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Convergence Criteria - How Tight a Constraint under Inflation Targeting?

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Convergence Criteria – How Tight a Constraint under Inflation Targeting?

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ABSTRACT

The paper focuses on how tight a constraint are convergence criteria for the conduct of inflation targeting. This particular question is relevant only for these EU member countries staying outside the euro area that are currently operating under flexible exchange rate arrangements. For these countries, it will be very difficult to avoid a double shift in monetary policy. To meet the convergence criteria, they are pressured to switch to exchange rate targeting and adopt regime similar to inflation targeting after joining the euro area again. For these that want to avoid the double shift, 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 markets reactions to the existing policy constraints. The experience of the current euro area members during the ERM2 period is analysed and implications 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 (NMS) on the euro adoption and ERM2 participation has recently shifted from shaping the positions into the questions of a more practical nature. Among those, suitable policies for meeting the convergence criteria before adopting the euro play a prominent role. Countries search for ways how to make the transition into ERM2 and later the euro as smooth as possible. This is a question relevant not just for the new EU entrants but for all the non-euro EU members that either are supposed to (Sweden) or might want to (UK, Denmark) enter the euro area.

Among these, there are five inflation targeters (UK, Sweden Czech Republic, Poland, Hungary) plus two non-IT floaters (Slovakia, Slovenia) that 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 also the main question I am trying to answer in this paper. It is natural that the question is relevant only for some of the EU member countries now staying outside the euro area. These are the countries currently operating under flexible exchange rate arrangements. One the contrary, the countries operating currency board will fare rather different challenges.

The issue has at least two levels. First, one can think about it as about a proper 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 to be relatively simple. One of the most important and easily observable characteristics of inflation targeting as a policy regime is that policy is formulated in an explicit numerical target for inflation. And this is what the inflation convergence criterion stands for – 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 lowest inflation is. Thus, even countries that have not applied IT in the past will, at least from the outside view, resemble some form of IT prior to the euro area entry. There is another reason, why having an explicit goal for inflation may be a proper strategy prior to euro area entry. The ECB has been practicing 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 reaching a specific rate of inflation may manifest important continuity if IT is practised before the euro area entry. This is, of course, even more relevant for the countries that have practised this strategy already for some time in the past.

If the regime choice is not the issue, the question on the 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 on how to examine the consistency between inflation and exchange rate convergence criteria. Égert and Kierenkowski (2003), Szapary (2001) or Buiter and Grafe (2002) use rather informal way of presenting the topic. Grauwe and Schnabl (2004) employ more formal partial equilibrium model. Mihaljek (2002) or Flek, Markova and Podpiera (2002) perform empirical analysis, while Natalucci and Ravenna (2003) investigate the issue by means of 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[1]. Moreover, there is the usual the lack-of-data problem with the new Member

[1] Apart from the Lucas critique, Natalucci and Ravenna (2003) disregard the impact of nominal exchange rate appreciation on the firms' profits that may transform to investment and later potential GDP growth. This

States. General equilibrium approach covers full scope of interrelationships and is thus particularly well-suited to explore the interaction 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 may accommodate appropriate and relevant assumptions, constraints and scenarios, although they are not well-suited for exploring general equilibrium consequences.

As indicated above, the goal of this paper is to provide an answer the question posed in the title, namely "how tight a constraint is the exchange rate criterion for the conduct of IT?". In addition to that, 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 on the process, the NMS are burdened with, if this process has been designed without having economics in mind. Given that the politics was a major force behind the design, it is more appropriate to analyze potential financial markets reactions to the policy constraints created. I will do this by analyzing the experience of the current euro area members during the ERM2 period and evaluating 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 on ERM2, they will be exposed to environment in which risk premium is approaching zero, exchange rate expectations are influenced to a large extent 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 exchange rate constraint is reviewed. In Section 2, the current state of nominal convergence is described and the Czech Republic position towards the euro adoption and ERM2 participation is presented. In Section 3, the tightness of constraints is assessed and subsequent Section 4 deals with monetary policy autonomy in ERM2. Section 5 then focuses on potential strategies for entering the ERM2 and implications of financial market mechanisms. Section 6 then concludes with the debate on the how to pursue IT in ERM2. The final section concludes together 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 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 fluctuation band of ±2.25 %

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".

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 the reasons for that deviation. A distinction is to be made between exchange rate movements above ±2.25 % upper margin and movements below the ±2.25 % lower margin.

Article 121 of the Treaty stipulates that both the European Commission (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 that based on the recommendation of the EC, judges upon whether a given country fulfils the necessary conditions for the adoption of a single currency[2].

As Égert and Kierzenkowski (2003) notice, the assessment practice of the EC in general has been different and much more explicit than that of the ECB (EMI). While the EC often refers to the ±2.25%, the ECB refrains from mentioning this band. In any case, the EC emphasizes the deviation exceeding ±2.25% will not automatically imply 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 high it is, and, most importantly, whether it occurs in the weaker or the stronger side of 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 from December 2003 reminds 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-a-vis the euro area and their evolution; 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 above the 2.25 % limit on the weaker side does not automatically mean the violation of the criterion, and at the same time, the possibility of the appreciation 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 the devaluation of the central parity and to ensure that the exchange rate will not be frequently well above the 2.25 % limit on the weaker side even despite interventions via interest rate hikes and exchange reserves sales.

There is thus a certain scope for manoeuvre concerning the mix of interest and exchange policy, the uncertainty remains as to the size of it. What is open is how the EC would assess the occasional breaches of the 2.25 % limit that are not of 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 the fundamental breaches from the non-fundamental ones. We know that the "severe tensions" conditions will be assessed by taking into account indicators like 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[3].

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[2] There is a substantial difference between the EC and the ECB responsibility. Albeit both the EC and the ECB are required to prepare a convergence report when a given country is analyzed 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 really live 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 European Central Bank 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 so easy to find a reference to smooth pasting, honeymoon effects and other desirable features that were discussed during the glorious days of ERM. Financial crises and 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 rather a complicated dynamics of modern financial markets. This paved the way for the understanding of the benefits of corner solutions (e.g. Fischer, 2001) in a form of either hard pegs or some rather flexible regimes. That's why most of the NMS want to minimize the length of ERM2 participation after they found that it would not be possible to avoid it at all. Unfortunately, the proponents of the European monetary integration in the EU institutions still pretend as if nothing happened and as we are not in 2004 but in 1994. That's where we stand now. Clearly, at the beginning of the 1990s IT could hardly be a viewed as a potential substitute for ERM2 due 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 of IT.

The position of the NMS' central banks towards ERM2 differs from the one of the Eurosystem or 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 the small NMS, ERM2 may not represent a *de facto* exchange rate regime shift. The 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 flexible and pragmatic policy based on slightly managed floating and a tailor-made communication strategy. ERM2 cannot be superior to it. In addition, ERM2 can hardly constitute the tool for stabilising nominal exchange rate. The width of the band ± 15 % cannot stabilize anything, intra-marginal interventions of the ECB are unlikely, and large-scale marginal intervention of the ECB cannot be guaranteed. Under such circumstances the agreed central parity in the narrow range

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pressures in the foreign exchange market (especially non-fundamental and expectations-driven ones) can mean allowing the exchange rate to change sharply and then adjust back with the support of accommodating and offsetting interest rate policy.

could be prone to testing by foreign exchange markets. The probability of this is increased by uncertainty of the market participant as to the "fair" value of currency due to the multiple-equilibria phenomenon, and potential conflict between exchange rate targets and inflation criterion. Paradoxically enough, the stabilising properties promised by the ERM2 proponents could easily be overcome by non-fundamental destabilising forces. In addition, a double-shift from inflation targeting that is close to the now prevailing monetary policy system in the euro area to a very different system and then back does not make sense. One of the key rules of monetary policy makers is "do not change the monetary policy regime that is working well". The shift from IT to a fixed exchange rate regime may really be risky. That is the main reason why the inflation targeters question the claims of the EU institutions regarding the process towards the euro. One of the key successes of the CNB policies based on flexible inflation targeting and floating exchange rate regime was the stabilization of the inflation as well as nominal interest rates on very low levels[4]. That would be extremely difficult to achieve with the fixed exchange rate in the environment of convergence trends, free movement of capital and unstable conditions in the world economy.

There are numerous papers highlighting the undesirable features of ERM2 regime (e.g. Lipschitz (2004) or Bubula and Otker-Robe (2003)[5]). A comprehensive description of risk embodied in the intermediate exchange rate regimes like ERM2 can be found in Begg et al. (2003), or Buiter (2004). I will stop 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 NMS 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 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 NMS 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 the 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 it specifies 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 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 environment for indeterminacy and multiple equilibria, if the state variables in question are expectational and non-predetermined. For most NMS it

[4] The Czech Republic used the interest rate channel in reaction to 2002 appreciation and subsequent slowdown of the world economy with the aim to support domestic demand. Despite external constraints already existing, monetary policy proved to be autonomous enough to achieve desired outcomes.

