INSTITUTIONAL CONDITIONS OF MONETARY POLICY CONDUCT IN THE CZECH REPUBLIC

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Abstract:
This paper tries to assess the conditions under which the CNB operates. Using a basic framework suggested by Mishkin (2000), the aim is to find out whether the central bank is able to conduct high-quality monetary policy. First, general principles that central banks should follow to succeed in their pursuit of monetary goals are theoretically introduced. Then, these theoretical principles are looked at in the Czech context. Issues of the strictness and suitability of concrete monetary policy of the CNB will not be dealt with, rather institutional circumstances that potentially allow successful policy are at the centre of this paper. It is concluded that the CNB is functioning in a moderately good environment, but still much room for improvement does exist.

Keywords: central bank, monetary policy, institution, price stability, independence, accountability, benchmark

JEL Classifications: E50, E52, E58, E61

1. Introduction

The Czech National Bank (CNB) has gone through more than a decade of development and monetary policy conduct. This relatively short time span was characterized, however, by both rapid changes in the economic conditions but also changes in monetary policy of the CNB itself. These changes were accompanied with achievements and drawbacks. The question of what could have been done differently or better is surely an interesting one, but in this paper it will not be addressed. The question posed here is, rather, whether the institutional conditions of monetary policy in the Czech Republic allow for success.

In the first part I will introduce a theoretical background of basic principles that should be followed (or provided) by (to) a monetary authority in order to accomplish its goals. In the next section these principles will be examined in the Czech context, trying to assess circumstances of the CNB's functioning during its existen-

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ce. Finally, concluding remarks will be made as to how the CNB performs (is enabled to perform) overall, depicting the possibilities the CNB has in pursuing successful monetary policy. I must note, that not all the principles are subject to the CNB's will (as an independent authority) and are rather a matter of broader legislation. Nevertheless, I will address these issues as a problem of the CNB as an institution regardless of under whose responsibility they fall. Generally, one could look at monetary policy as a part of public policy as a whole. Thus viewing the problem from this perspective it is possible to neglect the ever so questionable issue of monetary autonomy and assign the responsibility for the central bank to a more general public authority. Therefore all remarks and suggestions made will be addressed to this superior public authority. The reader should keep in mind that some aspects can be dealt with by the central bank itself, while others are for the government to implement them into the law.

2. Theoretical Background

Following Mishkin (2000) we find that a consensus appears to have developed in recent years on a few guidelines that central banks should incorporate, when trying to achieve successful outcomes in their monetary policy. These guidelines are as follows:
– price stability provides substantial benefits
– fiscal policy should be aligned with monetary policy
– time inconsistency should be avoided
– monetary policy should be forward-looking
– monetary authorities should be accountable for their policy
– monetary policy should focus on output as well as price stability
– most serious economic downturns are associated with financial instability

Let us first examine these guidelines in theory and then try to assess the activities of the CNB by applying this benchmark.

2. 1 Price Stability Provides Substantial Benefits

Price stability brings benefits to the overall economy. It should be stressed that by price stability we do not mean zero inflation, but rather a stable and low inflation rate. Discussions on what exactly is meant by a low and stable inflation rate are centre to many debates. There is little consensus on what the upper band of price stability should be. The lower band enjoys more consensus, for it is a more general view, that zero inflation is not preferable. Several reasons are put forward here.

First, the inadequacy of statistical measurements can lead to a positive inflation bias, when qualitative improvements are reflected in the statistics as price increases.[1)] Then there is the danger that the nearer the inflation target is to zero the gre-

1) This issue is even more relevant in transition economies. This is because transition economies experience relatively larger quality improvements in goods. This fact and the argument that transition economies should nominally converge to the level common in developed countries (this is especially relevant for European transition countries in their pursuit of entering the EMU) suggests, that a stable and low inflation rate in transition economies should be higher than in developed countries.

ater the chance that central banks facing a deflationary shock will not be able to sufficiently react by reducing interest rates. Another reason for a positive inflation target is the Ballassa-Samuelson effect that brings about inflation due to productivity differentials. Finally, there are other arguments for a low and stable inflation rate that focus on the labour market. In a world of wage rigidity inflation can serve the purpose of "greasing" the labour market (Palley, 2003). Workers are less reluctant to accept a real-wage drop caused by a price increase rather than a nominal cut made by the employer[2]. A real wage drop enables producers to increase their competitiveness or/and increase employment.

The benefits of price stability, costs of inflation, respectively, have become nearly a common knowledge by now, so let us only briefly name the most influential ones. Price stability lowers the uncertainty in the economy. Therefore economic agents are faced with clearer information about relative prices and about the future price level. This enables easier decision-making and increases economic efficiency. Price stability also decreases the distortions that appear in the interaction between inflation and the tax system. Moreover, high inflation devalues savings and income, redistributes income from creditors to debtors and is related to higher nominal interest rates. Finally, let us mention the well known menu and shoe leather costs of inflation.

All these benefits (theoretically well identified, but in practice difficult to measure) of a low and stable inflation rate suggest that promoting this goal can lead to an increase in the level of resources that are productively employed in the economy and might help to increase the rate of economic growth. The implication for monetary policy is that price stability should be its long-term goal. Also an explicit nominal anchor, reinforcing this goal, is suggested to be adopted.

2. 2 Fiscal Policy and Monetary Policy Alignment

Cooperation between fiscal and monetary policies is essential. An irresponsible fiscal authority can make it harder for the monetary authority to maintain its goals and pursue price stability. Large government deficits may put pressure on the monetary authority to monetize the debt. Restraining the fiscal authority from engaging in excessive deficit financing[3] can align the two policies and make it easier for the monetary authority to keep inflation under control.

As Hall *et al.* (1999) argues the existence of an independent central bank and the absence of cooperation between the two authorities leads to outcomes that are worse than either authority meant them to be.

