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**Central Bank Autonomy, and Inflation and Output Performance in the Baltic States,
Russia, and Other Countries of the Former Soviet Union, 1995–97**

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Abstract

A higher degree of de jure autonomy and accountability of the central banks of the Baltic states, Russia, and other countries of the former Soviet Union appears to be positively correlated with lower average inflation. There also seems to be some positive correlation between greater central bank autonomy and higher average real growth, after the initial period of reforms. Central banks with a higher degree of autonomy and accountability have apparently also reformed their operations more aggressively.

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I. INTRODUCTION

The Soviet Union dissolved in late 1991, but for some time thereafter the ruble remained legal tender in the Baltic states, Russia, and other countries of the former Soviet Union (BRO). The ruble zone gradually collapsed and the newly independent countries began to take responsibility for their own monetary policy.² The BRO countries could, for obvious reasons, not rely on a good track record, but had to establish an autonomous and accountable central bank in their respective countries, perhaps supplemented with a rule-based monetary policy, to ensure credibility.³ Most of the BRO countries therefore adopted central bank legislation embracing these principles, but also reflecting local conditions in each country. This helps explain the many variations in central bank legislation of the 15 BRO countries in spite of the almost similar point of departure. The purpose of this paper is to compare central bank autonomy and accountability of each BRO country, as revealed by the central bank legislation until the end of 1997, with the corresponding inflation and output performance since the early 1990s.

The Central Bank of the Russian Federation, which officially took over the authority of the Currency Emission Department of the Gosbank in May 1992, experienced severe problems controlling the money supply (Odling-Smee et al., 1994). In mid-1992, limits on central bank interstate lending were therefore imposed, which, in effect, led to separate noncash currencies, since these restrictions generated discounts on ruble accounts of different states reflected by the excess demand for Russian rubles. Estonia was the first BRO country to leave the ruble area by introducing its new national currency, the kroon, as the sole legal tender, in June 1992. Lithuania and Latvia, however, were the first BRO countries, together with Belarus, to introduce coupons, initially circulating in parallel with the ruble, in May 1992. Ukraine introduced rationing coupons already in 1991, but it was first in November 1992 these coupons were designated as a transitional currency. The Kyrgyz Republic introduced its own currency in May 1993. On July 24, 1993, the Central Bank of the Russian Federation announced that pre-1993 rubles would no longer be legal tender as of July 26. After the Russian announcement, Georgia, Turkmenistan, Azerbaijan, and Moldova decided to leave the ruble zone. In August 1993, Russia, Kazakhstan, and Uzbekistan signed a trilateral agreement

²For a discussion of the reasons for the collapse of the ruble zone, see, for instance, Odling-Smee et al. (1994) and Banaian and Zhukov (1995). See Appendix I for the timing of the introduction of national currencies. Appendix II provides a list of current central bank laws used in this paper.

³In the literature, central bank *autonomy* is sometimes preferred to the frequently used term *independence*, as autonomy entails operational freedom, while independence indicates a lack of institutional constraints. Even so-called independent central banks typically have strong commitments either to pursue price stability, to follow a specific exchange rate policy, or to comply with a target explicitly stipulated by the government. This paper will therefore use the term "autonomy."

on establishing a new ruble area. A new agreement, including Armenia, Belarus, and Tajikistan, was signed in September. The Russian terms for providing new rubles proved unacceptable to Kazakhstan and Armenia, which introduced their own currencies in November, and Uzbekistan, which introduced coupons. Bilateral discussion between Belarus and Russia on a monetary union continued, but collapsed later, and Belarus made the rubel the sole legal tender in October 1994. The last state to introduce its own currency was Tajikistan, whose Tajik ruble appeared in May 1995.

Several empirical studies of developed market economies have provided evidence that increased central bank autonomy is positively correlated with lower average inflation. During the period following the breakdown of the Bretton Woods system of fixed par values in the early 1970s, the industrialized countries, which accorded greater legal autonomy to their central banks also experienced lower average inflation.⁴ Furthermore, a higher degree of central bank autonomy did not seem to harm average real growth.⁵ The correlation between legal autonomy and lower inflation, however, does not appear to be empirically significant in developing countries.⁶ Instead, there seems to be an important positive correlation between the turnover of central bank governors and inflation. Cukierman, Webb, and Neypati (1992) argue that central banks with a low turnover of governors are more autonomous. However, lower turnover could also be interpreted as the respective central bank governor being more receptive to government instructions. A few studies of transition economies, for instance, Loungani and Sheets (1997), find that increased central bank autonomy is correlated with lower inflation rates, and that lower inflation also is correlated with subsequent real GDP growth. However, most of these studies focus on formerly centrally planned European economies, of which many aspire for eventual membership of the European Union (EU).⁷ This

⁴See, for example, Grilli, Masciandaro, and Tabellini (1991), Eijffinger and Schaling (1993), and Eijffinger and van Keulen (1995). For a comprehensive survey, see Cukierman (1992); for an overview, see Cukierman (1994) or *World Economic Outlook*, IMF, 1996 (pp. 128–9).

⁵See, for instance, Alesina and Summers (1993) and Eijffinger, Rooij, and Schaling (1996). However, some studies (among others, Debelle and S. Fischer (1994), A. Fischer (1996), and Gärtner (1997)) have found that sacrifice ratios (i.e., the ratio between the difference of potential and actual output during a disinflation period divided by trend inflation) are positively correlated with larger central bank autonomy. A. Fischer (1996, page 13), for example, argues this is due to the fact that more autonomous central banks face a flatter short-term Phillips curve.

⁶However, Anyadike-Danes (1995), for example, finds that the linkage between central bank autonomy and inflation performance is much weaker in developing countries with a pegged exchange rate than in other developing countries.

⁷See, for instance, Hochreiter and Riesinger (1995), Radzyner and Riesinger (1997), Siklos (1994), and Äimä (1998) for a discussion of central bank legislation in selected transition

(continued...)

study is aimed solely at the BRO countries, of which only the Baltic states strive for EU membership in the near future.

The greatest challenge of comparing central bank autonomy with inflation and output performance is in defining and measuring central bank autonomy. The index used in this paper includes most of the elements found in other similar indexes, but in addition it is specifically tailored to cover the guidelines used by the Monetary and Exchange Affairs Department and the Legal Department of the International Monetary Fund when they provide technical assistance. Each central bank law is rated according to 21 criteria, and each criterion is graded. The criteria themselves, the grading, and the weighting all add an element of arbitrariness and are, of course, subject to discussion. Nevertheless, the index is a useful tool to give a rough indication of the level of de jure autonomy and accountability of the different central banks in the BRO countries.

In spite of these caveats, there appears to be a positive correlation between a larger degree of de jure central bank autonomy and accountability, as measured by the calculated index, and lower inflation and subsequently higher real growth—or rather a smaller decline in real growth after the initial restructuring of the economy. However, it is not clear if it is the political will to pursue sound economic policies that results in lower inflation and a higher degree of central bank autonomy and accountability, or whether a higher degree of central bank autonomy and accountability in itself facilitates lower inflation and, in principle, also results in higher sustainable real growth. Because of the complexities of measuring central bank autonomy and accountability, the causality problem, and the relatively short period after most of these countries have succeeded in stabilizing their economies, the results are presented in figures without advanced statistical testing.⁸

⁷(...continued)

economies. A brief comparison of core issues of central bank legislation of the 15 BRO countries can be found in Knight et al. (forthcoming). See, for example, Temprano-Arroyo and Feldman (1998) for a discussion of institutional requirements for EU membership, including the establishment of an autonomous central bank, and to what degree selected transition economies comply.

⁸It is not the purpose of this paper to make an advanced econometric analysis of central bank autonomy and inflation, compare amendments of central bank legislation with changes in inflation and output performance, estimate reaction functions of central banks, estimate sacrifice ratios, and other similar analyses. The BRO countries have experienced significant adverse terms-of-trade shocks, which have affected the real sector, and some countries, like Armenia, Azerbaijan, Georgia, Russia, and Tajikistan have been involved in military conflicts, which also have affected their respective economies. Furthermore, the relatively short period since the countries actually have been able to fully control their monetary policy and the more or less ambitious efforts to adjust the real sector would make it a challenging task to make more advanced analyses.

The remainder of the paper is structured as follows. First, the principles for sound central bank legislation are addressed in Section II and summarized in a Box. Section III provides a brief overview of indexes used in other studies to measure de jure autonomy and accountability. A detailed description of the index used in this paper can be found in Appendix III. Section IV presents the empirical findings, and Section V concludes the paper.

II. PRINCIPLES FOR SOUND CENTRAL BANK LEGISLATION

It is the prerogative of the state to control monetary policy and thus to affect inflation. Major changes in the general price level are basically considered a monetary phenomenon that distorts the information content of variable prices. Although inflation may reflect a deliberate redistribution policy, the distortion, nevertheless, hampers an efficient allocation of resources and thus is harmful to sustainable economic growth. Governments may have several competing economic objectives, particularly in the short term, and may accordingly tend to ignore the medium-term inflationary effects of an expansionary monetary policy, particularly near election times. Even a simple announcement by the government that it intends to pursue price stability is often not viewed as credible, because at some future date it may no longer be politically optimal to implement the policies announced beforehand to anchor inflation expectations. Rational economic agents will require a risk premium to compensate for this inflation bias caused by this time-inconsistency problem (Kydland and Prescott, 1977), which impedes sustainable growth. The government could rigorously follow a simple, easy-to-monitor fixed rule to eliminate its credibility problem, but such rules are often not flexible enough in the longer run and in an environment with financial innovations. Contingent rules would allow for more flexibility, but they are difficult to monitor instantaneously and thus lose credibility. If, instead, authority over monetary policy is delegated to an autonomous central bank with a clearly defined primary objective to pursue price stability and with sufficient authority to achieve this objective, in addition to being accountable for the outcome of its policies, the risk premium can be reduced without losing flexibility, provided that the central bank uses its discretion professionally to establish a good track record.⁹

A distinction can be made between *goal autonomy*, *target autonomy*, and *instrument autonomy*.¹⁰ Goal autonomy is the broadest concept, since in principle, it gives the central

⁹It is not the purpose of this paper to reiterate reasons and benefits of central bank autonomy and accountability. For excellent overviews, see, for example, Eijffinger and de Haan (1996), Fischer (1994), Guitián (1995a and 1995b), or Swinburne and Castello-Branco (1991). For a historical overview of central bank legislation, see, for instance, Capie, Goodhart, and Schnadt (1994). For a comprehensive survey of monetary frameworks in the post-Bretton Woods era, see, Cottarelli and Giannini (1997). For general legal issues affecting central banks see Effros (1992, 1994, 1995, 1997, and 1998).

