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CZECH REPUBLIC IN RESPECT OF THE REAL CONVERGENCE¹

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Abstract

In spite of the fact that the Czech Republic, on its entry into the European Union, undertook, within the shortest possible time limit, to meet all the terms and conditions which are required for adoption of the common European currency, the Euro, it is apparent at the present time that the Czech shall not be able to meet this undertaking until 2012. The unfavourable situation of the Czech public finances, due to which the Czech economy is not able to comply with one of the nominal convergence criteria, that is, the government deficit criterion, can be regarded as one of the major causes of this delay. Although the degree of compliance with the Maastricht nominal convergence criteria appears to be the critical factor for acceptance of a country into the Euro Area, which also showed when the Lithuania's last year's application was declined, in our opinion, the country's compliance with the real economic convergence criteria is far more important on its entry into the Euro Area. Therefore, we have devoted our contribution to these problems, wherein we have focused on the assessment of real dispositions which shall enable the Czech to keep all its positive effects ensuing from its membership in the Euro Area. Within the analyses which we have completed, we have arrived at the conclusion that in the upcoming five years the Czech economy will need to undergo quite a dramatic process of convergence with the Euro Area's economy, since the current state of its real convergence is accompanied by a myriad of risks, which in case of an early adoption of the Euro might result in severe economic trouble.

Keywords: *Price level; gross domestic product per capita; real convergence; economic structure; foreign trade*

JEL codes: *E42*

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1. Introduction

Although the Czech Republic, on its entry into the European Union, undertook, within the shortest possible time limit, to meet all the preconditions which are required for adoption of the common European currency, the Euro, at the present time it is apparent that the Czech shall not be able to meet this undertaking until 2012. Should we assess the preparedness of the Czech for the future adoption of Euro, we can take into consideration both the Maastricht nominal convergence criteria and the actual dispositions, which shall enable the Czech Republic to maintain all the positive effects, which the membership in the Euro Area is to bring. With regard to the fact that, in our opinion, on the entry of any country into an already operating monetary area, its actual presumptions for the adoption of a common currency are far more important, in this article we have focused our attention to the analysis of selected macroeconomic indicators providing that using these we shall be able to assess the degree of the real convergence of the Czech economy to the Euro Area economy.

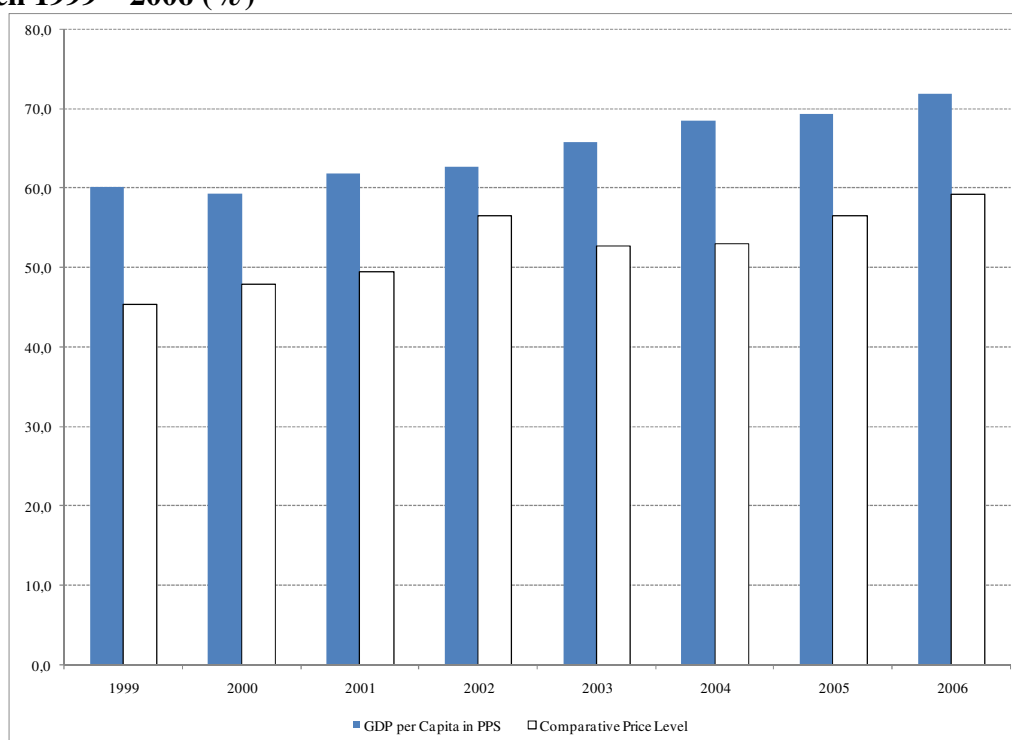
2. Cyclical and structural accord of the Czech economy and Euro Area economy

