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# The Quest for Monetary Integration – the Hungarian Experience

*Working paper*

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## **Abstract**

*From 1990 onwards, Eastern European countries have had as a primary economic goal the convergence with the traditionally capitalist states in Western Europe. The usage of various exchange rate regimes to accomplish the convergence of inflation and interest rates, in order to create a fully functional macroeconomic environment has been one of the fundamental characteristics of states in Eastern Europe for the past 20 years. Among these countries, Hungary stands out as having tried a number of exchange rate regimes – from the adjustable peg in 1994-1995 to free float since 2008.*

*In the first part, this paper analyses the macroeconomic performance of Hungary during the past 15 years as a function of the exchange rate regime used. I also compare this performance, where applicable, with two similar countries which have used the most extreme form of exchange rate regime: Estonia (with a currency board) and Romania, who never officially pegged its currency and used a managed float even since 1992.*

*The second part of this paper analyzes the overall Hungarian performance from the perspective of the Optimal Currency Area theory, therefore trying to establish if, after 20 years of capitalism, and a large variety of monetary policies, Hungary is indeed prepared to join the European Monetary Union.*

**Key words:** exchange rate regimes, free float, Eastern Europe, Optimal Currency Area Theory.

**JEL classification:** E42, F15, F31, F41

## **I. Hungary's Exchange Rate Regimes Experience – A Brief Account**

Since February 2008, according to the Hungarian National Bank, the Hungarian Forint (henceforth HUF) is floating freely on the currency market, with euro as a reference currency. This is an arrangement MNB (Magyar Nemzeti Bank – the Hungarian Central Bank) has come to after pursuing for almost 7 years a target zone with respect to euro, with a central parity of 282.36 forint per euro and a +/- 15% floating band – an arrangement extremely similar with ERM-II, without though being the formal regime EU requires for accession to Eurozone.

Taking into account the Eastern bloc countries, albeit probably Poland, Hungary has experienced the largest number of different exchange rate regimes between 1990 and 2008, the year when it reverted to a free float regime, postponing thus the ambitions to join ERM-II in the very near future.

### **Stage 1**

**TIMEFRAME:** 1990 – 1995. **REGIME:** Adjustable Peg.

**CURRENCY:** Trade-weighted basket (USD, ECU, DM)

As most Eastern European countries, Hungary has undergone in the past 20 years a transition process to a market-driven economy. In order to succeed, Hungarian monetary policy was directed to the stability of the exchange rates – to bring inflationary expectations under control. A primary cause for such a goal was that monetary institutions were not yet fully developed and therefore credible enough in their own right to fight damaging phenomena such as hyperinflation, which happened in other Eastern European countries, such as Romania.

However, fears that due to inflationary pressures in Hungary might rapidly lead to an overvalued forint were the monetary authorities to adopt a less flexible peg or even a currency board – like Estonia did – and to maintain the competitiveness of the national currency, MNB decided to adopt a slightly more flexible regime: an adjustable peg relative to a basket of currencies, weighted by their importance in Hungarian trade. This arrangement was then modified in 1994, when the only currencies in the basket remained the American dollar, with a 50% weight, while the rest of the basket was represented by ECU<sup>1</sup> and the Deutsche Mark (DEM).

### **Stage 2**

**TIMEFRAME:** March 1995 – May 2001 & May 2001 – September 2001 **REGIME:** Crawling Band

**CURRENCY:** ECU, then DEM, then EUR (70%) and USD (30%) basket

By 1995, Hungarian monetary authorities felt more confident in their abilities to handle the mechanisms of a market economy and believed more in their policies' credibility. Therefore, a new, more flexible regime has replaced the adjustable peg – a (+/-) 2.25% crawling band<sup>2</sup>. Such a regime was regarded as a good compromise between the need for credibility of MNB and competitiveness of the forint. Market forces influenced the exchange rate, which was a progress from the previous arrangement.

Moreover, the slowly paced devaluation of the forint was designed to keep it competitive for exports and reduce the need for sudden adjustments (which were a factor of uncertainty for the public) while avoiding an overvalued forint. All of these, *nota bene*, in the context of MNB still having a strong commitment to the band and therefore sufficiently large credibility.

One of the more subtle changes in the exchange rate regime was the very components of the currency basket: ECU, followed by Deutsche Mark and the Euro (after 1999) accounted for 70% of the

<sup>1</sup> European Currency Unit, the EURO's predecessor

<sup>2</sup> Not a very large band, indeed – market forces were still pretty well contained

basket, while the US Dollar's weight dropped by 40% (20 percentage points) from 50% before 1995 to only 30% now. This can be interpreted as a return to fundamentals in MNB policymaking: it can easily be argued that the Hungarian economy was more likely to undergo the same shocks as its European neighbours rather than the United States. Since January 2000, Euro was the only currency the forint was crawling against.

In May 2001, the National Hungarian Bank widened the band to (+/-) 15%, which resulted in a strong appreciation of the HUF in the following period showing that maybe the forint was kept artificially undervalued by the previous band or simply a wave of optimism in response to this action of the MNB.

**Stage 3**

**TIMEFRAME:** 2001 – February 2008 **REGIME:** Target Zone (against EURO)

**CURRENCY:** EUR

In September 2001, the crawling system was abandoned, MNB considering that there is no further need to pursue a constant-paced devaluation of the forint against EUR, encouraged probably by the events in May the same year, when the forint proved itself consistently undervalued. The “target zone” system was strikingly similar to the ERM-II mechanisms: the value of the forint was allowed to move around a central parity against Euro (1 EUR=276.10 HUF) within a +/- 15% band. Later, in 2003, the MNB pondered the negative effect an overvalued forint would have at macroeconomic level and decided to devalue the HUF to the central parity: 1 EUR=282.36 HUF.