[5] Bubula and Otker-Robe (2003) document that during 1990-2001 the frequency of crisis under intermediate regimes was substantially higher than under polar regimes.

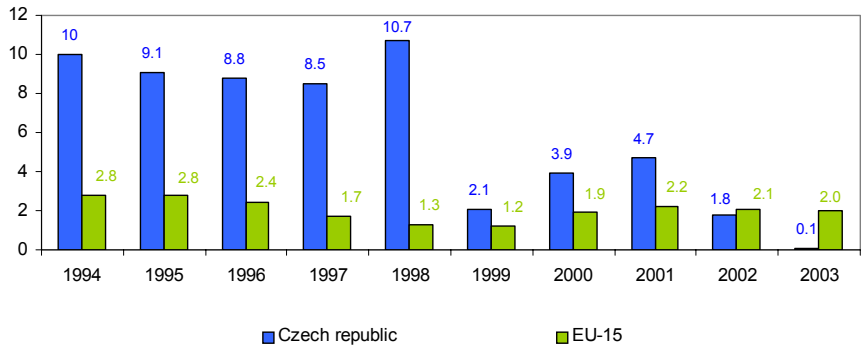
will bring unnecessary exposure to potentially destabilising international capital flows, to excessive exchange rate volatility and to the risk of financial instability. Buiter concludes that an enforced period in ERM purgatory represents a potentially costly investment without any return.

2. The Czech Economy Developments: Where Do We Stand?

2.1 The State of Convergence

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

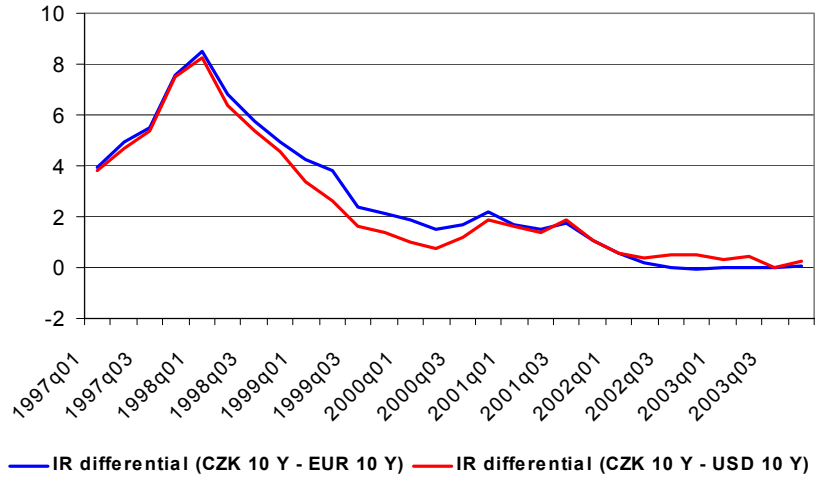
Figure 1: Inflation in the Czech Republic and the EU



Source: CNB and Eurostat

The long-term as well as short-term interest rates stay on 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 disappeared

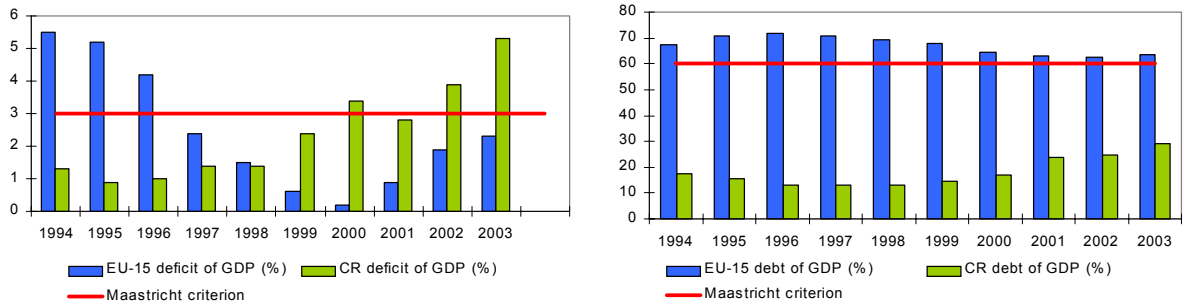


Source: CNB and IMF IFS

The current fiscal situation is still relatively stabilized, but without decisive reforms the situation may become unsustainable (Figure 3). The deficits may not be historically much

larger than in the EU-15, though their dynamics exhibits a risky trend[6]. The level of debt is still relatively low though rising in a lively pace.

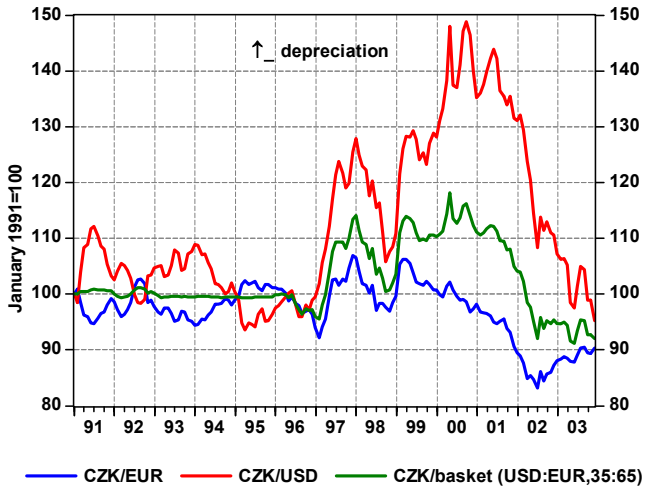
Figure 3: Public finances: deficit and debt



Source: CSU and Eurostat

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

Figure 4: Long-run stability of the Czech koruna

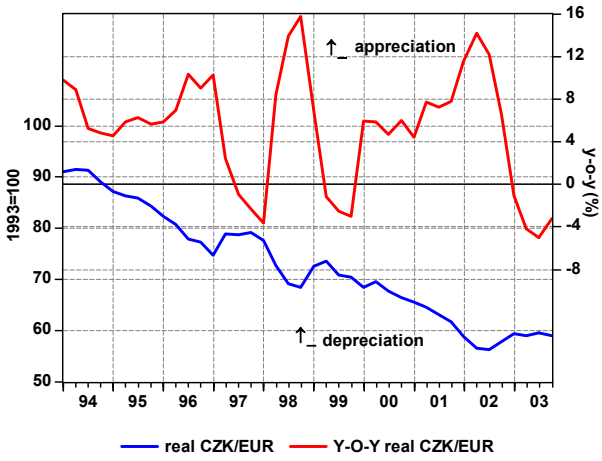


Source: CNB

Figure 5 documents that in the Czech Republic, despite the volatility, real exchange rate vis-á-vis EUR (DEM) was most of the time moving in the appreciation zone during the last 10 years. After the period of fast real appreciation at the beginning of the transition, further appreciation should be much milder. The picture shows that after the appreciation episode in the and of 2001 and the first half of 2002 the real exchange rate returned back to the long-run trend for a mild appreciation.

[6] Nearly 13 % deficit announced for 2003 is the result of one-off accounting measures and can thus hardly be used in comparisons.

Figure 5: Trend in real exchange rate



Source: CNB

For years, there have been serious discussions among the analysts and policy-makers on the implications of the policy of low inflation on the background of the natural trends for the real appreciation. Due to the inflation criterion, it is generally believed that the Czech Republic and some other NMS countries will join the euro area with the euro cheaper in nominal terms. The CNB was facing the effect of "convergence game" especially in the 2001-2002 period. Fortunately, the appreciation bubble burst relatively soon and the exchange rate returned to the more realistic levels. Recently, the CNB has concluded that after some adjustment in the nominal exchange rate in the previous years, and after completing the major steps in deregulation of administered prices, the scope for the further sustainable real appreciation will be limited in the years ahead to roughly to 2 or 3 percent a year. Given the scope for 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. The factors behind this conclusion are the relatively pessimistic view of real convergence potential of the Czech economy and recent low estimates of the BSE.

2.2 The Czech Republic and the Euro

The CNB strategy towards the euro 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 a minimum required period of two years in the ERM2 exchange rate regime. The strategy of the CNB has been generally supported by the corporate sector. This is the reflection of the strong trade orientation towards the EU and the deep integration of the 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 is not yet being designed. It is crucial since the current levels of public deficits will not be tolerable in the future. They are largely structural in their 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 the 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. The flexibility and adaptability applies to the fiscal policy stabilization role, the 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 structural reforms, too.

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

As far as ERM2 is concerned, the CNB views it as an entry gate to adoption of the euro. The CNB therefore recommended the government to enter EMR2 only after it is for 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) are secured[7], including sound fiscal policy framework. The CNB also recommends the government to keep the koruna outside ERM2 after joining the EU in May 2004 and evaluate the perspective preparedness for adoption of the euro regularly each year. The CNB prefers to continue with the policy of IT in the period before joining the euro area. A 2-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 combination of the convergence criteria 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 potential consequences. First, I examine the potential conflict between the exchange rate and inflation criterion focusing on long-term factors of equilibrium appreciation of real exchange rate. Second, I analyze the potential conflict between the two criteria stemming from cyclical factors. The cyclical factors seem to be a bit disregarded in the literature so far though 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 Balassa-Samuelson (BSE) effect in particular. Some authors building on BSE (e.g. Natalucci

[7] The experience of Hungary with the ERM2-like regime obtained so far provides the rationale for the approach like this.

