

Preparation of the Czech Republic for the accession to the ERM II and the eurozone from the point of view of the price criterion*

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Abstract

In deciding about the accession to the ERM II and the eurozone we should be interested in the theory of optimum currency areas. This theory defines a number of important characteristics that should be followed closely and analyzed by both the countries acceding to the monetary union and by the existing monetary union itself. Among these characteristics belong: the price level, the relative prices and the rate of inflation. From the theory of optimum currency areas it follows that after its accession to the currency union a country has a better chance to form with it a well-operating monetary union the nearer are the price levels and the relative prices in those areas. The rates of inflation should approximately be on the same level, too. Apart from the theoretic definition of this problem it is the aim of this paper to find if the price level and the relative prices between the Czech Republic and the eurozone are approximately at the same level. Unfortunately, we have found that the relative prices of nearly all the commodities are dramatically lower. That is why from the point of view of this criterion the Czech Republic is not prepared to accede to the eurozone. With a view to the price criteria fast accession of the Czech Republic to the ERM II and the eurozone should be recommended only most cautiously. The Czech Republic may rather be advised not to enter the eurozone within the period of five years. The Czech Republic will probably be prepared to enter after ten years period if the dynamics of harmonization of prices do not change.

Key words: the ERM II, the eurozone, the European Union, relative prices, the price level

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1 Introduction

One of the important problems of these days is the optimum timing of the accession by the “new” European Union members, including the Czech Republic, to the ERM II system and the eurozone. In order to solve this problem with full responsibility we have to explore carefully the individual characteristics defined by the theory of optimum currency areas. On the basis of these characteristics we should be able to decide whether the country is prepared to access to the monetary union or not.

Inflation is a very important magnitude which is followed in the content of admission to the monetary union (or the foundation of a new monetary union). The economists agree on the fact that the countries with similar rates of inflation have a better chance to form a well-operating monetary union.¹ That is why a lot of them find it suitable for the rates of inflation of the monetary union and the countries aspiring to admission to be nearly on the same level. But there are economists who see the problem differently. According to them the similar rates of inflation are the result of - not the entry requirement for - the monetary union's existence. It is a question as to which approach to this problem should be chosen by the countries desiring to access to the monetary union. As far as the eurozone is concerned, this dilemma has been solved by the Maastricht criteria. In our opinion any monetary union will have to deal with lot of problems after its formation and after its expansion. These problems could impair greatly its future existence. That is why we are of the opinion that the entry to the monetary union should be prepared particularly well. It means that each member aspiring to admission to the monetary union should do everything to have established a well-operating monetary union with the others as early as before the foundation of the monetary union. If we start to be interested in the problems of prices we can in no case occupy ourselves with rates of inflation only.

The aim of this paper is to attempt an analysis of all the questions connected with the impact of prices on a monetary union. We will try to formulate what is to be fulfilled in order that we could say that from the point of view of these characteristics the country is prepared to enter and form a well-operating monetary union.

Further we will try to analyse concrete data on the Czech Republic, and based on these data to state whether the Czech Republic is prepared to enter the eurozone. (We will be interested only in the price criterion.) If the conclusion is negative (the Czech Republic is not prepared) we will try to answer the question at what time it will really be prepared.

2 The OCA theory and the price criterion

If we consider it important for the rates of inflation to be on a similar level in the countries that want to access to the monetary union, as well as in those that are already members of the union, the new members of the European Union should enter the eurozone after the price relations and the price levels have satisfactorily approximated. Then the objective reasons for the rise of the rates of inflation will vanish in the future. There will not be any objective reasons for a future high inflation. In Table 1 we can see that at present the differences between the rates of inflation are not significant. (A bit higher rate of inflation (i.e. around 7 percent) can be found only in three counties of the EU-27. These countries are: Bulgaria,

¹ „A well-operating monetary union is defined as a geographical area which using single currency realizes long term higher yields than it would realize if any part of that region used its own currency.

An optimum currency area is a geographical area in which there are flexible prices or perfectly mobile inputs, or the area is so homogenous that all shocks hitting it are symmetric.”