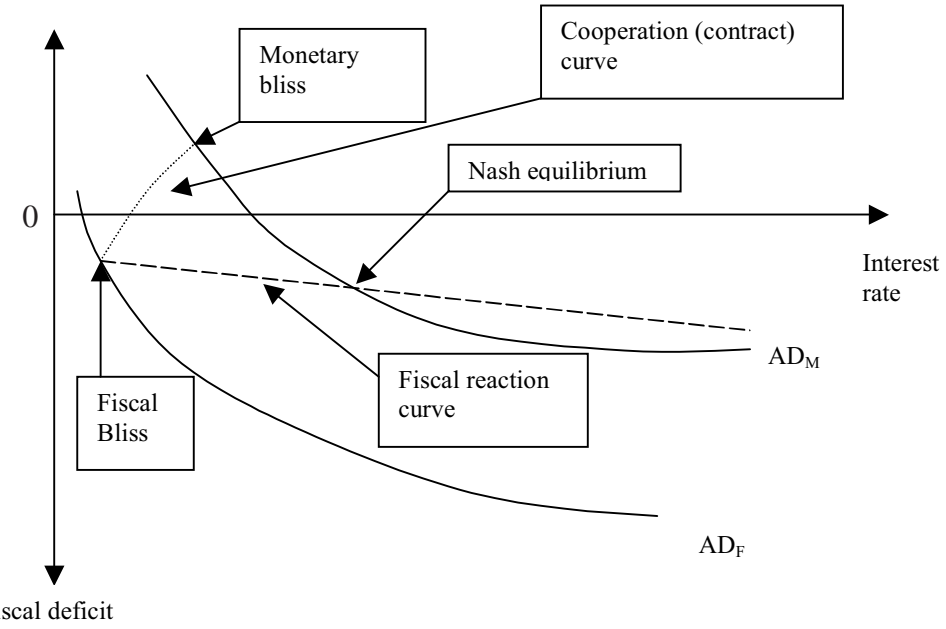
Figure 1 depicts the situation. The model assumes that the preference functions of the two authorities are dependent on unemployment, inflation and the level of budget surplus. The representation of the economy is simplified, where unemployment depends on the two instruments (budget surplus and interest rate). AD_M and AD_F represent combinations of the interest rate and budget surplus that yield the same aggregate demand desired by each authority. Aggregate demand decreases as

2) These ideas then lead to the notion of the backward-bending Phillips curve. But these findings are not in the scope of this paper.

3) As the Stability and Growth Pact, for instance, is theoretically supposed to do.

we move to the top right-hand corner. The monetary curve is to the right of the fiscal one because the monetary authority is assumed to have a more contractionary target for aggregate demand. The curves are downward sloping because higher interest rates are offset by a lower budget surplus to yield the same level of aggregate demand. The points labelled as monetary and fiscal bliss are the preferred outcomes for interest rate and budget surplus for each authority.

Figure 1
Reaction Curves and Cooperative and Non-Cooperative Outcomes



Source: Hall *et al*., 1999.

The contract curve shows the outcomes of cooperative behaviour (from monetary bliss, when both authorities agree on the monetary authority's choice, to fiscal bliss, when the fiscal authority's choice wins).

On the other hand, when non-cooperative behaviour is introduced[4)], the reaction curve shows that this situation will lead to a Nash equilibrium solution. The reaction curve of the monetary authority is identical to the AD_M curve. This is because the monetary authority (unlike the fiscal authority) is not prepared to trade-off, it follows its target. On the other hand, the fiscal authority moves along its reaction curve, trading off. The mechanics are as follows: trying to boost aggregate demand by a budget deficit makes the monetary authority increase interest rates in fear of higher inflation. These are then offset by the government increasing its expenditure to yield the desired demand, which leads to an even higher deficit and so on. The

4) That is when one authority sets its policy assuming the other's is given.

solution is one in which the interest rates are higher than the monetary authority originally intended and in which the budget surplus is lower than the fiscal authority wished it to be in the beginning.

This model, thus, encourages cooperation between the two policy makers suggesting that not doing so may lead to a situation where the outcome is worse than either originally intended. This kind of reasoning gets us to the issue of independence of the central bank.

Several indices of independence are readily available, but there is an ongoing debate as to what extent independence leads to a more stable economic environment.[5] There are also several types of independence. Here we will be concerned with only two.[6] Goal independence that allows the central bank to choose its goals in monetary policy. And instrument independence, which permits the central bank to set the instruments with which it wants to meet the monetary goals. It is argued, that the central bank should be instrument independent, but not goal independent.

2. 3 Time Inconsistency

The time inconsistency problem was originally introduced by Kydland and Prescott (1977), recent Nobel-prize laureates. Several studies came afterwards, another classical paper on this topic is Barro and Gordon (1983). The problem arises when incentives for a policy maker to exploit a short-run trade-off exist, even though this will not serve the long-run goal. For instance, monetary policy could be tempted to undergo expansionary actions to increase output and employment, even though it will result in higher inflation in the long run because of adjustment of inflation expectations by economic agents.

Kydland and Prescott (1977) show in a simple two period model that the consistent policy ignores the effect of future policies on current decisions, that are brought about by expectations, of economic agents. A time consistent policy is optimal only if this effect or the effect of first period decisions on the social objective function are zero or negligible. This, of course, is not true in the world of forward-looking agents.

Barro and Gordon (1983) analyze several possibilities of different monetary policy conduct from discretion to a reputation enforced rule. Under assumptions of different weights given to inflation in a social welfare function of the central bank, they examine outcomes of these altering institutions and outcomes of potential cheating. They then show that by enforced commitments on monetary behaviour, such as policy or price rules, the *ex post* surprises can be eliminated. This leads to the conclusion, that "in equilibrium rates of inflation can be lowered by shifts from monetary institutions allowing for discretion to ones that enforce rules." The first best outcome is, however, when the monetary authority cheats when agents expect behaviour under a rule, but this is not sustainable in repeated interaction.

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5) In some cases a central bank can be relatively dependent and still enjoy a credible reputation leading to a stable economy. On the other hand, in some economies (especially in developing countries) independence of the central bank is essential because without it the government would abuse such an institution.

6) Other types of independence are institutional, financial, personal and budgetary.

Also models of central bank independence, that deal with the weight given to inflation by the monetary authority, show that the so called "hard" central bank, that is oriented only on inflation, reaps superior outcomes to those of a "soft" central bank that takes inflation expectations as given and maximizes under these conditions. Thus encouraging the adoption of rules. However, Rogoff (1985) shows that in a stochastic environment where the economy Phillips curve can fluctuate, the "hard" central bank may be too harsh and achieve price stability at the expense of excessive output fluctuations.

McCallum (1995) points out that opportunities for time inconsistent behaviour themselves do not imply that the central bank will try to exploit the trade-off. It is usually the political pressure that makes the time inconsistency problem relevant. Therefore central banks must be designed in a way that prevents a time inconsistency trap.