¹⁰Debelle and Fischer (1994) introduced the distinction between goal independence and

(continued...)

bank authority to determine its primary objective, when it is not clearly defined or objectives are not clearly ranked. Target autonomy allows the central bank to decide a specific target for achieving the primary objective, which is stipulated in the law. Goal and target autonomy are perceived as strong degrees of autonomy, but are also susceptible to the accusation of having a *democratic deficit*, since central bankers, who are not elected by the general public, have the authority to decide the short-term tradeoff between the rate of inflation and employment.¹¹ Nevertheless, as long as there is short-term price stickiness, it may, according to Rogoff (1985), be optimal to have a “conservative central banker” weighting price stability higher than the social objective function to neutralize myopic behavior of the government. However, strong accountability provisions are also needed to ensure the authority delegated to the central bank is actually used as intended (Fischer, 1995). Thus, even with goal or target autonomy, it may be necessary to introduce a clearly defined operational target to facilitate accountability.

Instrument autonomy implies that the cabinet or the legislature actually decides the target, in agreement with the central bank, and the central bank retains sufficient authority to implement the target using the instruments it sees fit.¹² This assumes the establishment of a sort of contract between the government (the principal) and the central bank (the agent), ensuring that the purpose of delegating authority over monetary policy to an autonomous central bank is actually achieved.¹³ While instrument autonomy reduces the potential risk of the government manipulating monetary policy in the short run, it will not fully diminish the risk premium unless the agreement covers a long period and is credible, as the targeting horizon becomes relevant. Formal goal or target autonomy combined with a pegged exchange

¹⁰(...continued)

instrument independence, which is elaborated in Fischer (1995).

¹¹The Chilean Central Bank Law of 1989 and the statutes of the European Central Bank of 1992, which are strongly influenced by the Bundesbank Act of 1957, are examples of laws with target autonomy. The U.S. Federal Reserve Act of 1913 amended up to 1994, has no clearly defined primary objective, but several broad goals (maximum employment, stable prices, and moderate long-term interest rates), which leaves some flexibility to prioritize the different stipulated goals.

¹²The Reserve Bank of New Zealand Act of 1989 is one of the best examples of institutionalized instrument autonomy. Although not explicitly stipulated in the law, instrument autonomy has also been practiced in Canada since 1991, while the Bank of England, with the changes in May 1997, is also moving in the direction of instrument autonomy.

¹³The principal-agent approach is discussed by Persson and Tabellini (1993) and Walsh (1995), among others, and strictly applies to an explicitly contractual framework such as that in New Zealand, rather than to the more common arrangements which might be seen as embodying implicit contracts.

rate policy under the authority of the government essentially becomes instrument autonomy. It is frequently argued that central banks should have instrument autonomy (Fischer, 1995).¹⁴

The BRO central bank laws are not always very specific regarding target or instrument autonomy. The Baltic States, however, have pursued a fixed exchange rate policy—in Estonia and Lithuania in the form of a currency board arrangement established in June 1992 and April 1994, respectively. The other BRO countries have fairly rigorous provisions ensuring coordination with the government in formulating monetary policy, and the central banks are generally formally autonomous regarding implementation. However, because they have not had an opportunity to establish a good track record, they must rely more on the legislation itself to promote the credibility of monetary policy.¹⁵

The primary guideline for sound central bank legislation is that—depending on the extent of autonomy delegated to the central bank—there must be adequate consistency among the degrees of autonomy, authority, and accountability actually delegated to the central bank to improve the credibility of monetary policy. A high degree of formal autonomy that is not implemented in practice and is not accompanied by adequate accountability may endanger not just the credibility of monetary policy, but also the general level of public confidence in the legal framework. Within the primary guideline, a range of principles should be followed. First, the central bank must have a clearly defined primary objective, namely price stability. It might be formulated as preserving the value of the currency to allow it to be interpreted as exchange

¹⁴The degree of autonomy delegated to the central bank is ultimately a political decision. Goal and target autonomy may seem to suggest that the central bank has full independence without any institutional constraint, but, in practice, central bank authority is often restricted by an exchange rate policy under the authority of the government or provisions that the central bank shall take due account to the economic policies of the government. Instrument autonomy with consistently defined objective(s), authority, and accountability provisions, may thus, in fact, be better suited to reduce the inflation bias than formal target autonomy without such additional provisions in place.

¹⁵At times, some of the other BRO countries have also operated a de facto pegged exchange rate system. Fischer et al. (1998), for instance, suggest that as of 1995, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, and the Kyrgyz Republic operated a de facto peg to the U.S. dollar. Credibility in monetary policy, and other economic policies as well, may also be promoted by an arrangement with the International Monetary Fund (Cottarelli and Giannini, 1998), provided the country *complies* with the program. By the end of April 1998, Estonia, Latvia, and Ukraine have a Stand-by arrangement with the Fund; Azerbaijan, Kazakhstan, Moldova, and the Russian Federation have an Extended Fund Facility with the Fund; and Armenia, Azerbaijan, and Georgia have an Enhanced Structural Adjustment Facility with the Fund. Estonia, Latvia, and Kazakhstan have not drawn on their respective facilities (as of April 1998).

rate stability.¹⁶ Second, the central bank must have sufficient authority to actually achieve its objective(s). If the central bank also conducts banking supervision, as in the case of all the BRO countries, it should accordingly have sufficient authority to oversee the commercial banks and safeguard the financial system without endangering monetary policy. Third, if the central bank's authority or effectiveness at times is significantly limited by factors outside its control, including government instructions or policies of the government, the law should have provisions ensuring that the public is promptly informed whenever such events occur, and that the central bank during such circumstances can no longer be considered accountable for the results of the monetary policy put into effect.¹⁷ Fourth, the governing bodies of the central bank must not be directly or indirectly subject to political influence that may affect the short-term implementation of monetary policy (political autonomy). Fifth, the central bank must be financially independent so as to avoid the possibility that profitability concerns will prevent price stability (economic autonomy). Finally, the central bank must be accountable for the authority delegated to it by providing transparent information on a regular basis about both its monetary policy and its financial condition (accountability). These guiding principles are summarized in the accompanying Box.

III. LEGAL INDEX FOR CENTRAL BANK AUTONOMY AND ACCOUNTABILITY

There have been several efforts to create indexes to measure central bank autonomy. For example, Alesina (1988) uses an index, primarily based on previous work by Robin Bade and Michael Parkin, focusing on authority over monetary policy, the number of board members appointed independently of the government, and whether government officials participate in the policy board. Grilli, Masciandaro, and Tabellini (1991) use 16 criteria divided between political independence and economic independence.¹⁸ Cukierman (1992) and

¹⁶For a brief discussion of "price stability," see, for instance, S. Fischer (1996).

¹⁷In practice, however, such provisions may primarily have a deterrent effect, but they are nevertheless useful in providing the central bank sufficient authority to implement monetary policy, provided the bank really is politically and financially autonomous.

¹⁸Political independence, as defined by Grilli et al. (1991), depends on the specifics of the governor's appointment, whether the governor's and board members' terms are longer than five years, if there is no mandatory participation of government representatives in the policy board, if the government shall approve monetary policy, if monetary stability is among the central bank's statutory goals, and if there are legal provisions to strengthen the central bank's position vis-à-vis the government in case of a conflict. Economic independence, as defined by Grilli et al. (1991), on the other hand, depends on the direct credit facility of the government, if it is automatic, if it is based on a market interest rate, and if advances are temporary and limited. Economic independence also depends on whether the central bank does not participate in the primary market for government securities, whether the central bank itself can determine the interest rates on its various facilities, and whether banking supervision is separated from the central bank.