Provided that in the upcoming years the Czech becomes a Euro Area (and thereafter also EU-13) member, this step shall, on the one hand, bring indisputable benefits relating in particular to the stabilisation of long-term interest rates, lower risk of occurrences of currency turbulences or higher transparency in the monetary area, and, on the other hand, significant risks; the peril regarding occurrence asymmetrical economic shocks and their subsequent damping, being regarded as the most significant. With regard to the fact that the peril of occurrence of asymmetrical shock may be, under the optimal monetary area theory, relatively dramatically reduced provided that the economy of the country entering into the relevant monetary union shows a high degree of accord with the economy of the respective monetary area, prior to its entry, the Czech Republic should undergo a process which would either ensure its fast economic convergence or at least improve its ability to successfully respond to the potential asymmetrical shocks.

2.1 Real economic convergence

Should we assess the degree of accord of the Czech economy with the Euro Area's economy, we are able to employ a number of macroeconomic indicators for this purpose, of which the most important include the gross domestic product per capita expressed in the purchasing power parity of the currency and the comparative price level.

Figure 1 GDP per capita in PPS and comparative price level in the Czech Republic between 1999—2006 (%)

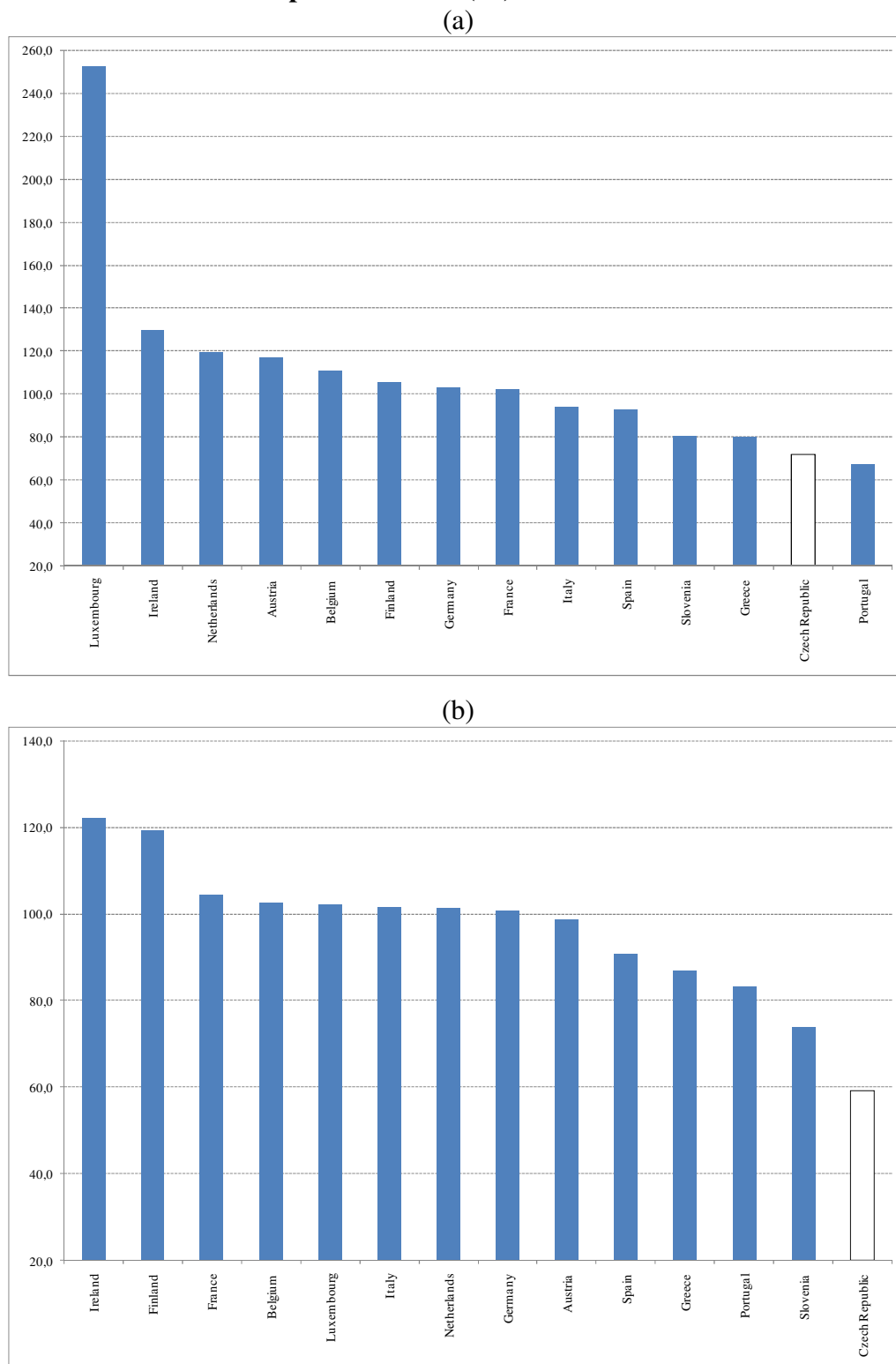


Source: Eurostat and author's calculation

Should we analyse the real convergence process using the gross domestic product per capita development in the PPS, we shall arrive at the conclusion that between 1999-2006 the Czech economy was gradually converging to the economic level of the Euro Area's countries. As the facts from the last year of the period which have we analysed shown in the Figure No. 1 indicate, the *per capita* GPD totalled 71.99 % of the average value of this indicator in the EU-13 countries, in particular due to the a dramatic advance of the growth rate of the Czech real gross domestic product over the Euro Area's real GDP growth rate, where between 2003-2006 the Czech GDP grew 3.50 percentage points faster than the EU-13 gross domestic product. As a result of this positive development, in 2004, the Czech overtook, in terms of the economic level, the first ones of the current Euro Area's member states. This country was Portugal, where the gross domestic product per capita expressed in the purchasing power parity in 2004 accounted for 98.82 per cent of the same indicator in the Czech Republic, while two years later this gap was even broader (in 2006, the Portugal's economic standard accounted for 93.83 % of the Czech's economic standard). Along with this development, the Czech economy markedly approached also the level of Greece (89.82 %), Slovenia (89.41 %) and Spain (77.54 %). On the other hand, it should be noted that the Czech quite considerably

