The Convergence Criteria – How Tight a Constraint under Inflation Targeting?

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Paper for the 10th Dubrovnik Economic Conference

This version: June 2004

ABSTRACT

The paper focuses on how tight a constraint are the convergence criteria for the conduct of inflation targeting. This particular question is relevant to those EU member countries staying outside the euro area which are currently operating under flexible exchange rate arrangements. For these countries, it will be difficult to avoid a double shift in monetary policy. To meet the convergence criteria, they will be pressured to switch to exchange rate targeting and adopt a regime similar to inflation targeting after joining the euro area again. For those that would like to avoid the double shift, the conditions for using inflation targeting as an independent anti-cyclical monetary policy after joining ERM2 are defined. The approach applied is rather informal and builds on potential financial market reactions to the existing policy constraints. The experience of the current euro area members during the ERM2 period is analysed and the implications of the term structure of interest rates and the uncovered interest rate parity condition are discussed.

JEL: E31, F31, O11, P17

Keywords: ERM2, convergence criteria, uncovered interest rate parity, inflation targeting, exchange rate regime, Balassa–Samuelson effect

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Introduction

The discussion of the ten new Member States (NMSs) on euro adoption and ERM2 participation has recently shifted from the shaping of positions to questions of a more practical nature. Among those, suitable policies for meeting the convergence criteria before adopting the euro play a prominent role. Countries are searching for ways of making the transition to ERM2 and later the euro as smooth as possible. This is a question relevant not just to the new EU entrants, but to all the non-euro EU members, which either are expected to enter the euro area (Sweden) or might want to (UK, Denmark).

Among them, there are five inflation targeters (UK, Sweden, the Czech Republic, Poland, Hungary) plus two non-inflation targeting floaters (Slovakia, Slovenia), which all may face the same question. Namely, how tight a constraint is the exchange rate criterion (and its combinations with other criteria) for the conduct of inflation targeting (IT) or a policy similar to IT? This is the main question I try to answer in this paper. It is natural that the question is relevant to only some of the EU member countries now staying outside the euro area. These are the countries currently operating under flexible exchange rate arrangements. On the contrary, the countries operating currency boards will face rather different challenges.

The issue has at least two levels. First, one can think about it in terms of the right policy regime to use in the pre-euro phase. Second, one can understand the question as concerning the specific way monetary policy is conducted in this period, irrespective of the declared regime. The discussion on the regime design question may seem relatively simple. One of the most important and easily observable characteristics of inflation targeting as a policy regime is that policy is formulated as an explicit numerical target for inflation. And this is what the inflation convergence criterion represents – a numerical inflation target. This is true notwithstanding the fact that it is a moving target – depending on how low the inflation rate in the three EU countries with the lowest inflation is. Thus, even countries that have not applied IT in the past will, at least from the outside view, operate some form of IT prior to euro area entry. There is another reason why having an explicit goal for inflation may be the right strategy prior to euro area entry. The ECB has been practising a policy based on a (more or less) specific numerical target of “below but close” to 2 percent inflation. Thus, monetary policy communication with the public formed around the logic of attaining a specific rate of inflation may manifest important continuity if IT is practised before euro area entry. This is, of course, even more relevant to the countries that have already practised this strategy for some time in the past.

If regime choice is not the issue, the question on constraint then really boils down to a question on the mutual consistency of the inflation, exchange rate and, potentially, other criteria. This can be a tricky issue since it depends not only on how one understands the definition of the criteria, but also on several country-specific factors. Methodologically, there are several ways of examining the consistency between the inflation and exchange rate convergence criteria. Égert and Kierzenkowski (2003), Szapary (2001) and Buiter and Grafe (2002) use a rather informal way of presenting the topic. Grauwe and Schnabl (2004) employ a more formal partial equilibrium model. Mihaljek (2002) and Flek, Marková and Podpiera (2002) perform empirical analysis, while Natalucci and Ravenna (2003) investigate the issue by means of a dynamic stochastic general equilibrium model.

The formal approaches have significant drawbacks. Econometric treatment is useful, but as the transfer to ERM2 will represent a regime change for most of the countries concerned, the results from the old situation cannot easily be transferred to the new one, since the Lucas critique applies. Moreover, there is the usual lack-of-data problem with the NMSs. The

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1 Apart from the Lucas critique, Natalucci and Ravenna (2003) disregard the impact of nominal exchange rate appreciation on firms’ profits, which may transform to investment and, later, potential GDP growth. This
general equilibrium approach covers the full scope of the interrelationships and is thus particularly well-suited to exploring the interactions among the criteria. However, unless fully micro-based, it may also be subject to the Lucas critique typical of the econometric models. In this respect, partial equilibrium models and informal description may serve the purpose well, too. They can accommodate appropriate and relevant assumptions, constraints and scenarios, although they are not well-suited to exploring the general equilibrium consequences.

As indicated above, the goal of this paper is to provide an answer to the question posed in the title, namely, “How tight a constraint is the exchange rate criterion for the conduct of IT?” In addition, I define conditions for using IT as an independent anti-cyclical monetary policy at least to some extent even after joining ERM2. The approach applied is informal because, among other reasons, it is rather difficult to apply formal economics to the process that the NMSs are burdened with, given that this process has been designed without having economics in mind. As politics was a major force behind the design, it is more appropriate to analyse potential financial market reactions to the policy constraints created. I will do this by analysing the experience of the current euro area members during the ERM2 period and evaluating the constraints stemming from the term structure of interest rates and the uncovered interest rate parity (UIP) condition. The use of UIP instead of formal analysis is justified by the very specific situation of the new entrants. Once they decide to participate in ERM2, they will be exposed to an environment in which the risk premium is approaching zero, exchange rate expectations are influenced by the explicit central parity and interest rates are converging to the euro area levels.

The remaining discussion is structured as follows. In Section 1, the debate on the definition and extent of the exchange rate constraint is reviewed. In Section 2, the current state of nominal convergence is described and the Czech Republic’s position on euro adoption and ERM2 participation is presented. In Section 3, the tightness of the constraints is assessed, and the subsequent Section 4 deals with monetary policy autonomy in ERM2. Section 5 then focuses on potential strategies for entering the ERM2 and the implications of financial market mechanisms. Section 6 then concludes with a debate on how to pursue IT in ERM2. The final section concludes with several policy reflections.

1. The Constraints and their Relevance

1.1 The Exchange Rate Convergence Criterion

The exchange rate convergence criterion is defined in the Treaty on European Union (the Treaty), as follows: “The criterion on participation in the Exchange Rate Mechanism of the European Monetary System ... shall mean that a Member State has respected the normal fluctuation margins provided for by the Exchange Rate Mechanism of the European Monetary System without severe tensions for at least the last two years before the examination. In particular, the Member State shall not have devalued its currency’s bilateral central rate against any other Member State’s currency on its own initiative for the same period”.

The assessment of fulfilment of the criterion is based on the relevant provisions of the Treaty. The European Commission (EC) expressed its standpoint on the fulfilment of the exchange rate criterion in ERM2 in its 2000 Convergence Report as follows: 1) Participation in the ERM2 at the time of assessment is mandatory and expected for at least two years. Some exchange rate stability during a period of non-participation before entering ERM2 can be taken into account, too. 2) No downward realignment (devaluation) of the central parity within the two year examination period. 3) Exchange rate to have been maintained within a

 omission may be one of the reasons why they conclude that “allowing for a sustained appreciation of the nominal exchange rate would deliver a lower volatility of both the output gap and inflation”.

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fluctuation band of ±2.25% around the currency’s central parity against the euro. An assessment of any deviation from the ±2.25% fluctuation band would have to take account of the reasons for that deviation. A distinction is to be made between exchange rate movements above the ±2.25% upper margin and movements below the ±2.25% lower margin.

Article 121 of the Treaty stipulates that both the EC and the European Central Bank (ECB) are to examine the state of convergence of the Member States. The Convergence Reports are then to be submitted to the Council of the EU, which, based on the recommendation of the EC, judges whether a given country fulfils the necessary conditions for the adoption of the single currency.