Box: Main Guidelines on Central Bank Autonomy and Accountability

Objectives and targets	Price stability, as the best contribution monetary policy can make to balanced sustainable growth, is the preferable formulation for the primary objective. Consistent with this broad objective, a specific target—which could, for example, involve explicit inflation targets, maintenance of a fixed exchange rate, or monetary aggregate targets—should be established and published. These targets may be determined by the central bank (target autonomy); or determined by the government in agreement with the central bank (instrument autonomy). To facilitate accountability, the target(s) should be easy to monitor. Consideration should be given to explicit, but limited “escape clauses” in the face of significant exogenous shocks.
Monetary policy	A central bank should determine and implement monetary policy to achieve its target. To this end, the central bank should have authority to determine quantities and interest rates on its own transactions without interference from the government.
Conflict resolution	A clear and open process should be established to resolve any policy conflict between the central bank and the government. Some of the aspects below (e.g., the nature of government representation on the board) are potential channels for such a resolution; another approach is to allow the government to direct or overrule the central bank, but such a power should be constrained, to avoid other than exceptional use. It should be absolutely clear to the executive, legislature, and the general public that responsibility for the results lies with the government, not the central bank, if the latter is overruled, its advice ignored, or its effectiveness is significantly limited by government policies. This may require that both the government and the central bank publish a formal statement to that extent.
Governor	Nomination and appointment/confirmation of the governor should be by separate bodies to provide some measure of balance, bearing in mind the institutional framework. The term should be longer than the election cycle of the body with the predominant role in selecting the governor. Dismissal should be only for breaches of qualification requirements, or misconduct; lack of performance could also be grounds if clearly defined in terms of the primary objective and specific targets. The latter could be ruled upon according to a suitable and independent judicial procedure, and perhaps be with the consent of the legislature.
Board	Composition of the board should ensure a reasonably well informed and balanced view, but avoid conflicts of interest. Precisely what is reasonable depends in part on the role of the board (decision-making, monitoring, or purely advisory), and whether it is a single or multiple board structure. The highest level board should include a majority of non-executive, non-government directors. Indeed, direct government representatives should be eliminated from a policy board and probably also from a monitoring board. If a government representative does participate in a policy board, it should at least be without the right to vote (though it might be with a limited, temporary veto power). As with the governor, nomination and appointment/confirmation should be by different bodies; terms should be longer than the election cycle of the main body in the appointment process, and should be staggered; and dismissal of board members should occur only for breaches of qualification requirements and misconduct, and on performance grounds only if clearly defined. The latter could be ruled upon according to a suitable and independent judicial procedure, and be with the other board members’ prior consent.
Credit to government	If not prohibited, direct credit to the government should be carefully limited to what is consistent with monetary policy objectives and targets. For example, temporary advances and loans could be allowed if: (i) they are explicitly limited to a small ratio of average recurrent revenue of preceding fiscal years (say, 5 percent); (ii) they bear a market-related interest rate; and (iii) they are securitized by negotiable securities. The central bank should not underwrite and participate as a buyer in the primary market for government securities, except with noncompetitive bids and within the overall limit for credit to government. Indirect credit to the government, that is, buying outright existing government securities held by the market, or accepting them as collateral, should be guided by monetary policy objectives. The central bank should not finance quasi-fiscal activities.
Exchange rate policy	Basic consistency needs to be ensured between the exchange rate and monetary policy. If exchange rate policy (including choice of regime) is not solely the responsibility of the central bank, the bank should nevertheless have sufficient authority to implement monetary policy within the constraint of exchange rate policy (e.g., in a fixed exchange rate regime, to support the exchange rate as the specific target of monetary policy), and should be the principal advisor on exchange rate policy issues (e.g., as to whether the current regime is most suitable for the fundamental price stability objective). In case of a conflict with the government on exchange rate issues, the conflict resolution procedures as stated above should come into effect.
Financial conditions	The law should ensure that the central bank has sufficient financial autonomy to support policy autonomy, but with matching financial accountability. Its budget should not be subject to normal annual appropriation procedures (but could be subject to a longer-term appropriation—e.g., on a cycle consistent with the term of the governor). Only realized net profits, after prudent provisioning by the central bank and appropriate allocations to general reserves, should be returned to the government. The government should ensure the solvency of the central bank by transferring interest bearing negotiable securities if the authorized capital is depleted. The body to which the central bank is accountable should be allowed to ask external auditors and the auditor general to review the central bank’s accounts and procedures.
Publication and reporting	Policy and financial accountability should be clearly established. The central bank should prepare formal statements on monetary policy performance at, say, six-month intervals, without prior approval by the government. Whoever the bank is directly accountable to, these statements should be forwarded to both the executive and the legislature, and should be published for the benefit of the public. Annual financial statements audited by external auditors should similarly be forwarded and published. Summary balance sheets should be published more frequently (for instance, on a weekly or monthly basis).

Cukierman, Webb, and Neyapti (1992) look at four categories: (1) appointment, term, and dismissal of the governor; (2) formulation and authority over monetary policy; (3) the objective(s); and (4) limitations on central bank credit to the public sector. Eijffinger and Schaling (1993) mainly focus on three features, namely, the authority over monetary policy, government officials on the policy board, and appointment of board members independently of the government. Although these indexes all are based on a similar approach, they, in some cases, actually result in a different ranking.¹⁹

Accountability is also important for an autonomous central bank to balance the authority delegated to the bank. Accountability has primarily been discussed in the context of democratic countries, but central bank accountability is important for all agents making economic decisions that may be affected by inflation expectations. Briault, Haldane, and King (1996) use an accountability index that focuses on monetary policy. Their index uses four criteria: (1) external monitoring of the central bank by parliament; (2) publication of minutes of policy meetings; (3) publication of reports on inflation and monetary policy in addition to standard central bank bulletins; and (4) explicit or implicit procedures in case the government overrules the central bank.²⁰

The index used in this paper covers both autonomy and accountability, and is based on 21 criteria, which include most of the above-mentioned elements in one form or the other (Appendix III). However, compared to the indices discussed so far, this index follows more rigorously the guidelines discussed in Section II. Thus, it also incorporates the importance of clearly defined coordination and resolution procedures between the central bank and the government, including the coordination of monetary policy and exchange rate policy; and the prominence of accountability, including the central bank's financial condition and audits by independent external auditors. The index favors prohibiting direct central bank credit to the government, although this may be rather strict for transition economies, until the market for government securities is fully developed. It may actually be preferable for governments of transition economies to have limited access to central bank credit to reduce the risk that government arrears develop, as such arrears may pose a larger risk for the transition than limited and temporary advances from the central bank. Some countries have dealt with this issue by including transitional provisions to initially allow limited and temporary access to

¹⁹See, for example, Eijffinger and de Haan (1996) for an overview of the different indexes and Mangano (1998) for a discussion of the consistency of some of these indexes.

²⁰Briault et al. (1996) survey 14 OECD countries, and find that there appears to exist some tradeoff between a larger degree of central bank autonomy (goal independence) and their index for accountability. It should be noted that the Bank of England has the highest accountability score and that the study was conducted before May 1997, when the Bank of England was given authority to set interest rates.

direct central bank credit in their central bank law. The index in this paper may therefore be considered to be rather rigorous.²¹

Furthermore, the weighting of the various criteria is always subject for discussion, but to simplify, the grades, which range between zero and one, are merely added up, although this reflects implicit weights. The highest score, that is, the highest degree of autonomy and accountability, is thus 21. Some of the grades may be rounded up or down depending on other provisions in the law. There is always an element of arbitrariness regarding the interpretation of the provisions, thus the index only provides a rough indication of the central bank's de jure autonomy and accountability.

The 15 BRO central bank laws can be classified into three groups. The first group comprises the Kyrgyz Republic, Georgia, Estonia, Moldova, Lithuania, and Armenia, which all have made substantial progress in adopting modern central bank legislation (i.e., a score in the range of 17½–21), while Kazakhstan, Latvia, Russia, and Uzbekistan also have made significant progress (i.e., a score in the range of 15–17½). The second group consists of Turkmenistan, Azerbaijan, and Tajikistan, which have made some progress. The third group consists of Belarus and the Ukraine. Newly suggested amendments in Belarus indicate that de jure autonomy of the central bank may actually be reduced. On the other hand, a new draft central bank law of Ukraine, which will replace the law of March 1991, is currently being discussed, and may increase the de jure autonomy of the National Bank of Ukraine. In general, bearing in mind the point of departure, the former centrally planned BRO countries have made good progress in formally delegating autonomy, authority, and accountability to their respective central banks.²²

²¹For instance, the index gives a law a full point if price stability is the primary objective, but the law must also explicitly prohibit or limit central bank credit to the government and require the government to pay a market-related interest rate on loans and advances, which shall be securitized by negotiable government securities so as to achieve high grades for provisions on credit to the government. This practice should help to ensure that there be consistency between the objective and the authority actually delegated to the central bank, although price stability as the primary objective implies a limit on central bank credit to the government. In contrast to the index used in this paper, Äimä (1998), who uses indexes based on the methodology of Grilli et al. (1991) and Cukierman (1992), respectively, finds that Latvia has a more autonomous central bank than Lithuania and Estonia, partially due to the requirements on direct credit to the government. Actually, in October 1998, Latvia amended its central bank law to explicitly prohibit direct credit to the government.

²²The average score of the 15 BRO countries is 15.6 (see Appendix III). The average score of 32 selected Sub-saharan African countries, including the eight members of the West African Economic and Monetary Union and the six members of the Central African Monetary Union, using a similar index, is 11.4 (see Mehran et al. (1998) for details).

IV. EMPIRICAL FINDINGS

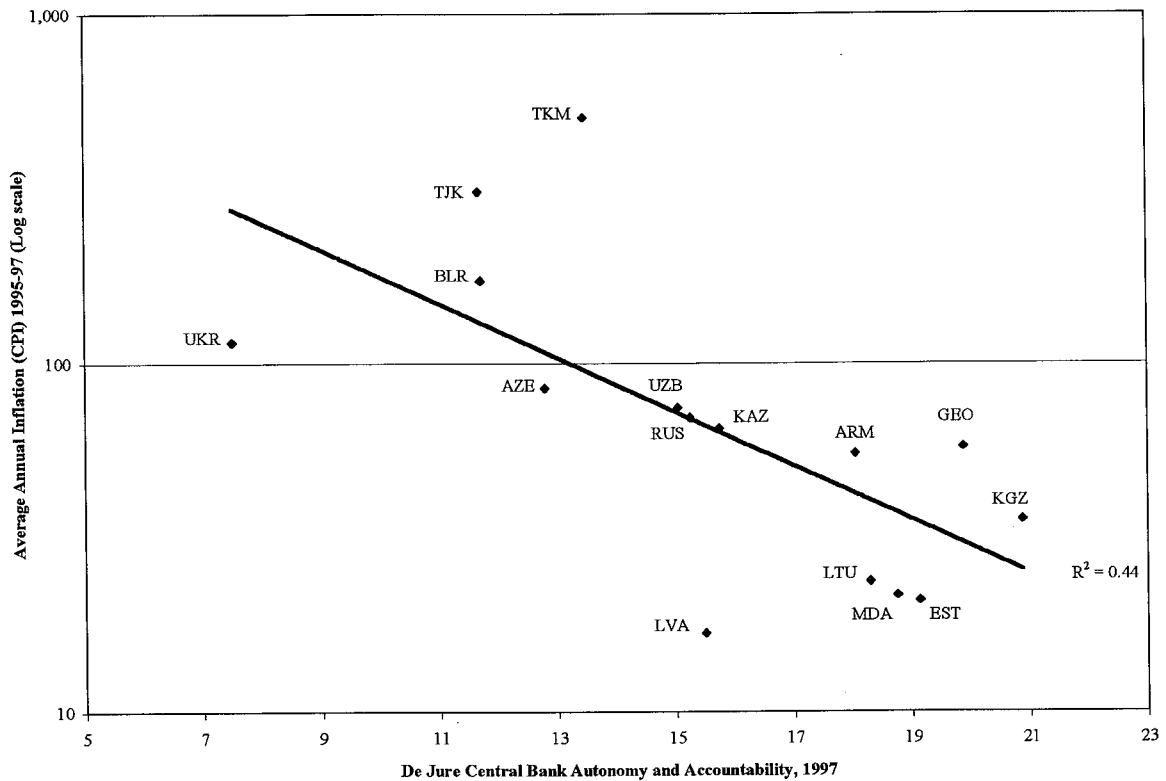
The BRO countries embarked on major reforms of their economies in the early 1990s. Most prices were liberalized, but the inherited monetary overhang and new excessive credits to subsidize inefficient production led to exorbitant inflation. Difficulties with interregional trade also adversely affected most BRO countries (Christoffersen and Doyle, 1998). Thus, output plunged and inflation increased after the initial reforms. Some countries managed to limit the large declines in output, which occurred at the outset, but typically at the cost of higher inflation and without a subsequent sustainable increase in output. Other countries, in contrast, which more aggressively reformed the real sector from the beginning, were better able to keep inflation at bay while later realizing an increase in output. Many BRO countries introduced their own currencies in late 1993 and several countries adopted important amendments of their central bank laws during 1992–95. This section, which compares central bank autonomy and accountability with inflation and output performance, concentrates on the three-year period 1995–97, since changes in the money supply take some time to fully work their way through the system.