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

In additional, the existence of a conflict is strongly conditioned upon the strength of the potential growth in the NMS. The conflict would emerge only if the growth in the NMS picked up to the very high and persistent levels compared to the current euro area members. And second, the BSE, that dominates thinking about convergence dynamics, may be rather a 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 tradeables, clear frontiers between tradeables and non-tradeables, dominance of non-tradeables by services and other features of traditional international trade theory. The link between productivity and price level may be rather weak due to the high transaction cost of producers in transitional countries that try 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 is translated to low wages and prices in transitional economies, no matter whether or not the producers have low or high productivity in their production leagues. Under these assumptions, the growth in productivity itself does not guarantee increase in incomes, wages and prices (and thus in real value of domestic currencies). This can be delivered only via more sophisticated, specialised and diversified production sold for the higher prices in the 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.

The additional complicating factor that may cool down the expectation of fast real appreciation is the phenomenon of the so-called double-speed economy. This term describes the situation when there are two different sectors in the economy. The first one is the sector comprised of well-performing companies usually with foreign ownership (“new” sector henceforth) and the second sector is the one comprised of the traditional companies owned often by the local investors and government (“old” sector henceforth). The trend for the real appreciation is in line with the performance of the foreign sector and we may say that it is caused by it (through the capital inflows to the sector and its export capability). In theory, the old sector firms should adjust to the new sector ones by increasing the 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 productivity and lower costs. Initially, they were not forced to leave the market, and through the bank system and government bailouts they burdened with extra costs the relatively efficient sector. But now, they are step by step forced out of the market or in some cases towards the new sector. This creates question like "Should it lead to faster real appreciation?". There is no single answer since there is also no single optimal trend in real exchange rate. We can find reasonable equilibrium solutions for the slower as well as the 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 the economy with more technologically advanced production), may be practically difficult to achieve without exposing the economy to significant risks[8]. 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 the BS-like effect due to the low growth of total productivity combined with a Dietz-Turek logic provide arguments against the assumption of large real exchange rate appreciation during ERM2. However, relying on this combination would create the "fear of success". The fear is based on the assumption that if for some reasons the Czech economy switches to GDP growth rates much higher compared to the current ones, the conflicts between the euro area accession/membership and convergence may emerge. A huge success would stimulate credit creation and domestic demand to such an extent that overheating of the economy would be hardly avoidable. In addition, the attempts to front-load the expected success may have a potential to initiate the asset markets bubbles and potentially threaten the stability of the financial sector. The problem will not easily disappear even after the adoption of the euro. It is natural for the faster-growing converging economy in a monetary union to have a higher inflation rate compared to 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 the real interest rates in the economy with the fast growth would thus be limited by current account implications of real exchange rate appreciation. The offsetting properties may nevertheless be far from perfect creating the risk of boom in the domestic demand at the expense of external deficit. The risk of macroeconomic and financial stability may thus emerge.

3.2 Cyclical Sources of the Inflation - Exchange Rate Conflict

In this part I focus on cyclical aspects of incompatibility between inflation and exchange rate. These are strengthened by rather a specific situation of the economies of new EU entrants. This can be described as follows: the industrially oriented economies with the large scope of "old" sectors producing relatively non-sophisticated production and with the need for further restructuring; economies exposed to globalization, owned to a large extent by foreigners and facing a fierce competition from the East; next year the EU economies with generous social system, population getting older and relatively low level of GDP per capita; economies with huge potential but with relatively low wage and price levels and thus different relative prices compared to the current EU standards. A situation like this is really specific and creates conditions for a very complicated dynamics with indeterminacy and multiple-

[8] Relatively fast real appreciation would lead to faster restructuring with some traditional productions quickly dying. If the new productive capacities were not establish quickly enough, it would result in slow economic growth. Slow growth would worsen fiscal situation and at the end, the reputation of the economy could become basically undermined. In a situation like this, the crisis of the confidence can easily be transformed to a severe financial crisis.

equilibria solutions. In an environment like this, the level of cyclical synchronization really matters.

ERM2 and convergence criteria are strongly asymmetric. The system thus poorly simulates conditions of the euro area and exposes the economies to risks that are not natural for the monetary union. Due to the need to implement the asymmetry into the policy reaction functions, the unfavourable dynamics of the economy may be initiated. This particular danger is enforced by the lack of anti-cyclical policy measures compatible with the whole process that requires squeezing a set of crucial macroeconomic variables to a very narrow range in a particular point in time[9]. Especially the exchange rate appreciation boosted by the asymmetry of the regime may create conditions for the asset market instability and intertemporal disequilibria. The effect of the squeeze may come to the light only after joining the euro area.

In this respect, one of the major problems is that the whole process drawn upon the convergence criteria ignores business cycle and impact of policies on it. One of the papers that have been frequently 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 requirement of membership in ERM2 and convergence criteria constrain the policy choice while providing no additional benefits to countries with a credible commitment to join the euro. Relaxing the exchange rates requirements may provide some benefits, especially lower the volatility in terms of both the inflation rate and output gap.

4. Monetary Policy Autonomy and Interest Rate Constraints

This section will contribute to the existing literature with the notion of the role of term structure of interest rates in the exchange rate-inflation tension when they are constrained by the 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 the monetary policy autonomy in the EMS is not new. It was addressed long time 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 stabilizing monetary policy with IT features with the explicit central parity and an asymmetric band? Svensson (1994) explains how the exchange rate bands give central banks some monetary policy independence via some control over domestic interest rate even under fixed exchange rate and free capital mobility. The control is exercised by allowing exchange rates movements within the band that result in and expected change relative to central parity that is consistent with a desired level of domestic interest rates. However, the control is limited to short-term interest rates. I will show that in real world there are forces that allow a limited control over the medium- and long-term interest rates. The limitation of Svensson's and similar works of the period is that they focus on the interest rate smoothing as the purpose of monetary policy. It is therefore necessary to take the concept of monetary policy in a target zone much further.

4.1 Monetary Policy Considerations

For central bank targeting exchange rate in parallel with inflation, the interest rate channel may remain the only instrument for absorbing the shocks. Hence, in pure theory, domestic policy interest rates and consequently long-term interest rates will have to adjust to a shock

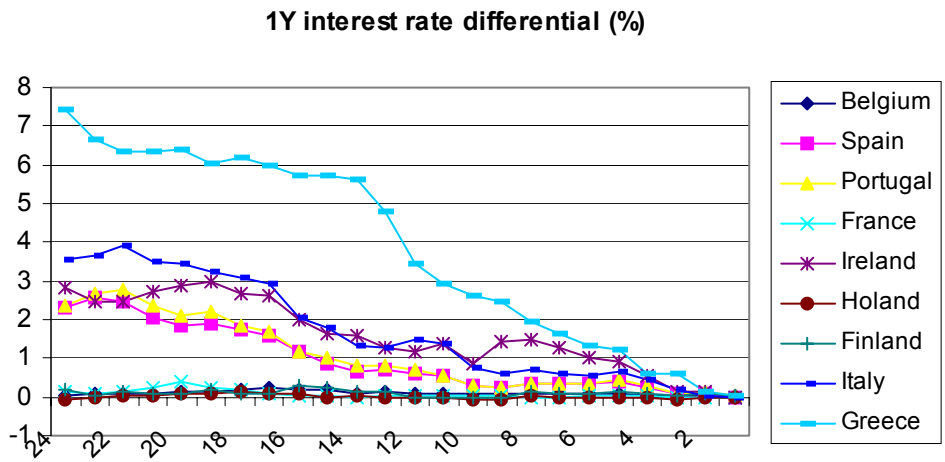
[9] Of course, the proponents of ERM2 emphasise the importance of the regime as a kind of simulation of monetary union environment and test of a preparedness of a country for living in the monetary union. Having fixed exchange rate, the ECB interest rates, low budget deficits and low inflation is what the country has to expect as a permanent outcome of the process. Nevertheless, the lack of the country-specific inflation criterion and of the exchange rate risk makes the situation entirely different from the one in the monetary union.

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 interest rate channel will thus be limited and dependent on the level of fixity of the exchange rate. Therefore, just before the euro area entry (i.e. in ERM2), the stabilization of an idiosyncratic shock may require even larger adjustment of domestic policy interest rates in order to affect somehow medium- and long-term interest rates, which then guides inflation into target. Given the effect of the policy interest rates on the nominal exchange rate, monetary policy considerations may trigger the 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 the volatility of foreign exchange capital flows.