As Égert and Kierzenkowski (2003) notice, the assessment practice of the EC in general has been different from – and much more explicit than – that of the ECB (EMI). While the EC often refers to the ±2.25% band, the ECB refrains from mentioning it. In any case, the EC emphasises that a deviation exceeding ±2.25% will not automatically imply a violation of the criterion on exchange rate stability. Whether or not a larger deviation corresponds to a violation of the normal fluctuation margins or to severe tension hinges mainly on how long the deviation lasts, how large it is, and, most importantly, whether it occurs on the weaker or the stronger side of the fluctuation band. Also, the ECB has always understood that wider bands should have been taken into account in a way.

The ECB in its latest policy position (December 2003) points out that the assessment of exchange rate stability against the euro will focus on the exchange rate being close to the central rate while also taking into account factors that may have led to an appreciation, which is in line with what was done in the past. The ECB further stresses that the width of the fluctuation band within ERM2 shall not prejudice the assessment of the exchange rate stability criterion. Moreover, the issue of absence of “severe tensions” is, according to the ECB, addressed by examining the degree of deviation of exchange rates from the ERM2 central rates against the euro, by using indicators such as short-term interest rate differentials vis-à-vis the euro area and their evolution, and by considering the role played by foreign exchange interventions.

All this means that the exchange rate criterion should basically be understood as 2.25% on the weaker side and 15% on the stronger side. In addition, going beyond the 2.25% limit on the weaker side does not automatically mean a violation of the criterion, and at the same time, the possibility of revaluation of the central parity questions the existence of any limit on the stronger side. It is thus possible to conclude that to meet the criterion, it is necessary to avoid devaluation of the central parity and to ensure that the exchange rate is not frequently well beyond the 2.25% limit on the weaker side despite interventions via interest rate hikes and exchange reserves sales.

There is thus some room for manoeuvre concerning the mix of interest and exchange rate policy; uncertainty remains as to the size of it. What is open is how the EC would assess occasional breaches of the 2.25% limit that are not of a fundamental nature and that are not accompanied by any interventions. In other words, the crucial question is how to assess the underlying tensions and tell fundamental breaches from non-fundamental ones. We know that the “severe tensions” conditions will be assessed by taking into account indicators like the side, timing, size and duration of the deviations during the assessment period. In addition, factors like exchange rate volatility, short-term interest rate movements or size of foreign exchange interventions will be taken into account. Such a framework offers some scope for desirable exchange rate flexibility.

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2 There is a substantial difference between the EC’s and the ECB’s responsibility. Although both the EC and the ECB are required to prepare a convergence report when a given country is analysed to see whether it complies fully with the convergence criteria, it is the EC that makes a direct recommendation to the European Council.

3 The Czech experience with 2001–2002 appreciation pressures provides evidence that properly addressing
1.2 ERM2 as a Constraint

There was a very lively debate on the role and sense of ERM2 between the Eurosystem and the acceding countries. The Eurosystem position regarding ERM2 is set out in the “Policy position of the Governing Council of the ECB on exchange rate issues relating to the acceding countries” (ECB, 2003). This document builds on the Position Paper “The Eurosystem and the Accession Process” endorsed by the Governing Council on 21 November 2002. The Position Paper puts forward the view that “ERM2 offers a meaningful framework for combining nominal and real convergence and should therefore not be seen as a mere “ante-chamber” before the adoption of the euro ... ERM2 should be seen as a useful regime on its own right, as a number of policy challenges can be tackled within that framework in the run-up to the adoption of the euro ... ERM2 will provide for a certain degree of exchange rate stability and macroeconomic policy discipline, while still leaving room for adjustments to shocks and market developments. Moreover, its multilateral nature – with both the accession country’s central bank and the ECB being involved – will enhance its credibility. For these reasons, ERM2 is likely to be beneficial for the accession countries in their pursuit of real and nominal convergence.”

One of the most striking features of this particular argumentation is the apparent lack of emphasis on the target zones literature that was so popular in the 1990s (Krugman, 1991, Bertola and Caballero, 1992 or Svensson, 1994). It is not easy to find a reference to the smooth pasting, honeymoon effects and other desirable features that were discussed during the glorious days of ERM. Financial crises and the subsequent literature on multiple equilibria, self-fulfilling speculative attacks and reversals of capital flows (e.g. Eichengreen and Wyplosz, 1993) made us more aware of the complicated dynamics of modern financial markets. This paved the way for an understanding of the benefits of corner solutions (e.g. Fischer, 2001) in the form of either hard pegs or more flexible regimes. That is why most of the NMSs want to minimise the length of ERM2 participation now that they know it will not be possible to avoid it entirely. Unfortunately, the proponents of European monetary integration in the EU institutions still pretend as if nothing has happened and as if we are not in 2004 but in 1994. That is where we stand now. Clearly, at the beginning of the 1990s IT could hardly have been viewed as a potential substitute for ERM2, owing to the lack of experience with it. Today, thanks to the experience with intermediate regimes, one can hardly think of ERM2 as a reasonable substitute for IT.

The position of the NMSs’ central banks towards ERM2 differs from that of the Eurosystem and the EC. They generally perceive ERM2 as a mere “waiting room”. Some even argue that it is at best of zero or negative value-added and may even entail significant risks. Of course, for some small NMSs, ERM2 may not represent a de facto exchange rate regime shift. ERM2 participation may deliver negative effects for countries with a free or lightly managed float and a credible IT framework in place.

Personally, I cannot see any value added in using the ERM2 regime. The Czech Republic successfully stabilises inflation by means of IT, which is now a flexible and pragmatic policy based on occasionally managed floating and a tailor-made communication strategy. ERM2 cannot be superior to it. In addition, ERM2 can hardly constitute a tool for stabilising the nominal exchange rate. The width of the band, ±15%, cannot stabilise anything, intra-marginal interventions of the ECB are unlikely, and large-scale marginal intervention of the ECB cannot be guaranteed. Under such circumstances an agreed central parity in the narrow pressures in the foreign exchange market (especially non-fundamental and expectations-driven ones) can involve allowing the exchange rate to change sharply and then adjust back with the support of accommodating and offsetting interest rate policy.
range could be prone to testing by the foreign exchange markets. The probability of this is increased by the uncertainty of market participants as to the “fair” value of the currency, owing to the multiple-equilibria phenomenon, and by the potential conflict between exchange rate targets and the inflation criterion. Paradoxically enough, the stabilising properties promised by the ERM2’s proponents could easily be overcome by non-fundamental destabilising forces. In addition, a double-shift from IT, to exchange rate targeting and then to the ECB policy which is on the euro area level close to IT and on a small country level close to currency board\(^4\). One of the key rules of monetary policy makers is “do not change a monetary policy regime that is working well”. The shift from IT to a fixed exchange rate regime may be risky. That is the main reason why inflation targeters question the claims of the EU institutions regarding the process towards the euro. One of the key successes of the CNB’s policies based on flexible inflation targeting and a floating exchange rate regime was the stabilisation of both inflation and nominal interest rates at very low levels\(^5\). That would be extremely difficult to achieve with a fixed exchange rate in an environment of convergence trends, free movement of capital and unstable conditions in the world economy.

There are numerous papers highlighting the undesirable features of the ERM2 regime (e.g. Lipschitz, 2004 or Bubula and Otker-Robe, 2003\(^6\)). A comprehensive description of the risk embodied in intermediate exchange rate regimes like ERM2 can be found in Begg et al. (2003), or Buiter (2004). I will deal briefly with two of them. Lipschitz (2004) explains that real economic forces (not only the equilibrium rate of real appreciation, but also various structural changes) limit monetary independence in the NMSs and make these countries highly sensitive to conditions in external capital markets. Given that, monetary and exchange rate policies during the interregnum between joining the EU and adopting the euro will be particularly difficult to formulate. He proposes a flexible exchange rate with a relatively large amplitude of exchange rate swings as the most efficient measure to contain vulnerability. From the point of view of domestic borrowers, it will reduce the incentive for excessive foreign exchange exposure. From the point of view of the domestic authorities, less foreign exchange exposure militates against a fear-of-floating phenomenon with the government trying to resist market-driven exchange rate changes. And, from the point of view of speculators, less intervention of this sort will reduce one-way bets and opportunistic speculation. Unfortunately, the NMSs are forced to maintain a very low degree of exchange rate flexibility during the interregnum. Lipschitz concludes that an asymmetric band with an ostensible guarantee against significant depreciation seems to be the most dangerous policy. It seems likely that capital flows will produce the following pattern: an initial over-appreciation of the nominal exchange rate, coupled with an expected depreciation and a correspondingly higher interest rate than in the euro area.