A. Central Bank Autonomy, Accountability, and Inflation

Figure 1 shows that a higher degree of central bank autonomy and accountability, as measured by the above-mentioned index, is negatively correlated with average annual inflation (CPI) during 1995–97.²³ The deviations from the linear fit can easily be explained. Ukraine, which scored the lowest on the autonomy and accountability index, has for several years worked on amending its central bank law of 1991. A draft central bank law that has been submitted to the legislature in 1997 would have scored significantly higher. Thus, to the extent the National Bank of Ukraine already complies with some of the new provisions in the draft, it would move closer to the linear fit. For instance, the Governor was reappointed in February 1997 for a new term of four years, although the old law does not explicitly stipulate a specific term. Tajikistan has experienced a long period of civil war, and to the extent that political autonomy would have been given a larger weight in the index, Tajikistan would have scored lower, moving it closer to the trend. Turkmenistan has endured severe problems receiving payments for its gas exports, which, in addition to slow reforms may have prevented the Central Bank of Turkmenistan from fully implementing its *de jure* autonomy. Georgia's stabilization policies succeeded later than most of the other BRO countries in bringing inflation under control. Furthermore, the adoption of the Constitution in 1995 temporarily resulted in uncertainty regarding the primary objective of the National Bank of Georgia. Latvia, which has a better inflation performance than suggested by the index, reflects the fact that the government has deliberately pursued strong stabilization policies in the context of a fixed exchange rate policy, which may have given the Bank of Latvia larger *de facto* autonomy than the index suggests. The amendments adopted in October 1998 would add around three points more to the index. In addition to the Baltic states, the Kyrgyz Republic

²³The difference between using the consumer price index (CPI) and the GDP deflator is noticeable for some of the countries, particularly in the early years of transition, but the difference does not substantially change the linear fit in Figure 1 and Appendix IV.

Figure 1: Average Inflation and De Jure Central Bank Autonomy and Accountability



Source: Appendix III and World Economic Outlook Database (September 1998).

and Moldova have also done well regarding inflation performance and de jure central bank autonomy and accountability.

The same negative correlation between increased central bank autonomy and higher inflation remains if the period measuring inflation is reduced or extended, although the deviations generally become larger. The cumulative percentage increase of inflation from 1992 to 1997 measured against central bank autonomy is shown in Appendix IV.

However, it is not possible to determine whether modern central bank legislation has promoted sounder economic policies, or whether it is the political will to implement sound economic policies that has provided the central banks with more autonomy. The European Bank of Reconstruction and Development (EBRD) has developed an index for transition economies measuring their progress against the standards of advanced market economies. This reform index covers enterprise restructuring (privatization and governance), price and trade liberalization, and financial sector reforms, and is thus one indicator of the political will to reform the economy (EBRD, 1997). There is indeed a strong correlation between this reform index and the index for de jure central bank autonomy and accountability, particularly if Ukraine is excluded from this comparison (see Appendix V).

B. Central Bank Autonomy, Accountability, and Output

Figure 2 shows a positive correlation between increased central bank autonomy and accountability, and higher average annual real growth (GDP) during 1995–97. If the period is shortened to include the most recent years the correlation remains, but is less pronounced. If the period is extended, the correlation also becomes smaller. There is also correlation between average annual real growth during 1992–97 and central bank autonomy, as illustrated in Appendix VI, but less so for longer periods. Furthermore, there is no correlation between central bank autonomy and accountability, and real GDP per capita adjusted for purchasing power. Price stability is an important factor contributing to sustainable real growth, but it is not the only one, since the institutional framework and infrastructure also must be in place for the reformed real sector to operate as intended.

Caution is needed using real GDP figures as a measure for output. The continued need for government subsidies and the increase in inter-enterprise arrears in most BRO countries after the initial price liberalization suggest that some production actually may have contributed negatively to the value added under the former centrally planned system. Output figures based on net material product may thus previously have exaggerated real output. After embarking on reforming the economies, private sector development, particularly in the service sector, in addition to tax evasion in some countries, may have resulted in underreporting of real output.²⁴

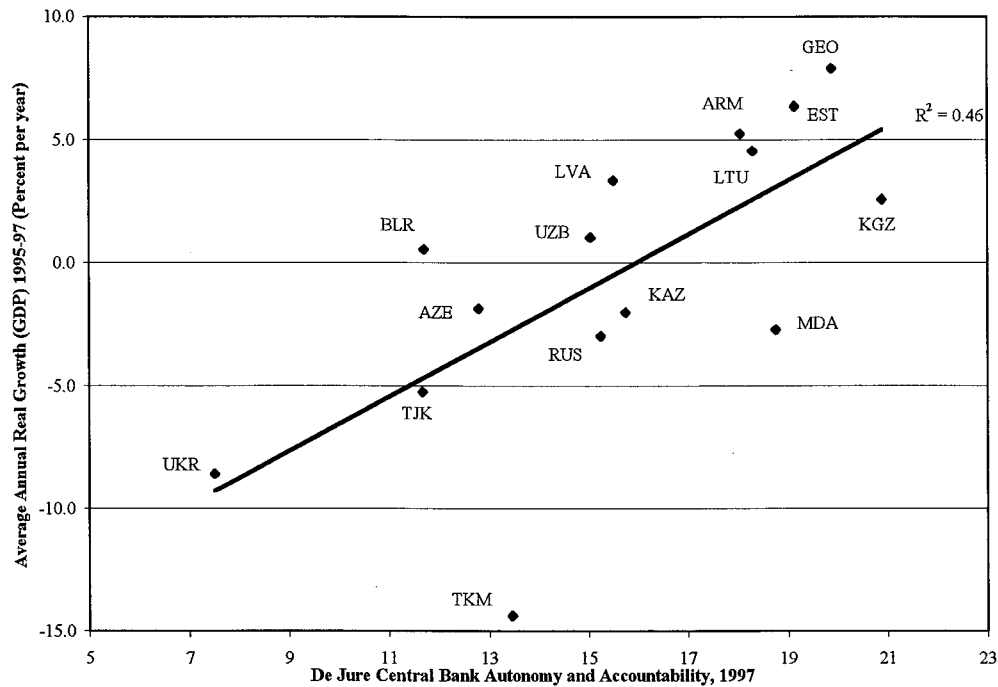
C. De Facto Central Bank Autonomy and Accountability

Central bank legislation may not always be implemented as intended. Cukierman (1992) and Cukierman, Webb, and Neypati (1992) use the turnover ratio of central bank governors as a proxy for de facto autonomy (a higher turnover ratio suggests less autonomy), arguing that governors less willing to adopt government instructions will more often be dismissed. In the case of the BRO countries, there is no apparent relationship between the number of governors and average annual inflation and average annual real growth.²⁵ There is, however, anecdotal evidence that some governors have felt pressured to resign before their term expired, and the fact that some governors have not been dismissed simply because they implemented very accommodating policies. Nevertheless, the period is rather short and in many countries, the governor has often only been appointed once or twice under modern central bank legislation.

²⁴For a discussion of output and inflation effects of transition economies, see, for instance, Christoffersen and Doyle (1998), Fischer et al. (1998), or Havrylyshyn et al. (1998). Regarding tax evasion, Hendley et al. (1997, page 34), for example, found in a survey of 15 Russian enterprises that barter trade between enterprises had increased from a range of 5 percent to 20 percent in 1992 to a range of 40 percent to 48 percent in 1996. The enterprises cited tax considerations, as it was difficult for tax authorities to unravel and assess the value of barter transactions, in addition to liquidity constraints and high real interest rates as the main reasons to the increase in barter trade.

²⁵See Appendix VII and VIII for the number of central bank governors since attaining IMF membership.

Figure 2: Annual Real Growth and De Jure Central Bank Autonomy and Accountability

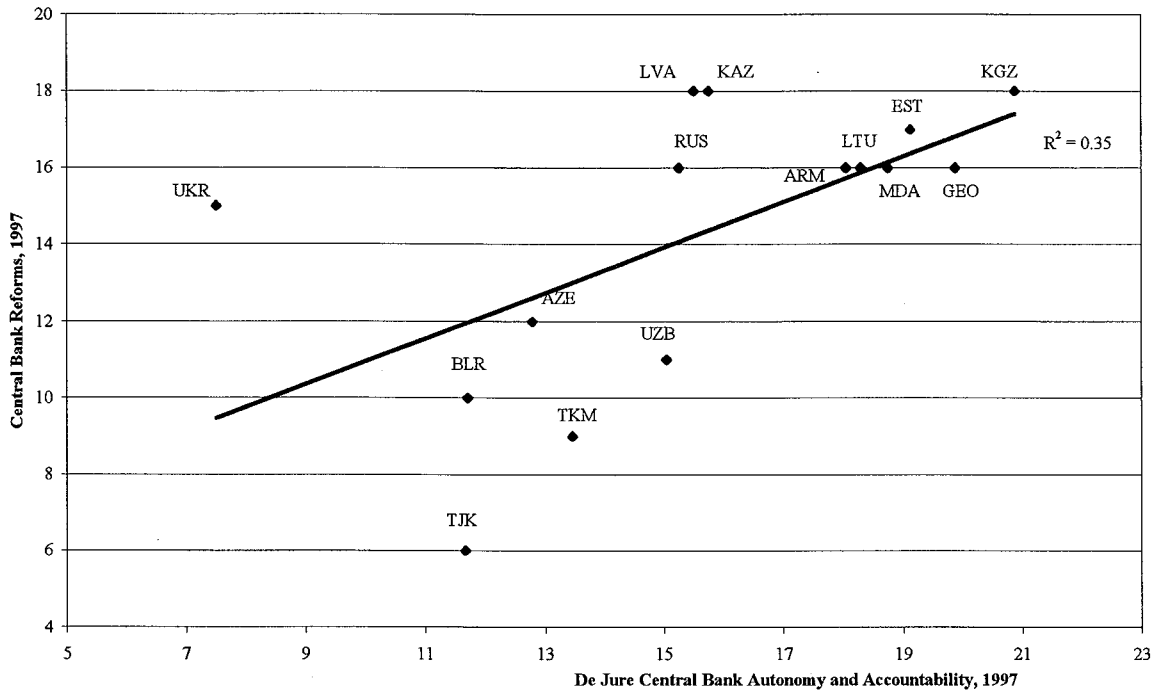


Source: Appendix III and World Economic Outlook Database (September 1998).