**Stage 4**

**TIMEFRAME:** February 2008 – present day **REGIME:** free float

**CURRENCY:** none

Although the case for maintaining a system so similar to ERM-II was widely argued for, the deteriorating inflation outlook in Hungary brought the need for a stronger forint than the band would have allowed. Not desiring to alter the interest rate and increase it even more, the Hungarian National Bank chose to abandon the target zone against Euro and let the forint float freely on the market, hoping in a most probable appreciation against the European currency. Furthermore, this twin objective (keeping the forint down and inflation rate under control) for MNB was less likely to be accomplished, threatening the Central Bank's credibility.

**THE ADJUSTABLE PEG REGIME (1990-1995)**

The main goal of the adjustable peg exchange rate regime was to temperate inflation, while not letting the forint become overvalued, which might have been more of a possibility under a currency board regime.

The commitment of the MNB to a certain exchange rate would have disallowed them to pursue over-expansionary monetary policies (which would have led to depreciation of the forint below the peg and the need to spend (limited) foreign reserves in order to buy HUF to keep it from losing value). On the other hand, inflation was bound to be higher in an emerging country like Hungary than in a developed country MNB would peg the forint to. Therefore, setting up a currency board or a non-adjustable peg would have meant an artificial overvaluing of the forint, thus hurting the exports, the trade balance and the economic growth. The solution MNB found to this lack of flexibility was to allow adjustments to the peg and devalue the forint whenever necessary.

To analyze the performance of MNB we should make a couple of simple comparisons between Hungary and other countries in the region, on both inflation and trade balance performance.

Romania, for example, seemed less concerned with the credibility of Central Bank problem and inflationary expectations and allowed the Romanian Leu (ROL<sup>3</sup>) to float on the market, taking no formal commitment to peg it. Inflation rates in Hungary ranged from 21-25% p.a. in the 1990-1995 period. At the same time, inflation rate in Romania reached even 256.1% in 1993<sup>4</sup> while constantly ranging between 32% in 1995 and over 100% *per annum* in early 1990s. From this point of view, one should conclude that the Hungary's exchange rate regime was fairly effective.

Comparing Hungary with Estonia, which adopted a currency board in the same period, we find that in 1996, the Hungarian trade balance deficit was -3.06% of GDP<sup>5</sup> while Estonia had a more than double deficit of more than 8.5% of GDP<sup>6</sup>. It can be argued that the tight exchange rate regime in Estonia lead to an overvalued krona (Estonian currency) which hurt exports and encouraged imports, therefore deepening the trade deficit. The relative flexibility of the adjustable peg in Hungary meant a lesser pressure on the trade balance, and a consequent smaller deficit.

This regime was abandoned in 1995 in favour of a crawling peg system, to allow for more flexibility in the exchange rate and a constant, steady depreciation of the forint.

### **THE CRAWLING BAND REGIME (1995-2001)**

Although more flexible than the adjustable peg used before 1995, the crawling band regime still represented a strong commitment taken by MNB to not pursue expansionary policies that would jeopardize the crawling band limits.

Therefore, inflationary expectations were brought down, and inflation rates followed shortly. As Figure 1 shows, the crawling band regime brought Hungary a period of highly accelerated disinflation:

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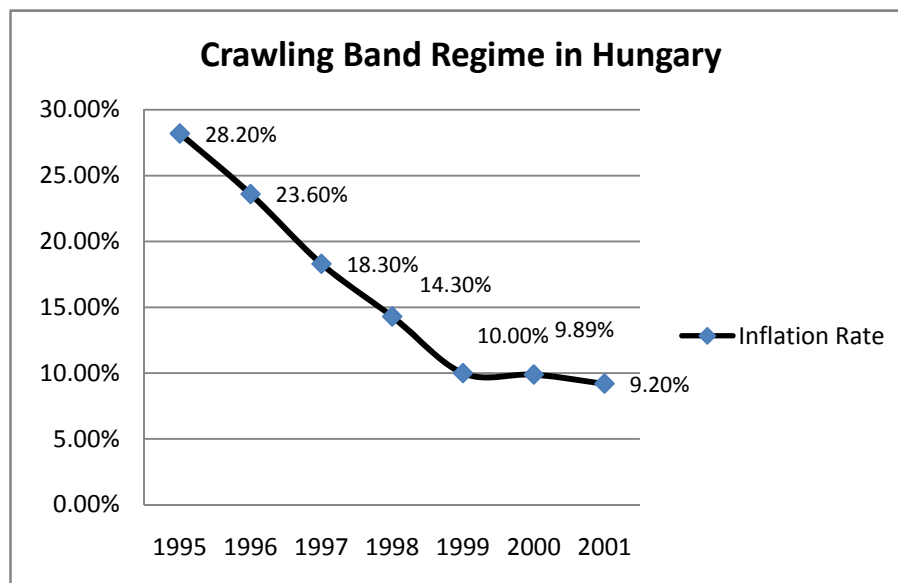
<sup>3</sup> From 2005, Romanian New Leu (RON) – as it is now found in any currency symbols list.

<sup>4</sup> Source: Romanian Institute of Statistics, [www.insse.ro](http://www.insse.ro)

<sup>5</sup> Source: OECD Statistics

<sup>6</sup> Source: Eurostat

from 28.20% in 1995 to only 9.20% in 2001, when it was abandoned. This is an extraordinary 67.37% fall in the inflation rate.



**Figure 1.** Inflation in Hungary: 1995-2001. *Source: Eurostat*

During the same period, Romania's policy of letting the ROL float brought inflation down from 38.8% in 1996 to 34% in 2001, only a small downward movement (12.3% in relative terms) compared to the swiftness and vigour of the Hungarian price stability progress.