The monetary policy will thus be more constrained than sometimes believed. The Czech National Bank in its Quarterly Projection Model assumes the key role of the „long-term" interest rates in the transmission mechanism. These long-term interest rates are associated with the maturities between one and two years long which reflects the structure of new loans extended by the local banking sector. Due to the logic of the term structure and UIP, these interest rates will be more and more determined in the euro area as the country gets close to the assumed date of entry. The strength of determination will be the function of credibility of the central parity as a final conversion rate. In other words, unless there is a major uncertainty as to the final conversion rate, the interest rate component of monetary policy conditions will be set by the euro area conditions even two years before adopting the euro. This will also apply for the short term interest rates, especially in the final year before the euro adoption. This will constrain the monetary policy 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 9 countries for the period of 24 months before adopting the euro. The results indicate relatively large differential for some countries that persisted even half a year ago before the final conversion. Does it indicate the existence of a large scope for an autonomous interest rate policy in NMS? 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 current NMS and the assumption of the equilibrium real exchange rate appreciation, the scope may be much lower.

Figure 6: Interest rate differentials prior to the euro adoption



Source: Bloomberg

Can fiscal policy help the monetary one? Since monetary policy faces the trade-off between inflation and exchange rate stabilization Grauwe and Schnabl (2004) suggest that it really is fiscal policy that might help to cut down inflation. Restrictive fiscal policy in ERM2 is viewed as a desired measure and a remedy for making all 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 fiscal constraint given by the fiscal convergence criteria resolves the tension between inflation and exchange rate convergence criteria for the ERM2 period and guides the economy to meeting all convergence criteria.

We may really expect that the larger of the NMS will enter ERM2 during the downward adjustment of the public finances deficit and thus with a relatively restrictive fiscal stance[10]. To the extent that this kind of fiscal consolidation will have a 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 stabilize the cycle.

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

4.2 Asymmetric Convergence Criteria and IT with 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 the 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. It applies to the extent that the fiscal consolidation has negative impact on domestic demand. In a situation like this, IT with a symmetric reaction function tends to loose interest rates in order to shift inflation to a target providing its forecast points to the probability of excessively low inflation. As already pointed out, monetary policy constraint call for more aggressive interest rate cut. Depreciation of the nominal exchange rate is induced and the incompatibility between the inflation and exchange rate criteria may arise again. Thus, fiscal convergence criterion may not go in line with other criteria automatically. 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, symmetric reaction function of central bank tends to depreciate the nominal exchange rate and create an upward pressure on inflation as a consequence of fiscal tightening and subsequent disinflation pressures.

[10] There is an assumption that the Czech Republic will join ERM2 during the period of credible fiscal consolidation with the public sector deficit declining much below 3 % level only during ERM2.

On one hand, asymmetric exchange rate convergence criterion, accommodating for and accounting for the trend nominal appreciation, was engineered. On the other hand, negative demand shock stemming from fiscal constraint induced by fiscal convergence criterion was not accounted for. The symmetry in reaction function is the trigger of this conflict. Therefore, asymmetric reaction function in line with asymmetric convergence criteria looks a natural solution for the IT regime in ERM2. It supports the fulfilment of both 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 a way that it abstracts from the need to minimize certain combination of the output gap and inflation volatility.

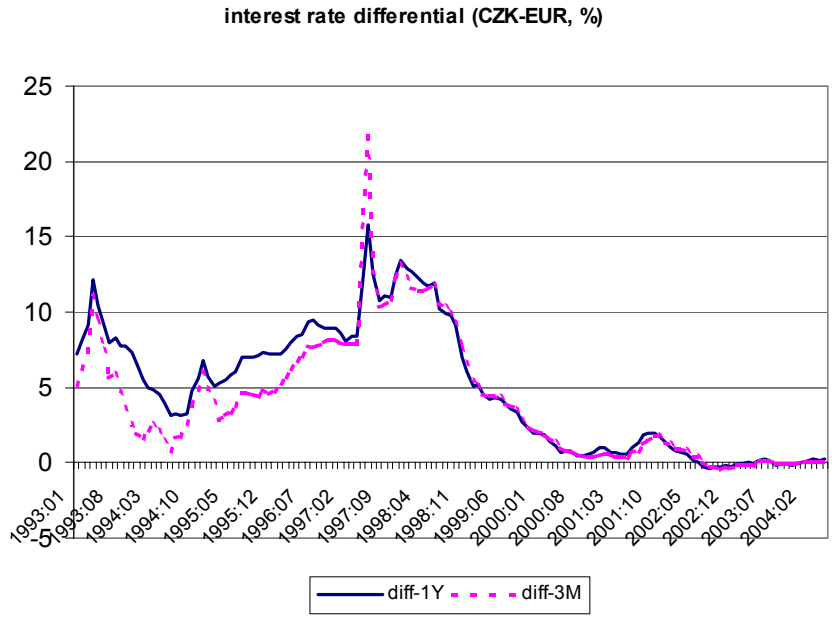
5. Financial Markets Constraints and Strategies for ERM2

In this section I will analyze 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 in ERM2 and approaching the €-Day, 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 NMS 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 to strong exchange rate appreciation in this period and associated favourable inflation outlook. During this period, the local rates fell even below the euro area level. In some present euro area countries such a convergence was achieved just before adopting the euro (see Figure 6).

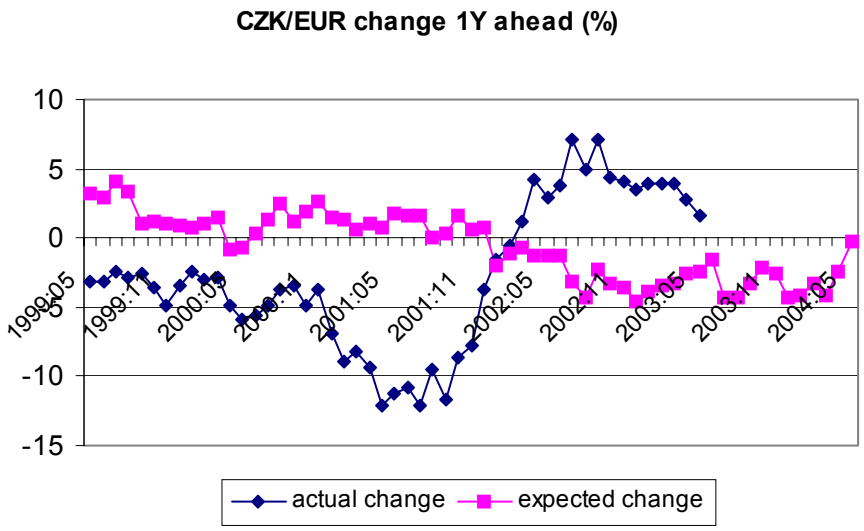
Figure 7: Nominal interest rate differential - the Czech Republic vs. the euro area