The purpose of delegating more authority over monetary policy to an autonomous central bank is to increase the credibility of monetary policy. There are different indicators of such credibility (e.g., the use of the national currency, the real exchange rate, and financial deepening), but often these indicators reflect developments of other important factors as well. For instance, there seems to be some correlation between a higher degree of autonomy and larger holdings of currency in percent of GDP, but the use of the domestic currency also reflects the development of alternative payment instruments. There also appears to be weak correlation between a higher degree of central bank autonomy and accountability, and a lower degree of dollarization (measured as bank deposits denominated in foreign currencies in percent of broad money including foreign currency deposits). However, the level of dollarization, as measured here, also reflects the level of financial deepening, among other considerations. Similarly, the real exchange rate and the level of capital inflows mirror not just monetary reforms, but also the efficiency of the real sector and political stability.

It is, however, noteworthy that there appears to be some correlation between central banks' de jure autonomy and accountability and their progress in reforming their operations. In a study by Knight et al. (forthcoming), the implementation of the following BRO central bank reforms are rated: (1) monetary operations and government debt management; (2) foreign exchange operations; (3) banking supervision; (4) bank restructuring; (5) payment systems; and (6) central bank accounting and auditing. Each category is graded for the amount of progress made during the period in question—one for limited progress, two for moderate progress, and three for substantial progress. Figure 3 shows the correlation between the index for central bank autonomy and the indicator for central bank reforms, which is calculated by

Figure 3: Central Bank Reforms and De Jure Central Bank Autonomy and Accountability



Source: Appendix III and Knight et al. (forthcoming).

simply adding the grades for each of the above-mentioned categories.²⁶ The BRO countries are basically clustered in two groups, indicating that the countries, whose central banks have the most autonomy, also have made the most progress in reforming the central bank's operations.

V. CONCLUSION

It is now generally accepted that by delegating the authority over monetary policy, or, at a minimum, the implementation of monetary policy to an autonomous and accountable central bank with a clearly defined primary objective, the credibility of monetary policy can be improved significantly. This paper uses a simple index to measure de jure autonomy and accountability at the end of 1997 of the 15 central banks of the Baltic states, Russia, and other countries of the former Soviet Union. A large degree of autonomy and accountability, as measured by this index, appears to be positively correlated with lower average inflation. This is consistent with previous findings for developed market economies and for selected transition economies. However, there seems also to be some positive correlation between a higher degree of central bank autonomy and higher average real growth—or rather a smaller decline in average real growth—after the initial period of reforms. On the other hand, there is no significant correlation between the turnover of central bank governors, which some studies

²⁶Please note that Estonia and Lithuania only are rated “moderate progress” for monetary operations and government debt management, because a currency board arrangement limits the central bank's ability to conduct open market operations.

have used as a proxy for de facto central bank autonomy, and inflation or real growth. However, the transition period may yet be too short to really make a reliable comparison.

The causality between central bank autonomy and accountability, and inflation and, in particular, output performance remains debatable. Arguably, it is the political will to implement sound economic policies that causes lower inflation and increases central bank autonomy, rather than the autonomy of the central bank and its pursuit of sound monetary policies that causes lower inflation. One measure of the will to reform the economy is the EBRD's reform index, and there is indeed strong correlation between this index and the index for de jure central bank autonomy and accountability, but it is outside the scope of this study to explore this and the causality issue further. In practice, however, both central bank autonomy and political will to pursue sound economic policies are probably important influences on inflationary performance. It is, nevertheless, noteworthy that BRO countries with the highest degree of de jure autonomy and accountability also appear to have modernized their operations more aggressively and to have achieved the best inflation performance. Since the prospects of reforming the central bank's operations seem greater with a higher degree of de jure autonomy and accountability, which indicates a larger degree of de facto autonomy and accountability, the likelihood for better inflation and output performance may therefore also increase, although many other factors, including structural adjustments, of course, also are important.

**Introduction of National Currencies and
Amendments of Central Bank Legislation**

Country	National currency			Amendments of central bank legislation		
	Introduction	Sole legal tender	Currency	Amendments ^{1/}	Most recent amendment ^{1/}	Under review
Armenia	Nov. 22, 1993	Nov. 22, 1993	Dram	August 1992, April 1993	June 1996	No
Azerbaijan	Aug. 15, 1992	Jan. 1, 1994	Manat	August 1992	June 1996	No
Belarus	May 25, 1992	May 18, 1994	Belarussian Ruble	December 1990, December 1992, June 1993, March 1994, February 1995	March 1995	Yes
	Aug. 20, 1994	Oct. 21, 1994	Rubel			
Estonia	June 20, 1992	June 20, 1992	Kroon	March 1990, May 1993	April 1994	Yes
Georgia	Apr. 5, 1993	Aug. 3, 1993	Coupon Lari	August 1991, June 1993, June and September 1995	May 1996	No
	Sep. 25, 1995	Oct. 2, 1995				
Kazakhstan	Nov. 15, 1993	Nov. 18, 1993	Tenge	June 1991, April 1993, March 1995	July 1997	No
Kyrgyz Republic	May 10, 1993	May 15, 1993	Som	June 1991, December 1992	July 1997	No
Latvia	May 7, 1992	July 20, 1992	Latvian ruble Lat	July 1990, May 1992, and June 1997	October 1998	No
	March 5, 1993	Oct. 18, 1993				
Lithuania	May 1, 1992	Oct. 1, 1992	Talonas Litas	February 1990, December 1994, March 1996	April 1997	Yes
	June 25, 1993	Aug. 1, 1993 ^{2/}				
Moldova	June 20, 1992	July 25, 1993	Moldovian coupons	June 1991, January, November, and December 1992, January and May 1994	September 1995	No
	Nov. 29, 1993	Nov. 29, 1993 ^{3/}	Leu			
Russia	July 24, 1993	July 26, 1993 ^{4/}	1993 ruble	1990, 1992, July 1993, April and December 1995, June 1996, and February and April 1997	March 1998	Yes
Tajikistan	May 10, 1995	May 15, 1995	Ruble	February and June 1991, December 1993, April 1995	December 1996	No
Turkmenistan	Nov. 1, 1993	Nov. 1, 1993	Manat	May 1992	October 1993	No
Ukraine	Nov. 12, 1992 ^{5/} Sep. 2, 1996	Nov. 16, 1992 Sep. 2, 1996	Karbovanets Hryvnia	1990	March 1991	Yes
Uzbekistan	Nov. 15, 1993	Jan. 1, 1994	Sum-coupon	February 1991	December 1995	No
	July 1, 1994	Oct. 15, 1994	Sum			

1/ Some of these amendments are minor, and there may be other legislative initiatives affecting the central bank.

2/ The conversion was completed as of July 20, but all domestic transactions were to be performed in litai as of August 1, 1993.

3/ The Trans-Dniester region continued for some time using pre-1993 rubles and rationing coupons.

4/ Small-denominated old ruble notes remained legal tender until the end of 1993.

5/ Single-use coupons had already been issued in 1991 and a multi-use coupon was introduced in January 1992.

Source: Odling-Smee et al. (1994), *Quarterly Report on Changes in Exchange Rate Arrangements and in Real Effective Exchange Rates*, IMF, and *Exchange Arrangements and Exchange Restrictions*, IMF.

**Central Bank Laws of the Baltic States, Russia,
and Other Countries of The Former Soviet Union ^{1/}**

The Law on the Central Bank of Armenia of June 30, 1996.

Republic of Azerbaijan Law on the Republic of Azerbaijan National Bank of June 10, 1996.

Law on the National Bank of the Republic of Belarus with amendments until March 2, 1995.^{2/}

Law of the Central Bank of the Republic of Estonia with amendments until April 5, 1994.^{2/}

Law of Georgia on the National Bank with amendments until May 28, 1996.

Edict of the President of the Republic of Kazakhstan with the force of law On the National Bank of the Republic of Kazakhstan of March 1995, with some of the amendments included in On the Introduction of Changes and Additions to Certain Legislative Acts of the Republic of Kazakhstan on Issues of Banking Activity of July 11, 1997.

Law of the Kyrgyz Republic on the National Bank of the Kyrgyz Republic of July, 1997.

Law on the Bank of Latvia of May 19, 1992 with amendments passed on June 18, 1997 (effective July 3, 1997) and October 29, 1998 (effective November 18, 1998).

Law on the Bank of Lithuania with amendments until April 8, 1997.^{2/}

Law on the National Bank of Moldova promulgated September 19, 1995.

Federal Law on the Central Bank of the Russian Federation approved by the State Duma on April 12, 1995, with amendments until March 1998.^{2/}

Law on Amending and Supplementing the Law of the Republic of Tajikistan on the National Bank of the Republic of Tajikistan of December 14, 1996.

Law of Turkmenistan on the Central Bank of Turkmenistan of October 8, 1993.

Law of the Ukrainian Soviet Socialist Republic on Banks and Banking Activity of March 10, 1991. Statutes of the National Bank of Ukraine, undated.^{2/}

Law of the Republic of Uzbekistan on the Central Bank of the Republic of Uzbekistan of December 21, 1995

1/ The translations used are in most cases unofficial translations.

2/ Law currently under review.