Kaňková, E.: Teorie optimálních měnových oblastí a její uplatnění v praxi. Disertační práce, VŠE, Praha 2006, s. 76

Latvia and Rumania.) This situation is given by the monetary policy of the central banks in these countries. The central banks are concentrating, and were concentrating greatly in past, on maintaining internal monetary stability. According to a number of economists the exclusive watching of the low rates of inflation was unacceptable and it did not take into consideration the broader needs of the individual economies. For instance Růžena Vintrová is one of the economists who do not criticise the monetary policies of only the countries which want to enter the eurozone. In her opinion she considers pushing the low rates of inflation of the “new” European Union members particularly unsuitable. Vintrová as well as others mentions the so-called own sources of inflation, which automatically increase inflation in the transforming economies. These own resources of inflation are the still existing deformations of price levels and price relations. We cannot probably have any illusions that the optimum harmonisation will precede the acceptance of the euro. “In our practical policy the usual interpretation predominates: the lower the inflation approximates to zero the better. In the last five years of inflation targeting ...the Czech National Bank has hit the goal only in a single year. In all the other cases the existing inflation has been lower than the target. This result was not interpreted as a problem: The Czech national Bank has only explained which objective circumstances have caused this problem.”² Because harmonisation of the price relations and price levels will probably not be effected before the accession to the eurozone, a high rise of the rates of inflation can be expected after the entry. In this situation we can be afraid of a loss of competitiveness of domestic economy.

The probably greatest problem is the fact that the post-Communist countries in which the process of transformation has not run through yet, try to apply the principles and the rules which are valid for the stabilised market economies. These problems are connected with following risks arising from the economic levels and price levels as compared with the average of the European Union. If the new members of the European Union are also to become members of the eurozone and to form with its present countries a monetary union, the new members will have to reach the same economic level as the current members of the eurozone.³ This strive will be witnessed by real appreciation of the native currencies in the economies undergoing the process of adaptation. Real appreciation will be effected either owing to the rise of the price level, or owing to nominal appreciation. This process will take longer, so it will not be finished in a few years within which the entry by the new members of the European Union to the eurozone is expected. This process is linked with a lot of problems. “Real appreciation will be linked with the task to sustain competitiveness and, on the other hand, the problem of optimum growth of the economies in a situation of such low rates of inflation that would not endanger the monetary targets of the European Central Bank.”⁴

The first source of real appreciation is a higher rate of inflation in the adapting economies. As it has already been indicated, many economists think that this channel is very important, and that is why they are afraid of a too restrictive policy on the part of the monetary authorities. Economists distinguish two types of this process. One type is the one-off price deregulation, which causes radical changes of prices, and the second is a gradual rise in prices linked with correcting the price relations and the price levels.

Harmonising the price relations proceeds over a long period of time. Some prices rise faster and some rise more slowly. It is generally held that the correction of price relations leads to a higher rate of inflation, because prices are not elastic in the downward direction. Probably, it

² Vintrová, R.: Konvergence ekonomické úrovně a cenových hladin. *Acta oeconomica pragensia*. 2003, č. 6, s.131

³ Presented in detail in Kaňková, E. (2006a): Současná a budoucí eurozóna z pohledu ekonomické úrovně členských a kandidátských zemí. In. *Agrarian perspectives XV*. ČZU v Praze, PEF, Praha 2006

⁴ Janáčková, S.: Rozšiřování eurozóny: některá rizika pro dohánějící země. *Politická ekonomie*, 2002, č. 6, s. 768

may not be possible to guess to what extent correcting price relations will be projected onto inflation.

The reason for harmonising price levels may be catching up with the economic level of the advanced countries of the existing eurozone. This rise of prices is only identified as inflation, but in fact it is no real inflation at all. The rise of prices is caused by higher quality of the products. Technical progress, and thus also the rise in the quality of the products, are a process testified in all countries. That is why the European Central Bank sees the inflation of 2 percent as price stability. This leads a number of economists to the conclusion that in the economies catching up on the economic level of the eurozone the optimum level of inflation must be higher.

Another very important cause of the price rise, which in its final effect will lead to revalorization is the Balass-Samuelson effect. This effect is connected with the rise of the part of capital in production and with the introduction of new technologies into the process of production. This leads to a rise in the productivity of labour in the sector of tradable goods and to the pressure on the growth of wage costs in the sector of non-tradable goods. The impact of the Balass-Samuelson effect on the rate of inflation depends on the shares of non-tradable and tradable sectors in the economy as well as on the part of the wage costs in the total costs in the non-tradable sector.