Source: CNB

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

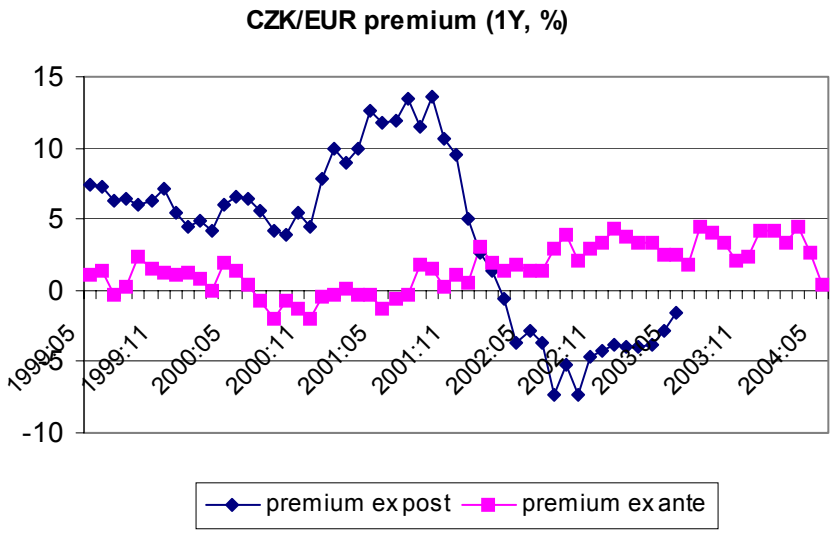
Figure 8: Exchange rate changes



Source: CNB

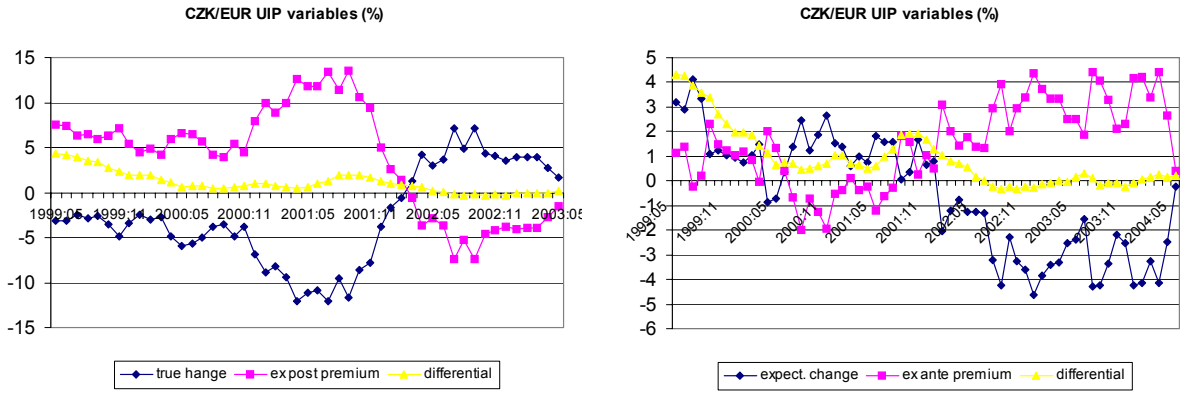
Now we can derive ex ante as well as ex post risk premium from the UIP equation (Figure 9, left hand side of Figure 10). Thanks to the zero interest rate differential prevailing from 2000, recent shocks to premium have to be associated with exchange rate changes. Ex post premium turned out rather volatile. The sharp increase reflects unexpected swift appreciation during 2002 caused by expectations of large capital inflows and subsequent bandwagon-like dynamics. Subsequently, ex post premium dropped to negative values associated with unexpected depreciation then. The ex ante approach based on expected exchange rate changes gives us a different story which is depicted by 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 from 2002 due to the expectations of gradual nominal appreciation in the pre-euro period that are still in place.

Figure 9: Ex ante and ex post risk premium



Source: CNB

Figure 10: Uncovered interest rate parity for CZK/EUR

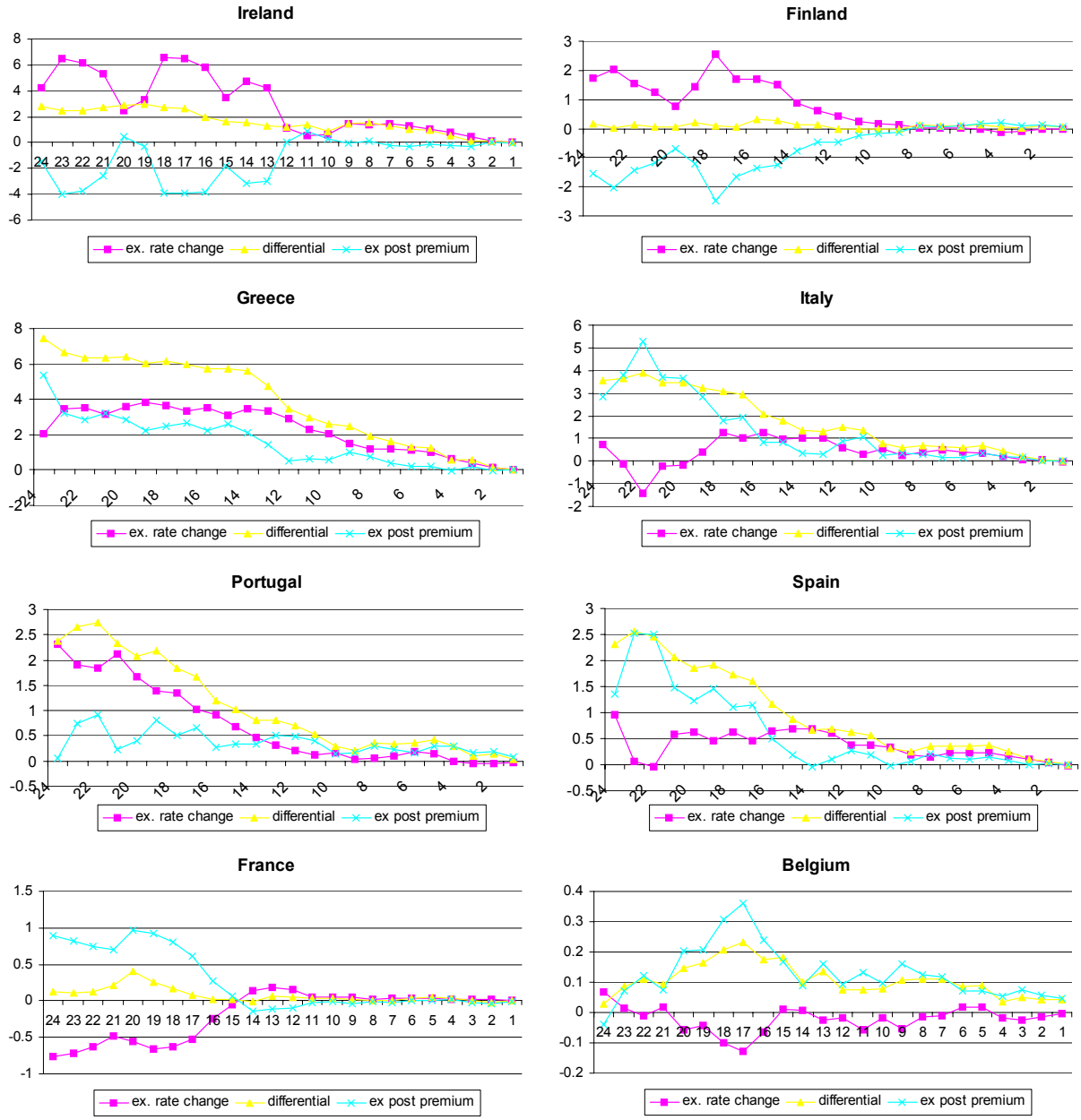


Source: CNB

Now we can compare the Czech results with these for selected members of the euro area in the period of 24 months before adopting the euro. Again, UIP variables depicted in Figure 11 are calculated with the use of interest rates with 1Y maturities and exchange rates of individual countries against DEM (EUR in 1999 respectively). We can see that none of these countries was living with negative interest rate differential. All countries with the exception of France and Belgium saw their exchange rates depreciate during the period chosen (though it was quite different 3 to 4 years before adopting the euro). Ireland and Finland were outliers in a way that they maintained negative ex post risk premium for rather a long time. This reflects "unexpected" depreciation (more precisely depreciation in excess of interest rate differential). Other four countries kept relatively large interest rate differential associated with some depreciation and positive ex post risk premium. One can thus speculate that the lack of credibility lead to depreciation expectations that were not materialised and that these expectations were rather persistent. France and Belgium kept the differential close to zero with some appreciation, but also with a positive ex post risk 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 abrupt change in market sentiment. Up to 2001 it was viewed as a looser due to the mistakes in transition. Suddenly, the investors began to view it as an attractive country again. Due to the very low inflation, the appreciation expectations are now in place. Any of the two situations may prevail during ERM2, the one will dominate at the end will be to a large extent the function of perceived progress in real convergence and anti-inflation credibility.

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



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 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 UIP variables partially build on the current macroeconomic dynamics of the Czech economy. This kind of dynamics is projected into the future[11]. Some readers may be surprised by the assumption of the zero or even negative interest rate differential. However, this has been a recent reality of the Czech economy 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 scenarios shown below.

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

I. Central parity weaker than the actual exchange rate

The first potential strategy is to set the central parity on a weaker level compared to the actual exchange rate just before entering ERM2. This may be explained by the conviction that the domestic currency is overvalued[12]. This will create the 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 the €-day. The exchange rate will be moving 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 will be converging to the euro area levels from above. One can just speculate that it is what Finland and Ireland did (see Figure 11). Also some other countries (Italy, Spain, Portugal) exhibit a similar pattern.

