

# HARMONIZATION OF PRICE LEVELS AND PRICE RELATIONS BETWEEN THE CZECH REPUBLIC AND THE EURO AREA

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## Abstract

The Czech Republic is one of the countries that joined the European Union on 1 May 2004 – in the "fifth wave" of enlargement of the EU, which has been the largest enlargement of the European Union ever. As we have not negotiated the so-called "non-participation clause", the Czech Republic will sooner or later become a member of the euro area. In order for monetary policy to be appropriate for the entire monetary union, individual parts of the monetary union need to be roughly at the same economic level. The aim of this paper is to evaluate the importance of the Maastricht convergence criteria with regard to the harmonization of price levels and price relations. On specific data, we will also try to show whether price level and price relations in the Czech Republic are already well harmonized with core countries of the euro area.

**Key words:** euro area, Czech Republic, price level, price relation

**JEL Code:** E3, E5, E6

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## Introduction

The Czech Republic is one of the countries that joined the European Union on 1 May 2004 - in the "fifth wave" of enlargement of the EU, which has been the largest wave of enlargement ever. As we have not negotiated the so-called "non-participation clause", the Czech Republic will sooner or later become a member of the euro area. So far nothing suggests that the referendum would precede the mentined step - as in Sweden. It is also a question whether the referendum should or should not be promoted in this issue. The situation can be perceived by the fact that the public has already expressed itself to the problem with its consent to the accession to the EU. In addition, the laical public is unlikely to be able to assess the issue of the euro adoption rate sufficiently. In the case of a referendum, it would not be possible to make any other decision, because we have decided to enter the euro area by our accession to the EU (Article 4 – Act concerning the conditions of accession of the Czech Republic,...). That is, if

the referendum was to take place, then the only result of the referendum is to get an opinion that almost does not tell us about the need and readiness of our country and is very expensive. If we had a negative answer, then the opinion would be even more expensive because we would have to make another referendum in the future (according to the currently agreed terms, we would have to repeat the referendum until we get a positive answer).

Any country that intends to enter the euro area must fulfill certain conditions. These conditions are dual. The first - historically older - are the so-called Maastricht convergence criteria (plus the compatibility of legislation with EMU). Recently, as a result of the GIPS countries (Greece, Italy, Portugal, Spain) problems, so-called economic imbalances have also been observed.

The economists realized for a long time that the Maastricht criteria do not suffice to assessment of readiness of new EU members (and thus new candidates to enter the euro area)<sup>1</sup>. For this reason, a number of characteristics and criteria have emerged from various economists, which come from the Theory of Optimum Currency Areas, and on the basis of which it is possible to assess sufficiently whether the country is ready to join the monetary union. However, these criteria are not formally defined or required. One of these criteria is the convergence of price levels and price relations, which are among the so-called real convergence criteria. It can be said therefore, that a part of the overall economic convergence of the Czech Republic with the countries of the European Union is the price convergence. The aim of this paper is to evaluate the importance of the Maastricht convergence criteria with regard to harmonization of price levels and price relations. On specific data, we will try to show whether the price level and price relations in the Czech Republic are already well harmonized with the euro area countries or not.

## **1 Relationship of the Maastricht convergence criteria to the harmonization of price level and price relations**

The origin of the euro area was made possible by the adoption of the Treaty on European Union, or the Maastricht Treaty. This was signed at the European Council in early 1992 and entered into force in the autumn of 1993. The Maastricht Treaty contains criteria for assessing the readiness of the country to enter the Euro area (or a group of countries to create this currency union). The main objective pursued by the European Council when approving the treaty was to identify which candidate countries are already ready for accession and which are not yet. From

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<sup>1</sup> The enlargement in May 2004 and following is considered.

the beginning, individual countries were clearly aware that early access into the euro area would be detrimental not only to the incoming, unprepared country, but would also act negatively for the entire currency union.

### **1.1 Theory of Optimum Currency Areas as the theoretical framework of the integration process in Europe**

One of the basic theories that deal with monetary union issues is the Theory of Optimum Currency Areas (OCA). It is a theory whose development is closely related to the events in the world (especially in Europe). The OCA creates a theoretical framework on which economists try to assess whether a currency union is approaching optimum currency area or whether a country is ready to join an existing monetary union and whether they together will form the optimum currency area.