falls behind the EU-13 most advanced countries, i.e. Luxembourg (28.49 %), Ireland (55.56 %) and the Netherlands (60.06 %).

Figure No. 2 GDP per capita in PPS (a) and comparative price level (b) in the Euro Area countries and in the Czech Republic in 2006 (%)



Source: Eurostat and author's calculation

The positive development in the economic level indicated above is somewhat shaded by the development of the comparative price levels. Should we at this moment we proceed from the facts shown in Figure No. 1, we shall arrive at the conclusion that despite the fact that in the period which we have analysed the Czech price level grew faster than the Euro Area's price level – except for 2003, when the value of this indicator dropped 3.82 percentage points – the growth rate in terms of the real convergence appears to be insufficient. Hence, in 2006 the price level in the Czech appeared only at 59.16 % of the EU-13 price level. The Czech price level approached most the price level of Slovenia (80.08 %), Portugal (70.99 %) and Greece (68.05 %), whereas the Czech economy fell furthest behind from Ireland (48.41 %), Finland (49.55 %) and France (56.68 %). Based on these facts, it may be presumed that the future entry of the Czech Republic into the Euro Area shall be accompanied by a more dramatic advance of the domestic inflation rate over the EU-13 current countries' inflation rate, which shall in turn cause a fall in the domestic real interest rate. In this connection it should be noted that this development can be regarded as dangerous only if the Czech economy remains in this stage in the course of a longer time period.

2.2 Accord of economic cycles

In addition to the mentioned relative indicators, a significant role in assessment of the degree of accord of the individual economies is also played by the indicators which demonstrate the development of the real and potential gross domestic products, and that is in particular due to the fact that using them we are able to analyse the individual stages of the economic cycle, in which the selected economies in the analysed period appear. With respect to the analysis of the cyclical harmony, three significant macroeconomic indicators are concerned, including the growth rate of the real and potential product and the size of the production gap.