According to Buiter (2004), a serious design weakness of the Maastricht criteria for full EMU membership is that they specify a number of nominal convergence criteria that jointly constrain the behaviour of real economic variables in ways that may not be desirable or, worse, not even feasible. He argues that ERM2 is a pointless and potentially dangerous arrangement, especially if the nominal exchange rate constraint it incorporates is combined

\(^4\)The only way how to avoid the double shift is to switch to a currency board when entering ERM2 since for a small country having the euro is just like having a currency board. Nevertheless, currency board is not exactly the same as membership in a monetary union, and what is more important, establishing a currency board in a country with a history of floating exchange rate is not a risk-free option.

\(^5\)The Czech Republic used the interest rate channel in reaction to the 2002 appreciation and subsequent slowdown of the world economy with the aim of supporting domestic demand. Despite the external constraints already existing, monetary policy proved to be autonomous enough to achieve the desired outcomes.

\(^6\)Bubula and Otker-Robe (2003) document that during 1990–2001 the frequency of crisis under intermediate regimes was substantially higher than under polar regimes.
with an inflation target and a nominal interest rate target. The simultaneous pursuit of three nominal targets greatly enhances the likelihood that a major financial accident will happen. A state-contingent set of criteria creates an environment for indeterminacy and multiple equilibria if the state variables in question are expectational and non-predetermined. For most NMSs it will bring unnecessary exposure to potentially destabilising international capital flows, to excessive exchange rate volatility and to the risk of financial instability. Buiter concludes that an enforced period in ERM purgatory represents a potentially costly investment without any return.

2. The Development of the Czech Economy: Where Do We Stand?

2.1 The State of Convergence

It is almost a stylised fact that basic macroeconomic convergence in the Czech Republic has been fully achieved. Inflation has gone down to levels compatible with the price stability definition.

Figure 1: Inflation in the Czech Republic and the EU

![Inflation Chart]

Source: CNB and Eurostat

Long-term and short-term interest rates are at the levels of the industrially developed countries. In other words, the interest rate differentials converged to zero levels some time ago.

Figure 2: Interest rate differentials have disappeared

![Interest Rate Differentials Chart]

Source: CNB and IMF IFS
The current fiscal situation is still relatively stabilised, but without decisive reforms the situation may become unsustainable (Figure 3). The deficits may not be historically much larger than in the EU-15, but their dynamics exhibit a risky trend\(^7\). The level of debt is still relatively low, although rising at a lively pace.

**Figure 3: Public finances: deficit and debt**

![Chart showing EU-15 and Czech Republic (CR) deficits and debt from 1994 to 2003.]

*Source: CSU and Eurostat*

Nominal exchange rates (Figure 4) are relatively stable on a long-term basis and even approximately 10 percent stronger in nominal terms than 13 years ago. Despite the long-term stability, the exchange rate has been rather volatile in the last few years.

**Figure 4: Long-run stability of the Czech koruna**

![Chart showing the CZK/EUR, CZK/USD, and CZK basket against USD:EUR, 35:65 from January 1991 to 2003.]

*Source: CNB*

Figure 5 shows that in the Czech Republic, despite the volatility, the real exchange rate vis-à-vis EUR (DEM) has been in the appreciation zone for most of the time during the last 10 years. After a period of fast real appreciation at the beginning of the transition, any future appreciation should be much milder. The figure shows that after an appreciation episode at the end of 2001 and the first half of 2002 the real exchange rate returned to its long-run trend of mild appreciation.

\(^7\) The nearly 13% deficit announced for 2003 is the result of one-off accounting measures and can thus hardly be used in comparisons.
For years, there have been serious discussions among analysts and policy-makers on the implications of the policy of low inflation against a background of natural trends towards real appreciation. Owing to the inflation criterion, it is generally believed that the Czech Republic and some other NMSs will join the euro area with the euro cheaper in nominal terms. The CNB was facing the effect of the “convergence game” especially in the 2001–2002 period. Fortunately, the appreciation bubble burst relatively soon and the exchange rate returned to more realistic levels. Recently, the CNB has concluded that after some adjustment in the nominal exchange rate in previous years, and after completing the major steps in deregulation of administered prices, the scope for further sustainable real appreciation will be limited in the years ahead to roughly to 2 or 3 percent a year. Given the scope for an inflation differential, hardly any nominal appreciation will thus be needed. In other words, the fundamentally-driven real appreciation might be slow enough not to imply a serious conflict between low inflation and other macroeconomic variables.

2.2 The Czech Republic and the Euro

The CNB’s euro strategy was published after an intensive discussion within the Bank at the end of 2002. The strategy concludes that the evaluation of the positive effects and possible risks speaks in favour of the Czech Republic’s fast entry into the euro area. The CNB thus recommended that some necessary measures must be implemented in such a way as not to rule out the possibility of joining the euro area sometime around 2007 after spending the minimum required period of two years in ERM2. The strategy of the CNB has been generally supported by the corporate sector. This reflects the Czech Republic’s strong trade orientation towards the EU and the deep integration of local manufacturers with the euro area.

During the subsequent negotiations with the government, it became clear that the outlook in the fiscal policy area based on the now implemented reform package was not fully consistent with the fast-track approach towards the euro. The country will thus have an option to join the euro area later – probably during 2009–2010 only after implementing the 2nd stage of fiscal consolidation, which has not yet been designed. This is crucial, since the current levels of public deficits will not be tolerable in the future. They are largely structural in nature and related to the long-run unsustainability of some socially oriented public spending programmes.

The CNB strategy warns that important preconditions have to be fulfilled to ensure that
the potential positive effects really materialise and that the existing risks of euro area membership are minimised. First, sufficient alignment of the Czech economy with the euro area economies in the real and financial spheres is required. Second, and maybe more important, the economy must be flexible and adaptable enough. This flexibility and adaptability applies to the stabilisation role of fiscal policy, labour market features as well as the framework for conducting business. To achieve further progress in these areas, the Czech Republic needs not only to consolidate its public finance system, but to further deepen its structural reforms, too.

The CNB’s recommendation for relatively fast adoption of the euro was based on practical considerations. In practice, joining the euro area will not change things all that much. The economy has fully open goods and financial markets and has had nearly the same nominal exchange rate for many years. Euro adoption would only fix this exchange rate permanently. There is a strong trade orientation towards the EU and deep integration of local manufacturers with the euro area. Though the level of the traditionally measured euroisation of the economy is very low, many Czech-based companies invoice each other in euro even in domestic trade. Adoption of the euro would thus not change much the environment in which companies operate.

As far as ERM2 is concerned, the CNB views it as a gateway to adoption of the euro. The CNB therefore recommended the government to enter EMR2 only after it is sure that adequate conditions for joining the euro within a short period of time (two plus something years, with the assessment period probably less than two years) have been secured, including a sound fiscal policy framework. The CNB also recommends that government keep the koruna outside ERM2 after joining the EU in May 2004 and evaluate the nation’s preparedness for adoption of the euro regularly each year. The CNB prefers to continue with IT in the period before joining the euro area. A two-year period of joint operation under IT and ERM2 will surely be a challenge, though for a limited period of time and under certain circumstances it should be manageable. I will try to present my personal view of these circumstances at the end of the paper.