2. 4 Forward-Looking Monetary Policy

The existence of lags between a policy decision, its realisation and its effect suggest that monetary policy should be forward-looking. If this was not the case and monetary policy was not sufficiently economically conscious, it could do more harm than good. For instance a monetary expansion to get the economy out of recession could come in a time, when the economy has already recovered. This would result in unnecessary output fluctuations and possible inflation pressures. And *vice versa*, a monetary contraction could come late into a starting depression and result in a greater drop of output. Policy changes should be made, if there is concern that inflation should rise in a time horizon as far away as two years.

Monetary policy should therefore incorporate readily forecasts into its decision-making process. This is, of course, not a surprising principle, since in everyday life all of us must make decisions under imperfect information making the use of our own predictions of the future events. A different view on why the monetary authority should make use of forecasts is the fact, that by making such predictions public it effectively sends a signal to the economy. This signal can help by bringing more information into decision-making and can serve as a kind of self-fulfilling mechanism. Economic agents in the view of a certain level of inflation in the future will behave in a way incorporating this information, which can in the end lead to the predicted outcome (or one close to it).

2.5. Accountability

Accountability should be introduced just for the sake that it is an integral part of democracy. Policymakers need to be held accountable to the public. It helps promote efficiency in the system. Incompetent policymakers will be subject to punishment and replaced, thus increasing efficiency. Another reason is the time inconsistency problem. Higher accountability will result in lower incentives to cheat. Let us also note that accountability and responsibility for not meeting a target should be symmetric. That is consequences should be identical for overshooting as well as undershooting.

A related aspect to accountability is transparency, for without transparency an institution can hardly be accountable. But transparency on the other hand does not necessarily imply greater accountability (as we will see later on). Transparency states the extent to which the monetary authority carries out activities that are understandable or even known to the public. We can distinguish between five types of transparencies corresponding to the separate stages in the policy-making process (see Geraats, 2002): political, economic, procedural, policy and operational transparency.

– *political transparency* – refers to openness about policy objectives and institutional arrangements. This includes explicit targets, independence.
– *economic transparency* – refers to economic information that is used by monetary authorities. Economic data, policy models, forecasts.
– *procedural transparency* – describes the way policy decisions are made. Minutes and voting records.
– *policy transparency* – suggests announcements and explanations of policy decisions.
– *operational transparency* – focuses on implementation. Discussion of errors and macroeconomic transmission disturbances.

The need for transparency is one of credibility. Monetary policy, especially under a inflation targeting regime, where expectations play a key role, must not be a taboo. On the contrary, without credibility the success of monetary policy is endangered. But as Issing (2004) points out higher information disclosure need not lead to greater transparency. There may be a difficulty in balancing between clarity and providing sufficient information for decision-making. In any case, transparency is necessary for anchoring inflation expectations and minimising risks of false expectations of financial markets and the general public concerning policy responses.

2.6. Concern about Output Fluctuations

As Stiglitz (2003) states in his article, controlling inflation is not a goal in itself. "It is merely a means of achieving faster, more stable growth with lower unemployment." Therefore central banks should have, beside a price stability target, also a growth stability target, even if it should be only an implicit one.[7)]

In this context criticism of explicit inflation targets arose, because they were seen as too obsessive and resulting in low emphasis on output fluctuations.[8)] But the opposite is reality. In fact adopting an explicit inflation target can make it easier for the monetary authority to deal with negative shocks to the economy. The rationale is as follows: a decline in aggregate demand leads to lower than expected inflation. The central bank is then able to ease its monetary policy (without questioning its long-term goal of price stability) and give an expansionary hand to the economy.

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7) For instance, discussions are being made whether the ECB is focusing too much on inflation disregarding (and dampening) growth. Some recent empirical evidence (Patria Finance, 2004) shows, however, that this is probably not the case.

8) Here the assumption is, that output fluctuations lead to uncertainty in investments and frustration of the general public (due to unemployment) which in consequence undermines the economic and political situation in a country.

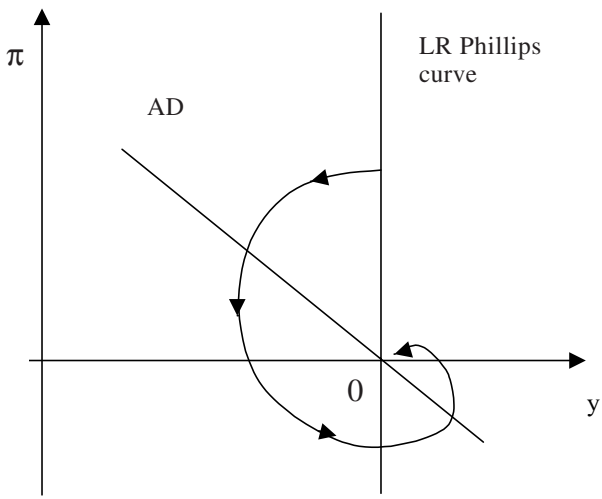
A classical portrait of this behaviour is the Taylor rule[9] (1993). It depicts the central bank's commitment to both output and inflation deviations.

$$r = \psi_1\pi + \psi_2 y + \psi_0 \quad (1)$$

The first term ($\psi_1\pi$) in equation (1) represents the nominal anchor (π represents the deviation of actual inflation from its target), the second term ($\psi_2 y$) is the stabilisation part of monetary policy (y is the output gap) and ψ_0 is the equilibrium interest rate (no inflation bias is present) meaning that with output and inflation on their targets, there is not a zero interest rate. The mechanics are depicted in Figure 2: if an inflation shock hits the economy, interest rates rise to contain the growing inflation, as a result output falls (nominal anchor term). The output stability term reacts and decreases the interest rate by ψ_2 to compensate for the output gap. This mechanism enables the economy to manoeuvre back to its equilibrium state with smaller fluctuations in output.

We must realise, however, that a concern with output fluctuations should not be mistaken for an effort to promote output growth. The question of whether monetary policy is too restrictive[10], and if by loosening it greater output growth could be achieved, is a different matter requiring deep analysis. It is a question of the relative weights (ψ_1 and ψ_2) that are assigned to inflation and output deviations, respectively. It is therefore a broader issue of a social optimum that is selected by the monetary authority and it is not dealt with here.

Figure 2
Mechanics of Taylor Rule Type of Monetary Reaction Functions



Source: Allsopp, Vines, 2000.

9) The rule was not explicitly announced, it was rather empirically discovered as a regularity.
10) As many have suggested (among others V. Klaus) that is the case of the CNB.