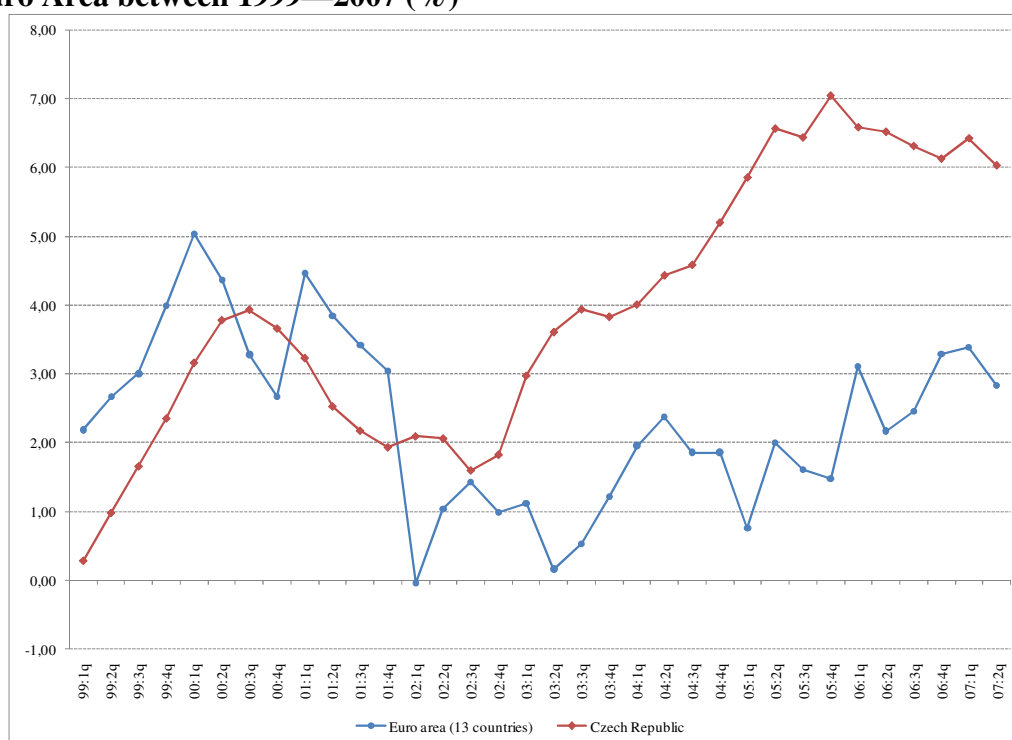
When comparing the development of the economic cycles in the Czech and in the EU-13 between 1999-2006, or Half 1/2007, we arrive at the conclusion that in this period a certain disagreement of the cyclical development of these economies occurred. As the Figure No. 4 and Table No. 1 show, in the analysed period we have noticed only one year in which the Czech economy and the EU-13 economy appeared in the same production gap. The concerned year is 2004, when both the mentioned economies appeared in the recession gap, while in the remaining seven years the cyclical development was quite contrary.

Table No. 1 Potential gross domestic product and production gap in the Czech Republic (CZK, mil., %) and in the Euro Area (EUR, mil., %) between 1999--2006

	1999	2000	2001	2002	2003	2004	2005	2006
<i>Czech Republic</i>								
<i>potential GDP</i>	1512.7	1573.0	1634.2	1696.6	1760.6	1826.0	1892.4	1959.3
<i>GAP</i>	0.9	-0.4	-1.4	-1.9	-1.7	-0.9	0.6	2.3
<i>Euro area (13 countries)</i>								
<i>potential GDP</i>	6016.2	6155.4	6293.5	6430.4	6566.1	6700.8	6834.9	6968.9
<i>GAP</i>	-0.1	0.3	0.6	0.4	0.2	-0.1	-0.3	-0.3