3. The Tightness of the Constraints

The convergence criteria combination forms a constraint with certain consequences for the compatibility of the IT regime with the exchange rate convergence criterion. In this part, I investigate the extent of the constraint, its dependence on long-term and cyclical factors, and the potential consequences. First, I examine the potential conflict between the exchange rate and inflation criterion, focusing on long-term factors of the equilibrium appreciation of the real exchange rate. Second, I analyse the potential conflict between the two criteria stemming from cyclical factors. The cyclical factors seem to have been somewhat disregarded in the literature, although they are most relevant in my view.

3.1 Long-Term Equilibrium Real Appreciation

The vast majority of papers dealing with the potential conflict between the inflation and the exchange rate convergence criteria focus on trend real exchange rate appreciation and the Balassa–Samuelson (BSE) effect in particular. Some authors building on the BSE (e.g. Natalucci and Ravenna, 2003) argue that a trade-off between inflation and exchange rate stability may arise. However, these authors take as a baseline the symmetric ±2.25% band. This is clearly irrelevant, since the EC or the ECB would hardly care about appreciation of the exchange rate or revaluation of central parity (only competitive devaluations are to be

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8 The experience of Hungary with an ERM2-like regime provides a rationale for such an approach.
prevented). Even if we ignore some more flexible interpretations and bet on the asymmetric fluctuation band of +2.25% and -15%, simultaneous achievement of inflation and exchange rate criteria is possible. The relevant issue is the cost of the achievement.

While earlier analyses estimated the BSE to be relatively large, the estimates of more recent studies reveal a smaller effect. As Mihaljek (2002) points out, earlier studies often neglected productivity growth in the non-tradable sector. Moreover, positive productivity growth in the tradable sector has also been estimated in the euro area, lessening the real appreciation tendency. Flek, Marková and Podpiera (2002) find the impact of the BSE for the Czech economy to be negligible. Nevertheless, only part of the trend real appreciation can be attributed to the productivity differential effect. First, a trend of a diminishing risk premium in the real version of the uncovered interest parity relation may translate into trend appreciation. Second, other effects such as improvements with regard to the terms of trade, price deregulation and initial undervaluation of transition country currencies also tend to generate trend real appreciation. Thus the certain, though not necessarily large, pressures for real appreciation can be viewed as a natural phenomenon.

In addition, the existence of a conflict is strongly conditional upon the strength of potential growth in the NMSs. A conflict would emerge only if the growth in the NMSs picked up to very high and persistent levels compared to the current euro area members. And second, the BSE, which dominates thinking about convergence dynamics, may be a rather poor description of the current state of affairs in transitional economies. Turek (2002), with reference to Dietz (1999), questions the validity of the BSE logic based on comparative advantages, homogeneity of tradables, clear frontiers between tradables and non-tradables, dominance of non-tradables by services and other features of traditional international trade theory. The link between productivity and the price level may be rather weak, owing to the high transaction costs of producers in transitional countries trying to sell their production in foreign mature markets dominated by well established companies and global multinationals. Producers from transitional countries are often forced to sell products with a low level of sophistication for low prices close to their low costs or to engage in low-income outward processing traffic. That translates into low wages and prices in transitional economies, no matter whether or not producers have low or high productivity in their production leagues. Under these assumptions, growth in productivity does not itself guarantee an increase in incomes, wages and prices (and thus in the real value of domestic currencies). This can be delivered only via more sophisticated, specialised and diversified production sold for higher prices in international markets. And there is no easy way to achieve that. It is necessary to create a business-supportive environment with a modern institutional and operational framework.

An additional complicating factor that may cool down expectations of fast real appreciation is the phenomenon of the “two-speed” economy. This term describes the situation where there are two different sectors in the economy, the first one comprising well-performing companies usually in foreign ownership (the “new” sector) and the second comprising traditional companies owned often by local investors and the government (the “old” sector). The real appreciation trend is in line with the performance of the foreign sector and we may say that it is caused by it (through capital inflows to the sector and the export capability of the sector). In theory, the old sector firms should adjust to the new sector ones by increasing their productivity, and those that are not able to do so should leave the market. In reality, it is extremely difficult for many old sector firms to increase their productivity and lower their costs. Initially, they were not forced to leave the market, and through the banking system and government bailouts they burdened the relatively efficient sector with extra costs. But now they are one-by-one being forced out of the market or in some cases towards the new sector. This creates questions such as “Should it lead to faster real appreciation?”.
single answer, since there is also no single optimal trend in the real exchange rate. We can find reasonable equilibrium solutions for both slower and faster real appreciation. The problem is that the latter solution, which may be more suitable from the long-run perspective (since it should lead to an economy with more technologically advanced production), may be practically difficult to achieve without exposing the economy to significant risks. Given the complexity of the economy-wide restructuring, the risks seem to be so high that a cautious approach by the central banks to estimation of the equilibrium real exchange rate appreciation trend can only be recommended.

The limited scope for a BS-like effect due to the low growth of total productivity combined with the Dietz–Turek logic provide arguments against the assumption of large real exchange rate appreciation during ERM2. However, relying on this combination would create a “fear of success”. This fear is based on the assumption that if for some reason the Czech economy switches to GDP growth rates much higher than the current ones, conflicts between euro area accession/membership and convergence may emerge. A huge success would stimulate credit creation and domestic demand to such an extent that an overheating of the economy would be difficult to avoid. In addition, attempts to front-load the expected success may initiate asset market bubbles and potentially threaten the stability of the financial sector. The problem will not easily disappear even after adoption of the euro. It is natural for a faster-growing converging economy in a monetary union to have a higher inflation rate than a mature economy. If these two economies share the same interest rate, the real interest rate in the converging one will naturally be lower. This may have some implications. Of course, the converging economy will also have a currency that appreciates in real terms. The potential for overheating given by the low level of real interest rates in the economy with the fast growth would thus be limited by the current account implications of the real exchange rate appreciation. The offsetting properties may nevertheless be far from perfect, creating the risk of a boom in domestic demand at the expense of an external deficit. The risk of macroeconomic and financial stability may thus emerge.

3.2 Cyclical Sources of Inflation – The Exchange Rate Conflict

In this part I focus on cyclical aspects of the incompatibility between inflation and the exchange rate. These are strengthened by the rather specific situation of the EU entrants’ economies. This can be described as follows: industrially oriented economies with a large proportion of “old” sectors producing relatively non-sophisticated products and needing further restructuring; economies exposed to globalisation, owned to a large extent by foreigners and facing fierce competition from the East; EU economies with generous social systems, ageing populations and relatively low levels of GDP per capita; economies with huge potential but with relatively low wage and price levels and thus different relative prices compared to the overall EU standards. A situation like this is really specific and creates conditions for very complicated dynamics with indeterminacy and multiple-equilibria solutions. In an environment like this, the level of cyclical synchronisation really matters.

ERM2 and the convergence criteria are strongly asymmetric. The system thus poorly simulates the conditions of the euro area and exposes economies to risks that are not natural for the monetary union. Owing to the need to implement asymmetry into policy reaction functions, unfavourable dynamics of the economy may be initiated. This particular danger is

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9 Relatively fast real appreciation would lead to faster restructuring, with some traditional industries quickly dying. If new productive capacities were not established quickly enough, it would result in slow economic growth. Slow growth would worsen the fiscal situation and ultimately the reputation of the economy could become fundamentally undermined. In a situation like this, a crisis of confidence can easily transform into a severe financial crisis.
reinforced by a lack of anti-cyclical policy measures compatible with the whole process, which requires squeezing a set of crucial macroeconomic variables into a very narrow range at a particular point in time\textsuperscript{10}. In particular, an exchange rate appreciation boosted by the asymmetry of the regime may create conditions for asset market instability and intertemporal disequilibria. The effect of the squeeze may come to light only after joining the euro area.