Another source of real appreciation of the currency is the inflow of foreign capital. The arrival of foreign capital can lead to excessive nominal appreciation of this domestic currency under which the domestic products will lose competitiveness. That is why there are fears by the Czech National Bank of the impact of foreign capital on the domestic rate of exchange. In the past the Czech National Bank tried to slow down that impact of real appreciation whenever it was considered too fast. On the other hand however such behaviour may be problematic, because the excessive restriction of real appreciation can slow down the growth of the productivity.

A number of economists perceive as very interesting the question as to what fastest real appreciation should the individual countries be allowed without their competitiveness being endangered. If real appreciation does not cause the country any problems with competitiveness, then this process is clearly positive. In this case the approximation of the price levels and the price relations means only a rise of the GDP per capita. Real appreciation happens owing to structural changes, the rise of the productivity and quality of the products.

Summarization:

The discussion concerning the rate of inflation, price relations and price levels can be summed up by saying that a lower economic level corresponds to a lower price level. A low rate of inflation (equal in all the regions of the future monetary union) is clearly positive, only if both the monetary union and the country that is prepared to enter the union are on the same economic level. In the case of the eurozone and the candidates of admission this does not hold at all. That is why correction of the price levels, and the relative prices in particular, is necessary. Prices can be adjusted in the following way:

1. with the help of a higher rate of inflation in the transforming economies
2. by nominally appreciating currency
3. by a combination of a higher rate of inflation and nominal appreciation of currency.

A non-negligible problem of many candidates for membership in the eurozone is also the surviving heritage of the centrally planned economies. In these countries this fact is felt (among other effects) in a high deformation of prices as compared with market economies. In this content we should not forget that nominal appreciation can lead to closer relations

between the price levels only, not the price relations. That is why the countries that want to enter the eurozone cannot avoid higher inflation.

3 Preparation of the Czech Republic for the accession to the eurozone from the point of view of the price criterion

In the introduction to this paper it is claimed that the aim of the empirical part is to judge the coordination of the relative prices and the price levels between the Czech Republic and the eurozone. In working on the empirical part we have been using accessible data. In the (Kaňková, 2006a) paper we reminded the reader that the problem of the current data was the fact that the values calculated for the whole present European Union – it means EU-25 or EU-27, have been taken at their 100 percent height. This approach can be considered problematic, because in case of the entry of some less prepared countries plus the Czech Republic, our country would immediately stand at 100 percent. In reality, if the European Union is to function well, the economic level of the new members will have to rise so as to be the same as the economic level of the center of the European Union. That is why it would be much more serious if EU-15 is taken as the value of 100 percent. Neither this situation would be ideal. There are countries, as Portugal or Greece, for which EU-15 is a hardly attainable goal. The time inconsistency of these data is another very important problem. For instance, if the relative prices between the years 1999 and 2003 are calculated at 100 percent for EU-15, and between the years 2004 and 2005 and at 100 percent for EU-25, comparison of these data is problematic. Because there is no possibility of obtaining relative prices for the years 1999-2005 converted to the same base (e.g. EU-15 for the whole period), we have to tolerate that inaccuracy. Fortunately in 2003, relative prices for EU-25 were in most cases on a higher level than 90 percent and we can suppose that the situation improving. That is why the inaccuracy that must be tolerated is in no way fatal.

In the previous chapter we explained that the coming closer of relative prices should proceed primarily via higher inflation. Nominal appreciation itself cannot solve all the problems. That is why the main question is what the relative prices between the Czech Republic and the eurozone look like. Unfortunately, the Czech Statistical Institute did not calculate relative prices between the Czech Republic and EU-15, not between the Czech Republic and the eurozone, and only until 2003. Since 2003 the relative prices have been calculated for EU-25. Now we will try to sum up development of the relative prices between the Czech Republic and EU-15 for the years 1999-2003.

During the period mentioned some harmonization of the relative prices between the Czech Republic and EU-15 can be observed. From this point of view the future entry of the Czech Republic to the eurozone can be valued positively. Nevertheless, the harmonization is still considered insufficient. From Table 2 it can be seen that in a number of items the 2003 prices in the Czech Republic were below the 60 percent level of the EU-15 prices. The items were for instance bread and cereals, fish, milk, cheese and eggs etc. These items stood even at approximately 50 percent. As for the non-tradable items the situation was even more dramatic. E.g. the year 2003 health service was at 44 percent of EU-15 and education even at 27 percent of EU-15. In a number of items a fall in relative prices could be witnessed between years 2002 and 2003.