Source: Eurostat and author's calculation

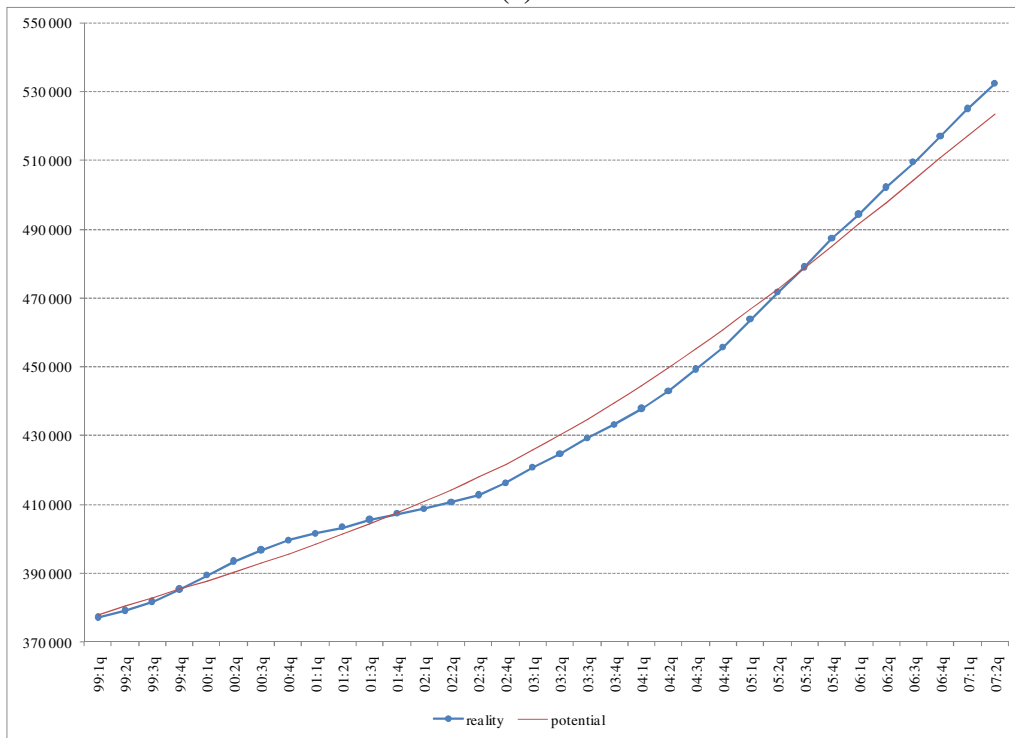
Figure No. 3 The real gross domestic product growth rate in the Czech Republic and in the Euro Area between 1999—2007 (%)



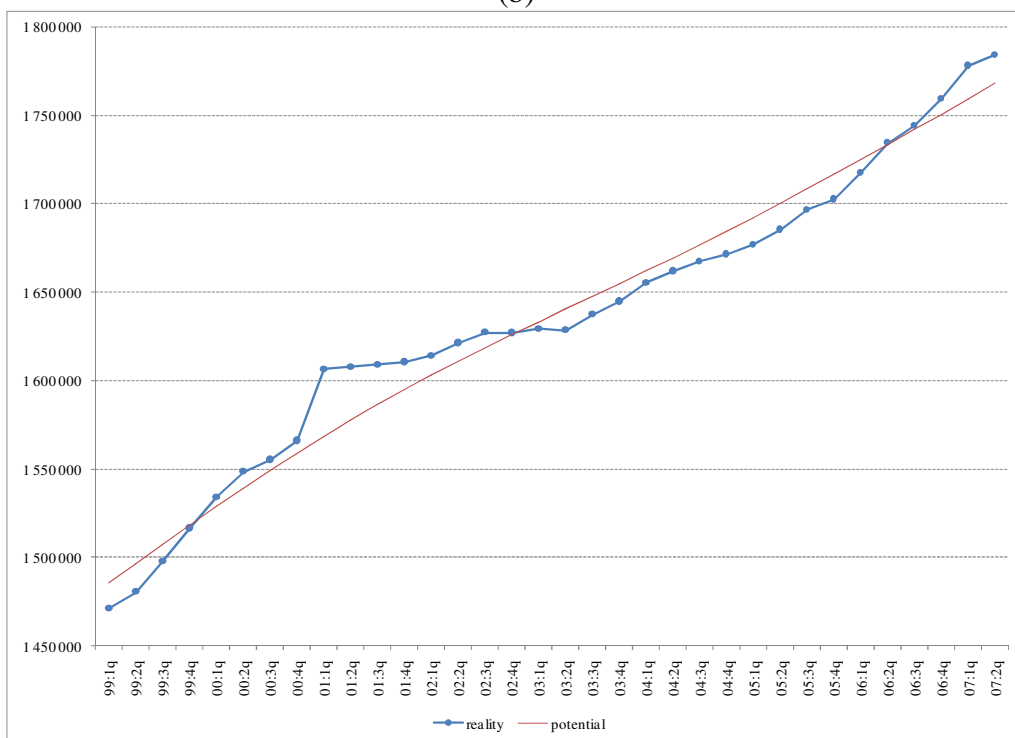
Source: Eurostat and author's calculation

As the Figure No. 3 shows the period in which the differences in the development of the economic cycles in the Czech Republic and the EU-13 were the least dramatic was in the interval commencing in Quarter 1/1999 and finishing at the beginning of Quarter 2/2000. In the course of these five quarters, the Czech GDP expressed in stable prices in fact copied the development of the gross domestic product of the Euro Area countries. From the beginning of Quarter 2/2000 we can notice a certain growth in differences between the development of the analysed economies' cycles, which subsequently showed in a dramatically lower level of the economic accord; the largest differences being observed in the period from Quarter 2/2000 to Quarter 2/2003.