However, Hungarian authorities could not any more act like a monetary *deus ex machina* and just devalue the forint whenever exports seemed to decline or GDP growth was less than expected. The new commitment ensured a steady devaluation but whether this was enough or not, MNB had no further control. The trade deficit remained in the same range (3.18% of GDP in 2001)<sup>7</sup>, while the Estonian one had a steeper decline to 5.4% of GDP (Eurostat).

GDP growth in Hungary in the 1995-2001 period was, on average 3.65%<sup>8</sup> (28.55% for the whole period)<sup>9</sup>; at the same time, Estonian real GDP growth between 1996 and 1998 (when the currency board was given up) was 5.17%. One can argue that, with respect to ensuring a good GDP growth, Hungary's exchange rate system was pretty stable, but better results have been obtained also with a currency board. On the other hand though, Estonia's growth potential was seemingly higher: after 1999, when

<sup>7</sup> Source: Eurostat

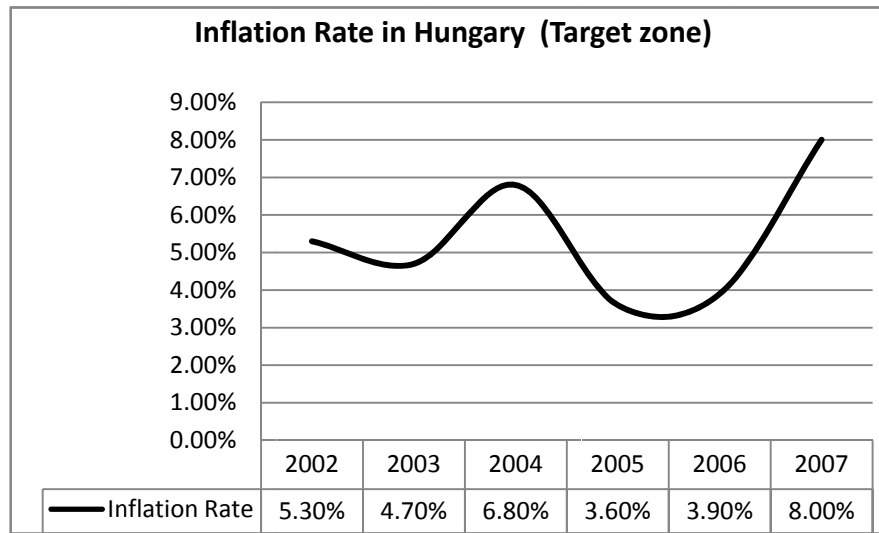
<sup>8</sup> Source: OECD statistics, own calculations

<sup>9</sup> Although growth in 1995 and 1996 remained below 2%

they gave up the currency board, growth rates increased to 9-10%. Hungary’s growth remained quite constant even to the present day to a steady 4-5%, which shows that, as opposed to the Estonia’s strict regime, the crawling band did little to hinder economic growth – there was no overheating effect when it was removed. The regime was abandoned in September 2001, in favour of a “target zone” regime.

**TARGET ZONE (AGAINST EURO)**

In September 2001, MNB abandoned the crawling system, considering that allowing for steady depreciation of the forint was no longer necessary.



**Figure 2.** Inflation in Hungary: 2002-2008. *Source: OECD Statistics*

The new system was a “target zone” against EURO, with a (+/- )15% floating band which represented indeed a solid commitment from the Hungarian National Bank to not pursue highly expansionary monetary policies that would bring inflation and also the need to overbalance downward pressures on the forint.

However, the mechanism, as shown in Figure 2, did not ensure constant deflation: there were large swings in the inflation rate and a general upward trend. Still, inflation rates were much lower than in Romania, where prices grew from 2002 to 2007 by 92.6%<sup>10</sup> compared with a mere 36.88% in Hungary (from the table). So, the mechanism was indeed effective compared to a country from the same region with a free floating exchange rate regime.

<sup>10</sup> Source: Romanian Statistical Yearbook, [www.insse.ro](http://www.insse.ro) and own calculations

As previously stated, there was no significant difference in the rhythm of GDP growth compared to the crawling band regime (1995-2001): not allowing for devaluation of the forint did not have a great impact on the economic growth. Trade deficit was not very much affected: whilst in 2003 and 2004 it has risen above 4.5% of GDP<sup>11</sup>, in 2007 it accounted for a mere 0.6% of GDP – it is hard then to believe that the forint has been artificially kept overvalued by the target zone.

The system was abandoned in February 2008: pressures to the an undervalued<sup>12</sup> forint within the bands required large sums of HUF injected into the market by MNB and a possible threat on the inflation target.

### **FREE FLOAT (2008-)**

It is yet early to assess the present free floating regime in Hungary: inflation rate in 2008 was only 6.10%. This can be a sign of the success of MNB's policy – which did not have to put inflationary pressures on the economy anymore to keep the forint within the bands – or can just be a sign of an economic slump: a decrease of the aggregate demand due to international economic crisis; Hungary's growth in 2008 was estimated from 0.5% ("The Economist") to -1.5% (CIA Factbook).

## **II. The Arguments For and Against Fixed Exchange Rates in Eastern Europe**

Possible benefits of fixed Exchange rate regimes include:

- a) Lower inflationary expectations in the economy, and thus help to lower inflation rates

If the Central Bank commits to a fixed exchange rate regime (or some intermediate commitment, such as a crawling band or target zone) then it loses the incentive to sustain inflationary policies; in order to keep the exchange rate within the commitment limits, the Central Bank would have to buy local currency and sell their foreign reserves, running the risk to deplete them.

In Hungary, inflation rates fell steadily during the adjustable peg regime; a consistent deflation was experienced in the context of the crawling band regime (from 26.30% in 1996 to 9.20% in 2001). Also during the target zone system (2002-2007) inflation was pretty well contained, although the process of deflation was less obvious<sup>13</sup>.