If we go on assessing the years 2004 and 2005, we can say that between these two years the relative prices of a number of items were rising. (Relative prices in the years 2004 and 2005 are summarised in Table 3.) This development can be positively assessed in the majority of items, because the prices in the Czech Republic are mostly on a lower level than the prices in the eurozone. That is why this process represents a process of harmonization of the price

relations. Unfortunately, we have always to remember that in these years (the years 2004 and 2005) relative prices are related to EU-25, i.e. all the values calculated for EU-15 would be a bit lower. Even in this situation the major items of relative prices in the Czech Republic are at a lower level than 80 percent of EU-25. (A number of prices are still approximately at a 60 percent level.)

Table 4 is a summarization of the view. This table records the development of the price levels of the individual countries of the European Union in the years 1999-2006. On the one hand these values are problematic, because they provide us with only an aggregate view and do not inform us about how the price relations are being harmonised. On the other hand, the advantage of these data is their time consistency (prices for the period of the years 1999-2006 are related to the same base, i.e. EU-27). From Table 4 we can discover at first sight that the price level in the Czech Republic is at present at 60 percent of the EU-27 prices.

Even though the situation is examined in detail using relative prices or only the price levels, in both cases the conclusion is that at present the prices in the Czech Republic are not harmonised enough with the prices in the eurozone. If the dynamics of the harmonization of the price levels and the price relations did not change, the Czech Republic would not be prepared to enter the eurozone in the following five years. In these years the entry of the Czech Republic to the eurozone was originally planned. From the point of view of these criteria the Czech Republic would be prepared only as late as in ten years.

If we are interested in the problems of harmonisation of price levels and the price relations the development of the nominal effective exchange rate and the real effective exchange rate of the Czech crown are also worth our attention. The analysis of the process of convergence of the Czech Republic will show us that the harmonization of the Czech Republic with the eurozone proceeds at first through the channel of inflation and then through the exchange rate channel. From Table 5 it is evident that the process of convergence proceeded through the exchange rate channel starting with the year 1999. Both the nominal and the real effective exchange rates were appreciating during the years 1999-2002. Between the years 2002 and 2003 there was moderate depreciation (again of both the nominal and the real exchange rates) and since 2003 the nominal and the real exchange rates have nominally been appreciating again. In this context it might be objected that we do not have to work with the effective exchange rate of the Czech crown and that it would be more advantageous to make use of the rate of exchange of the crown to the euro. On the other hand the development of the real effective exchange rate informs us about the changes of the competitiveness of the Czech economy as related to the foreign countries that we carry on trade with. From this point of view the real effective course is rather interesting. (Apart from this, we should not forget that the major exports go to the European Union and the same holds for the imports.) If we take a look at Table 6 we find that the development of the nominal exchange rate of the Czech crown to the euro corresponds with the development of the nominal effective exchange rate, i.e. from 1999 till 2002 we see clear appreciation of the Czech crown, in 2003 we can see depreciation, but from 2003 till 2006 there is appreciation again.

“...Up to the year 1998 (included) the convergence proceeded via the inflation channel. The inflation differential between the Czech Republic and the European Union amounted to about 7 to 9 percentage points, while the nominal exchange rate of the Czech crown ... remained stable. Since this year the Czech Republic has been experiencing a low rate of inflation, and the inflation differential to the EMU has gradually been falling. The exchange rate of the Czech crown to the euro started simultaneously to appreciate considerably in the year 2000.

All that means a change of the character of the process of convergence. Nor the process of convergence is running through the exchange rate channel.“⁵

Table 1: Rates of inflation in the European Union and some other countries.