In this respect, one of the major problems is that the whole process founded on the convergence criteria ignores the business cycle and the impact of policies on it. One of the papers that has frequently been cited is Natalucci and Ravenna (2003). They explain how the real exchange rate appreciation trend shifts the output gap/inflation variance trade-off and why the fixed exchange rate is more costly in terms of output gap and inflation volatility over the business cycle. They conclude that the requirement of membership in ERM2 and the convergence criteria constrain the policy choice while providing no additional benefits to countries with a credible commitment to joining the euro. Relaxing the exchange rate requirements may provide some benefits, especially a lowering of volatility in terms of both the inflation rate and the output gap.

4. Monetary Policy Autonomy and Interest Rate Constraints

This section will contribute to the existing literature by discussing the notion of the role of the term structure of interest rates in the exchange rate-inflation tension when rates are constrained by euro area entry. Furthermore, the conflict between the asymmetric convergence criteria and IT with a symmetric reaction function will be addressed. The topic of the scope for monetary policy autonomy in the NMSs is not new. It was addressed long ago by Svensson (1994). However, the success of IT in the last 10 years brings a new horizon into the debate. The current question is: How to pursue stabilising monetary policy with IT features with an explicit central parity and an asymmetric band? Svensson (1994) explains how exchange rate bands give central banks some monetary policy independence via some control over the domestic interest rate even under a fixed exchange rate and free capital mobility. Control is exercised by allowing exchange rate movements within the band which result in an expected change relative to the central parity which is consistent with the desired level of domestic interest rates. However, the control is limited to short-term interest rates. I will show that in the real world there are forces that allow limited control over medium- and long-term interest rates. The limitation of Svensson’s work and similar work of the period is that it focuses on interest rate smoothing as the purpose of monetary policy. It is therefore necessary to take the concept of monetary policy in the target zone much further.

4.1 Monetary Policy Considerations

For a central bank targeting an exchange rate in parallel with inflation, the interest rate channel may remain the only effective instrument for absorbing shocks. Hence, in pure theory, domestic policy interest rates and consequently long-term interest rates will have to adjust to a shock more aggressively. However, since future short-term interest rates are to be determined in the euro area, domestic control of long-term interest rates will have diminished through the term structure and UIP. The scope for the interest rate channel will thus be limited and dependent on the degree of fixity of the exchange rate. Therefore, just before euro area entry (i.e. into ERM2), the stabilisation of an idiosyncratic shock may require an even larger

\textsuperscript{10} Of course, the proponents of ERM2 emphasise the importance of the regime as a kind of simulation of the monetary union environment and a test of the preparedness of a country for living in the monetary union. Having a fixed exchange rate, ECB interest rates, low budget deficits and low inflation is what the country has to expect as a permanent outcome of the process. Nevertheless, the lack of a country-specific inflation criterion and exchange rate risk makes the situation entirely different from the one in the monetary union.
adjustment of domestic monetary policy interest rates in order to somehow affect medium- and long-term interest rates, which then guide inflation to the target. Given the effect of policy interest rates on the nominal exchange rate, monetary policy considerations may trigger exchange rate instability. The exchange rate constraint, designed to promote exchange rate stability, triggers the need for foreign exchange interventions, since interest rate changes induce volatility of foreign exchange capital flows.

Monetary policy will thus be more constrained than sometimes believed. The Czech National Bank in its Quarterly Projection Model assumes the key role of “long-term” interest rates in the transmission mechanism. These long-term interest rates are associated with maturities of between one and two years, which reflects the structure of new loans extended by the local banking sector. Owing to the logic of the term structure and UIP, these interest rates will be determined more and more in the euro area as the country gets close to the assumed date of entry. The strength of determination will be a function of the credibility of the central parity as the final conversion rate. In other words, unless there is major uncertainty as to the final conversion rate, the interest rate component of the monetary policy conditions will be set by the euro area conditions a full two years before adopting the euro. This will also apply for short-term interest rates, especially in the final year before euro adoption. This will constrain monetary policy even further.

How strong was this kind of constraint for the current euro area members during ERM2? Figure 6 plots the 1Y interest rate differential against DEM for nine countries for the period of 24 months before adopting the euro. The results indicate a relatively large differential for some countries, which persisted even half a year before the final conversion. Does it indicate the existence of large scope for an autonomous interest rate policy in NMSs? Probably not much, since it clearly concerned the countries with relatively high inflation during the 1990s and thus low policy credibility. Given the anti-inflation credibility of the current NMSs and the assumption of equilibrium real exchange rate appreciation, the scope may be small.

Figure 6: Interest rate differentials prior to euro adoption

![Figure 6: Interest rate differentials prior to euro adoption](image)

Source: Bloomberg

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11 This is in line with some empirical findings. Fratzcher (2002), after studying the dependence of the short-term interest rates of various countries on the interest rates of the US and the euro area, concludes that a monetary authority may not enjoy much monetary autonomy even under a more flexible exchange rate regime if it lacks credibility or if the economy is highly integrated with a large economy such as the US or the euro area. Though the CNB may have enough credibility, the level of integration is unambiguously high.
Can fiscal policy help monetary policy? Since monetary policy faces a trade-off between inflation and exchange rate stabilisation, Grauwe and Schnabl (2004) suggest that it is fiscal policy that might help to cut inflation. Restrictive fiscal policy in ERM2 is viewed as a desired measure and a remedy for making all the convergence criteria compatible with one another. It directs both inflation and budget deficits to targets while not hinging on nominal appreciation. It really may seem that the fiscal constraint given by the fiscal convergence criteria resolves the tension between the inflation and exchange rate convergence criteria for the ERM2 period and guides the economy to meeting all the convergence criteria.

We can indeed expect the larger NMSs to enter ERM2 during downward adjustment of public finance deficits and thus with a relatively restrictive fiscal stance. To the extent that this kind of fiscal consolidation will have the potential to reduce domestic demand, this should help the central bank to tame the potential inflation pressures (if any) and to enhance the credibility of the devaluation-proof exchange rate policy. With fiscal policy predetermined like this, we are back with the question of which policy will then be assigned to stabilise the cycle.

It would be naive to believe that fiscal policy will solve all the issues concerning macroeconomic dynamics under improperly constrained monetary policy. Nevertheless, combined with a flexible interpretation of the exchange rate criterion and deliberately maintained uncertainty concerning the final conversion rate this may create scope for interest rate policy at least partially compatible with IT. If the authorities view this option as too risky, they will have to resume a policy oriented towards the exchange rate stability provided by the credibility of the central parity. This leads to a clear conclusion. The important way to increase the potential for domestic interest rate policy compatible with the IT regime is to secure some uncertainty concerning the final conversion rate and the scope for exchange rate fluctuations within the ±15% band. As a by-product, the stabilisation role of the central parity, which is said to be the main advantage of ERM2, will be reduced.

4.2 Asymmetric Convergence Criteria and IT with a Symmetric Reaction Function

There is an important constraint associated with the loss and reaction functions of the central bank. Besides an asymmetric exchange rate criterion, there is also an asymmetric inflation criterion. It may have been defined under assumption that the ERM2 entrants will be exposed to excessive inflation pressures and the policies will help them to tame these pressures. Nevertheless, let us assume that the inflation of a country entering ERM2 is in line with the inflation criterion. Fiscal tightening will be a problem if there is a cyclical downturn when entering ERM2. This applies to the extent that fiscal consolidation has a negative impact on domestic demand. In a situation like this, IT with a symmetric reaction function tends to ease interest rates in order to shift inflation to the target, provided that its forecast points to the probability of excessively low inflation. As already pointed out, the monetary policy constraint calls for a more aggressive interest rate cut. Depreciation of the nominal exchange rate is induced and incompatibility between the inflation and exchange rate criteria may arise again. Thus, the fiscal convergence criterion may not be automatically in line with the other criteria. Fiscal policy may not serve as a remedy, but, on the contrary, under certain circumstances it may reinforce the conflict between the inflation and exchange rate criteria. While asymmetric convergence criteria do not disqualify low inflation and appreciation, they disqualify substantial depreciation. Nevertheless, the symmetric reaction function of the central bank tends to depreciate the nominal exchange rate and create upward pressure on

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12 There is an assumption that the Czech Republic will join ERM2 during a period of credible fiscal consolidation, with the public sector deficit declining much below the 3% level only during ERM2.
inflation as a consequence of the fiscal tightening and subsequent disinflation pressures.