- b) Lower volatility of the exchange rate, therefore less uncertainty for exporters and importers in Hungary – this might encourage the trading volume and therefore support economic growth.

Not only foreign trade is encouraged; by linking forint to currencies of more developed countries (like USD, DEM and then Euro), Hungary was able to attract more foreign investors which are

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<sup>11</sup> Source: Eurostat

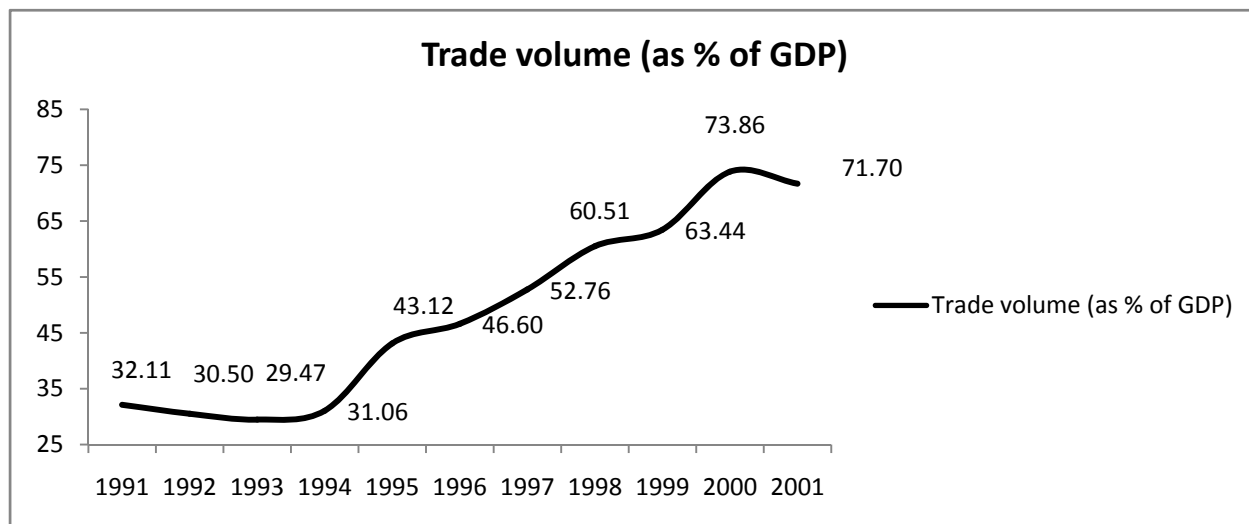
<sup>12</sup> The forint was actually stronger than the band allowed it to be; it was kept undervalued by MNB

<sup>13</sup> One cannot argue that this period was one of higher economic growth than the preceding one; Hungary's GDP growth was steady at approximately 4%-4.5% each year



less worried about the volatility of the exchange rate. What happened to the trade volume in Hungary during the adjustable peg and crawling band regimes?

As the figure below illustrates, during the period 1991-2001, when the exchange rate was relatively fixed against major currencies (either by adjustable peg or crawling band), the trade volume increased from 32.11% of GDP in 1991 to 71.70% in 2001, with a maximum of 73.86% in 2000.<sup>14</sup>



**Figure 3.** Trade volume in Hungary (1991-2001) *Source: OECD Statistics*

Other advantages of the fixed exchange rate include the existence of an automatic rule for monetary policy – thus increasing the central bank’s independence of political factors (F. Mishkin, “The Economics of Money, Banking and Financial Markets”) and the fact that it is a simple rule for the general public to understand.

Had such a rule not been implemented, there might have been the incentive to create the “political business cycle”, that is pursuing expansionary monetary<sup>15</sup> and fiscal policies around elections, to improve employment and stimulate economic growth. This wouldn’t even have been necessary in Hungary in some periods: even with strong deflation between 1995 and 2005, the unemployment rate fell from 10.4% in 1995 to 5.7% in 2001, consequently rising to 7.2% in 2005. We are noticing an upward sloping Phillips curve for the first period (1995-2001): inflation fell, unemployment fell as well. For 2001-2005, the negative relationship might have provided the incentive for decreasing the unemployment at the cost of higher inflation rates – the phenomenon was not too intense precisely due to the rigidity of the +/- 15% target zone against EURO (however, it should be noted that in 2003 the central parity has been lowered – a devaluation of HUF to support economic growth).

<sup>14</sup> Perhaps the switch to a more flexible exchange rate regime in 2001 was also due to a reduction in the positive effect a fixed exchange rate had over the trade volume.

<sup>15</sup> Provided that the Central Bank was not independent enough.

At least until 2001, the monetary policy was also relatively well coordinated with a restrictive fiscal policy: the budget deficit fell from 11.35% of GDP in 1994 to 2.95% of GDP in 2001.<sup>16</sup> After 2001, the still contractionary monetary policy was counterbalanced by a relaxed fiscal policy (as we can notice from the increase in the budget deficit) – still, the strict commitment of MNB to the exchange rate target zone kept the inflation rate within reasonable limits.

The possible costs implied by a fixed exchange rate include a loss of flexibility against domestic shocks as well as shocks in the anchor country. A transition country like Hungary is more prone to increases in productivity than the EU or United States; this is a positive domestic shock that might lead to the need of revaluing the forint – the peg/band is strained, keeping it undervalued and there are market pressures to appreciate the forint<sup>17</sup>.

The economic downturn EU is experiencing now can be regarded as a foreign shock for the Hungarian economy – in 2008, the target zone against Euro had the effect of keeping the forint undervalued relative to its true potential. To overcome such appreciation pressures and keep the forint low, MNB had to increase the money supply and create instead inflationary pressures: the main advantage of a fixed exchange rate, fighting inflationary expectations was no longer relevant. Therefore, in February 2008, the target zone regime was abandoned and Hungary reverted to the free float regime.