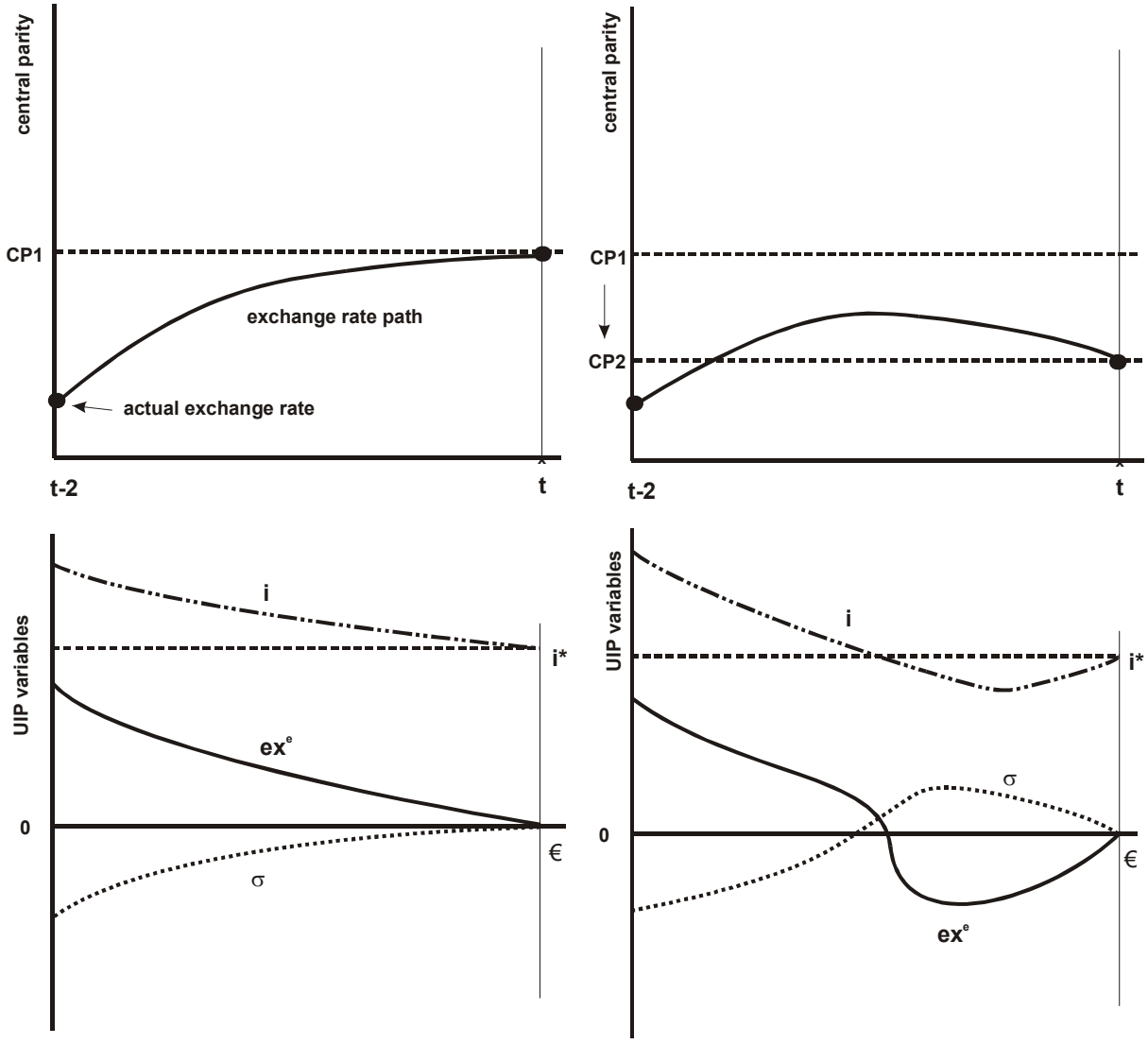
The solution on the right hand side can be at least partially referred to as the "Greek" approach. At a certain point in time the central parity will lose credibility and the initial devaluation expectations will be reversed. The interest rates may drop sharply, even below €-levels, and just before the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

Due 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 interest of NMS to enter ERM2 with a relatively weak central rate so that to limit the risk of depreciation pressures. In reality, it is a risky strategy to join ERM2 with a central rate significantly different from the rate that is viewed as the equilibrium one. Otherwise the country will face the risk of overshooting the inflation criterion. The strategy is thus suitable for the initial situation characteristic of the excessively low inflation and recession.

[11] The assumptions like credible fiscal consolidation and a strong political commitment to the euro adoption at a certain point in time in the future are retained.

[12] This was the case of Greece that entered ERM2 in March 1998 with an upfront 12.3 % devaluation of central parity. Despite some depreciation, the exchange rate was moving constantly in the appreciation part of the band. Consequently the authorities initiated 3.5 % appreciation of the central parity nearly 1 year before joining the euro area.

Figure 12: The solutions for a weaker parity



II. Central parity equal to the actual exchange rate

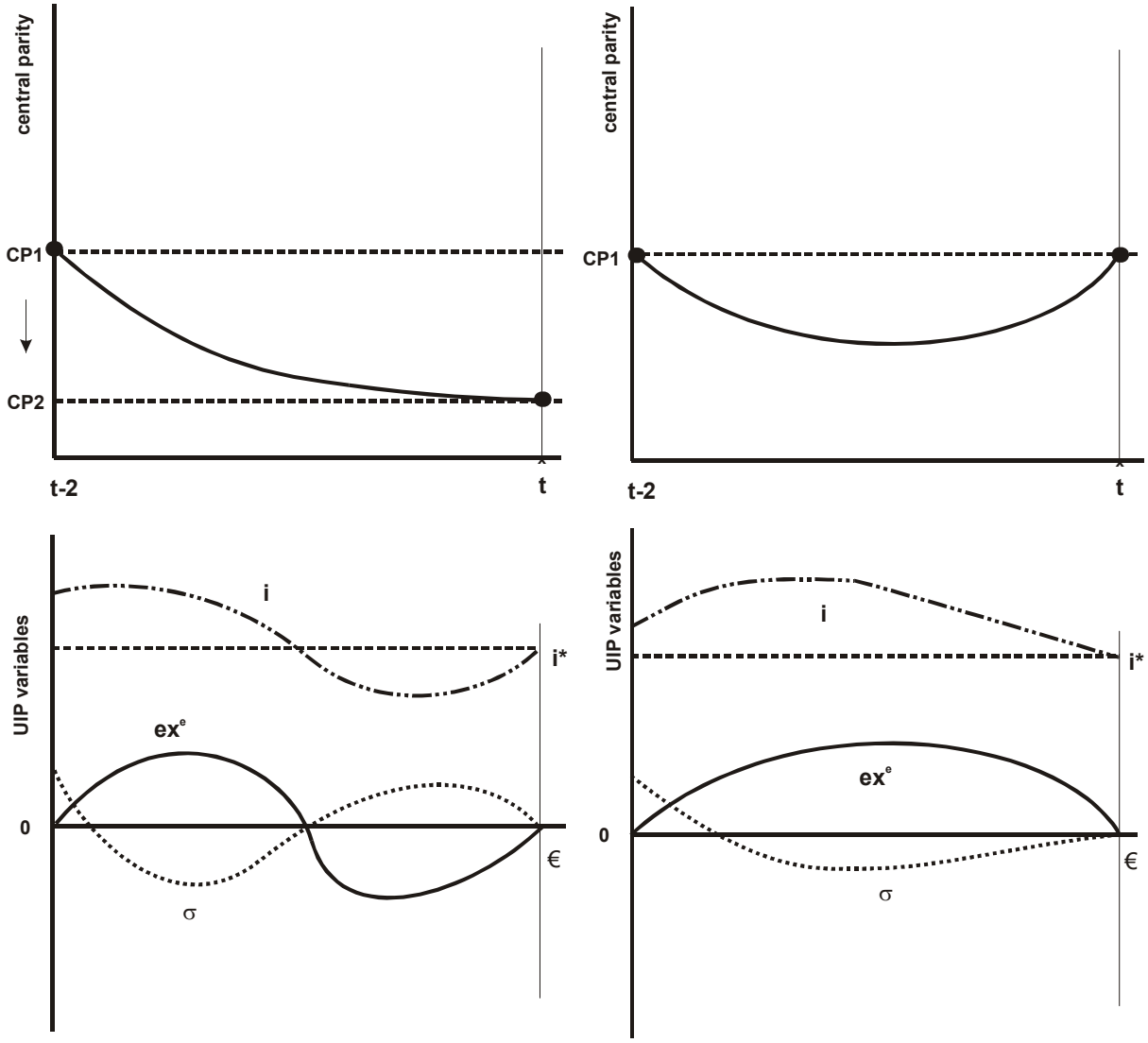
The second option is to set the central parity on a level equal to the actual exchange rate just before entering ERM2. This has a potential to create initial appreciation expectations to the extent the agents believe in the equilibrium real appreciation[13], and in undervaluation of the spot exchange rate. In Figure 13 I plot again 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 a certain point in time the central parity will lose credibility and the initial expectations will be reversed. Again, just before the €-day the central parity will be re-valued, i.e. the conversion rate will be set on a level stronger compared to the initial central parity. The changes in exchange rate expectations and exchange rate trajectory are compatible with swings in risk premium and policy interest rates.

The solution on the right hand side assumes the ability to maintain the initial central parity up to the €-day. The exchange rate will be moving in the appreciation zone permanently. The credibility of the central parity will deliver permanent expectations of depreciation. Domestic

[13] More precisely in nominal appreciation in excess of the inflation differential compatible with equilibrium rate of real exchange rate appreciation.

interest rate will be converging to the euro area levels from above. The interest rate moves may even be the cause for the termination of the speculation on the revaluation of the central parity. The credibility of central parity may deliver stability also for the risk premium. The strategy is thus suitable for the initial situation characteristic of the need to cut a bit the inflationary expectations.