2.7. Financial Instability and Economic Downturns

Literature suggests that financial instability is one of the key factors for the depth and lasting of large economic downturns. These findings suggest that central banks should incorporate into their monetary policy also a concern for financial stability.

One aspect of a financial crisis is the failure of the banking sector. Here the central bank can intervene by acting as a lender of last resort. This responsibility is accompanied, however, with a moral hazard risk. The potential borrowers knowing that the central bank will in a crisis eventually grant liquidity have incentives to undertake excessive risk. Therefore the central bank must balance well the benefits and risks of acting as a lender of last resort. They should have a vast informational base for this purpose. This suggests that central banks should act as a supervisory body to the banking sector as well.

The role of a central bank in dealing with (preventing) a financial crisis is, however, a broader one than just caring about the banking sector, although it has been emphasized that a weak banking system is an invitation to a macroeconomic crisis. Several very general principles were identified as crisis preventing (Fischer, 1997).

These are for instance avoiding exchange regimes that are vulnerable to attack; opening capital accounts in an orderly fashion; ensuring that guarantees (explicit or implicit) do not shield the private sector from the consequences of unduly risk behaviour; improving transparency and provision of information to the public sector and investors.

Another aspect of central bank action during a crisis is its monetary policy. It was recognized by the IMF that the countries that were most successful in ending the period of excessive exchange rate volatility and limiting inflation pass-through, were those that tightened monetary policy sharply and quickly. But things do not end with a return to sounder macroeconomic results. The central bank must introduce a new monetary policy framework to anchor expectations. Wining market credibility in this case is often a difficult task.

Recently the idea that central banks should – apart from their price stability goal- incorporate into their objectives other aspects as well was center of many discussions. The experience of financial crises in the 1990s led to the notion of central banks keeping a closer eye on developments in several fields, such as asset prices, increasing household debt, development of new financial instruments *etc*. that all require a deepening of surveillance that would account for the specific risks.

3. The Czech National Bank

3.1. Price Stability

The role of the CNB was integrated into the Czech Constitution,[11)] which defined that the role of the central bank is to maintain stability of the currency. The monetary stability goal was not specified in any closer manner. No specific nominal anchor was legally called for. Unspecified or vague objectives such as "monetary stability" can lead to situations of confusion and weak efforts to keep inflation under control,

11) The new Constitution of the Czech Republic remembered the CNB in a separate Catch 6.

since agreeing on what exactly monetary stability means may not be easy.[12] But the CNB prevented this potential state of confusion by adopting an explicit nominal anchor in the form of a fixed exchange rate and a monetary target. The value of a nominal anchor is always a matter of many discussions. It is even more difficult in a case of a transforming economy, such as the Czech Republic, where fear of low competitiveness of domestic firms led to an undervaluated exchange rate.[13]

Exchange rate targets are said to be appropriate for emerging markets that struggle with high inflation and a central bank that did not have the opportunity to build up its credibility (Oliver, 2001). The principle of this kind of regime is that the country using the exchange rate target effectively imports low inflation and credibility from the anchor country. The benefits of fixed exchange rates are its transparency (it is easy for economic agents to follow this type of rationale) and its relatively simple control (meaning that the central bank can effect the exchange rate directly by its activities). But several disadvantages also exist. First, and maybe most importantly, there is the problem of asymmetric shocks and the loss of independent monetary policy. Then, there is the possibility of speculation attacks[14] if the credibility of the peg is questioned.

But the fixed exchange rate was not the only instrument used by the CNB to tackle its monetary duty. The second pillar was a money supply target. This regime uses the monetarist idea that there exists a stable relationship between a money aggregate and the general level of prices. The weak points of this kind of reasoning are: what the appropriate aggregate should be (M2 was chosen in the case of the Czech Republic) and are the relationships in the transmission mechanism really stable? The problem seems to be that in a modern economy there is high substitution between financial instruments. Control of one of them as an instrument of monetary policy makes financial institutions compensate by other means (circumventive innovation). Moreover, the mere control of the monetary aggregate is complicated.[15]

Problems with this dual targeting regime started to appear in the mid 1990s.[16] The CNB decided to react to this unstable development by widening the exchange

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12) Mishkin (2000) describes the lack of a clear definition such as monetary (or price) stability quite concisely: "Typical definitions of price stability have many elements in common with the commonly used legal definition of pornography in the United States – you know it when you see it."

13) This regime pegged the newly established Czech koruna to a basket of currencies. At first five currencies were being monitored, then the basket reduced to only two, the DEM (65 %) and USD (35 %), which sufficiently represented Czech foreign trade. In the years 1991-1996 the range of volatility was set very narrow ± 0.5 %. At first the maintaining of the proclaimed exchange rate range was without problems. This was due to two factors. First, the mobility of capital that was exploiting the interest differential was not liberalised. Second, the original devaluation (28 CZK/USD) offered a sufficient cushion for Czech firms competing on international markets. This enabled the central bank to fulfil its goal of maintaining (external) stability of the home currency.

14) This problem is a threat to even strong economies such as the UK, France, Italy or Sweden. Currencies of all these countries were forced to devaluate under the ERM regime in the early 1990s because of rising interest rates in the anchor country of Germany due to its reunification.

15) Money supply targets have been missed in Germany 50 % of the time since 1979 (Mishkin, 1999).

16) High wage growth accompanied with lower productivity growth and high public investments encouraged the demand boom and resulted into an excessive foreign capital inflow (primarily short-term capital). This was even more encouraged by the further liberalisation of the financial market,

rate spread in 1996 (to ± 7.5 %) to increase the risk for foreign investors. But the unsound state of the Czech economy led to a substantial drop in foreign investments (for the first time the financial account could not fully cover the current account deficit) in 1997 and an attack on the Czech koruna was made in May of that year. Due to this development the CNB was forced to abandon its existing monetary policy and decided to undergo inflation targeting starting from January, 1st 1998. In the short period between the desertion of the fixed exchange rate and the adoption of inflation targeting, monetary policy operated with a controlled floating mechanism and a monetary target.