In fact, the effect of keeping the forint undervalued against Euro is obvious if we look at the historical exchange rates HUF/EUR and HUF/USD. From 2000 until 2008<sup>18</sup>, the forint appreciated from 260.04 HUF for an EUR to 251.5 HUF for an EUR – a 3.28% appreciation. Knowing that Euro has appreciated against USD in the same period by 32.68%<sup>19</sup>, we would expect a circa 35% appreciation of the forint against USD. However, if 1USD=282.8 HUF in 2000, the dollar was worth only 171.8 HUF in 2008 – that is a 40% appreciation of the forint. There is a small gap between the two figures, which make the case for this particular disadvantage of fixed exchange rate regimes.

Another potential cost of fixed exchange rate regimes is the possibility of speculative attacks. This indeed happened in Hungary on 15-16 January 2003. The forint was then close to its strong band limit and a number of foreign hedge funds undertook long positions in forint, forcing the band. MNB had no other choice but to buy 5.2 billion Euro from the market and flood the market with forint, therefore cutting interest rates by a large amount<sup>20</sup>.

A third potential cost of fixed exchange rate is the loss of accountability of MNB: the exchange rate loses its value as a signal for the real economy and the productivity and inflation differentials.

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<sup>16</sup> Due probably to the reason in the previous paragraph: the upward-sloping Phillips curve

<sup>17</sup> An increased demand for HUF

<sup>18</sup> When HUF was only linked to the evolution of Euro, not the USD

<sup>19</sup> Source: OECD Statistics

<sup>20</sup> Consequently it bought back 3.8bn Euro in May 2003.

## **The Maastricht criteria**

One important issue to analyze is whether, as of year 2008, Hungary fulfills the Maastricht Criteria for joining the European Monetary Union.

### **1. Inflation rate - FAILED**

The first criterion is that an eligible country for the EMU should have an inflation rate not higher than the average of the three lowest-inflation Eurozone countries, plus 1.5 percentage points. In 2008, the target inflation rate was of 3.2% (according to OECD statistics). As Appendix 1 shows, Hungary has, in 2008 an inflation rate of over 6%, insufficient to adhere to the Monetary Union. However, the deflation process will nevertheless continue in Hungary, though permitting them to reduce the inflation rate to the Maastricht requirements. The performance of 2005 and 2006 (inflation below 4%) could easily be repeated, especially in the context of free floating exchange rates. The massive injection of HUF into the market to keep the forint within the target zone might have been an important inflationary factor in 2007 and 2008.

### **2. Interest rate – FAILED**

As nominal interest rates are highly correlated with the inflation rates, it comes as little surprise that Hungary failed to fulfill this second Maastricht criterion, stating that the long term nominal interest rate should exceed by no more than 2% the same indicator in the best performing three countries in the Eurozone. The Hungarian interest rate exceeded 10% (see Appendix 1) whilst the target value was around 6.5%<sup>21</sup>. However, deflationary process in the next few years would lead to a convergence with the target value.

### **3. Government Deficit – PASSED**

With a 2.60% of GDP public deficit, Hungary passes this third Maastricht criteria (of a maximum 3% of GDP public deficit). However, the unfavourable economic climate in 2009 might trigger increased public expenditure to revitalize the economic conditions, and therefore increase the deficit to more than 3% of GDP.

### **4. Public debt – FAILED**

With the exception of 2001, Hungary never managed to keep the public debt below 60% of GDP, as the Maastricht treaty requires. The value of 73.8% of GDP in 2008 (see Appendix 1) is considerably higher than the target. In that respect, countries like Romania, where the public debt was completely paid off during the communist period, are highly advantaged.

### **5. ERM-II participation for more than two years – FAILED**

Although Hungary has never been part of the ERM-II, adhering to a target zone exchange rate regime against EURO until 2008 is a valuable experience that might help Hungary easily adapt to the

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<sup>21</sup> OECD statistics

official exchange rate mechanism – the monetary policy instruments necessary have already been used for more than 4 years.

After analyzing these criteria, one can easily observe that Hungary fulfills only one of the five Maastricht requirements for admission in the EMU. However, as discussed in the previous paragraphs, once the target zone abandoned – inflation should fall, and consequently interest rates should follow a similar behaviour. Moreover, as Hungary already followed an exchange rate regime similar to the ERM-II, the monetary policy instruments, as well as the public level of understanding with regard to the regime are better suited than in Romania, for instance, who always had a free floating arrangement.

#### **IV. Hungary and the Optimal Currency Area Theory**

In the next section of the paper, I will analyze the Hungarian macroeconomic climate from the perspective of the Optimal Currency Area – and thus argue whether Hungary is prepared or not, from this point of view, to join the European Monetary Union.

The optimal currency area theory proposes six criteria of evaluation: three economic based criteria and three political criteria [7]. These will be thoroughly analyzed in the following paragraphs.

##### **Economic Criterion 1: Labour mobility (Mundell)**

As Hungary does not keep track of the people working in Western Europe<sup>22</sup>, this number is being estimated at 45000 people<sup>23</sup>, about 0.5% of total population. This is a very small figure compared to the EU average, estimated at about 5%, tenfold the Hungarian value.

However, a study by Monika Błaszkiwicz and Przemysław Wozniak shows that the probability of asymmetric shocks seems to be quite low in the case of Hungary; the correlation coefficient between the GDP movements in Hungary and the EU-15 is 0.96 for the period 1999-2002, growing from 0.52 for 1994-2002. Hungarian economy is therefore getting very much in line with the European one, the shocks having a greater likelihood of being symmetric. By comparison, the same correlation coefficient in Romania is -0.76 – a very strong negative correlation which increases the chances of an asymmetric shock. Actually, Hungarian economy seems the most correlated with the European one, with Poland (0.93 correlation) coming in second.