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
European Union	:	:	1.7 ^(ei)	1.3 ^(ei)	1.2 ^(ei)	1.9 ⁽ⁱ⁾	2.2 ⁽ⁱ⁾	2.1 ⁽ⁱ⁾	2.0 ⁽ⁱ⁾	2.0 ⁽ⁱ⁾	2.2 ⁽ⁱ⁾	2.2
Euro area	:	:	1.6 ^(e)	1.1	1.1	2.1	2.3	2.2	2.1	2.1	2.2	2.2
Belgium	:	:	1.5	0.9	1.1	2.7	2.4	1.6	1.5	1.9	2.5	2.3
Bulgaria	:	:	:	18.7	2.6	10.3	7.4	5.8	2.3	6.1	6.0	7.4
Czech Republic	:	:	8.0	9.7	1.8	3.9	4.5	1.4	-0.1	2.6	1.6	2.1
Denmark	:	:	2.0	1.3	2.1	2.7	2.3	2.4	2.0	0.9	1.7	1.9
Germany	:	:	1.5	0.6	0.6	1.4	1.9	1.4	1.0	1.8	1.9	1.8
Estonia	:	:	9.3	8.8	3.1	3.9	5.6	3.6	1.4	3.0	4.1	4.4
Ireland	:	:	1.3 ^(e)	2.1	2.5	5.3	4.0	4.7	4.0	2.3	2.2	2.7
Greece	:	:	5.4	4.5	2.1	2.9	3.7	3.9	3.4	3.0	3.5	3.3
Spain	:	:	1.9	1.8	2.2	3.5	2.8	3.6	3.1	3.1	3.4	3.6
France	:	:	1.3	0.7	0.6	1.8	1.8	1.9	2.2	2.3	1.9	1.9
Italy	:	:	1.9	2.0	1.7	2.6	2.3	2.6	2.8	2.3	2.2	2.2
Cyprus	:	:	3.3	2.3	1.1	4.9	2.0	2.8	4.0	1.9	2.0	2.2
Latvia	:	:	8.1	4.3	2.1	2.6	2.5	2.0	2.9	6.2	6.9	6.6
Lithuania	:	:	10.3	5.4	1.5	1.1	1.6	0.3	-1.1	1.2	2.7	3.8
Luxembourg	:	:	1.4	1.0	1.0	3.8	2.4	2.1	2.5	3.2	3.8	3.0
Hungary	:	:	18.5 ⁽ⁱ⁾	14.2 ⁽ⁱ⁾	10.0 ⁽ⁱ⁾	10.0 ⁽ⁱ⁾	9.1 ⁽ⁱ⁾	5.2	4.7	6.8	3.5	4.0
Malta	:	:	3.9	3.7	2.3	3.0	2.5	2.6	1.9	2.7	2.5	2.6
Netherlands	:	:	1.9	1.8	2.0	2.3	5.1	3.9	2.2	1.4	1.5	1.7
Austria	:	:	1.2	0.8	0.5	2.0	2.3	1.7	1.3	2.0	2.1	1.7
Poland	:	:	15.0 ^(ei)	11.8 ^(ei)	7.2 ^(ei)	10.1	5.3	1.9	0.7	3.6	2.2	1.3
Portugal	:	:	1.9	2.2	2.2	2.8	4.4	3.7	3.3	2.5	2.1	3.0
Romania	:	:	154.8 ⁽ⁱ⁾	59.1 ⁽ⁱ⁾	45.8 ⁽ⁱ⁾	45.7 ⁽ⁱ⁾	34.5 ⁽ⁱ⁾	22.5 ⁽ⁱ⁾	15.3 ⁽ⁱ⁾	11.9 ⁽ⁱ⁾	9.1 ⁽ⁱ⁾	6.6
Slovenia	:	:	8.3	7.9	6.1	8.9	8.6	7.5	5.7	3.7	2.5	2.5
Slovakia	:	:	6.0	6.7	10.4	12.2	7.2	3.5	8.4	7.5	2.8	4.3
Finland	:	:	1.2	1.3	1.3	2.9	2.7	2.0	1.3	0.1	0.8	1.3
Sweden	:	:	1.8	1.0	0.5	1.3	2.7	1.9	2.3	1.0	0.8	1.5
United Kingdom	:	:	1.8	1.6	1.3	0.8	1.2	1.3	1.4	1.3	2.1	2.3
Croatia	:	:	:	:	:	:	:	:	:	:	:	:
Turkey	:	:	85.6 ⁽ⁱ⁾	82.1 ⁽ⁱ⁾	61.4 ⁽ⁱ⁾	53.2 ⁽ⁱ⁾	56.8 ⁽ⁱ⁾	47.0 ⁽ⁱ⁾	25.3 ⁽ⁱ⁾	10.1 ⁽ⁱ⁾	8.1 ⁽ⁱ⁾	9.3 ⁽ⁱ⁾
Iceland	:	:	1.8	1.3	2.1	4.4	6.6	5.3	1.4	2.3	1.4	4.6
Norway	:	:	2.6	2.0	2.1	3.0	2.7	0.8	2.0	0.6	1.5	2.5
United States	2.8	3.0	2.3	1.6	2.2	3.4	2.8	1.6	2.3	2.7	3.4	:
Japan	-0.1	0.1	1.8	0.6	-0.3	-0.7	-0.7	-0.9	-0.3	0.0	-0.3	:

⁵ Mandel, M. – Tomšík, V.: *Monetární ekonomie v malé otevřené ekonomice*. Management Press, Praha 2003, s. 258

- (:) Not available
(e) Estimated value
(i) See explanatory text

Source: Eurostat

http://epp.eurostat.ec.eu.int/portal/page?_pageid=1996,39140985&_dad=portal&_schema=PORTAL&screen=detailref&language=en&product=STRIND_ECOBAC&root=STRIND_EC_OBAC/ecobac/eb040

Table 2: The development of relative prices in Czech Republic during years 1999- 2003.

	1999	2000	2001	2002	2003
	CZ	CZ	CZ	CZ	CZ
Final consumption by private h/holds	44	45	49	53	53
Food and non-alcoholic beverages	50	51	54	57	57
Food	49	50	53	56	56
Bread and cereals	39	39	42	42	47
Meat	44	46	49	50	49
Fish	60	58	64	68	61
Milk, cheese and eggs	52	56	58	63	61
Oils and fats	60	61	68	74	75
Fruits, vegetables, potatoes	56	54	56	60	58
Other food	57	59	61	68	66
Non-alcoholic beverages	61	62	63	68	75
Alcoholic beverages, tobacco, narcotics	47	48	52	57	58
Alcoholic beverages	55	56	62	69	76
Tobacco	42	43	46	50	46
Clothing and footwear	67	70	73	80	102
Gross rents, fuel and power	29	31	34	39	38
Furnishings, equipment, maintenance	65	66	69	67	64
Health	33	35	37	43	44
Transport	56	58	61	66	64
Communication	63	71	77	88	85
Recreation and culture	48	49	52	58	57
Education	19	19	22	25	27
Restaurants and hotels	42	45	48	49	48
Miscellaneous goods and services	46	47	51	53	55
Net purchases abroad	100	100	100	100	100
Final consumption by NPISH	22	22	24	28	28
Final consumption by government	28	29	32	36	37
Individual services	24	25	28	32	33
Collective services	33	34	37	42	42
Gross fixed capital formation	58	60	64	67	64
Equipment	79	75	86	93	92
Construction	41	47	47	48	47
Other products	77	86	74	91	72
Changes in inventories and valuables	61	64	107	66	79
Balance of exports and imports	100	100	100	100	100
Gross Domestic Product	42	44	47	52	51

Source: Czech Statistical Institute

Table 3: The development of relative prices in the Czech Republic during the years 2004- 2005.

NAME OF ANALYTICAL CATEGORY	2004	2005
	CZ	CZ
Gross Domestic Product	52,2	56,4
Actual individual consumption	49,5	53,1
Food and non-alcoholic beverages	61,4	65,2
Food	59,9	63,5
Bread and cereals	52,7	55,1
Meat	54,1	57,8
Fish	60,4	63,3
Milk, cheese and eggs	66,4	71,1
Oils and fats	79,7	84,2
Fruits, vegetables, potatoes	61,4	64,4
Other food	68,7	74,9
Non-alcoholic beverages	78,8	83,3
Alcoholic beverages, tobacco and narcotics	61,1	64,2
Alcoholic beverages	78,3	83,8
Tobacco	48,6	50,3
Clothing and footwear	99,2	101,2
Housing, water, electricity, gas and other fuels	41,5	43,8
Household furnishings, equipment and maintenance	71,3	75,6
Health	36,2	40,5
Transport	65,6	68,8
Personal transport equipment	91,0	93,6
Communication	90,0	104,5
Recreation and culture	49,4	53,4
Education	35,0	38,8
Restaurants and hotels	44,5	47,9
Miscellaneous goods and services	46,1	49,1
Actual collective consumption	43,4	47,8
Gross fixed capital formation	64,3	70,1
Machinery and equipment	87,7	93,5
Construction	50,2	55,6
Final consumption expenditure	48,7	52,4
Household final consumption expenditure	54,5	57,8
Government final consumption expenditure	38,0	42,1
Collective consumption expenditure	43,4	47,8
Individual consumption expenditure	34,1	38,0
Total goods	68,7	73,5
Consumer goods	72,1	76,1
Non-durable goods	65,9	70,0
Semi-durable goods	90,4	93,7
Durable goods	85,8	89,0
Capital goods	64,3	70,1
Total services	38,8	42,3
Consumer services	39,9	42,8
Government services	38,0	42,1
Collective services	43,4	47,8
Individual services	34,1	38,0

Source: Czech Statistical Institute

Table 4: The development of price levels in the European Union and some other countries.