The original theory OCA was formulated by Nobel prize holder, Professor R. A. Mundell. He published an article in „The American Economic Review“ in 1961 with the title „A Theory of Optimum Currency Areas“. Other economists that dealt with the OCA theory and, eventually, worked it out were: Milton Friedman, Peter B. Kenen, Ronald McKinnon, Georg Tavlas, Paul De Grauwe, Paul Krugman, etc.

Very interesting are some insights of Milton Friedman. Despite the fact that he was always a keen proponent of the flexible exchange rate, it was already in 1953 when he was of the opinion that the difference between the flexible and the fixed exchange rate is insignificant when prices and wages are flexible and react both upwards and, particularly, downwards and the labour force is mobile.

The current state of the OCA theory is basically based on the Tavlas' article from 1993. Economists mostly agree on the individual characteristics defined by the OCA theory to be met by countries seeking to create a monetary union. The problem, however, is that the significance of individual characteristics can be rather estimated. The similarity of economic levels (which includes a similar level of price levels and price relations) is often considered to be one of the key characteristics. The issue of economic convergence of individual countries of the monetary union is dealt with eg in Baldwin & Wyplosz (2012) or De Grauwe (2007).

Another problem that closely relates to individual characteristics is the problem of endogeneity of some criteria. This means that there is an assumption that the accession to the

monetary union itself will ensure the adaptation of the relevant factors and thus the fulfillment of the given characteristics.

It can be said that the integration efforts that have been made in Western Europe could have enabled and ultimately allowed the emergence of the EU and later even the euro area. One of the key economists' questions is following: Is the euro area an optimum currency area? In order to answer this question, it is necessary to carefully analyze and evaluate all the criteria defined by the OCA theory. The purpose of this article is therefore not and cannot be to answer mentioned question. One of the aims of the article is only to assess whether the price level and price relations of the Czech Republic are at a similar level as the euro area price level and price relations - ie whether the Czech Republic is, in terms of this criterion, already prepared to enter the euro area (to which it has itself committed).

## 1.2 Maastricht convergence criteria

The question of the Maastricht convergence criteria is very important, for example, in terms of the implementation of monetary policy by the candidate countries. One of the Maastricht criteria is the price stability criterion.

“The criterion on price stability referred to in the first indent of Article 140(1) of the Treaty on the Functioning of the European Union shall mean that a Member State has a price performance that is sustainable and an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than 1 ½ percentage points that of, at most, the three best performing Member States in terms of price stability. Inflation shall be measured by means of the consumer price index on a comparable basis taking into account differences in national definitions“ (Treaty on the Functioning of the European Union, Protocol No. 13).

However, the above mentioned quotation should not be interpreted as choosing the three countries with the lowest inflation. The best results do not include countries that, for example, show deflation. As the best results are considered those that most closely approximated the inflation objective set by the European Central Bank. An observance of the requirement of price stability has been criticized by a number of economists in the past. Among the Czech economists were: František Vencovský, Zdeněk Tůma, Viktor Kotlán, etc. The main reasons are that if the price level and, in particular, the price and wage relations are not sufficiently harmonized in the country with the price level and the price relations in the euro area countries, the issue of price stability policy is a problem. Prices and especially wages are mostly inflexible downwards. In this case, it is advisable that the adjustment process proceeds to raise all prices,

some faster and some slower. I.e. during the adjustment process there will be a higher inflation rate in a country that is adapting - in our case it would be the Czech Republic.