Therefore, analyzing this criterion, we find that labour mobility tends to be quite low in Hungary, this being a concerning fact, but on the other hand, the probability of an asymmetric shock between Hungary and EMU which will need to be compensated by labour force flows is as well very low.

##### **Economic Criterion 2: Production diversification (Kennan)**

Another economic criterion for an Optimal Currency Area states that countries attempting to join an OCA should have a similar pattern of production. In this way, the chances of asymmetric shocks is highly reduced, for production has the same basic structure.

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<sup>22</sup> As the Hungarian Statistics Institute states

<sup>23</sup> Hungarian Statistics Institute

Using a 2006 study from Eastern European Quarterly, we find out that Hungary has a production diversification index (relative to EMU) of 73 out of 100, superior to those of Germany (55.5), Austria (61.78) or France (62.31). The same study shows a structural similarity between Hungary and EMU means that any shock will affect Hungary in the same way as it affects the whole European Monetary Union.

Was this not the case, a negative shock in the world demand for a commodity EMU produced and Hungary not would have diminished the export demand for EMU more than the Hungarian one, leading to pressures to depreciate the Euro (to stimulate aggregate demand), pressures Hungary wouldn't feel: a depreciation of the common currency would only lead to inflation in Hungary.

As the production is quite similar between Hungary and EMU (especially Germany, Austria and Poland), the above scenario is not too probable and the production diversification criterion is accomplished.

### **Economic Criterion 3: Openness**

Richard Baldwin and Charles Wyplosz define openness as the “share of economic activity devoted to international trade”. In order to assess whether Hungary accomplishes or not this criterion we will create as a special indicator the average of exports in GDP and imports in GDP ratios and compare it with EMU countries as well as other candidate countries for EMU.

No.	Country	(Exp+Imp)/2GDP (%)	No.	Country	(Exp+Imp)/2GDP (%)
1	Hungary	70.1%	5	Lithuania	56.9%
2	United Kingdom	27.9%	6	Romania	39.3%
3	Portugal	36.2%	7	Bulgaria	65.9%
4	Belgium	87.2%	8	Poland	40.9%

*Source: Richard Baldwin, Charles Wyplosz, "Economics of European Integration", 2006*

As it can easily be noticed, the share of foreign trade in GDP is considerably large in Hungary – more than double relative to United Kingdom or Portugal, countries that are already in the EMU and considerably higher than the share of foreign trade in other EMU candidates such as Poland, Romania or Lithuania. Therefore, one can assume that the openness criterion is successfully accomplished by Hungary.

### **Political Criterion 4: Fiscal Transfers**

This criterion is one of the most debatable in the EMU case; overall, the EU budget – which should be used to alleviate asymmetric shocks across the Monetary Union through fiscal transfers – does not exceed 1.3% of European Union GDP.

However, Hungary is expected to be for still a fairly long period a net beneficiary of the EU fiscal transfers, being one of the least developed countries in the EU. As EU regulations permit, fiscal transfers are allowed only for countries with a GDP of less than 75% of the EU average. Therefore, were a

negative asymmetric shock to affect Hungary, there is a great probability of it receiving funds from the European Union, and a low probability to supply in a large proportion such funds to any other country suffering from an economic shock.

The low EU budget though means that the fiscal transfers criterion is not accomplished by the European Monetary Union, and not by Hungary, were it to enter EMU.

**Political Criterion 5: Homogeneous Preferences**

This criterion states that countries forming a currency area should share the same views and the same policies in the way a crisis is dealt with. This will lead to a better understanding of each other’s actions, also encouraging fiscal transfers. This criterion matters more for symmetric shocks, in which all countries should have the same reaction, and might also matter in the eventuality of asymmetric shocks: by increasing information about your partners’ behaviour and thus reducing moral hazard relative to other countries’ actions fiscal transfers can be encouraged.

There is no general consensus about this criterion, but in general European Central Banks have had similar way of dealing with crisis (interest rates, quantitative easing) and therefore we might assume that probably this criterion is fulfilled also by Hungary, which has shown a great concern for price stability – having thus the same primary objective as ECB.

**Political Criterion 6: Solidarity**

This last criterion states that Countries that view themselves as sharing a common destiny will accept more easily to share also the cost of operating the institutions of the Currency Area. The countries should therefore accept higher economic costs in the short run (due to temporary asymmetric shocks) because they believe in a higher purpose.

However, Hungary seems not to share such a view. If in 2004 (the year when Hungary joined the EU), according to the Eurobarometer 50% of Hungarians had a positive view on the European Union, in 2008, only 33% retained the good opinion; approximately two thirds of Hungarians are not satisfied with the Union, being the most pessimist country in EU-25.

To summarize the conclusion from the 6 criteria Hungary should fulfil to join the Optimal Currency Area:

<b>CRITERION</b>	<b>YES/NO (comments)</b>
<b>Labour mobility</b>	No, but in rest good correlation with EU economy
<b>Production diversification</b>	Yes
<b>Openness</b>	Yes
<b>Fiscal Transfers</b>	No, but for a period still net beneficiary of any transfers
<b>Homogeneous Preferences</b>	Probably Yes
<b>Solidarity</b>	Probably No

**Should Hungary Join The EMU?**

The factors summarized above do not indicate a straightforward conclusion whether Hungary is ready or not to join the European Monetary Union. However, there are several other factors to consider when making such a decision, including the importance of monetary policy independence for the country applying to a monetary union.