Inflation targeting is a relatively new phenomenon introduced by New Zealand in 1990. There are several advantages to the inflation target regime. First, monetary policy is independent (unlike under the fixed exchange rate) and can therefore respond to domestic shocks to the economy. Moreover, it does not rely on any money-inflation relationship that might be unstable (monetary targets). It focuses, rather, on inflation directly. Finally, this type of monetary policy is highly transparent (it is clear and understandable to economic agents). There are, however, some difficulties accompanying inflation targeting. Lags between monetary action and effects on inflation are long lasting. Inflation is subject to other variables, such as fiscal policy, inflation expectations or supply shocks. Changes in these variables can occur after a change in monetary policy, but before the effects on inflation. Some also warn that inflation targeting as a policy instrument has yet to fail and might do so in the event of a large supply shock. It is argued that inflation targeting is a reliable instrument for dealing with demand shocks, but principally it is rather impotent in resolving supply shocks.

The CNB, in spite of not being pressed by a legally required explicit target, announced its short-term targets[17]. These targets had the essential goal of fastening inflation expectations that were booming in the two digit inflation environment of 1998 and by doing so back-up stabilization of the economy after the 1997 crisis. Having the unprecedented development of prices during 1998 in mind, the CNB also announced a set of exceptions that lie out of reach of monetary policy.[18] Inflation targets were being specified for years 2000 and 2001. In the year 2000 an amending act (the harmonization amendment, the Act on the CNB) was passed that restated the goal of monetary policy from accomplishing stability of the currency to price stability, but again no explicit nominal value was identified. But this time it is a broader "European" question, since the legislation adopted is in line with the de-

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positive interest differential and good ratings of the Czech Republic by foreign investors and international institutions.

17) A short term target for 1998: net inflation (inflation adjusted for the effects of changes in indirect taxes and price deregulations) between 5.5–6.5 %. A medium-term target of net inflation between 3.5 -5.5 %. In 1998 a short-term target for 1999 in the range of 4-5 % was introduced.

18) These exception include: substantial changes in world prices of raw materials, energetic resources and commodities; substantial changes in exchange rates that do not relate to the development of fundamentals and domestic monetary policy; substantial changes in the conditions of agriculture production with an affect on agriculture producer prices; natural disasters and other extraordinary situations with cost and demand effects on prices; changes in regulated prices with an effect on total inflation greater than 1 to 1.5 percentage points; rapid changes in indirect taxes.

mands of the European Union. Nevertheless, the CNB never failed to announce a target[19] (Figure 3). The future holds more specific requirements for price stability in the Czech Republic reflecting the needs of fulfilling the Maastricht criteria for euro area entrance. It is specified that the entering country must have an inflation rate not higher than 1.5 percentage points above the average of three economies of the euro area with the lowest inflation rate (Table 1).

I note, that I am not concerned about the actual results of monetary policy, *i.e.* observed inflation (the CNB repeatedly failed to hit its targets – monetary or inflationary). My concern is whether institutional conditions for price stability were embedded in the CNB's functioning.

Price stability was an overriding long-term goal of the CNB from the beginning, which backs its monetary action commitments. It was legally specified (though vaguely), first as monetary stability, then more concretely as price stability. Though no explicit nominal anchor was legally called for, the central bank always chose to announce its targets.

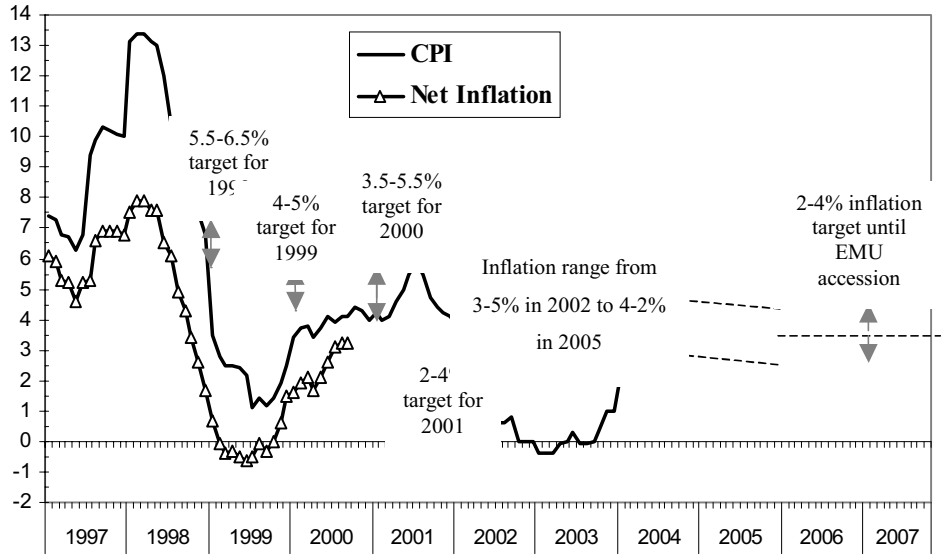
Table 1
Inflation Rates in Best Performing Countries of the EMU (in %)

Country/Year	2002	2003	2004
Belgium	1.6	1.5	1.9
Germany	1.3	1	1.8
Austria	1.7	1.3	2
Netherlands	3.9	2.2	1.4
Finland	2	1.3	0.1
Average of the best	1.5	1.3	1.1
Upper limit for EMU entry for the CR	3	2.8	2.6

Source: Eurostat, 2005.

19) In April 2001 CNB announced an inflation range for the years 2002-2005 starting at 3 – 5 % and ending at 2-4 %. Inflation from now on have been measured by the CPI to bring in more transparency. Finally, the CNB set its target for 2006 on until the accession to the euro zone to be 3 ± 1 % of CPI.

Figure 3
Inflation Targets and Observed Values



Source: CNB, CSU, 2004.

3.2. Monetary and Fiscal Cooperation

First of all let us look at the independence of the CNB. From its foundation in 1993 it had the responsibility to look after monetary stability, which was even embedded in the Constitution. Later on the goal was specified as price stability. This can be observed as goals set by the government. But this kind of goal is fairly unspecific and effectively the central bank had lots of legal space to manoeuvre in it. Therefore I would consider (unlike the IMF) the CNB to be goal independent. Although empirical evidence of improved macroeconomic performance due to greater independence of the central bank has been introduced, there is question of the causality between the two variables. Recent theory suggests that the government should set an explicit goal for the central bank. One argument is that it is a natural principle of democracy, since an important issue such as price stability should be agreed upon by elected representatives of the public.[20] Another argument is that it reduces the possibility of time inconsistency, but this issue is dealt with later on. The other side of independence, instrument independence, is present in the Czech monetary system. There is no legislation restricting the central bank in any instrumental way.

20) This assumes that the government is not tempted to exploit the control over the central bank and is rather economically conscious, which is, of course, questionable.