Figure No. 4 The real gross domestic product growth rate in the Czech Republic (a) and in the Euro Area (b) between 1999—2007 (%)
(a)



(b)



Source: Eurostat and author's calculation

Provided that we use the above mentioned division of the analysed time series into three separate periods (Quarter 1/1999 - Quarter 1/2000, Quarter 2/2000 - Quarter 2/2003, Quarter 3/2003 - Quarter 2/2007) and should we measure the degree of the cyclical accord of the Czech economy and EU-13 economy in these periods using a simple correlation analysis based on determination of the time series by a method of year-on-year differences, then we again arrive at the previously mentioned conclusion, that an increase in the cyclical accord of both the mentioned economies appeared only at the beginning of the analysed period. This conclusion further confirms the values of correlation coefficients which in the second and third period amounted to 0.268 and 0.552, whereas in the first period this indicator amounted to 0.977.

2.3 Structural accord of the Czech economy

Another factor which shall dramatically affect the possibility of asymmetrical demand shocks shall include the degree of their structural accord, provided that also in this case it can be assumed that the high degree of similarity of the Czech economy with the EU-13 economy shall dramatically reduce both the peril of occurrence of these shocks and the costs which shall be related to their subsequent removal.

Table No. 2 Structure of the Czech economy and the Euro Area's economy between 1999—2006 (%)

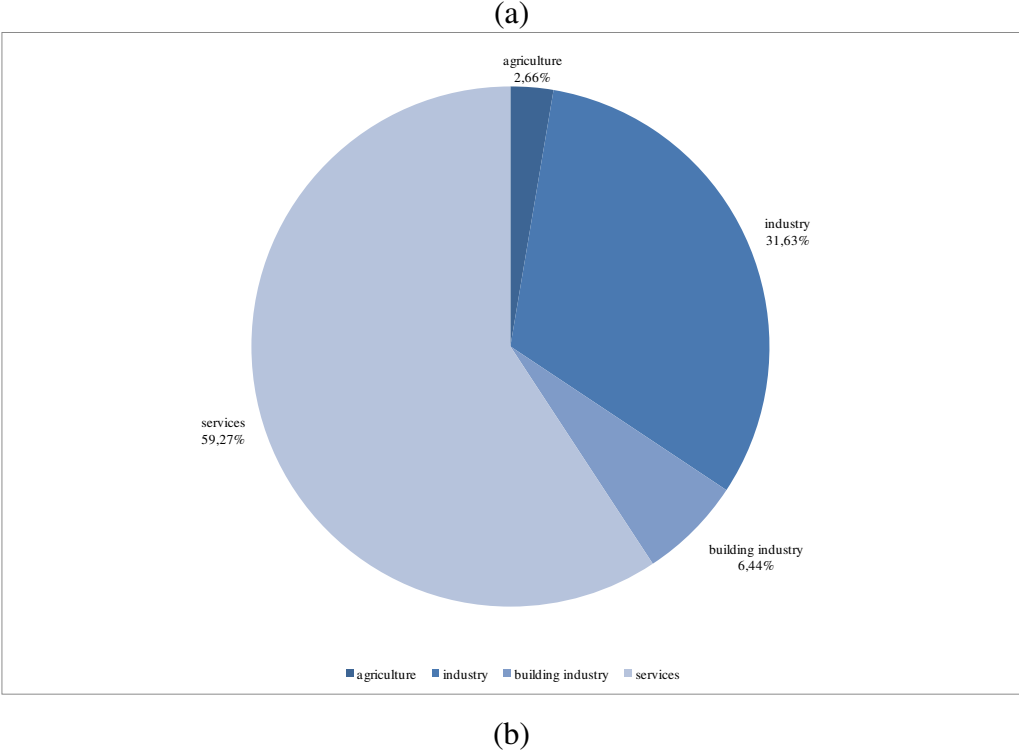
	1999	2000	2001	2002	2003	2004	2005	2006
<i>Czech Republic</i>								
<i>Agriculture</i>	3.88	3.86	3.97	3.30	3.08	3.34	2.90	2.66
<i>Industry</i>	31.78	31.57	31.42	30.47	29.48	32.04	31.44	31.63
<i>Building industry</i>	6.98	6.40	6.28	6.16	6.38	6.45	6.69	6.44
<i>Services</i>	57.36	58.17	58.32	60.07	61.06	58.18	58.97	59.27
<i>Euro area (13 countries)</i>								
<i>Agriculture</i>	2.46	2.46	2.56	2.34	2.23	2.23	2.01	1.79
<i>Industry</i>	22.35	22.32	21.71	21.25	20.71	20.49	20.20	20.16
<i>Building industry</i>	5.59	5.69	5.68	5.78	5.79	5.90	6.14	6.38
<i>Services</i>	69.61	69.53	70.04	70.63	71.27	71.38	71.65	71.67