On the one hand, the asymmetric exchange rate convergence criterion, accommodating for and accounting for the trend nominal appreciation, was engineered. On the other hand, the negative demand shock stemming from the fiscal constraint induced by the fiscal convergence criterion was not accounted for. The symmetry in the reaction function triggers this conflict. Therefore, an asymmetric reaction function in line with the asymmetric convergence criteria looks like a natural solution for the IT regime in ERM2. It supports fulfilment of both the inflation and exchange rate convergence criteria by relaxing the tension between them when the economy is subject to cyclical adjustment. The corollary to this is the risk of excessive exchange rate appreciation. The loss and reaction functions of the central bank in the pre-euro phase are thus forced to be modified in an asymmetric way that abstracts from the need to minimise some combination of output gap and inflation volatility.

5. Financial Markets Constraints and Strategies for ERM2

In this section I will analyse the constraints stemming from the uncovered interest rate parity (UIP) condition, taking into account the experience of the current euro area members during the ERM2 period. The use of UIP is highly relevant, because once a country is in ERM2 and approaching €-Day, the risk premium will be approaching zero, exchange rate expectations will be influenced by the central parity and interest rates will be converging to the euro area levels. Let us have a look at the individual components of UIP first.

5.1 Interest Rate Convergence and UIP

One of the specific features of the Czech economy, relative to some other NMSs’ experience, is the gradual convergence of interest rates over the past several years. Figure 7 depicts the interest rate differentials of CZK against EUR for 3M and 1Y maturities. The final sharp fall of the differentials in 2002 is connected with the strong exchange rate appreciation in this period and the associated favourable inflation outlook. During this period, local rates even fell below the euro area level. In some present euro area countries, such convergence was achieved just before adopting the euro (see Figure 6).

Figure 7: Nominal interest rate differential – the Czech Republic vs. the euro area

![Figure 7: Nominal interest rate differential – the Czech Republic vs. the euro area](image)

Source: CNB
The year-on-year changes in the CZK/EUR exchange rate are depicted in Figure 8. The expected changes are important for UIP. I use expectations obtained from a survey among analysts available since May 1999. This particular method has some drawbacks. In particular, the analysts are not those who decide on trading strategies. Unfortunately, we do not have an alternative method such as data from option contracts at our disposal. Besides the expected changes I show the true changes for ex post evaluation. The graph shows that the analysts were expecting depreciation up to 2001 (to comply with UIP the data are shifted one year backwards), while in reality the koruna appreciated. Thereafter the analysts expected appreciation, while depreciation was the reality. Recently the expectations have indicated no change.

*Figure 8: Exchange rate changes*

![CZK/EUR change 1Y ahead (%)](chart)

Source: CNB

Now we can derive the ex ante as well as ex post risk premium from the UIP equation (Figure 9, left hand side of Figure 10). Thanks to the zero interest rate differential prevailing since 2000, recent shocks to the premium have to be associated with exchange rate changes. The ex post premium turned out rather volatile. The sharp increase reflects the unexpected swift appreciation during 2002 caused by expectations of large capital inflows and subsequent bandwagon-like dynamics. Subsequently, the ex post premium dropped to negative values associated with the unexpected depreciation. The ex ante approach based on expected exchange rate changes gives us a different story, as depicted by the ex ante risk premium in Figure 9 and all the UIP variables in Figure 10 (right hand side). First, the trajectory ex ante premium is relatively smooth. Second, it has moved to positive levels since 2002 due to expectations of gradual nominal appreciation in the pre-euro period, which are still in place.
Now we can compare the Czech results with those for nine selected members of the euro area in the 24 months before adopting the euro. Again, the UIP variables depicted in Figure 11 are calculated with the use of interest rates with 1Y maturities and exchange rates of the individual countries against DEM (EUR in 1999). We can see that none of these countries was living with a negative interest rate differential. All countries with the exception of France and Belgium saw their exchange rates depreciate during the period chosen (although the situation was different three to four years before adopting the euro). Ireland and Finland were outliers in the sense that they maintained a negative ex post risk premium for a rather long time. This reflects “unexpected” depreciation (or, more precisely, depreciation in excess of the interest rate differential). The other four countries kept relatively large interest rate differentials associated with some depreciation and a positive ex post risk premium. One can thus speculate that the lack of credibility led to depreciation expectations that did not materialise and that these expectations were rather persistent. France and Belgium kept their differentials close to zero, with some appreciation but also with a positive ex post risk premium.
premium. If we compare Figure 11 with the Czech experience in Figure 10 (left hand side), we can see that the Czech economy switched between the two alternatives as a result of an abrupt change in market sentiment. Up to 2001 it was viewed as a loser. Suddenly, investors began to view it as an attractive country again. Thanks to very low inflation, appreciation expectations are now in place. Any of the two situations may prevail during ERM2. The one that ultimately dominates will be to a large extent a function of perceived progress in real convergence and anti-inflation credibility of the central bank.

**Figure 11: Uncovered interest rate parity for current euro area members**

<table>
<thead>
<tr>
<th>Country</th>
<th>Ex. Rate Change</th>
<th>Differential</th>
<th>Ex Post Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ireland</td>
<td>-6</td>
<td>-4</td>
<td>0</td>
</tr>
<tr>
<td>Finland</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Greece</td>
<td>-2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Italy</td>
<td>-2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Portugal</td>
<td>-0.5</td>
<td>0</td>
<td>0.5</td>
</tr>
<tr>
<td>Spain</td>
<td>-0.5</td>
<td>0</td>
<td>0.5</td>
</tr>
<tr>
<td>France</td>
<td>-1</td>
<td>-0.5</td>
<td>0</td>
</tr>
<tr>
<td>Belgium</td>
<td>-0.2</td>
<td>-0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Source: Bloomberg and IMF-IFS

### 5.2 Exchange Rate Strategies for ERM2

This section will present three alternative strategies regarding the initial setting of the central parity and subsequent dynamics in the UIP framework. The approach will be rather
descriptive and will abstract from a large number of “details”. There are numerous trajectories compatible with each strategy; I will always concentrate only on the two selected. The individual pictures of the UIP variables partially build on the current macroeconomic dynamics of the Czech economy. This kind of dynamics is projected into the future. Some readers may be surprised by the assumption of a zero or even negative interest rate differential. However, this has been the recent reality of the Czech economy and one that can easily repeat itself even in ERM2. The experience of the current euro area members indicates that keeping interest rates below the euro area level may be exceptional. Under this assumption, the interest rate and risk premium curves would be shifted up relative to the scenarios shown below.

The three strategies will be depicted in Figures 12 to 14. The upper part will always describe the trajectory of the nominal exchange rate in ERM2 (a decline being a domestic currency appreciation). The lower part will then capture the accompanying trajectories of UIP variables in the “ideal” world ($i$ is the domestic interest rate, $i^*$ is the foreign interest rate, $e^{-\epsilon}$ is the expected depreciation of the domestic currency, and $\sigma$ stands for the risk premium; the relation is $i = e^{-\epsilon} + i^* + \sigma$). The euro area interest rates are assumed to be fixed.

I. Central parity weaker than the actual exchange rate

The first potential strategy is to set the central parity at a weaker level compared to the actual exchange rate just before entering ERM2. This can be explained by the conviction that the domestic currency is overvalued. This will create initial depreciation expectations. In Figure 12 I plot two alternative solutions. The one on the left hand side assumes maintaining the initial central parity up to €-day. The exchange rate will be in the appreciation zone (stronger than the central parity), depreciating steadily over time. Of course, if the central parity is credible, the adjustment may take place in jumps rather than through a smooth process as depicted in the figure. Domestic interest rates will converge to the euro area levels from above. One can just speculate that this is what Finland and Ireland did (see Figure 11). Also, some other countries (Italy, Spain, Portugal) exhibit a similar pattern.