The question is whether the price level and price relations between the Czech Republic and the euro area are sufficiently harmonized. If not, it would be suitable and desirable for the Czech Republic to have a higher rate of inflation so that both price levels and price relations would be harmonized. Preventing this process is harmful. In the case when a country whose price level is significantly lower than the price level in a given monetary union (and the relative prices are not harmonized) strives to join the monetary union, the effort of this country to keep the inflation rate at the same level as the relevant monetary union lacks reason. This is true until the approximation of both price levels and price and wage relations. If this is the case of the Czech Republic, the Maastricht convergence criterion on price stability should not yet be met by the Czech National Bank (CNB). A number of economists perceive the criterion as harmful. There are, unfortunately, major political risks that prevent the re-opening of the Maastricht Treaty, and therefore it is not possible to expect that these criteria will be corrected. Moreover, there is currently no political support in the Czech Republic for a rapid entry into the euro area. This means that the CNB has not even been pushed to fulfill the Maastricht criteria. It is only after a clear decision is made that the Czech Republic will enter the eurozone, when the CNB will have to ensure fulfillment of the Maastricht criteria, which are within its competence (ie the monetary criteria).

## **2 Harmonization of price levels and price relations between the Czech Republic and euro area**

The main questions that we have to ask at the moment are probably the following: "Is the price level in the Czech Republic at approximately the same level as the euro area price level? Are the relative prices between the Czech Republic and the eurozone harmonized? Is most of the relative prices - in both the tradable and non-tradable goods sectors - harmonized? Is the Czech Republic ready to enter the euro area in terms of price levels and price relations? "

### **2.1 Harmonization of price levels**

First, we will deal with the issue of price levels. Table 1 shows the development of the euro area price level since 2005, the evolution of euro area price levels since 2005 and the price level in the Czech Republic since 2005. The table shows that the price level in the Czech Republic is roughly at 65% level compared to the euro area price level. If we look at the price

levels of individual euro area countries, except in Lithuania, all countries showed a higher (in most cases significantly higher) price levels than the Czech Republic in 2016.

**Table 1: Price levels**

geo\time	2005	2010	2011	2012	2013	2014	2015	2016
EU (28 countries)	100	100	100	100	100	100	100	100
Czech Republic	58,3	71,6	73,5	71,2	68,2	62,8	62,8	65,7
Euro area (19 countries)	98,9	102,8	102,9	101,8	102,1	101,2	99,2	101,5
Austria	99,9	104,6	105,4	104,5	105,5	105	102,5	106
Belgium	104	109,2	109,1	107,9	108,7	106,8	104,6	109
Cyprus	88,4	93,2	94,5	93,8	93,3	91	86,7	87,8
Estonia	62,4	71,7	72,8	73,1	74,6	74,4	72,8	75,3
France	104,6	109,6	109,3	108,3	107,4	106,7	105,3	107,9
Finland	120,2	119,6	120,6	121	122,6	121,5	118,3	121,1
Germany	102,2	104,1	102,9	101,5	103,2	101,8	100,4	103,3
Greece	85,3	95,7	95,7	93,1	89,8	85,2	82,7	84,1
Ireland	120,2	118	118,9	117,9	120,6	122,9	120,7	123,7
Italy	100,3	100	101,5	101,3	102,2	102,5	100,2	100,5
Latvia	56	68,6	71,2	71,5	70,5	70,7	68,9	71,2
Lithuania	53,2	63,1	64,1	63,4	62,9	62,1	60,3	62,9
Luxembourg	108,4	119,4	120,1	119	120,4	120,8	120,9	125,1
Malta	71,9	78	79,1	78,8	81,4	80,6	78,9	82
Netherlands	101,8	107,6	108,9	107,8	108,9	109,5	107,2	111
Portugal	79,3	85,5	86	84,2	82,9	82,9	81,3	84
Slovakia	54	69,4	70	69,6	68,6	67,7	66,4	68
Slovenia	74,6	85,3	84,4	82,8	83	82,7	80,8	83,8
Spain	89,4	97,8	98,1	96	94,6	92,4	89,2	91,5

Source: ČSU [<http://apl.czso.cz/pll/eutab/html.h?ptabkod=tec00120>]

Looking at how the price level changed between 2005 and 2016, we see a rise in price levels for all euro area countries (except Greece and Cyprus). For some countries, growth is very strong. E.g. the price level of Slovakia was roughly at 54% of the euro area level in 2005 and it was at 68% in 2016. Similarly, the sharp rise in price levels can be observed, for example, in

Lithuania or Estonia. In the Czech Republic, the price level also rose in the same period - from 58.3% to 65.7% of the EU level. This is a significant increase, especially since most of the EU countries have suffered a recession since 2011, which has affected the EU economies to varying degrees. In the Czech Republic, therefore, the price level in relation to the EU countries as a whole decreased between 2012 and 2015.