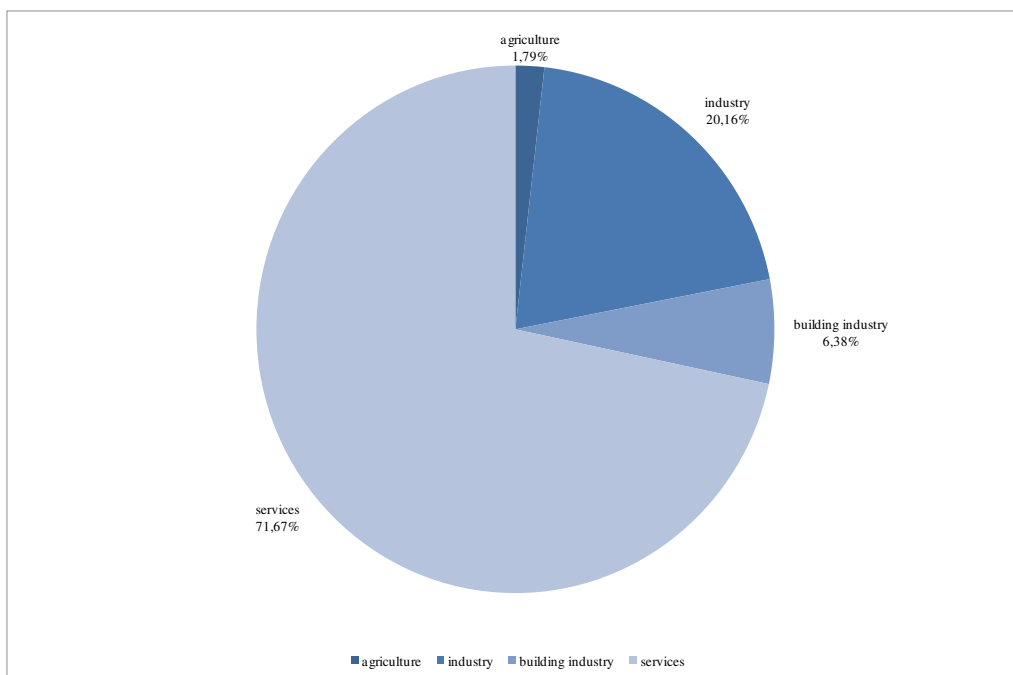
Source: Eurostat and author's calculation

Like in the case of the cyclical accord, also at this moment it is possible to claim that both the economies which we have analysed show quite significant differences in their structure. Comparing the structure of the Czech economy and the structure of the economy consisting of the Euro Area countries, we will discover that between 1999-2006, industrial sector, at the expense of the service sectors in particular, contributed to the Czech gross added value far more significantly compared to the EU-13 gross added value. As Table No. 2

apparently shows, in the analysed period, the Czech industry accounted for 31.23 % in the creation of the gross added value, whereas in the case of the Euro Area this proportion was 10.08 percentage points lower (an average of 21.15 %). On the contrary, the development in the services sector was quite opposite, where the EU-13's share in the creation of the gross added value amounted to an average of 70.72 percent between 1999-2006, whereas in the case of the Czech economy only 58.92 %.

Figure No. 5 Structure of the Czech economy (a) and the Euro Area economy (b) in 2005 (%)





Source: Eurostat and author's calculation

Should we analyse the structure of the Czech economy in more detail, we shall arrive at the conclusion that, in addition to the industry, the production of the “Trade; repairs of motor vehicles and goods for personal consumption and in particular for household” sectors, “Accommodation and food” and “Transport, storage and telecommunications” sectors contributed much more significantly to the creation of the Czech gross added value; their aggregate share in the creation of the gross added value amounting to the average of 20.87 % in the Czech between 1999-2006, which was 3.90 percentage points more than in the Euro Area countries. On the contrary, the “Financial intermediation” and “Activities in the area of real estates and lease; business activities” sectors as well “Public administration and defence; mandatory social security”, “Education”, “Health and social service; veterinary activity”, “Other public and social services” and “Household activities” sectors showed far lower share in the creation of the gross added value, where the aggregate share in the creation of the gross added value was nearly thirteen percent points lower (Czech 27.22 and Euro Area 39.93 %).