In considering the cooperation of fiscal and monetary policy,[21] we may look at the development in the mid 1990s. The dissonance between the demand and supply side in the economy gradually led to increasing external imbalances. In the situation of high foreign capital inflows, growing demand pressures and the symptoms of an overheating economy, a fiscal stance leading to budget surpluses would have been adequate. But in reality fiscal policy was quite expansive (the government deficits were in the range of 1-2 % of GDP in the years 1994 – 1996). The central bank was then forced to substitute for the lack of appropriate fiscal policy and had to restrict its policy (increasing the exchange rate spread and increasing interest rates). It is a question of debate, what would have happened if both policy-makers acted in a more cooperative manner.

Another example of the lack of cooperation was the inflation target setting by the central bank in its beginnings. The inflation targets were not consulted with the government.[22] But in latter years the cooperation improved. The declaration of the "economic strategy of EU accession" was an example of monetary and fiscal cooperation.

By and large the cooperation between the central bank and the government is not legally supported. In fact it is stated in the Act on the CNB that the CNB and members of the Bank Board must not accept or require instructions from the president, parliament, government or any other subjects. Where is there scope for fiscal and monetary cooperation, when effectively any remarks, suggestions or considerations made by the fiscal authority to the central bank could be regarded as illegal (!).

Performance of the central bank could improve by delegating the goal setting to the government.[23] Moreover, the CNB can be regarded as a highly independent central bank. The question is to what extent it is a positive fact.

3.3. Time Inconsistency

The question of time inconsistency has appeared in the Czech context during the search for an appropriate nominal anchor in the beginning of the transformation, then after the sudden change in monetary policy in 1997 and also in the course of the political games concerning CNB independence and its share on the output downturn in the years 1997-1999.

In the theory explained we recognized that an optimal policy at a given point of time is not time consistent (Kydland, Prescott, 1977). This results in the conclusion that Kydland and Prescott made and that is well expressed by the title of their revolutionary paper: "Rules rather than Discretion". Rules enforced by some sort of measures are also supported by Barro and Gordon (1983). Time inconsistency can

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21) There is no legal requirement for cooperation between the two authorities. The Act on the CNB only states that both authorities inform each other in the matters of monetary and economic policy and that the central bank acts as an advisory body to the government in monetary and bank issues (once more I note that this is in line with the EU legislation).

22) The CNB excuses itself by referring to the changing governments the on break of the years 1997-1998 (CNB, 2004).

23) As in the UK, for example, where the inflation target for the Bank of England is set by the government.

be overcome by applying a rule to monetary policy. In practice we can distinguish two approaches (Pavelek, 2002). A legislative approach that is based on a law calling for independent central bank with a unambiguous goal of price stability. The second approach could be called the contract approach that would make the top representatives of the central bank responsible for the inflation target by a private sector-like contract.

In the case of the CNB we may note that it is independent and obliged to price stability by law. As for the second approach, there is no such thing as contracts based on the fulfilment of the inflation target in the Czech context. Barro and Gordon also emphasized that the monetary rule should be enforced meaning that the central bank should be accountable. As dealt with later on, the case of the CNB is questionable. We also mentioned that time inconsistency could arise due to political pressures. Reduction of these pressures can be accomplished by letting the government set the monetary rule. We must not be mistaken that letting the government set any kind of nominal anchor will reduce time inconsistency. The government should not be allowed to set short-term goals, which effectively would permit the government to exploit trade-offs in the economy resulting in higher inflation pressures in the long-run. On the contrary, the government should set a long run goal for the monetary authority to follow. This commitment then reduces the capability of the government to put pressure on monetary policy to exploit any kind of trade-off, since any such attempt would discredit the government itself.

As we mentioned above, the CNB did announce an explicit nominal anchor, but this was not legally established by the government. So the time inconsistency issue could be dealt with in an improved manner, if the CNB was made goal dependent.

3.4. A Forward-Looking Monetary Policy

Having long lags in monetary policy application in mind, we stated that the monetary authority must be forward looking. In the case of the CNB, forward-looking behaviour was forced to improve when monetary policy switched to inflation targeting. In the fixed exchange rate regime one reacts to immediate changes in the exchange rate by changes in interest rates and direct foreign exchange interventions. In a monetary targeting scheme, the central bank must be able to predict the relationship between a certain monetary aggregate and the level of prices. But in inflation targeting the central bank must include into its decision process other variables, such as labour market information, importer prices, producer prices, interest rates (nominal and real), exchange rate (nominal and real), public finances *etc*. (CNB, 2004). All of these variables are included in the forecasting models. Models used by the CNB were also improved by incorporating into themselves a model reaction by the CNB itself (unconditioned models). In the Czech Republic the so called time horizon of effective transmission, that states when in the future today's monetary policy action will effect inflation, is estimated to be between 4 and 6 quarters (CNB, 2004).

The CNB is definitely a forward-looking monetary authority. It is not surprising since the mere nature of its instrument, inflation targeting, dictates this kind of behaviour.

3.5. Accountability

The reasons for accountability are clear-cut. But is the CNB accountable for? A prerequisite for accountability is an explicit nominal anchor to which one can assess the performance of the authority. As was pointed out several times, there is no legally called for nominal anchor in the Czech monetary system. Nevertheless, the CNB has always announced (its own!) anchor. But for the existence of effective accountability also a legal stance must exist, specifying circumstances under which action against the CNB can be undertaken. These circumstances are embedded in the No. 6/1993 Coll., Act on the CNB. But there is only a vague clause enabling the president of the Czech Republic to effectively sack the governor (nothing is said about the other members of the Bank Board !) if he or she commits a serious mistake. What is meant by this phrase is unclear. There is nothing in the sense of market-like contract responsibility, such as practised in New Zealand,[24] or at least political responsibility, such as in the case of the Bank of England.[25] The question of symmetry in the case of the monetary rule is therefore irrelevant, since the monetary authority is practically untouchable[26]. As for an informational duty, the CNB is obliged to give reports about the monetary development at least twice a year to the Chamber of Representatives. But these reports are hardly comparable to the regular questioning of Monetary Policy Committee (MPC) members by the UK Treasury Select Committee or FED hearings in the USA. A discussion on the symmetry of responsibility is useless since no explicit responsibility is defined.[27] The inviolability of the Bank Board is supported also by the fact, that minutes are published namely only after a six year period.