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



III. Central parity stronger than the actual exchange rate

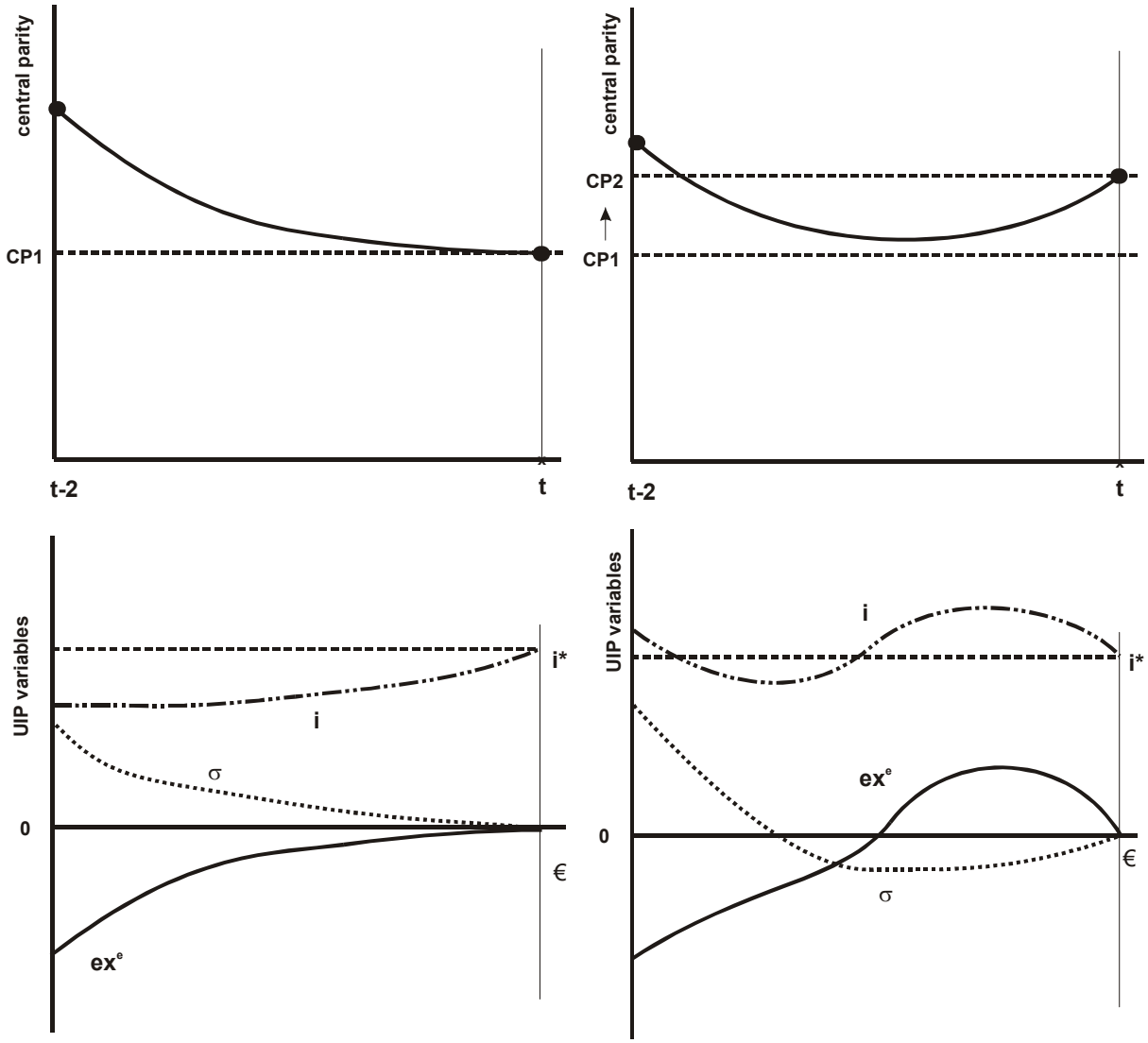
The third option is setting the central parity on a level stronger with respect to the actual exchange rate so that to allow for the equilibrium real exchange rate appreciation[14]. This has a potential create the initial appreciation expectations to the extent the agents believe that the central parity 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[15]. The exchange rate will be moving in the depreciation zone (relative to the central parity) permanently. In line with declining rate of expected

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

[15] This particular description is not too realistic. The exchange rate would normally jump to the levels close to the central parity immediately.

appreciation and risk premium the domestic interest rate will be converging to the euro area levels from below. The strategy may thus be suitable for the initial situation characteristic of relatively high inflationary expectations linked for example to recent history of exchange rate depreciation or a perception that the exchange rate is undervalued.

Figure 14: The solutions for a stronger parity



On the right hand side I plot the situation when the central parity is gradually losing credibility. Initially the exchange rate appreciates in line with appreciation expectations. However, at a certain point in time the initial expectations will be reversed because the agents will reassess the view of the final conversion rate. Just before the €-day the central parity will be devalued a bit. The changes in exchange rate expectations and exchange rate trajectory are again compatible with swings in risk premium and policy interest rates. The solution may be applied in the situation that is characteristic of loosing competitiveness owing to the excessive appreciation or due to the pressures to devalue if the parity chosen was too strong. However, devaluation is violation of the exchange rate criterion. Given that, this particular solution is just theoretical.

The strategy chosen will be to a large extent a function of the state of the economy and its cyclical position just before entering ERM2. These will then determine expectations for the ERM2 period, which will influence macroeconomic dynamics and initial conditions for functioning in the euro area. Any of these strategies can be compatible with meeting

convergence criteria, but these represent clear quantitative restrictions.

As far as the issue of autonomy[16] of monetary policy is concerned, the experience of current euro area members, as well as the description of available strategies, indicates that some scope exists. This scope is limited and subjected to a declining function of anti-inflation credibility and credibility of central parity as the final conversion rate. This is positive news from the euro adoption perspective, and negative news from the stabilisation policy perspective. Anyway, it may be difficult to achieve significant changes in relevant interest rates without associated changes in exchange rate expectations and risk premia.

6. What Kind of IT in ERM2?

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

There is a 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[17]. However, IT was pursued in rather a formal way, both countries actively used of interest rates and 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 the inflation pressures. Nevertheless, the experience of these countries has a certain value. Schadler et al. (2004) points out that current inflation rates in the NMS are close to those of the euro area members in the middle of 1990s. If parities weaker with respect to 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 an excessive appreciation of the currency in a Greece-like manner. However, with expectations of continuing real exchange rate appreciation, the credibility of a solution like that is at question.

6.1 The Case Against Dual Targeting

One of the roughest warnings against the combination of IT and ERM2 has been sent 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 (and essential) focal point for private sector expectations as regards the future behaviour of the nominal exchange rate[18]. According to Buiter, there are two reasonable alternatives. Both involve setting a date and the rate for the irrevocable conversion. The first is to have a currency board. The second is to have a free float and a continuing IT. Unfortunately, the second option is not available due 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.

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[16] By autonomy I mean the ability to influence the interest rates with maturity one year or longer.

[17] The Finnish case is of a high relevance for the Czech Republic. Finland adopted IT in 1993 and entered ERM2 at the end of 1996 and final assessment was done in Spring 1998. This particular approach corresponds to the idea of spending the minimum time in ERM2.

[18] 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 January 1, 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.

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 convergence criteria, does not seem favourable[19]. If 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 be subject to sizeable volatility. The very strict limit on the weaker side can thus invite the speculators to test the central bank's ability to withstand the pressures. "Pure" IT is also hardly conceivable if convergence criteria are to be fulfilled. As argued before, the symmetric reaction function natural for the IT regime may trigger the conflict with the exchange rate criterion. Given that, explicitly asymmetric reaction function may constitute the only solution.

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

6.2 A Case for the Dual Targeting?

My third option is partially the case for dual targeting that is not far from Buiter's (2004) date and rate requirement. I argue that there is a certain possibility to avoid the unsuitable procedure described in Section 1. The option is to continue with IT utilising 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 clearly sustainable external balance, with sound fiscal policy and a credible program for long-term fiscal consolidation, with central parity perceived close to the equilibrium level, with a flexible interpretation of exchange rate criterion, and with a clear strategy for interventions backed by high level of exchange reserves. All these ingredients would tame potential inflation pressures and deliver credibility of exchange rate policy focusing on cooling down the 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 will be assessed by taking into account indicators like side, timing, size and duration of the deviations, size of the interventions or interest rate hikes, it would be desirable to approach the exchange rate criterion with

[19] Hungary's experience with IT, which has operated simultaneously an exchange rate band, has not been very promising as both inflation and exchange rate went a bit out of control.

maximum flexibility A more flexible approach offering soft limit not only on a stronger side would be helpful in minimizing the risk of speculative attacks. At the same time, an approach like this can be justified only after all necessary steps were taken that would prevent from the depreciation pressures of fundamental nature. The increased flexibility of the economy, especially labour market, would also be much helpful. However, if the authorities find the flexible interpretation of the exchange rate criteria too risky, the exchange rate targeting polar regime is the solution.