3. Commercial interconnection of the Czech's and Euro Area's economy

The ability of the Czech economy to face asymmetrical shocks is not affected merely by the degree of the cyclical and structural accord, but also by its level of commercial interconnection with the individual Euro Area's countries. For this reason, in the final part of this contribution, we shall focus on the analysis of the Czech foreign trade, or, as appropriate, the degree of engagement of the Czech economy in the international economic relations.

Should we proceed from the facts related to the development of the international trade in the Czech Republic, we shall arrive at the conclusion that between 1999-2006 the degree of openness of the Czech economy amounted to an average of 131.63 %, providing that the proportion of the Czech exports and imports in the gross domestic product amounted 65.53 and 66.11 percent, respectively. Hence, the abovementioned facts indicated that the Czech economy can be regarded as an economy characteristic for a high degree of openness to the surrounding world, which is a phenomenon which can be, in relation to the Czech's future entry, viewed as positive, since thereby the problems related to the loss of autonomy in the area of monetary policy can be replaced.

Table No. 3 Share of the Czech Republic's export to, and import from, the Euro Area and the European Union countries in the total export and import between 1999-2006 (%)

	1999	2000	2001	2002	2003	2004	2005	2006
<i>import</i>								
<i>EU-27</i>	76.53	75.16	74.59	72.53	71.42	80.28	81.41	80.50
<i>Euro area (13)</i>	59.02	56.95	57.31	55.95	55.11	62.58	62.13	59.97
<i>export</i>								
<i>EU-27</i>	87.48	85.90	86.48	85.70	87.32	87.14	85.54	85.58
<i>Euro area (13)</i>	65.25	63.17	62.65	61.53	63.39	62.96	59.71	58.68

Source: Eurostat and author's calculation

As the Table No. 3 indicates, in the analysed period, the import from the Euro Area countries to the CZ accounted for 58.63 % of the total Czech import, and export to the EU-13 countries accounted for as much as 62.17 percent of the total export, which implies that in that period the Czech economy achieved a high degree of economic integration with the Euro Area countries. In this connection, it should be noted that such a high degree of openness of the Czech to the Euro Area countries can be regarded as one of the most significant arguments advocating for the soonest possible adoption of the common European currency, since such a step would within the mutual trade contracts lead to removal of the risks related to the fluctuations of exchange rates, if any. This idea which we have presented is confirmed also by the considerable share of the European Union in the Czech foreign trade. Should we proceed from the statistical facts, we shall arrive at the conclusion that between 1999-2006 the European Union' (EU-27) share in the import of goods and services to the Czech Republic accounted for 76.55 % and the share in the export amounted to as much as 86.39 percent. Regarding the fact that new European Union member states on their entry adopted the same commitment as the Czech Republic, i.e. to adopt the common European currency within the shortest possible time period, it can be presumed that the degree of the Czech economy's

economic integration with the Euro Area's economy shall deepen further in the years to come, which again confirms the above-mentioned thesis of the soon entry of the CZ into the Euro Area.

4. Conclusion

With respect to the fact that at the moment of its entry to the Euro Area the Czech National Bank shall lose its autonomy in the area of the monetary policy, which may in turn rather considerably affect the development of the Czech economy, in this connection we find quite important the compliance with the real economic convergence criteria in particular, whereas at this moment we understand the nominal criteria rather as a certain political and economic barrier, which should prevent from a massive entry of new member states to the Euro Area. The abovementioned facts indicate that in the elapsed years a certain convergence between the Czech economy and the EU-13 economy occurred, this process being the most marked both with respect to the *gross domestic product per capita* in PPS, where the Czech overtook the first current Euro Area country, Portugal, in 2004, and the degree of commercial interconnection between the Czech economy and the EU-13 countries' economy. On the other hand, it should be noted that in this period certain negative effects appeared, including both the insufficient tempo of the convergence of the price levels and the increasing imbalance between the economic cycle of the Czech Republic and EU-13 countries. The potential risks of the Czech's entry to the Euro Area also include certain differences in the structure of both the analysed economies, where the industrial sector plays a considerably more distinct role in the Czech economy. Should we proceed from the abovementioned facts, it is apparent that in the upcoming five years the Czech economy will need to undergo quite a dramatic process of convergence with the Euro Area's economy, since the current state of its real convergence is accompanied by a myriad of risks, which in case of an early adoption of the Euro might result in severe economic trouble.

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