Introducing a single currency will seriously affect the monetary independence of the participating countries. National Central Banks will not be able anymore to influence the real economy by setting interest rates (which will be set by the supranational body), increase or decrease the money supply (the supranational body being the only institution with this right). Therefore, monetary policy instruments cannot be used within one country to fight the economic adversities that affect that particular country. Theoretically, labour mobility (by working force flows) should be the answer to solving asymmetric shocks within the Monetary Union without the need for monetary policy adjustments. But, as we have discussed, the Mundell criterion is not fulfilled by the European Union, albeit for the language differences between the participating countries. A working Monetary Union is in place in the United States, but we face there a completely different situation: the differences between New York and Texas are seemingly less important than the ones between Slovenia and France.

However, having a supranational body conducting monetary policy has significant advantages. One important advantage is represented by the credibility improvement: the ECB is arguably the most independent central banks in the world; the probability of it being influenced by political business cycle or any other kind of outside bias is smaller than in any EU country, especially the ones with less market economy experience, such as Hungary is.

Having a single currency also eliminates all the conversion deadweight costs (estimated by the European Commission to be in the range of 0.25% to 0.5% of GDP), therefore stimulating trade between participating countries and consequently economic growth. Companies cannot any longer allow price discrimination between different markets from a monetary union, without it being immediately noticed by customers – price comparison is more easily allowed, encouraging consumption.

But the most important advantage a single currency area brings is related to the elimination of exchange rate risk – there will be no more volatility on currency markets. This should prove to represent an important incentive<sup>24</sup> for companies within the union to increase trading volumes.

The costs of having a supranational institution coordinating monetary policy for all participants are primarily related to the loss of national monetary policy independence, especially in the context of asymmetric shocks being quite probable and hard to alleviate by means of labour force flows. In this context, it is likely for transition countries (most likely to asymmetric shocks) to experience large output volatility after joining the Monetary Union. (Borowski, 2003).

There are also political costs – it is widely argued that by joining a currency area there will be a loss of national sovereignty, which is considered unacceptable by most European countries.

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<sup>24</sup> Assuming they are sufficiently risk averse

Another important disadvantage is that by following a deflationary policy at all costs, imposed by a supranational entity, recessions are likely to aggravate in countries experiencing them. This was the case of the United Kingdom (which although has never been a part of EMU has participated in the Exchange Rate Mechanism, effectively linking the sterling to the ECU) which in 1992 could not pursue a devaluation of the pound to fight the ongoing recession, being restrained by the commitment made by BoE to a exchange rate regime linked to the European currency. George Soros then speculated on the depreciation of the pound, which eventually lead to the UK exiting ERM and being able to fight the recession more effectively.<sup>25</sup>

Up to present day though there have been no big asymmetric shocks within EMU, and those of small amplitude were quickly alleviated by means of fiscal policy (France, Germany). Bayoumi and Eichengreen (1993) state in one study that for some EU countries (Belgium, Nederland, Luxemburg, Denmark and Germany) the correlation of supply side shocks is comparable to the one within the United States. Such a statement though, cannot be made if we look further than this small group of countries.

Finally, it can be concluded that it is a preferable alternative to join a monetary union such as EMU rather than peg your currency to the one of a more developed country; as part of EMU, each country has a vote in deciding the group's monetary policy and can influence it in the desired way, whereas by simply pegging the currency, such influence is not possible.

#### **Should Hungary maintain the floating exchange rate regime in the future?**

The main cost of a floating regime, especially in a transition country like Hungary, is the lack of a strong commitment by the monetary authorities to effectively fight inflation. By not having a floor exchange rate to prevent it, MNB (referring to the Hungarian situation) can increase the money supply virtually indefinitely without losing foreign reserves in order to reduce unemployment in the short run (due to political bias around election times, for example) and therefore create inflationary pressures. A relatively young central bank may lose credibility by adopting a floating exchange regime and therefore lack efficiency in fighting inflationary expectations.

In such conditions, volatility of the exchange rate will be high and countries will face a deficit of foreign investment, which is crucial at the early stages of development: both because of inflationary expectations and exchange rate risk. The loss of credibility and economic discipline in an emerging market economy is also an important disadvantage of floating exchange regimes. Romania, which unlike Hungary, adopted a floating exchange regime had encountered difficulties in the disinflation process: inflation was extremely high: in 2002, 13 years after the overthrow of the centrally planned economy, inflation was still above 20%<sup>26</sup>, while in Hungary it was only 5.3% - a figure fulfilling the inflation criterion for ascension to EMU.

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<sup>25</sup> As Paul Krugman states in *"The Return of Depression Economics"*, Penguin Economics, 2008, George Soros has acted as a benefactor of the British financial system, most likely without trying to.

<sup>26</sup> Source: Romanian Statistical Yearbook, 2007



However, the floating exchange rate regime brings some considerable advantages: firstly, it is important to be considered an automatic adjustment in the balance of payments, adjustment made simply by exchange rate fluctuations.

Secondly, and more important, a floating exchange rate allows a country to effectively fight asymmetric shocks through monetary policy: it can easily increase the money supply when needed without being concerned about the level of international reserves. This not only brings more flexibility in the context of turbulent international market, but also allows the Central Bank to keep lower amounts of foreign reserves – considerably diminishing its costs. Moreover, as shocks in the anchor country are easily transmitted to the emergent economy through contagion by exchange rate channel, this is no longer the case within a floating rate regime. Finally, the accountability of policymakers is substantially increased, because the exchange rate has value as an important signal regarding the stance of monetary policy and its effectiveness.

Adopting a floating rate regime can actually stimulate growth, for there is no further constraint in increasing the money supply and stimulate the aggregate demand; actually, after giving up the currency board in 1999, Estonia's rate of GDP growth skyrocketed from 5% to an almost double figure of 9-10%.