One of the open questions is the commitment to the central parity as a final conversion rate. Normally, the maximum credibility of the central parity as the future conversion rate is regarded as essential. On the other hand, the lack of credibility (even a deliberate one) has a potential to increase scope for interest rate policy. The other issue is the strategy for interventions. One option is to intervene in a systematic manner with the aim to smooth even the 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 claims against the countries wishing to adopt the euro in the future are skewed in a way that "punishes" the countries pursuing IT and floating exchange rate. The paper focuses on how tight a constraint are convergence criteria for the conduct of IT or a policy similar to it. This particular question is relevant only for these EU member countries staying outside the euro area that are currently operating under flexible exchange rate arrangements. For these countries, it will be very difficult to avoid double shift in monetary policy. 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 regime similar to IT after joining the euro area. Nevertheless, some of the NMS announced the intention to continue with current policies up to the 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 markets reactions to the existing policy constraints. The experience of the current euro area members during the ERM2 period is analysed and implications the term structure of interest rates and the uncovered interest rate parity condition are discussed.

Monetary policy in NMS will face number of constraints defined by 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 above the 2.25 % limit on the weaker side does not automatically mean the violation of the criterion. There is thus a certain scope for manoeuvre concerning the mix of interest and exchange policy, the uncertainty remains as to the size of it. 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 foreign exchange markets. The probability of this is increased by uncertainty of the market participant as to the “fair” value of currency due to the multiple-equilibria phenomenon, and potential conflict between exchange rate targets and 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 drawn upon the convergence criteria ignores business cycle and impact of policies on it. The loss and reaction functions are modified in a way that it abstracts from the need to minimise certain combination of the output gap and inflation volatility. Due to the need to implement the asymmetry into the policy reaction functions, the unfavourable dynamics of the economy may be initiated. This particular danger

is enforced by the lack of anti-cyclical policy measures compatible with the whole process that requires squeezing a set of crucial macroeconomic variables to a very narrow range in a particular point of time. The effect of the squeeze may come to the light only after joining the euro area.

In this environment, monetary policy will be more constrained than sometimes believed. Due to the logic of the term structure and UIP, these interest rates will be more and more determined in the euro area as the country will approach the assumed date of entry. Some scope exists, but anti-inflation credibility of central bank and credibility of central parity as the final conversion rate will pose increasing limits. Given the anti-inflation credibility of current NMS and the assumption of the equilibrium real exchange rate appreciation, the scope for autonomous interest rate policy may thus be rather low. This applies even though there were relatively large interest rate differentials that persisted even half a year ago before the final conversion in some countries during their pre-euro period. In addition, it may be difficult to achieve significant changes in relevant interest rates without associated changes in exchange rate expectations and 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, asymmetric reaction function in line with asymmetric convergence criteria looks as a natural solution for the IT regime in ERM2. It supports the fulfilment of both 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 be to a large extent 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 question that monetary policy 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 convergence criteria, does not have a major support in the literature. Polar regimes, in which one target is subordinate to the other one, unless in conflict with convergence criteria, is believed to be more appropriate. However, there is a certain option how to continue with IT. Such a strategy requires meeting number of preconditions. The very flexible interpretation of the exchange rate criterion is the crucial aspect of the strategy. If the authorities find this flexible interpretation as hardly acceptable, the exchange rate targeting polar regime may be the right solution.

References

Begg, D. et al. (2003) Sustainable Regimes of Capital Movements in Accession Countries. London, Centre for Economic Policy Research, *CEPR Policy Paper*, No. 10.

Bertola, G. and Caballero, R. J. (1992) Target zones and realignments. *American Economic Review*, Vol. 82, pp. 520-536.

Bubula, A. and Otker-Robe, I. (2003) Are Pegged and Intermediate Exchange Rate Regimes More Crisis Prone?, *IMF Working Paper,* No. 223.

Buiter, W. (2004) To Purgatory and Beyond: When and how should the accession countries from Central and Eastern Europe become full members of the EMU?. Paper presented at the Conference on Challenges for Central Banks in an Enlarged EMU, February 20- 21, 2004, at the Oesterreichische Nationalbank in Vienna. April 2004, CEPR Discussion Paper No. 4342, April

Buiter, W. and Grafe, C. (2002) Anchor, Float or Abandon Ship: Exchange Rate Regimes for the Accession Countries, *Banca Nazionale del Lavoro Quarterly Review*, No. 221, June, pp. 1-32.

CNB (2002): Czech Republic and the Euro – Draft Accession Strategy. *Czech National Bank,* Prague

CNB (2003) ERM2 and the exchange rate convergence criterion, *Czech National Bank*, Prague.

De Broeck, M. and Slok, T. (2001) Interpreting Real Exchange Rate Movements in Transition Countries, *IMF Working paper,* No. 56.

De Grauwe, P. and Schnabl, G. (2004) Nominal versus Real Convergence with Respect to EMU Accession. How to Cope with the Balassa-Samuelson Dilemma, Paper presented at the International Atlantic Economic Conference, Lisbon, March 2004.

Dietz, R. (1999) Exchange Rates and Relative Prices in Central and Eastern European Countries: Systems and Transaction Cost's Approach. Vienna, WIIW, *Forschungsberichte WIIW*, No. 254

ECB (2000) Convergence Report 2000, *European Central Bank*, Frankfurt.

ECB (2002) Convergence Report 2002, *European Central Bank*, Frankfurt.

ECB (2003) Policy Position of the Governing Council of the ECB on exchange rate issues relating to the acceding countries, *European Central Bank*, Frankfurt.

ECB (2004): The acceding countries' strategies towards ERM II and the adoption of the euro: An analytical review. European Central Bank, Occasional Paper Series, No. 10, February

Égert, B. and Kierzenkowski, R. (2003) Asymmetric Fluctuation Bands in ERM and ERM-II: Lessons from the Past and Future Challenges for EU Acceding Countries, *William Davidson Institute Working Paper,* No. 597.

Eichengreen, B. and Wyplosz, Ch. (1993) The unstable ERM. *Brooking Papers on Economic Activity*, No. 1.

European Commission (2000) *Convergence Report*, Brussels.

European Commission (2004) Discussions on ERM2 Participation: Some Guiding Principles, *Note for the EFC*, Brussels.

Fischer, S. (2001) Exchange Rate Regimes: Is the Bipolar View Correct?, *Journal of Economic Perspectives*, Vol. 15 (2) pp. 3-24.

Flek, V., Marková, L. and Podpiera, J. (2002) Sectoral Productivity and Real Exchange Rate Appreciation: Much Ado about Nothing?, *CNB Working Paper Series,* No. 4.

Frait, J. (2000): Economic Transition in the Czech Republic: a Real Success? In: Kaluyzhnova, Y.-Lynch, D.-Tucker, N.: *The Euro-Asian World: A Period of Transition*. Macmillan Press, pp. 116-140

Kotlán, V.-Navrátil, D. (2003): Inflation Targeting as a Stabilisation Tool: Its Design and Performance in the Czech Republic. *Finance a úvěr*, 53, no. 5-6, pp. 220–242

Krugman, P. (1991) Target zones and exchange rate dynamics. *Quarterly Journal of Economics*. Vol. 106, pp. 669-682.

Krugman, P. and Miller, M. (edited) (1991) *Exchange Rate Targets and Currency Bands*, Cambridge University Press.

Lipschitz, L. (2004) Real Convergence, Capital Flows, and Monetary Policy: Notes on the European Transition Countries. Paper for Conference on Euro Adoption in the Accession Countries - Opportunities and Challenges, Czech National Bank, Prague, February 2-3, 2004.

Mihaljek, D. (2002) The Balassa-Samuelson effect in central Europe: a disaggregated analysis, *ICEGEC Working Paper*, No.11.

Natalucci, F. and Ravenna, F. (2003) The Road to Adopting the Euro: Monetary Policy and Exchange Rate Regimes in EU Accession Countries, Board of Governors of the Federal Reserve System, *International Finance Discussion Papers*, No. 741.

NBP (2004) The Report on Costs and Benefits of the Euro Adoption in Poland, *National Bank of Poland*, Warsaw.

Schadler, S., Drummond, P., Kuijs, L., Murgasova, Z., and van Elkan, R. (2004) Euro Adoption in the Accession Countries - Vulnerabilities and Strategies, IMF, Paper for Conference on Euro Adoption in the Accession Countries-Opportunities and Challenges, Czech National Bank, Prague, February 2-3, 2004.

Svensson, L. E. (1994) Why Exchange Rate Bands? Monetary Independence in Spite of Fixed Exchange Rates, *Journal of Monetary Economics*, No. 33, pp.157-199.

Szapary, G. (2001) Maastricht and the Choice of Exchange Rate Regime in Transition Countries during the Run-Up to EMU, *ENEPRI Working Paper,* No. 6.

Šmídková, K., Barrell, R. and Holland, D. (2002) Estimates of Fundamental Real Exchange Rates for the Five EU Pre-Accession Countries, *CNB Working Paper Series*, No. 3.

Turek, O. (2002) Should We Be Concerned about Appreciation of the Crown? *Politická ekonomie*, Vol. L, No. 5, pp. 520-534

Világi, B. (2003) The Optimal Euro Conversion Rate in a Stochastic Dynamic General Equilibrium Model", *MNB Working Paper,* No. 11.