Relative Indicators of De Jure Central Bank Autonomy and Accountability, end 1997

Country, most recent amendment of central bank law (or law currently under review)	Objective		Policy				Political Autonomy							Economic Autonomy					Accountability		Index (Total=21)	
	Economic	Financial	Monetary	Foreign	Coordination	Resolution	Governor			Board				Credit to government			Quasi-fiscal	Instruments	Solvency	Publication		Auditing
							Appointment	Term	Dismissal	Gov. rep.	Appointment	Term	Dismissal	Limit	Interest rate	Securitization						
Armenia, June 1996	*	*	*	*	*	2/3	*	*	3/4	*	1/2	3/4	3/4	1/2	*	*	1/2	3/4	7/8	*	*	18 1/24
Azerbaijan, June 1996	1/4	*	*	1/4	3/4	2/3	*	3/4	1/4	*	*	1/2	1/4	1/4	1/4	3/4	1/2	5/8	1/4	3/4	3/4	12 19/24
Belarus, or March 1995	*	*	*	*	1/2	1/4	*	*	--	--	*	--	--	1/2	--	*	--	3/4	17/24	1/4	3/4	11 17/24
Estonia, or April 1994	*	*	*	*	*	3/4	*	3/4	*	*	*	1/2	*	*	*	*	*	3/4	3/8	*	*	19 1/8
Georgia, May 1996	3/4	*	*	*	*	*	*	*	3/4	*	*	*	3/4	3/4	*	*	*	7/8	*	*	*	19 7/8
Kazakhstan, July 1997	*	*	*	*	3/4	3/4	*	*	1/4	1/2	*	3/4	1/4	*2/	1/4 ^{2/}	3/4 ^{2/}	1/4	*	1/2	3/4	*	15 3/4
Kyrgyz Republic, July 1997	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	7/8	*	*	*	20 7/8
Latvia, June 1997 ^{3/}	*	*	*	1/2	1/2 ^{3/}	1/4	*	*	*	3/4 ^{3/}	*	*	*	1/2 ^{3/}	-- ^{3/}	-- ^{3/}	*	3/4	1/2	3/4	*	15 1/2
Lithuania, or April 1997	*	*	*	*	1/2	2/3	*	3/4	*	*	*	*	*	*4/	*4/	*4/	1/4	7/8	1/4	*	*	18 7/24
Moldova, September 1995	*	*	*	3/4	3/4	1/4	*	*	*	*	*	*	*	1/4	*	*	*	3/4	*	*	*	18 3/4

Country, most recent amendment of central bank law (□ law currently under review)	Objective		Policy				Political Autonomy						Economic Autonomy					Accountability		Index (Total= 21)		
	Econ omic	Fin an cial	Mo neta ry	For ex	Coor dina tion	Re solu tion	Governor			Board			Credit to government			Quasi- fiscal	Instru- ments	Sol ven cy	Pub- lica- tion		Audi- ting	
							Ap poin ter	Te rm	Dis mis sal	Gov rep.	Ap poin ter	Te rm	Dis mis sal	Li- mit	Inte rest rate							Secu ritiza tion
Russia, March 1998 ^{5/}	3/4	*	*	*	*	3/4	*	1/2	*	*	*	1/2	1/4	1/4	--	1/2	1/4	*	1/2	*	*	15 1/4
Tajikistan, December 1996	3/4	*	*	1/4	*	3/4	*	--	1/4	--	--	--	--	1/2	1/4	*	1/4	*	2/3	*	*	11 2/3
Turkmenistan October 1993	1/4	*	1/4	1/4	3/4	1/4	--	*	1/2	*	--	*	1/2	1/2	*	3/4	*	7/8	5/6	3/4	*	13 11/24
Ukraine, □ ^{6/} March 1991	1/4	*	*	--	1/4	1/4	*	--	--	--	*	--	--	1/4	--	--	1/4	7/8	3/8	1/2	1/2	7 1/2
Uzbekistan, December 1995	3/4	*	*	1/2	3/4	2/3	*	3/4	3/4	*	*	--	--	1/4	*	*	1/2	7/8	1/2	3/4	*	15 1/24

- 1/ The Constitution adopted by referendum in 1996 to some extent overrules the Law on the National Bank of Belarus. A new draft bank code has been submitted to the legislature, which, however, will reduce the autonomy of the central bank.
- 2/ The Law on the National Bank of Kazakhstan was amended in July 1997, eliminating the Bank's authority to grant credit to the government, which will become effective in 1998. This amendment also implies that direct credits to the government bear market-related interest rates and are fully collateralized by negotiable government securities, which will add one point more to the index.
- 3/ The Law on the Bank of Latvia was amended on October 29, 1998 to prevent the Minister of Finance from temporarily postponing decisions by the Board (Article 25) and explicitly preventing the Bank from granting direct credit to the government (Article 36). These amendments alone add around 3 points to the index.
- 4/ The currency board arrangement implicitly prohibits direct credit to the government.
- 5/ Amendments since April 1995 do not change the index significantly.
- 6/ A draft law on the National Bank of Ukraine, which significantly improves the autonomy and accountability of the central bank, has been submitted for the second review of the legislature. The constitution adopted on June 28, 1996, clarifies that the governor is appointed by the legislature upon the President's recommendation.

Definition of ranking:

Objectives:

Economic policy: * if “price stability” or “stability of the internal and external value of the currency” conducive to sustainable real growth is the sole objective or primary objective.
¾ if monetary stability is given explicit priority. (In contrast to price stability, monetary stability may emphasize financial sector stability over price stability.)
¼ if price stability, monetary stability, or stability of the currency is explicitly mentioned as one of several objectives.

Financial system: * if banking supervision is delegated to an autonomous government agency so it will not impinge on monetary policy, or the central bank supervises banks and the payments system and has sufficient authority to address financial sector weaknesses without endangering monetary policy. There may, however, be a conflict of interest between the supervisory agency and the monetary agency in the short run regarding monetary policy. On the other hand, coordination and the fact that the supervisory agency also should be an autonomous and accountable entity may be promoted by delegating banking supervision to the central bank, particularly if the banking sector is relatively small, provided the central bank’s objectives are prioritized and it has sufficient authority to actually conduct banking supervision. See, for instance, Goodhart and Schoenmaker (1993) or Tuya and Zamalloa (1994) for an overview of the pros and cons of having the banking supervisory function inside or outside the central bank.
Sufficient authority means, authority to: issue prudential regulations after appropriate hearings (1/8); issue licenses according to objective criteria (1/8); conduct off-site inspections (1/8); conduct on-site inspections (1/8); conduct consolidated supervision (1/8); collaborate with foreign supervisors (1/8); impose sanctions, including withdrawal of the license according to objective criteria (1/8); and supervise or oversee, at a minimum, the large-value payment system (1/8) without improper interference from or approval of the government. The ranking simply reflects if central bank legislation is appropriate, while detailed provisions on these issues can be found in commercial bank legislation.

Policy:

Monetary policy: * if the central bank has objective or target autonomy, that is, it can explicitly formulate and determine monetary policy; or the central bank implements monetary policy according to a target, including a pegged exchange rate, or a monetary program determined by the cabinet or the legislature in consultation with the central bank, and the central bank can do so without prior approval of the government (instrument autonomy).

- Foreign exchange: * if the central bank can formulate and determine the exchange rate consistent with its monetary policy; or if the central bank implements the foreign exchange rate policy according to the government's instructions, but when foreign exchange reserves have reached a critical threshold, as defined by the central bank, it reports to the government and suggests measures. If the government does not react and a conflict remains, the central bank should have the right to temporarily abandon its responsibility for price stability according to the provisions for conflict resolution.
- $\frac{3}{4}$ as above, but the central bank cannot formally temporarily abandon its primary objective, but shall continue to report and suggest measures to the government and the central bank shall regularly publish information about macroeconomic developments.
- $\frac{1}{2}$ if it is explicitly stated that the currency shall be convertible and consistent with monetary regulation.
- $\frac{1}{4}$ if the central bank only shall recommend measures to alleviate a situation when foreign exchange reserves deviate from a threshold determined by the central bank, or the central bank formally shall participate in the formulation the exchange rate policy.
- Coordination: * if the central bank and the government consult one another, but the government cannot instruct the central bank unless these instructions are published and laid before the legislature.
- $\frac{3}{4}$ if the central bank and the government shall inform one another, but the central bank remains independent in its area of authority.
- $\frac{1}{2}$ if representatives of the cabinet can participate in board meetings without the right to vote, perhaps with the right to temporarily postpone decisions, and a representative of the central bank can participate in cabinet meetings without the right to vote.
- $\frac{1}{4}$ if the central bank shall explicitly comment on the budget and forward its comments to the legislature.
- Conflict resolution: * if, in case of a conflict, where, in the opinion of the central bank, the government may endanger price stability and it instructs the central bank to pursue a specific policy, both parties shall make statements, which shall be presented to the legislature or published, and the government takes the responsibility for the directed policy.
- $\frac{3}{4}$ if it is explicitly stated that the government must not instruct the governing bodies of the central bank or very strongly states the bank shall be independent of the government. (This approach is only as strong as the above approach when it is difficult to amend the central bank law and is thus ranked lower.)
- $\frac{2}{3}$ if the monetary program does not need approval of the government (e.g., if the proposal is submitted to the legislature for information), and it is stipulated that the central bank is formally independent within its authority, or the banks shall not follow policies contradictory to its

objective, but nothing on how to resolve and publish if government instructions conflict with the bank's objective.

½ as above, but the president, parliament, or government may change the monetary program according to a transparent procedure.

¼ if it is stipulated that the central bank is formally independent within its authority, but nothing on how to resolve and publish government instructions if they conflict with the central bank's objective.

Political Autonomy:

Appointment of

Governor:

* if a "double veto arrangement" exists, that is, if two different entities, which truly balance one another, respectively nominate and appoint the governor. For example, if the head of state or the legislature appoints after another party nominates, for example, the board, or the minister of finance.

¾ if the two arms of government are more closely linked, but are not within the cabinet. For example, the chairman of the legislature nominates and the legislature appoints the governor.

¼ if both nomination and appointment are within the government, say, the minister of finance nominates and the cabinet appoints the governor.

Term of Governor:

* if the term is longer than five years.

¾ if the term is five years.

½ if the term is four years or longer.

¼ if the term can exceed four years.