Let us also examine each type of transparency. For political transparency we can state that the CNB is well off, since the long-term goal of price stability is embedded in the Constitution and specific inflation targets are being announced. Moreover, the central bank is an independent institution in the Czech economy and therefore exhibits greater transparency in public eyes.

The extent of economic transparency is mixed. Though the CNB does publish quarterly Inflation Reports (promptly after their approval), where the main economic data and forecasts are included, a more detailed reference to what the macroeconomic models, on which these forecasts were based, look like, could be included.

Procedural transparency is also only half way. Minutes from the Bank Board meetings are available (within a few days after the meeting), but there is no record

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24) The governor has a salary related to the inflation performance of the central bank and can actually loose his position if the inflation target is not met.

25) If the inflation target is missed by more than ± 1 %, then the governor must write an open letter to the Chancellor explaining how the discrepancy arose, how long it is likely to last and how it will be dealt with. This kind of responsibility is not market (financially) based, but it is reputation-based.

26) The mentioning of symmetry may seem superfluous in the context of a transition economy which is expected to suffer from a higher rate of inflation rather than a low one, but the opposite is true. The Czech Republic was one of a few countries in the world that experienced deflation in the year 2003.

27) The fact that the CNB regularly failed to meet its targets was never a public issue. All members of the Bank Board served their whole periods without any problems.

on how each member voted. This weakens the accountability of individual members of the Board. No explanations of the reasons why the votes were made is requested. An exemplary central bank in this direction would be the Bank of England. Here individual votes are published and members must explain there reasons for the way they voted to the public. They also undergo regular "tours" debating and explaining their position to economic participants.

Policy transparency is reasonable. Key strategic documents of monetary policy decision making are available to the broad public. Moreover, they are presented in an understandable manner. The CNB was, however, criticised for not consulting monetary policy changes with market participants.

Operational transparency is also well embedded in the key documents about monetary policy of the CNB that are available. This is also enforced by the explicit statement of exceptions of monetary development to which the CNB does not react.

Overall the transparency of the CNB is good.[28] It has improved after the adoption of the inflation target in 1998. Prior to this date it was not always clear what the priorities were (the annual and mid-year reports would focus considerably on the balance of payments confusing the public that there might be something that monetary policy should do about the current account, apart from maintaining a stable price level). The transparency of the CNB is appreciated even in the documents of the IMF (IMF, 2002). The IMF states, that "…the CNB's relationship with the government, agencies responsibilities and operational procedures for the conduct of monetary policy, and monetary implementation in the Czech Republic, where highly transparent."

But, as mentioned earlier, greater transparency does not imply higher accountability. This is also the case of the CNB. Though highly transparent it scores low in accountability.[29]

3.6. Concern about Output Fluctuations

As pointed out earlier, price stability should not be an end point in itself. It should be a prerequisite for a more stable and faster output growth. Central banks should therefore be concerned with output growth as well as inflation.

The CNB is obliged, under the Act on the CNB, to support general economic policies of the government (without prejudice to its primary objective) leading to sustainable economic growth (but this says nothing about output fluctuations). Here I will not pursue a thorough analysis, for it would require a separate paper. I therefore offer only a very crude glimpse at the matter.

As is apparent in Figure 4, output after a recovery from the recession phase in the years 1997-1998[30] entered a slightly upward trend with mild fluctuations.[31] In-

28) Transparency benefits might not be so straightforward. Research has been done on the idea that a lower degree of transparency may be more beneficial (see Geraats, 2002).

29) But this is the case for even strong and credible central banks, such as the ECB. The ECB's accountability can also be questioned.

30) I am focused on the situation after adopting inflation targeting, because I regard the environment as relatively settled and more sensitive to monetary policy effects, unlike the situation prior to the recession.

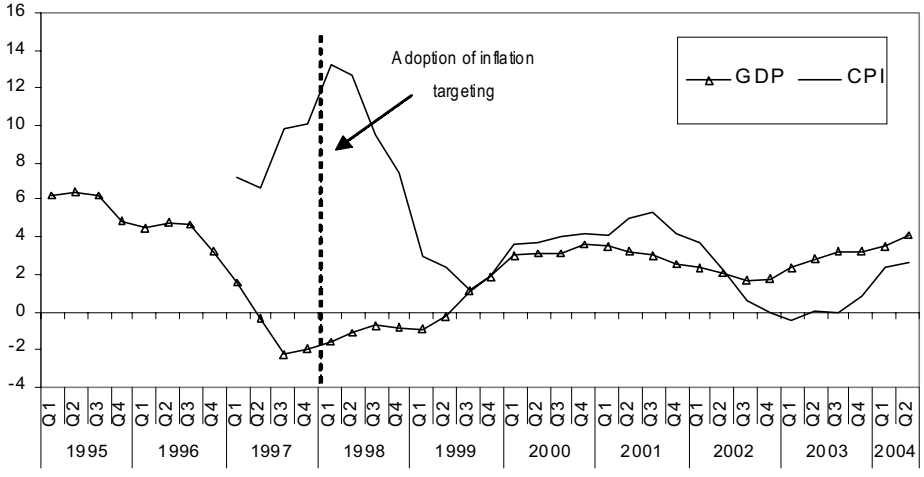
31) The drop of output in the fourth quarter in 2002 is caused by the aftermath effects of the summer floods. Output recovered shortly after in the beginning of the next year.

flation also, after dropping from double-digit figures in 1998, settled down and has stayed under control since. It is worth noting that the Czech Republic was one of few economies in the world that experienced a phase of deflation in the year 2003. This is a potentially dangerous situation, as mentioned earlier. The fact that deflation occurred in a transition economy is even more surprising and if measurement errors (that are more likely to be present in such an economy) are taken into account, one would get an even greater drop in prices. Monetary policy under low inflation (and interest rates) is a relatively new phenomenon and central banks are still in the process of learning how to deal with it. Moreover, monetary policy under deflation is even less explored and as can be seen from the example of Japan in recent years fighting deflation can prove a very difficult task.

It seems that after the adoption of inflation targeting the Czech economy did not experience any excessive output fluctuations. We can, however, express some concern about the fact that inflation has been for most of the time below the declared targets and even fell into deflation. And since a longer period of deflation could plunge the economy into growth troubles we can imagine that the balancing of output and inflation targets could be improved.

Again I will note, that I am not discussing the question of whether the CNB could have done better in its policies and promoted greater growth. I am more concerned about the fact of whether fluctuations were alleviated with the benefits accompanying such a situation. It is also clear, that output and its fluctuations are not dependent solely on monetary policy. On the contrary, monetary policy is only one of several factors affecting output, hence the relationship presented might well be incidental.