The solution on the right hand side can be at least partially referred to as the “Greek” approach. At some point in time the central parity will lose credibility and the initial devaluation expectations will be reversed. The interest rates may drop sharply, even below €-levels, and just before €-day the central parity will be re-valued.

Owing to the asymmetric nature of the exchange rate criterion, this strategy is rather attractive. There is a widely shared opinion that it is in the interests of NMSs to enter ERM2 with a relatively weak central rate so as to limit the risk of devaluation pressures. In reality, it is a risky strategy to join ERM2 with a central rate significantly different from the spot rate. Otherwise the country will face the risk of overshooting the inflation criterion. The strategy is thus suitable for an initial situation characteristic of excessively low inflation.

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13 Assumptions such as credible fiscal consolidation and a strong political commitment to euro adoption at some future point are retained.
14 This was the case of Greece, which entered ERM2 in March 1998 with an upfront 12.3% devaluation of its central parity. Despite some depreciation, the exchange rate moved constantly in the appreciation part of the band. Consequently, the authorities initiated a 3.5% revaluation of the central parity nearly one year before joining the euro area.
II. Central parity equal to the actual exchange rate

The second option is to set the central parity at a level equal to the actual exchange rate just before entering ERM2. This has the potential to create initial appreciation expectations to the extent that agents believe in an equilibrium real appreciation, and in an undervaluation of the spot exchange rate. In Figure 13 I again plot two alternative solutions. The one on the left hand side assumes that the agents initially view the central parity as partially credible, though the exchange rate tends to appreciate. This creates depreciation expectations. Nevertheless, at some point in time the central parity will lose credibility and the initial expectations will be reversed. Again, just before €-day the central parity will be re-valued, i.e. the conversion rate will be set at a level stronger than the initial central parity. The changes in exchange rate expectations and exchange rate trajectory are compatible with swings in the risk premium and policy interest rates.

The solution on the right hand side assumes the ability to maintain the initial central parity up to €-day. The exchange rate will move in the appreciation zone permanently. The credibility of the central parity will deliver permanent expectations of depreciation. Domestic interest rates will converge to the euro area levels from above. The interest rate moves may even quash speculation on a revaluation of the central parity. The credibility of the central parity may also deliver stability for the risk premium. The strategy is thus suitable for a initial
situation characteristic of a need to reduce inflationary expectations somewhat.

**Figure 13: The solutions for a central parity equal to the actual exchange ate**

III. **Central parity stronger than the actual exchange rate**

The third option is to set the central parity at a level stronger than the actual exchange rate so as to allow for equilibrium real exchange rate appreciation. This has the potential to create initial appreciation expectations to the extent that agents believe that the central parity is credible. In Figure 14 I plot two alternative solutions for this particular strategy. The one on the left hand side assumes that the exchange rate tends to appreciate towards the central parity. The exchange rate will move in the depreciation zone (relative to the central parity) permanently. In line with the declining rate of expected appreciation and risk premium the domestic interest rate will converge to the euro area levels from below. The strategy may thus be suitable for an initial situation characteristic of relatively high inflationary expectations linked, for example, to a recent history of exchange rate depreciation or a perception that the exchange rate is undervalued.

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15 Looking at Figure 11, only France and Belgium can be assigned to a strategy similar to this.

16 This particular description is not too realistic. The exchange rate would normally jump to levels close to the central parity immediately.
On the right hand side I plot the situation where the central parity is gradually losing credibility. Initially the exchange rate appreciates in line with appreciation expectations. However, at some point in time the initial expectations will be reversed, because the agents will reassess their view of the final conversion rate. Before the assumed €-day the central parity has to be devalued somewhat. However, devaluation is a violation of the exchange rate criterion. The changes in exchange rate expectations and the exchange rate trajectory are again compatible with swings in the risk premium and policy interest rates. The solution may be applied in a situation that is characteristic of falling competitiveness due to excessive appreciation or to pressures to devalue if the parity chosen was too strong. Given that, this particular solution means that the euro area membership is postponed.

The strategy chosen will primarily be a function of the state of the economy and its cyclical position just before entering ERM2. These factors will then determine expectations for the ERM2 period, which will in turn influence macroeconomic dynamics and the initial conditions for functioning in the euro area. Any of these strategies can be compatible with meeting the convergence criteria, but these represent clear quantitative restrictions.

As far as the issue of monetary policy autonomy is concerned, the experience of the

17 By autonomy I mean the ability to influence interest rates with maturities of one year or longer.
current euro area members, as well as the description of the available strategies, indicates that some scope exists. This scope is limited and subject to a declining function of anti-inflation credibility and credibility of the central parity as the final conversion rate. This is positive news from the euro adoption perspective, but negative news from the stabilisation policy perspective. Anyway, it may be difficult to achieve significant changes in the relevant interest rates without associated changes in exchange rate expectations and risk premia.

6. What Kind of IT in ERM2?

In its strategy the Czech National Bank announced the intention to pursue modified IT in ERM2. In this section I investigate the arguments for and against maintaining IT in ERM2 and the ways in which IT can be applied in ERM2.

There is very limited experience with the coexistence of IT and ERM. A strategy like this was used by Spain and Finland, which switched to IT a few years before adopting the euro. However, IT was pursued in rather a formal way, as both countries actively used interest rates and exchange market interventions to maintain exchange rate stability. Besides that, sound fiscal policy was an important factor behind the success. It helped to enhance credibility and contain inflation pressures. Nevertheless, the experience of these countries has some value. Schadler et al. (2004) point out that current inflation rates in the NMSs are close to those of the euro area members in the mid-1990s. If parities weaker than current market rates were seen as a credible conversion rate, it would provide scope for holding interest rates above the euro area level without bearing the risk of invoking excessive appreciation of the currency in a Greece-like manner. However, with expectations of continuing real exchange rate appreciation, the credibility of such a solution is at question.

6.1 The Case Against Dual Targeting

One of the bluntest warnings against combining IT and ERM2 has been sent out by Buiter (2004). He argues that the combination of a nominal exchange rate target zone with a “fixed but adjustable” central parity (such as ERM2) and an inflation target is possibly the worst exchange rate regime ever designed. He proposes that as soon as fiscal sustainability and inflation convergence are achieved, a date and a rate for the irrevocable conversion should be announced. The “date and rate” will provide the appropriate focal point for private sector expectations as regards the future behaviour of the nominal exchange rate. According to Buiter, there are two reasonable alternatives. Both involve setting a date and a rate for the irrevocable conversion. The first is to have a currency board. The second is to have a free float and continuing IT. Unfortunately, the second option seems not to be available, owing to the incompatibility of a free float with ERM2. However, in my opinion, some features of a free float may be compatible and even available. This delivers a third option that will be described later on.

All this indicates that monetary policy (other than strict exchange rate targeting) during the ERM2 period will need to be at least a specific hybrid of inflation and exchange rate targeting. Dual targeting, when neither target is subordinate unless in conflict with the

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18 The Finnish case is of high relevance to the Czech Republic. Finland adopted IT in 1993 and entered ERM2 at the end of 1996, the final assessment being made in spring 1998. This particular approach corresponds to the idea of spending the minimum time in ERM2.

19 Buiter (2004) points out that ERM was not a credible commitment device. The 11 countries that merged their monetary sovereignty in the euro area on 1 January 1999 managed to get to their joint destinations together only because they had been given a firm date and a firm rate for the start of EMU. This provided the financial markets (and forward-looking goods markets and factor markets) with a clear focal point to anchor the nominal exchange rate path during the traverse to EMU.
convergence criteria, does not seem favourable. If the market exchange rate approached the weaker limit of the fluctuation band, monetary policy would give primacy to keeping the exchange rate within the band. In a regime like this, risk premia would potentially be subject to sizeable volatility. The very strict limit on the weaker side may thus invite speculators to test the central bank’s ability to withstand the pressures. “Pure” IT is also hardly conceivable if the convergence criteria are to be fulfilled. As argued before, the symmetric reaction function natural for the IT regime may trigger a conflict with the exchange rate criterion. Given that, an explicitly asymmetric reaction function may be the only solution.