Dismissal of

Governor:

* if dismissal only can take place in case of breach of qualifications, misconduct, or poor performance, and if the latter can be clearly defined, ruled upon by the court or by an independent tribunal, and with the approval of the legislature.

¾ if dismissal only can take place in case of breach of qualifications, misconduct, or poor performance, if the latter can be clearly defined, or both the nominator and appointer shall approve the dismissal.

½ if dismissal only can take place in case of breach of qualifications, misconduct, or poor performance, but there is no clear description of how and who defines poor performance.

¼ if both the nominator and the appointer shall approve the dismissal.

Government
representation
in Board:

* if the government has no direct representatives with voting rights in the board.

¾ if the government representative can temporarily postpone a decision only to be superseded by a unanimous board.

½ if direct government representatives together with the governor and deputy governors cannot constitute a quorum (¼) or a majority (¼).

- Appointment of board members: * if a “double veto arrangement” exists, where one party, for example, the head of state, the legislature, or the cabinet appoints after another party nominates, say, the governor or chairman of the legislature, but neither the nominator or the appointer are members of the cabinet.
¼ if both nomination and appointment is within the government, but by separate individuals, say, the minister of finance nominates and the council of ministers appoints the members.
- Term of board members * if the term longer than five years and staggered, excluding ex-officio members.
¾ if the term is four years or longer and staggered.
½ if the term is four years or longer.
¼ if the term is three years or longer and staggered.
- Dismissal of board members: * if dismissal only can take place in case of breach of qualifications and misconduct, which should be ruled upon by the court or an independent tribunal, with the other board members’ prior consent.
¾ if dismissal only can take place in case of breach of qualifications and misconduct and need approval by the central bank board or the legislature.
½ if dismissal only can take place in case of breach of qualifications and misconduct.
¼ if the governor with the approval of the legislature can dismiss a board member, and the governor is formally protected from arbitrary dismissal. Although there may not be specific reasons, it gives the legislature the possibility to initiate a debate.
- Economic Autonomy:**
- Limits: * if direct credit to government (should not include securities resulting from open market operations for monetary policy purposes), and participation in primary auctions of government securities (with the exception of noncompetitive bids, which should be included within the limit for credit to government) are prohibited.
¾ if direct credit to the government is explicitly limited to 5 percent or less of recurrent revenue of previous three financial years.
½ if direct credit to the government is explicitly limited to 15 percent or less of recurrent revenue.
¼ if direct credit to the government is to be limited by other legislation, or the bank’s board approves direct credit to the government. (The latter is only a strong concept if the board is truly independent of the government, and then an explicit limit could just as well have been established in the central bank law.)

- Interest rates: * if the interest rate on credit to government is related to a market determined interest rate.
 $\frac{1}{4}$ if the central bank can alone determine the interest rate.
- Securitization: * if credit to the government is securitized by negotiable government securities.
 $\frac{3}{4}$ if credit to the government is securitized by government securities.
 $\frac{1}{2}$ if advances shall, at a minimum, be securitized at the end of the year by negotiable government securities, or loans and advances generally shall be collateralized unless legislation determines otherwise.
 $\frac{1}{4}$ if the central bank can require securitization or government guarantees.
- Quasi-fiscal activities: * if quasi-fiscal activities are explicitly prohibited.
 $\frac{3}{4}$ if quasi-fiscal activities are explicitly prohibited, but the central bank may function as bank for publicly owned commercial entities.
 $\frac{1}{2}$ if quasi-fiscal activities are explicitly prohibited, but the central bank may issue guarantees for development of special projects, etc.
 $\frac{1}{4}$ if central bank law prohibits quasi-fiscal activities, provided they are not included in other legislation.
- Monetary instruments: * if the central bank can: (i) set its key interest rates on its own transactions without interference from the government ($\frac{1}{4}$); (ii) if the central bank can freely conduct open market operations ($\frac{1}{4}$); (iii) if the central bank only shall use direct monetary instruments in extreme situations ($\frac{1}{4}$); and, (iv) reserve requirements are limited to a maximum that only can be increased with the consent of qualified majority of the board, or perhaps with the consent of the government ($\frac{1}{8}$), and the central bank can, at its discretion, remunerate required reserves ($\frac{1}{8}$).
- Solvency: * if: (i) the central bank is not subject to the government's appropriation ($\frac{1}{4}$); (ii) if only realized profits can be allocated to the government ($\frac{1}{8}$) after prudent provisions to general reserves ($\frac{1}{8}$); and, (iii) if government is obliged to recapitalize the central bank in case the value of its assets is less than the value of its liabilities and capital, including any evaluation losses, by cash transfers ($\frac{1}{2}$) or by transferring securities ($\frac{1}{6}$) that are interest bearing ($\frac{1}{6}$) and negotiable ($\frac{1}{6}$).
 $\frac{1}{4}$ if the government only is obliged to recapitalize either the authorized capital or just cover revaluation losses, that is, financed by the central bank's future profits, or it is stated the central bank shall be economically independent.

Accountability:

Publication of
statements:

* if the central bank shall publish more than one annual statement on its monetary policy operations, or it shall publish an annual statement and publish information when it finds it necessary, and such information shall not be approved by the government. The central bank may have to appear before the legislature to answer questions.

$\frac{3}{4}$ if the central bank shall publish one annual statement on its monetary policy operations that shall not be approved by the government or president.

$\frac{1}{2}$ if the central bank shall publish information about the economy and its operations to be approved by the government.

$\frac{1}{4}$ if the central bank shall publish general information about the economy and its operations, or the central bank is just formally obliged to report to the government.

Audits:

* if independent external auditors or an audit committee, in addition to the auditor-general, shall audit the annual financial statement, which shall be in conformity with international accounting standards, and be published together with more frequent summary balance sheets.

$\frac{3}{4}$ if only the auditor general of the government shall audit the annual statement to be published together with more frequent summary balance sheets.

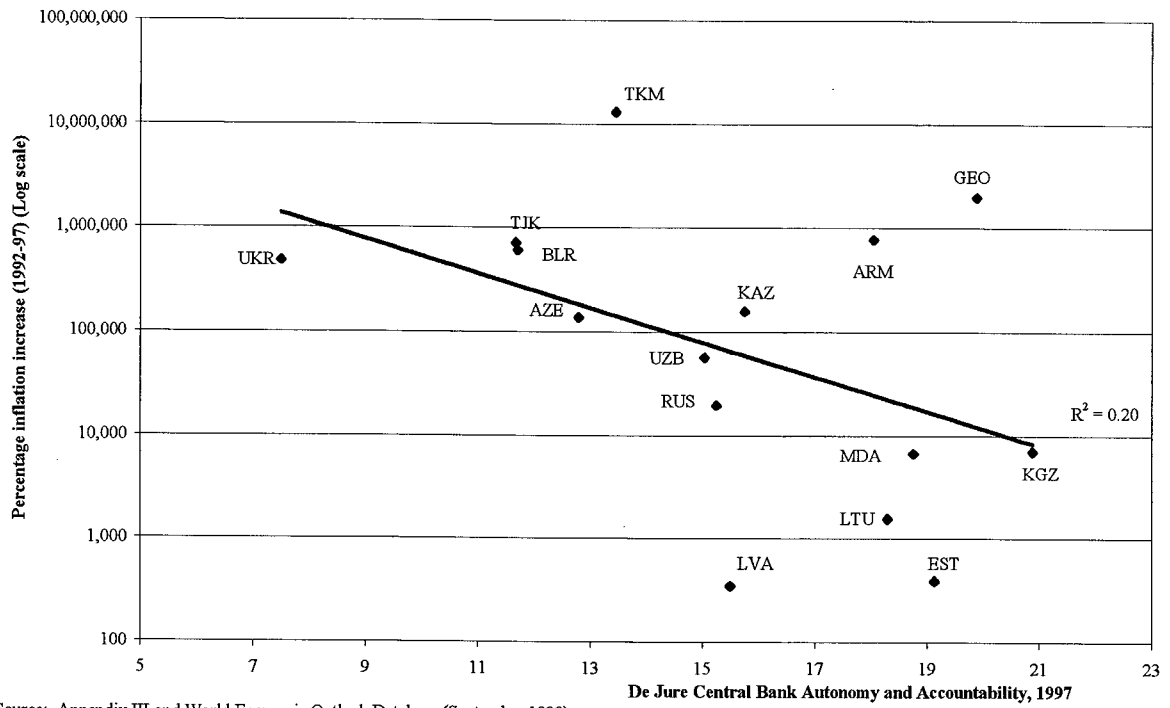
$\frac{1}{2}$ if only the auditor general of the government shall audit the annual statement or a general statement about being audited not less than once a year, but without an explicit requirement for publication.

$\frac{1}{4}$ if annual statements are submitted to the supervisor of the central bank, but without a formal requirement for auditing or publication.

Index:

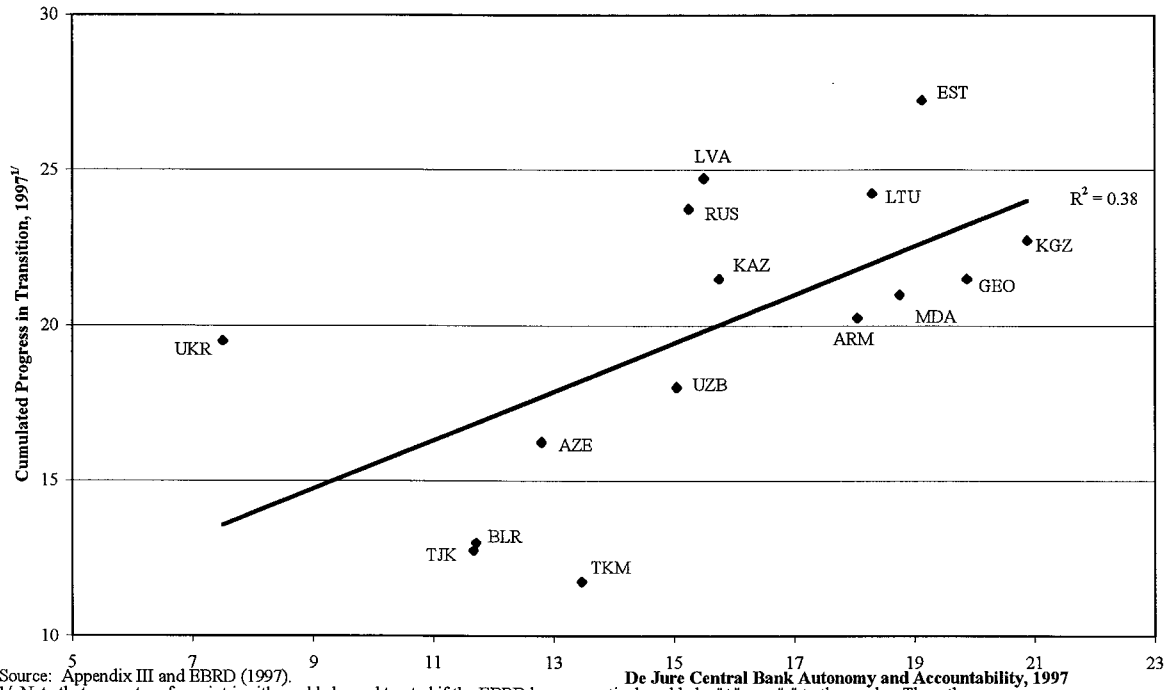
The index provides a rough indication of the central bank's de jure autonomy and accountability. The highest score, that is, the highest degree of autonomy and accountability, is 21. The weighting (each * is weighted one) is, of course, subject to discussion, as are the elements included in the index and their interpretation.