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
EU (27 countries)	100	100	100	100	100	100	100	100	100	100	100	100
EU (25 countries)	101.4	101.5	101.3	101.1	101.1	101	101.1	101.1	101.1	101.2	101.1	101.1
EU (15 countries)	105.8	105.9	105.7	105.3	105.5	104.9	104.7	104.9	105.2	105.4	104.8	104.9
Euro area (13 countries)	107.3	107.2	104	102.8	102.2	100.5	101	101.1	103.5	103.7	102.7	102.6
Euro area (12 countries)	107.4	107.3	104.1	102.9	102.3	100.6	101.2	101.2	103.6	103.8	102.8	102.7
Belgium	113.5	109.9	105.8	107.5	106.8	102	103.2	101.5	106.5	105.7	105.1	105.2
Bulgaria	32.9	27.3	34	37.5	37.9	38.7	41	40.8	40.7	41.7	42.4	44.1
Czech Republic	41.5	43.8	44.4	47.4	46.4	48.1	50	57.1	54.5	54.9	58.1	60.7
Denmark	138.1	135.8	131.6	129.4	131.5	130.3	135.2	133.8	141.1	139.6	140.1	139.4
Germany	118.5	114	109.6	108.7	107.3	106.6	107	106.6	106.1	104.7	103.8	103.3
Estonia	41.6	49.6	50.8	54.1	56.9	57.3	61.1	60.8	62	62.8	64.3	67
Ireland	100.7	103.3	113	108.1	111.6	114.9	119.3	125.2	126.4	125.6	124.9	125.4
Greece	82.8	85.8	87.6	85.7	88.3	84.8	82.3	80.2	85.9	87.3	88.3	89.2
Spain	88.9	90.7	86.9	85.5	86	85	85.4	84.6	88.3	90.9	92	93.2
France	118.2	117.1	112	110.7	109.3	105.9	104.1	103.5	110	110.5	107.6	107.1
Italy	89.9	99.2	99.7	97.9	98.2	97.5	99.7	102.7	103.6	105.2	104.4	104.4
Cyprus	86.7	86.2	86.6	87.1	87.4	88.1	88.9	89.1	90.9	90.6	89.1	89.5
Latvia	38.6	42.8	47.8	49.2	52.3	58.8	59	57	54.4	55.5	56.3	58.8
Lithuania	30.9	36.4	43.2	45.6	46.8	52.7	54.1	54.2	52.3	53.1	54.6	56.4
Luxembourg	113.4	108.9	106.6	104.2	102.9	101.5	103.5	102.1	103.2	105.1	104.6	105.1
Hungary	43.8	44.3	46.4	45.7	47.1	49.2	52.9	57.4	58.2	61.6	63.2	60
Malta	61.7	67	68.7	69.4	70.5	73.3	74.8	74.6	72	72.8	72.8	73.5
Netherlands	111.1	107.3	103.4	102.1	102.7	100	103	102.9	107.8	106	104.6	104.2
Austria	115.3	111.7	107.1	105.3	104.9	101.9	104.8	103.4	103.3	103.1	101.9	101.3
Poland	47.5	50.6	51.8	53.5	51.9	57.9	64.8	61.2	54.4	53.2	61.7	62.9
Portugal	82.8	83	82.5	84	83.4	83	84.4	86.3	86	86.7	85	85.5
Romania	31.4	30	34.7	43.2	37.9	42.5	41.7	43	43.4	44.3	55.5	58.5
Slovenia	75	72.5	72.4	74.1	74.1	72.9	73.9	74.4	76.2	75.4	75.6	75.8
Slovakia	39.7	40.3	41.6	41.9	40.5	44.4	43.4	44.8	50.7	54.9	55.8	58.2
Finland	132.9	127.9	125	123	122.3	120.9	124.8	123.9	126.6	123.8	123.5	122.5
Sweden	125.6	134.7	131.6	127	126.4	127.6	119.9	121.7	123.5	121.8	118.5	117.9
United Kingdom	92.3	92.6	107.6	112.2	115.6	120	116.8	117.1	107.8	107.9	109.2	110.2
Croatia	:	:	:	:	:	:	:	:	64.8	65.9	68.3	71.4
Macedonia, the former Yugoslav Republic of	:	:	:	:	:	:	:	:	43.9	44.1	43.9	43.9
Turkey	:	:	:	:	56	62.5	47.7	51.6	57.2	59	68.1	68
Iceland	116.4	117.9	120.8	124.7	126.7	144	127.9	134.6	138.4	138	153.4	141.8
Norway	135.4	133	136.6	131	134.3	137.7	141.8	151.2	142.1	134.9	140.8	140.5