In spite of the overall optimistic detection and growth of the price level in the Czech Republic between 2005 and 2016, the Czech Republic's price level is still well below the price level of the euro area.

## 2.2 Harmonization of price relations

Another interesting question is what are the price relations between the Czech Republic and the eurozone. There is a difference if the price level is at a lower level but relative prices are not fundamentally deformed or if relative prices are significantly different between the economy and the relevant monetary union (in our case the euro area). Selected relative prices between the Czech Republic and the EU are shown in Table 2.

**Table 2: Development of selected relative prices between the Czech Republic and EU28 (EU28=100)**

item\time	2005	2010	2011	2012	2013	2014	2015	2016
Food	65,4	75,5	81,4	82,5	82,3	78,6	77,9	79,5
Bread and cereals	57,8	65,5	75,5	75,0	73,0	72,8	73,0	74,9
Meat	58,4	70,1	72,0	73,1	72,3	74,7	74,0	76,5
Non-alcoholic beverages	80,5	94,7	96,9	98,7	96,5	91,4	89,7	92,5
Alcoholic beverages	82,4	95,5	101,1	97,4	95,3	79,0	78,8	84,2
Tabacco	52,1	76,4	73,1	68,7	66,3	57,4	59,1	62,5
Clothing	100,8	99,2	107,2	96,7	92,4	91,7	92,1	96,2
Footwear	93,8	98,0	90,4	86,3	86,0	74,3	79,7	86,8
Electricity, gas and other fuels	84,8	98,3	98,5	96,2	92,1	81,6	83,7	86,0
Furniture and furnishings, carpets and other floor coverings	76,7	76,1	76,4	73,3	73,9	69,0	67,9	69,4
Households appliances	101,8	97,1	95,8	97,2	90,9	84,0	88,0	91,7

Health	40,7	51,5	56,7	57,1	48,7	44,3	44,7	47,1
Hospital services		51,3	60,1	61,3	55,8	48,5	50,0	53,3
Transport	70,3	78,2	78,0	75,5	70,4	66,7	66,9	69,5
Transport services	41,1	62,0	62,1	61,6	52,6	49,8	49,6	50,4
Recreation and culture	53,8	70,8	71,7	68,9	65,3	60,6	59,9	65,5
Education	40,1	49,6	51,6	48,7	48,3	45,5	45,2	46,8
Restaurants and hotels	48,0	58,6	59,5	59,0	57,5	54,0	55,1	56,5
Miscellaneous goods and services	50,1	64,6	68,2	66,2	62,3	57,5	57,5	60,2
Construction	57,6	79,9	75,3	72,9	69,8	64,3	65,6	64,00
Residential buildings	46,4	67,5	64,6	64,3	60,2	56,2	59,1	59,4
Non-residential buildings	58,4	78,5	77,1	73,3	68,5	64,3	63,4	59,6
Total services	43,3	57,0	58,8	56,9	53,3	49,1	49,2	51,6
Government services	42,7	54,0	55,9	54,5	50,7	47,0	47,3	49,3

Source: Eurostat [ <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>]

Here we see that for some items, such as clothing, prices are already at almost the same level as in EU countries. However, many prices are still significantly lower in the Czech Republic than in the EU. It is not just about non-tradable goods. The prices at tradable goods are significantly lower in the Czech Republic; eg at some items belonging to food. Non-tradable goods (particularly health and education) show prices well below EU prices. E.g. education and healthcare are roughly at 45% of the EU level.

In the monitored period 2005 - 2016 there was a straightening of price relations between the Czech Republic and the EU, the problem is that this straightening seems to be inadequate.

The following can be said about the relative prices. Table 2 shows that the relative prices between the Czech Republic and the EU (or the euro area, respectively) are still significantly deformed.