Hungary adopted the floating rate regime in February 2008 – the forint has become stronger than the target zone permitted; to keep it within limits would have meant increasing the money supply and creating inflationary pressures – undermining the other, more important objective of MNB: price stability.

### **Conclusions**

The variety of exchange rates regimes followed by Hungary in the past 15 years led to a better macroeconomic performance than in countries like Romania, Bulgaria or Estonia which did not adjust their system of determining the exchange rate according to the macroeconomic conditions of each particular period. By gradually increasing the flexibility of the exchange rate, Hungary kept the inflation rates reasonably low and promoted a good economic growth. However, keeping the forint undervalued by not abandoning the target zone earlier did create inflationary pressures in the past 3 years. The free floating regime adopted in 2008 should nevertheless alleviate these pressures, provided that the central bank does not abuse their enhanced ability of inflating the money supply.

Although Hungary does not yet fulfill most of the Maastricht criteria, the inflationary perspectives sound reasonably good. The OCA theory predicts that Hungary fulfills 2 out of the three important economic criteria, with good hopes of also increasing labour mobility in the future. However, the risks and benefits of entering the EMU or keeping a free floating forint should be carefully analyzed by the Hungarian government and Central Bank when taking any important decision for the future.

## REFERENCES

1. Błaszkiwicz , Monika and Wozniak , Przemysław ; “Do Candidate Countries Fit the Optimum-Currency-Area Criteria?”, Polish Centre for Social and Economic Research, 2003
2. Borowski , Jakub ;“Potential Benefits of Poland’s EMU Accession”, National Bank of Poland Studies, 2003
3. Darvas, Zsolt ; Szapáry, György : “Financial Contagion under Different Exchange Rate Regimes”, MNB Working Papers, 1999
4. Eastern European Quarterly : “Synchronization of business cycles: EU and Hungary.”, Spring 2006
5. Evžen Kocenda ; “Detecting Structural Breaks: Exchange Rates in Transition Economies”, 1999
6. Knight, Malcolm; “The role of the exchange rate in the monetary frameworks of emerging market economies”, speech at the Black Sea Governors’ Club, St Petersburg, 27 May 2005
7. Kucerova, Zuzana ; “The OCA Theory and its Application to Central and Eastern European Candidate Countries”, Department of Macroeconomics, Technical University of Ostrava, Faculty of Economics, 2003
8. Levasseur, Sandrine and Creel, Jerome ;“How would a Fixed Exchange Rate Regime Fit the Transition Economies?”, OECD Working Paper, 2004
9. Losoncz, Miklós ;“Speculative Attack Against the Hungarian Forint”, MNB Working Papers 2003
10. Mishkin, Frederic; “The Economics of Money, Banking and Financial Markets”, 8<sup>th</sup> Edition, Addison-Wesley, 2006
11. Mile, Ibolya ; “Exchange Rate Policy of Hungary on the Way to EU Membership”, Dissertation Thesis, University of Duisburg-Essen, 2003
12. Orłowski ,Lucjan ; “Monetary Policy Targeting In Central Europe’s Transition Economies: The Case For Direct Inflation Targeting”, 1998

## APPENDIX

### Hungary main macroeconomic data in various exchange rate regimes

Macro indicators	Adjustable Peg		Crawling Band against EURO (+/- 2.25% band, then +/- 15% band in 2001)					
	1994	1995	1996	1997	1998	1999	2000	2001
Inflation rate	18.80%	28.20%	23.60%	18.30%	14.30%	10.00%	9.89%	9.20%
Nominal interest rate	30.80%	28.80%	23.30%	19.20%	15.80%	13.20%	10.98%	10.49%
Nominal exchange rate (EUR)	-	-	-	-	-	252.77	260.04	256.59
Nominal exchange rate (USD)	105.16	125.68	152.64	186.79	214.4	237.14	282.18	286.5
public debt/GDP	91.78%	88.45%	76.12%	66.74%	64.94%	66.16%	60.10%	59.72%
budget deficit/GDP	-11.35%	-7.71%	-5.99%	-7.39%	-8.42%	-5.27%	-2.94%	-4.06%
GDP/capita (USD)	8814.54	9068.2	9401.9	10033.77	10721.96	11311.62	12267.65	13549.09
Unemployment rate	11.0%	10.4%	9.6%	9.0%	8.4%	6.9%	6.4%	5.7%

Macro indicators	Target zone (+/- 15% against EURO)						
	2002	2003	2004	2005	2006	2007	2008
Inflation rate	5.30%	4.70%	6.80%	3.60%	3.90%	8.00%	6.10%
Nominal interest rate	8.90%	11.99%	9.93%	5.41%	7.98%	7.01%	10.12%
Nominal exchange rate (EUR)	242.96	253.62	251.66	248.05	264.26	251.35	251.5
Nominal exchange rate (USD)	257.88	224.3	202.74	199.58	210.39	183.62	171.8
public debt/GDP	60.96%	61.42%	65.30%	68.73%	71.85%	72%	73.80%
budget deficit/GDP	-8.96%	-7.15%	-6.37%	-7.82%	-9.32%	-4.95%	-2.60%
GDP/capita (USD)	14694.21	15493.88	16223.45	16958.44	18030.11	18574.46	19800
Unemployment rate	5.8%	5.9%	6.0%	7.2%	7.5%	7.4%	7.70%

#### Sources:

OECD Statistical Database ( <http://stats.oecd.org> ),

CIA The World Factbook ( <https://www.cia.gov/library/publications/the-world-factbook> ),

Eurostat Database ( <http://epp.eurostat.ec.europa.eu> ),

Hungarian Central Statistical Office ( <http://portal.ksh.hu> ),

Hungarian Central Bank ( <http://english.mnb.hu> )