Switzerland	153	146.5	135.8	136.4	139.7	142.6	146.3	146.7	143.8	139.9	137	133.3
United States	89.3	90.8	100.5	101.1	101.3	118.7	123.3	119.9	102.5	:	:	:
Japan	188.8	162.4	160.5	147.9	166.2	194.1	172.6	155.5	138.7	:	:	:

Source: Eurostat

http://epp.eurostat.cec.eu.int/portal/page?_pageid=1996,39140985&_dad=portal&_schema=PORTAL&screen=detailref&language=en&product=Yearlies_new_economy&root=Yearlies_new_economy/B/B2/B21/er011

Table 5: The development of nominal and real effective exchange rates of the Czech crown.

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Real effective exchange rate % (year 2000=100)									
a) producer prices									
Weight – turnover ZO	99,5	100,6	100	104	115,2	111,3	114	118,9	121,3
Weight - turnover ZO SITC 5-8	99,9	99,5	100	104,6	115,9	112	115,4	121,1	123,9
b) consumer prices									
Weight – turnover ZO	99	98,8	100	105,5	116,7	112,9	113	118,9	124,2
Weight - turnover ZO SITC 5-8	99,4	98,2	100	106,2	117,5	113,7	114,1	120,7	126,7
Nominal effective exchange rate % (year 2000=100)									
Weight – turnover ZO	96	98,5	100	104,3	116,5	116	116,3	123,5	129,3
Weight – turnover ZO SITC 5-8	98,9	98,6	100	104,4	116,1	115,6	115,5	122,8	128,7

Source: Czech National Bank

Table 6: The development of nominal exchange rate of the Czech crown to the euro during the years 1999-2006.

Indicator		1999	2000	2001	2002	2003	2004	2005	2006
CZK/EUR	average	36,882	35,610	34,083	30,812	31,844	31,904	29,784	28,343

Source: Czech Statistical Institute

4 Conclusion

In conclusion we can repeat that a low rate of inflation is a benefit only if the individual regions of a future monetary union were on nearly the same economic level. But the European countries which would like to enter the eurozone are however not on the economic level the eurozone has reached. That is why the price levels and the relative prices will have to undergo adjustment. The coordination of the relative prices and the price levels itself proceeds via a higher rate of inflation and via nominal appreciation of the currency. In view of the fact that nominal appreciation cannot harmonize all the relative prices, the candidates for the entry to the eurozone cannot avoid higher inflation.

If we compare the coordination of the relative prices and the price levels of the Czech Republic and the eurozone in the year 2005 with the coordination of the prices of any country

of the present eurozone at the time of its admission, we can discover that as far as this criterion is concerned, the Czech Republic is prepared much worse. In the introduction to this paper we said that we thought it very risky to rely on the influence of uniform currency after the entry to the eurozone. Now we believe that the relative prices are deformed in such a way that the Czech Republic does not form together with the eurozone a potentially well-operating monetary union. It will still take a long time until it starts to form it. At the present prices are rising slowly, which can be assessed positively. If the dynamics of the rising prices do not change, the Czech Republic could be prepared for the entry to the eurozone in ten years provided the price criterion is taken into consideration. We do however not consider it advisable for the Czech Republic to enter the ERM II system and the eurozone in the future five years. (Do not let us forget that we are interested only in price criteria. In order to get full information we will have to investigate all the characteristics that are defined by the theory of the optimum currency areas.)

If we analysed the other candidates for the eurozone (for instance the Slovak Republic) in a similar way, we would arrive at the same conclusion as in the case of the Czech Republic.

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