Institut für Makroökonomie
und Konjunkturforschung
Macroeconomic Policy Institute

Study

1/2010

Price Competitiveness in Central and Eastern Europe

- a case study for transition economies -

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März 2010

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Abstract

Newly industrialized countries and transition economies are often perceived as a threat to Western countries in public discussion, and concerns about economic 'competitiveness' arise. The present paper focuses on the specific macro-economic term 'price competitiveness'. It analyzes the underlying assumptions of the term, explains how the 'price competitiveness' indicator is composed, and what the restrictions are when applying it to transition economies.

When calculating the 'price competitiveness' indicator for Central and Eastern European New Member States of the European Union in the last decade, all ten countries show values that are conventionally understood as a steady 'loss in price competitiveness'. Still, this has not led to lower export growth in the last decade in these countries. Instead, all ten assessed countries show above-average growth in Exports, in Manufacturing goods, and in Gross Domestic Product, compared to the rest of the world.

The 'price competitiveness' indicator fails, due to inherent assumptions and technical implications, to explain the Export development in economies that are fast-growing and going through a process of industrialization - so called 'catch-up economie' – what has been the case in the Central and Eastern European countries in the last decade. The 'price competitiveness' indicator should thus not be applied irrespectively of a country's economic situation.

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Contents *page*

	Abstract	i
I.	**Introduction**	**1**
II.	**Explaining the 'Concept of Price Competitiveness'**	**2**
2.1	Defining 'Competitiveness'	2
2.2	Applying the Term 'Competitiveness' to International Markets and Trade	3
2.3	Applying the Terms 'Competition' and 'Competitiveness' to National Economies	4
2.4	Defining Parameters	4
2.4.1	Setting a 'Success' Indicator	5
2.4.2	Setting the 'Competitiveness' Indicator: the Concept of 'Price Competitiveness'	6
III.	**Conventional Measurement Indicators for 'Price Competitiveness'**	
3.1	Defining the Scope of Goods and Services to be Assessed	
3.2	The 'Real Effective Exchange Rate'	7
3.3	Composing the Indicator 'Real Effective Exchange Rate'	8
3.3.1	Defining Comparator Countries and their Respective Weights	9
3.3.2	Defining Parameters for Measuring Price Level Changes	9
3.3.2.1	Price Indicators	10
3.3.2.1.1	Consumer Price Index	10
3.3.2.1.2	Producer Price Index	11
3.3.2.1.3	Export Prices	12
3.3.2.1.3.1	Export Unit Values	12
3.3.2.1.3.2	Export Price Indices	13
3.3.2.1.4.	Evaluation of the Price Indicators	13
3.3.2.2	Cost Indicators	14
3.3.2.2.1	Unit Labour Costs	15
3.3.2.2.2	Unit Labour Costs in Manufacturing	16
3.3.2.2.3	Evaluation of Cost Indicators	17
3.4	Evaluation of the 'Real Exchange Rate'	19
3.4.1	Limitations to the Interpretation of the REER	19
3.4.2	Further Determinants of Export Share Increases	21
IV.	**Evaluation of the 'Concept of Price Competitiveness'**	**22**

Contents *(continued)* *page*

V.	**Empirical Findings in Central and Eastern Europe**	**24**
5.1	Scope: New Member States of the EU in the last decade	24
5.2	Assessing Indicators for "Price Competitiveness"	25
5.2.1	Real Effective Exchange Rates	26
5.2.2	Price Indicators – CPIs	29
5.2.3	Cost Indicators	30
5.2.3.1	Nominal Unit Labour Costs in total economy	30
5.2.3.2	Nominal Unit Labour Costs in Manufacturing	32
5.2.3.3	Labour Productivities	35
5.2.3.4	Gross Fixed Capital Formation	36
5.2.4	Evaluation of Price and Cost Competitiveness Indicators	36
5.3	Export and Tradable Goods Sales	37
5.3.1	Export Shares	37
5.3.2	Export Performance	41
5.3.3	Manufacturing Sales Shares	41
5.3.4	Evaluation of the Success Indicators	44
5.4	Alternative Explanations	45
5.4.1	Integration to World Market	45
5.4.2	Initial Levels of compared Prices, Costs or Sales Volumes	48
VI.	**Conclusion**	49
VII.	**Appendix**	**53**
7.1	Alternatives to Price and Cost Indicators: Profit Indicators	53
7.1.1	Profit Shares	53
7.1.2	Evaluation of the Profit Share Indicator	54
7.2.	The REER based on Profit Shares in CEE	54
VIII.	**References**	58
8.1	List of Abbreviations	58
8.2	List of Graphs	59
8.3	List of Tables	60
8.4	Bibliography	60

I. Introduction

The topic of economic 'competitiveness' of countries has become urgently prominent on international policy agendas in the last decades. The European Council in Lisbon, 2000, for example, has defined 'competitiveness' to be one of its major strategic goals:

> "The Union has today set itself a ***new strategic goal*** for the next decade: *to become the most competitive […] economy in the world*".[1] (European Parliament 2000, paragraph 1.5)

In the 'Lisbon Strategy'[2] (European Commission 2004), particular emphasis is set on the concern that the EU has to face "the challenge of […] intensified global competition" (p.11), and that "competitor countries are […] threatening Europe's position in the global economic league" (p.11).

Nonetheless, the term 'competitiveness of economies' is, even if intensely discussed at high political levels, a rather blurry term:

Thus, theoretical foundation of 'competitiveness of economies' is sought for in international economics' literature in vain (compare Gandolfo 2002, Köppen 1998, Krugman/Obstfeld 1996, Reichel 2002 et alii.). As the European Commission concedes in its *Special Report on Competitiveness* in 2009:

> "Economic literature does not provide a single commonly-agreed definition of competitiveness" (p.18).