Some therefore believe that polar regimes, in which one target is subordinate to the other unless in conflict with the convergence criteria, may be preferable to an intermediate regime with symmetric dual targets, with pure IT or with no rule-based explicit target. Which of the two polar regimes is more appropriate for the current inflation targeters in ERM2 is at question. The arguments for the inflation targeting polar regime in ERM2 are (i) guidance of inflation expectations and support of the inflation criterion, and (ii) no dramatic changes of monetary regime with ERM2 entry. Unfortunately, the inflation targeting polar regime has the same underlying feature as pure IT – a propensity to being tested by speculators. On the other hand, the arguments for the exchange rate targeting polar regime in ERM2 could be defined as (i) guidance of exchange rate expectations and exchange rate convergence criterion support, (ii) greater vulnerability of the exchange rate than inflation to abrupt changes, (iii) the availability of “rescue” measures other than the exchange rate to squeeze inflation if needed, and (iv) a guarantee of securing low inflation via exchange rate stability, if inflation is low when entering ERM2. Unfortunately, the adoption of the exchange rate targeting polar regime in ERM2 makes it impossible to avoid a double shift between regimes and the associated risks. It might thus be more appropriate to announce a shift to the policy of strict exchange rate targeting based on the credibility of the central parity.

6.2 A Case for Dual Targeting?

My third option is partially a case for dual targeting that is not far from Buiter’s (2004) date and rate requirement. I argue that there is a certain possibility for avoiding the unsuitable procedure described in Section 1. The option is to continue with IT utilising the limited scope for interest policy described in Sections 4 and 5. This will have to be accompanied by careful and flexible application of ERM2 features.

Such a strategy should be based on entering ERM2 only for the shortest possible period, with low inflation and subdued inflation pressures, with a clearly sustainable external balance, with sound fiscal policy and a credible programme for long-term fiscal consolidation, with a central parity perceived close to the equilibrium level, with a flexible interpretation of the exchange rate criterion, and with a clear strategy for interventions backed by a high level of exchange reserves. Together, these ingredients would tame the potential inflation pressures and deliver credibility of exchange rate policy focusing on cooling down expectations of the domestic currency depreciation.

The interpretation of the exchange rate criterion is the crucial aspect of the strategy. Providing that the “severe tensions” conditions are assessed by taking into account indicators such as the side, timing, size and duration of deviations, the size of interventions or interest rate hikes, it would be desirable to approach the exchange rate criterion with maximum flexibility. A more flexible approach offering a soft limit not only on the stronger side would be helpful in minimising the risk of speculative attacks. At the same time, an approach like this can be justified only after all the necessary steps have been taken to prevent depreciation.

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20 Hungary’s experience with IT, which has simultaneously operated an exchange rate band, has not been very promising, as both inflation and exchange rate have gone a little out of control.
pressures of a fundamental nature. Increased flexibility of the economy, and especially the labour market, would also be very helpful. However, if the authorities find the flexible interpretation of the exchange rate criterion too risky, a regime based on exchange rate targeting is the solution.

One of the open questions is the commitment to the central parity as a final conversion rate. Normally, maximum credibility of the central parity as the future conversion rate is regarded as essential. On the other hand, a lack of credibility (even a deliberate one) has the potential to increase the scope for interest rate policy. Nevertheless, the proposition to induce the exchange rate uncertainty deliberately in the ERM2 period is really a tricky one. The other issue is the strategy for interventions. One option is to intervene in a systematic manner with the aim of smoothing even short-term volatility. The other is to allow for higher short-term volatility and act only against the effects of groundless expectations. These are really controversial issues that should be subject to further discussion.

**Conclusion**

The demands on countries wishing to adopt the euro in the future are skewed in a way that “punishes” those pursuing IT and a floating exchange rate. The paper focuses on how tight a constraint are the convergence criteria for the conduct of IT or a policy similar to it. This particular question is relevant only to those EU member countries staying outside the euro area which are currently operating under flexible exchange rate arrangements. For these countries, it will be very difficult to avoid a double shift in monetary policy, unless switching to a currency board arrangement. As a matter of fact, to meet the convergence criteria, they are “pressured” to give up IT, switch to exchange rate targeting and again adopt a regime similar to IT after joining the euro area. Nevertheless, some of the NMSs have announced the intention to continue with their current policies up to euro adoption. With this in mind, the conditions for using IT as an independent anti-cyclical monetary policy after joining ERM2 are defined. The approach applied is rather informal and builds on potential financial market reactions to the existing policy constraints. The experience of the current euro area members during the ERM2 period is analysed and the implications of the term structure of interest rates and the uncovered interest rate parity condition are discussed.

Monetary policy in the NMSs will face a number of constraints defined by the convergence criteria during the pre-euro period. The exchange rate criterion should basically be understood as 2.25% on the weaker side and 15% on the stronger side. In addition, going beyond the 2.25% limit on the weaker side does not automatically mean a violation of the criterion. There is thus some room for manoeuvre concerning the mix of interest and exchange rate policy; uncertainty remains as to the size of it. The ERM2 regime is another constraint that has hardly any value added. It does not have stabilising properties and its asymmetric construction makes it prone to testing by the foreign exchange markets. The probability of this is increased by the uncertainty of market participants as to the “fair” value of the currency, owing to the multiple-equilibria phenomenon, and by the potential conflict between exchange rate targets and the inflation criterion.

To assess the choices available, the consequences for the compatibility of the IT regime with the exchange rate convergence criterion are analysed by investigating the extent of the constraint, its dependence on long-term trends, and cyclical factors. It is argued that one of the major problems is that the whole process founded on the convergence criteria ignores the business cycle and the impact of policies on it. The loss and reaction functions are modified in a way that abstracts from the need to minimise some combination of output gap and inflation volatility. Owing to the need to implement asymmetry into policy reaction functions, unfavourable dynamics of the economy may be initiated. This particular danger is reinforced by a lack of anti-cyclical policy measures compatible with the whole process, which requires
squeezing a set of crucial macroeconomic variables into a very narrow range at a particular point in time. The effect of the squeeze may come to light only after joining the euro area.

In this environment, monetary policy will be more constrained than sometimes believed. Owing to the logic of the term structure and UIP, these interest rates will be determined more and more in the euro area as the country approaches the assumed date of entry. Some scope exists, but the anti-inflation credibility of the central bank and the credibility of the central parity as the final conversion rate will pose increasing limits. Given the anti-inflation credibility of the current NMSs and the assumption of equilibrium real exchange rate appreciation, the scope for an autonomous interest rate policy may thus be rather small. This applies even though there were relatively large interest rate differentials that persisted even half a year before the final conversion in some countries during their pre-euro period. In addition, it may be difficult to achieve significant changes in the relevant interest rates without associated changes in exchange rate expectations and the risk premium.

The other important factor is the conflict between the asymmetric convergence criteria and IT with a symmetric reaction function of the central bank. Therefore, an asymmetric reaction function in line with the asymmetric convergence criteria looks like a natural solution for the IT regime in ERM2. It supports fulfilment of both the inflation and exchange rate convergence criteria by relaxing the tension between them when the economy is subject to cyclical adjustment. However, the corollary to this is the risk of excessive exchange rate appreciation. The extent of the risk will also depend on strategies regarding the initial setting of the central parity. The strategy chosen will to a large extent be a function of the state of the economy and its cyclical position just before entering ERM2.

The last part of the paper deals with the compatibility of ERM2 with an inflation target. It is out of the question that monetary policy during the ERM2 period will need to adopt a specific hybrid of inflation and exchange rate targeting. Dual targeting, when neither target is subordinate unless in conflict with the convergence criteria, does not have major support in the literature. Polar regimes, in which one target is subordinate to the other unless in conflict with the convergence criteria, are believed to be more appropriate. However, there is an option for continuing with IT. Such a strategy requires meeting number of preconditions. Very flexible interpretation of the exchange rate criterion is the crucial aspect of the strategy. If the authorities find this flexible interpretation hard to accept, the exchange rate targeting may be the right solution.

References


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28