In view of the above mentioned facts (both the low price level in the Czech Republic and the deformed price relations), the question is whether the CNB policy is suitable for the Czech Republic. Perhaps it would be worth considering whether the 2% inflation objective (which the CNB has held for many years) is unnecessarily ambitious for the Czech Republic. Such a low inflation rate is in fact price stability. In economies with a rate of inflation of up to



2%, prices are rising almost exclusively due to improvement of products' quality. The sense of setting the inflation objective low was at a time when the CNB started with inflation targeting policy and needed to convince subjects in the economy that this policy was effective in a fight against inflation. The question, however, is why the Czech National Bank did not release this objective in 2012-2015, when the Czech economy faced problems (as well as the rest of the EU). In these years, even the price level of the Czech Republic in relation to the EU has fallen. The main problem is that the 2% inflation objective does not create sufficient room for convergence of price levels and price relations. It cannot be presumed that the harmonization of price levels could occur mainly through valorization of the exchange rate. The exchange-rate channel cannot be used to straighten deformed price relations (can only be used to harmonize price levels).

## Conclusion

The European Union as well as the euro area are currently facing a number of problems. It is about both the problems in the individual EU countries (or the euro area) as well as the problems caused by changes in Europe and the world (eg negotiations on the UK's departure from the EU, GIPS problems, war conflicts, the influx of refugees to Europe, the risk of terrorist attacks in Europe, etc.) All these problems and facts can seriously undermine the stability of both the euro area and the EU. Some of them are very difficult to fight. At present, economies in Europe are closely interconnected. In particular, financial markets are very closely interconnected worldwide, and each shock is sensitively recorded by them. It is therefore important to maintain and, in the future, ensure the stability and credibility of the euro area. The current situation cannot be compared to the past, as some Czech economists and politicians do (eg. Petr Mach)<sup>2</sup>. At present, if, for example, serious economic problems caused a country to withdraw from the euro area, it can be expected that this would significantly affect the credibility of the euro area as a whole. This would probably seriously damage the economies of all EU countries and could put Europe as a whole into a recession (perhaps even into depression) for a long time. It is therefore even more important than in the past for individual euro area countries to resolve their economic and other problems and for EU countries to enter the euro area only when they are sufficiently prepared to enter. To ensure this, the countries

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<sup>2</sup> These are considerations and debates that create the idea that the collapse of the monetary union (eg the euro area) is not a problem. It is argued that in the past there were other monetary unions than they are today, they have broken up and new monetary union has originated, for example, the collapse of the Austro-Hungarian monarchy. Generally, the break-up of the euro area would, according to these economists, be nothing new and nothing dramatic.

planning to join the euro area need to assess and evaluate the whole range of factors defined by the OCA theory.

This paper focuses only on one partial factor, which is the harmonization of the price levels and price relations of the Czech Republic with the euro area countries. On the basis of this one factor, it cannot be taken into account whether the Czech Republic is ready for accession or not. It can only be said that the price level of the Czech Republic is still significantly lower than the euro area price level (around 65% of the EU) and the relative prices between the Czech Republic and the EU are still heavily deformed. In the case of relative prices, it can be said that, in particular, the non-tradable sector is well below euro area prices. The very criterion for harmonization price levels and price relations shows that the Czech Republic should not rush into joining the euro area.

On the other hand, it has to be said that the price levels of the countries that entered the euro area after 2008, ie Slovakia, Estonia, Latvia and Lithuania, were at a similarly low level as reported by the Czech Republic. In this respect, it is very optimistic that no sudden change in prices has been observed in these countries. It is therefore possible that the importance of the criterion (price levels and price relations) is not as large as many economists believe.

It also follows that the inflation targeting policy (with a 2% inflation objective) implemented by the CNB may not be optimal and prevents sufficient convergence of the Czech economy with the euro area countries.

As stated above, it would be necessary to examine and evaluate all the factors defined by the OCA theory to assess whether the Czech Republic is ready to enter the euro area. At the moment, however, it seems that, especially with regard to developments in the world and in the EU, and in view of the criterion of price levels and price relations, it is not recommended to rush to enter the euro area.

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