Cumulative Inflation (CPI) since 1992 and De Jure Central Bank Autonomy and Accountability



Source: Appendix III and World Economic Outlook Database (September 1998)

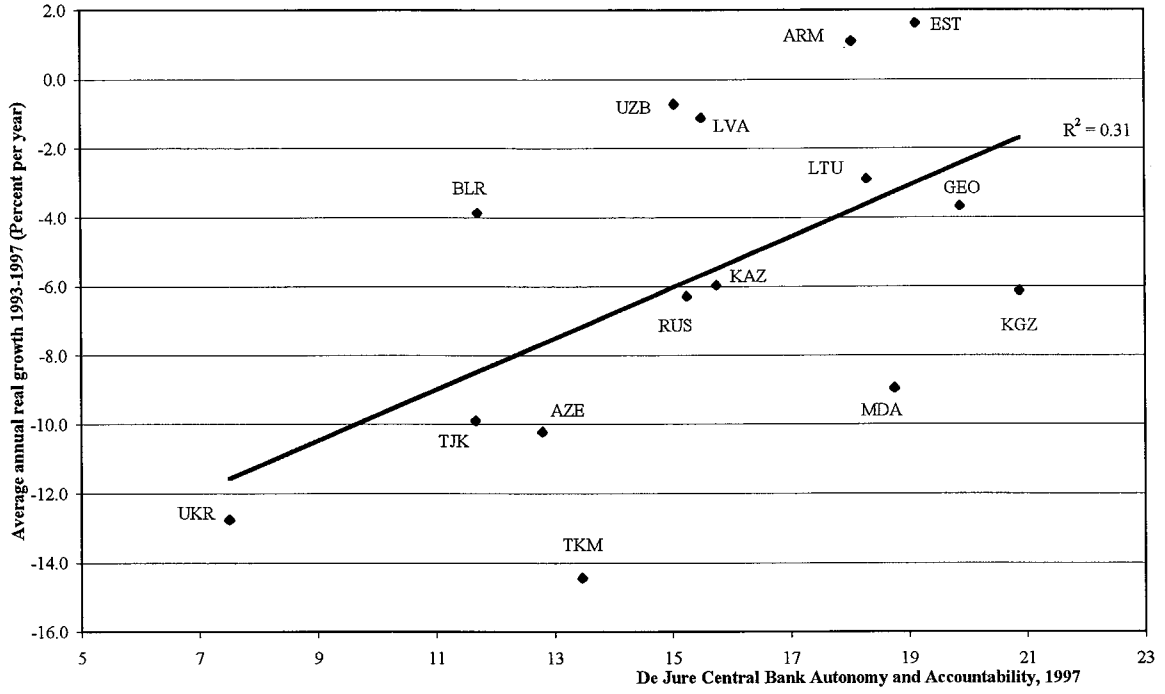
Progress in Transition and De Jure Central Bank Autonomy and Accountability, 1997



Source: Appendix III and EBRD (1997).

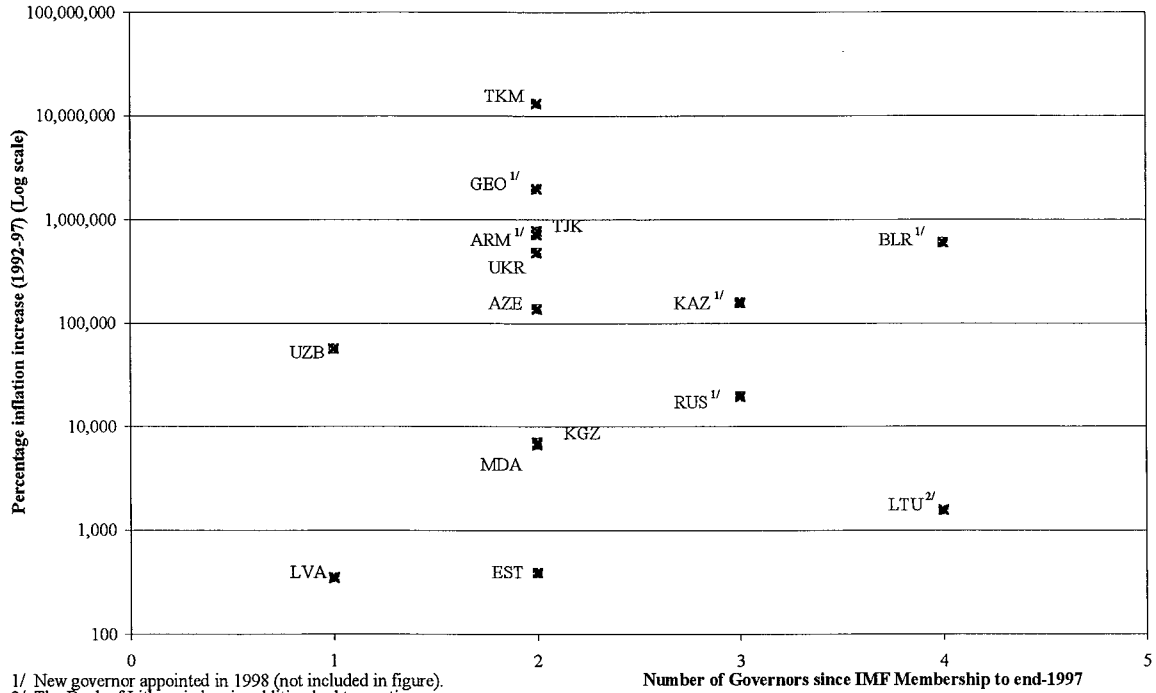
1/ Note that a quarter of a point is either added or subtracted if the EBRD has, respectively, added a "+" or a "-" to the grades. Thus, the maximum of the index is 34.

Average Annual Real Growth since 1992 and De Jure Central Bank Autonomy and Accountability



Source: Appendix III and World Economic Outlook Database (September 1998).

Cumulative Inflation (CPI) since 1992 and the Number of Governors since IMF Membership



Governors of Central Banks, 1992 – September 1998

Country (Most recent amendment of central bank law)	Number of governors since IMF membership	Memorandum items:			
		Member ship in IMF	Term according to legislation		
			Governor	Appointer ^{1/}	Comments ^{1/}
Armenia, June 1996	3	5/28/92	7	4	Appointed by legislature upon presentation of President (5 years).
Azerbaijan, June 1996	2	9/18/92	5	5	App. by Pres. from Board. Board app. by legisl. (5 years) on Pres.'s recommendation.
Belarus, March 1995 ^{2/}	5	7/10/92	6	5	Appointed by President with the consent of the Council of the Republic (4 years).
Estonia, April 1994 ^{3/}	2	5/26/92	5	5	The Pres. of the Bank is app. by the President and nom. by the Chairman of Board (5 years).
Georgia, May 1996	3	5/5/92	7	5	App. by President from Board members upon Board recommendation. Board is elected by legislature (4 years) and Pres. recommends.
Kazakhstan, July 1997	4	7/15/92	6	5 ^{4/}	Appointed by President with the approval of both chambers of the legislature. ^{4/}
Kyrgyz Republic, July 1997	2	5/8/92	7	5	Appointed by the President with the consent of the legislature (5 years).
Latvia, June 1997	1	5/19/92	6	3 ^{5/}	App. by the legislature upon recommendation of at a minimum 10 of its members.
Lithuania, April 1997 ^{3/}	4 ^{6/}	4/29/92	5	4	Appointed by the legislature upon recommendation of the President (5 years).
Moldova, September 1995	2	8/12/92	7	4	App. by the legislature upon recommendation of the Chairman of the legislature.
Russia, April 1995	4 ^{7/}	6/1/92	4	4	Appointed by the State Duma upon the proposal of the President (4 years).
Tajikistan, December 1996	2	4/27/93	--	5	Appointed by the President with subsequent approval of the legislature (5 years).
Turkmenistan October 1993	2	9/22/92	7	5	Appointed by the President.
Ukraine, March 1991 ^{8/}	2	9/3/92	--	4	Appointed by the legislature upon recommendation of the President (5 years).
Uzbekistan, December 1995	1	9/21/92	5	5	Appointed by the legislature upon nomination of the President (5 years).

1/ Terms of appointer and nominator according to the constitution.

2/ Draft banking code is currently under review. The unofficial translation of the central bank law amended up to March 1995 includes slightly different wording than the constitution adopted in 1996, which is used here.

3/ Central bank legislation amended with a view to achieve consistency with the future European System of Central Banks.

4/ The constitution of September 1995, used here, differs from the central bank law of March 1995. The constitution was amended in October 1998, extending the term of the President to 7 years, term of senate from 5 to 6 years, and term of Majilis from 4 to 5 years.

5/ The term of the legislature is apparently expected to be extended from 3 years to 4 years after the next election, due in October 1998.

6/ The Bank of Lithuania has in addition had two acting governors.

7/ A new governor was appointed in September 1998.

8/ Draft central bank law was considered for first reading by the legislature in October 1997.

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