Figure 4
Quarterly Gross Domestic Product Growth and CPI (in %)



Source: CSO, 2004.

3.7. Financial Instability

Financial instability has been one of the factors of depth and length of large depressions all over the world. In the 1990s several financial crises occurred and unfortunately the Czech Republic was one of the countries that suffered such a situation. Let us recapitulate the events that led to the crisis.

Economic instabilities started to come up in 1994. A fast awakening of domestic demand due to high wage increases (not supported by adequate productivity growth) and the wealth effect of the coupon privatisation led to increasing external imbalance under a rigid supply side of the economy (unfinished restructuralisation in the business sphere, unfinished privatisation in important sectors of the economy, institutional and legislative barriers to economic activity). This was enforced by large investments in the public sector. Also large foreign capital inflows encouraged by the liberalisation of the financial market, the existence of an interest rate differential and a fixed exchange rate were streaming into the economy. Such developments had to be countered with monetary restriction. Unfortunately fiscal policy did not contribute to this policy tightening. The CNB widened its exchange rate spread and increased the interest rates.[32] These remedial measures had little effect on credit activity and the imbalances increased in early 1997 (current account deficit was 8 % of GDP, well above the recognized critical value of 5 %). Uncertainty among investors was spreading fast and political turbulences did not help the situation. In May 1997 large pressures were put on the Czech koruna and the CNB was forced to abandon its monetary regime. There are of course different views, such as that the crisis was essentially created by the CNB and its monetary policy change in 1996, when it started with the monetary restriction (Holman, 2004).

We must note, however, that when the crisis arouse the CNB managed it relatively well.[33] The depreciation of the koruna (around 15 % to its former currency basket) was relatively small in comparison to other countries that went through a financial crisis (Thailand 35 %, South Korea 30 %, Indonesia 28 %).[34] The question of evaluating the central banks action is very complicated. Although the effects of the crisis were relatively mild, it is argued that if the CNB had freed the exchange rate earlier, the crisis might have never happened. For our purposes, where we are concerned about the effort the central bank made to pre-empt a financial crisis, we can lean slightly to the side that criticises the CNB for not loosening the exchange rate regime earlier.

The CNB's action in the aftermath of the crisis could be considered as appropriate. After a meantime measure of a managed floating regime the CNB adopted a new monetary policy framework of inflation targeting. It also announced explicit inflation targets trying to anchor expectations. Also with inflation targeting came grea-

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32) Discussions on whether this step should have been made earlier are still going on.

33) The CNB intervened on the foreign exchange market and tried to limit access to credits by increasing its interest rates. The Lombard rate temporarily increased up to 50 %.

34) The appreciation of the CNB's action during the crisis was expressed by the words of Michael Deppler, the director of the IMF for Western and Central Europe in 1999, "The Czech Republic was so far the example of how to act in an attack of a monetary crisis…"

ter transparency providing the private sector with more information, which supports the general economic environment and hence the prevention of a crisis.

As for considering the bank sector supervision aspect, the CNB practises its power over the banking sector through relating regulations. These conditions are embedded well in the Act on the CNB. Although no bank crisis has occurred, problems with the bank sector have not missed the Czech Republic. Banks emerged rapidly after the revolution, but with little experience many ended in bankruptcy. As mentioned above, no economy-wide crisis occurred but large social losses arose. The losses are reflected in the form of the debt of the Czech Consolidation Agency (CKA) and this burden will be carried in government deficits even in upcoming years.

Today the banking sector can be considered as stable. The entering of foreign investors into the domestic banking sector had a stabilizing effect, especially if we realize that 65% of the balance sum of the sector is managed by the four biggest banks, that are all under foreign control. The capital adequacy ratio is stable at a 15% level. Moreover, the market itself views all the largest banks positively since they all managed to get out of the speculative zone of rating agencies (Moody's, Standard and Poor's, Fitch Ratings).

4. Concluding Remarks

In this paper I tried to use the theoretical consensus that has developed in recent years on the principles a monetary authority should follow (or be provided with) when attempting to achieve its goals, to evaluate whether the CNB has at all a chance to conduct successful monetary policy. First I introduced these principles and later applied the criteria to the CNB. Let us make a final summary of the findings. I note again that some criteria are not in the scope of the CNB to change.

Price stability as an overriding goal of monetary policy is adopted in the Czech legislation. Even though explicit nominal anchors are not specified by law, the CNB announces its own targets. This situation of internally set targets is, however, viewed negatively in other perspectives. I argued that the government should set a target for the central bank in order to reduce the possibility of time inconsistent behaviour and for a better ability to make the monetary authority accountable. There is also little legal lever for making the authority explain its actions. No legal stance calling for personal responsibility of members of the Bank Board exists. Though a nominal anchor is present and though transparency is high (as we have said, transparency does not imply accountability), overall accountability is poor. Cooperation with fiscal policy is generally poorly mentioned in the Act on the CNB.

The relationship between the two authorities is still evolving and improving. Conditions for time consistent behaviour are reasonable and the forward-lookingness of the CNB is satisfied.

Having in mind, that only short time series are available and that the Czech Republic is still a transition economy and therefore exhibits some anomalies in macroeconomic behaviour, I did not pursue a thorough analysis of a dedication towards output fluctuations. A rough look suggests that this principle might be incorporated by the CNB, but even this conclusion may be too strong considering the facts introduced. I leave this for further analysis.

The CNB has experience with a monetary crisis. I lean to the argument that the crisis could have been avoided by a well-timed freeing of the exchange rate. But the saying goes "everybody is a general after the war". The results of the crisis were managed relatively well. The bank sector, although not experiencing a crisis, did go through some turbulent times and the economy is being punished for this even now. The take-over of banks by foreign investors should help stabilize the sector in the future. The question whether this will help to pre-empt potential future crises is a difficult one. Let us hope, that this is really the case.

The application of the above principles has shown that the CNB is operating in an environment of mixed conditions. On the one hand, it incorporates price stability very well, on the other hand, accountability is deficient. On the one hand, the CNB is forward looking, on the other hand, the Czech Republic experienced a financial crisis. The institutional conditions provided to the CNB are sufficient to allow reasonable monetary policy. But the sufficiency of this result is questionable and one should not be satisfied with it. The aim should be to improve these conditions. This paper points out the weak spots and suggests that further room for improvement exists.

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