In classic International Economics theory, the predominant idea is that free trade enhances total welfare for all participants (Smith 1776); and that each single participating country can benefit from trade via its 'comparative advantage' (Ricardo 1817), while no country could lose from trade (Krugman/Obstfeld 1996, p.13-37).

But in current policy papers, the term 'comparative advantage' is more and more replaced by the term 'competitive advantage' (compare European Commission 2004, p.16; p.28; p.35 and Krugman 1997, Thompson 2003).

Hence, more recent economic literature deals with the term 'competitiveness of economies' and sub-divides it into three aspects: an economy's "ability to sell" (Balassa 1962, p.29), an "ability to attract"[3] (Trabold 1995, p.169) or an "ability to innovate" (Ohr 1999, p.55, Ewald 2007, p.3).

The present paper concentrates on Balassa's "traditional" (European Commision 2009, p.18) definition, the "ability to sell", that refers to a country's exports. The

[1] emphasis in original document.
[2] main strategy paper of the EU that was intended to set the base for a European constitution
[3] i.e. to attract Foreign Direct Investment (FDI)

"ability to sell" is conventionally explained by the concept of 'price competitiveness'.

This specific concept has been developed by Balassa in the '60s, later elaborated by economists of the US government in the '70s (Kravis/Lipsey 1971), and then adopted and largely discussed in the '80s, especially by economists in the IMF (see Maciejewski 1983; Artus/Knight 1984; Durand/Giorno 1987, Lipschitz/McDonald 1992).

However, it should be noted that the idea of 'competitiveness', when applied to international trade, is a clear-cut departure from classic International Economics: it offers a picture of trade – not as a complementary, welfare-enhancing process (i.e. a win-win-situation) – but as a conflictual competition in which nations fight against each other and can win or lose (i.e. a zero-sum game) (compare Krugman 1997, part I: "A zero-sum world?"(pp.1-85) and Thurow 1992: "The coming economic battle: the decisive war of the century…" (book title and jacket)).

The present paper critically discusses the concept of 'price competitiveness' and its applicability to transition economies:

The underlying assumptions of the concept are analyzed and exposed. Different options for composing the indicator are presented, discussed and evaluated. And special implications when applying the indicator to transition countries are highlighted in the face of empirical findings on the European Union's New Member States in Central and Eastern Europe.

II. Explaining the Concept of 'Price Competitiveness'

'Price competitiveness' is a macroeconomic term expressed in one indicator, the Real Effective Exchange Rate (REER). The idea of 'price competitiveness' implies several hypotheses that will be explained in the following sections.

2.1 Defining 'Competitiveness'

Constitutive for the general term 'competitiveness' are the following assumptions:

> The first assumption is that various participants take part in a competition for a certain, defined goal.

The very definition of 'competition' includes that one participant can only improve his/her position to the detriment of another participant.[4]

[4] A competition is by definition a zero-sum game: The relatively better performance of one is automatically the relatively worse performance of the other. Thus, a relative improvement can only take place at the detriment of the other. Competition requires a comparison between different participants. A "relative improvement" in the context of competition means therefore always

> The second assumption is that certain qualities will enable the participants to get relatively closer to this goal – i.e. to win or maintain a relatively better position – than their competitors.

The working definition of this paper will therefore be, that

> the *ability* to improve one's position, or to maintain one's position, relatively to others, over time, is called '*competitiveness'*.

Following this definition, this ability – 'competitiveness' – would be the determinant for later 'success' and should cautiously not be mistaken for actual performance/ 'success' outcomes at certain points in time.

In order to be able to compare competitors with each other, first of all, 'success' – an obviously normative category – has to be defined as a quantifiable and measurable term. This 'success indicator' would be the endogenous variable – the measure for the eventual outcome –, whereas the underlying determinants of 'success' would be represented by the exogenous variables. One of these exogenous variables is supposed to be the 'competitiveness' variable.

2.2 Applying the Term 'Competitiveness' to International Markets and Trade

In the idea of market economy, international open markets will invite producers from different countries to compete against each other to sell their products to international customers. When talking about 'international competition' and 'competitiveness on international markets', this implies the

> assumption, that on integrated, international markets, the formerly local competition of domestic producers is extended to an international competition of international producers.

Supposing that 'success' is defined as 'selling more than your competitors' and 'obtaining a larger market share'[5] (see Lipschitz/McDonald 1992, p.38), being 'competitive' in this setting would mean that a producer of goods and/or services possesses the quality to increase or maintain his/her share of international sales.[6]

"relative to other participants". In contrast to this, a relative improvement of one's own performance over time is not competition, but development.

[5] A share is a relative parameter and reflects the idea of competition: when one's share grows, this means that one's growth rate is stronger than the average growth of the total.

[6] Caveat: "success" in business is of course profit generation, i.e., total research, production and marketing costs have to be lower than total revenues in the long run. Competing for a high market share is not an objective in itself, but only one strategy among others to reach or maintain a profitable situation. Generating profits is not necessarily a competition – it can happen without doing so at the detriment of other businesses –, but to increase one's market share is a competition, as it is a relative parameter.

2.3 Applying the Terms 'Competition' and 'Competitiveness' to National Economies

Beyond this understanding of international competition on the level of business entities, the term 'competitiveness' has been more and more applied not to producers of goods and services, but to countries or 'national economies' as a whole: In the *Special Report on Competitiveness Developments in the Euro Area of the European Commission* (2009, p.18), 'competitiveness [of a country]' is explicitly defined as 'its capacity to sell output on external markets' (p.18).

For this argumentation, further assumptions are necessary:

> the sum of a country's producers has to be considered as an equivalent to the entity 'national economy'.

This equation – 'total economy' = 'sum of producers' – necessarily excludes all other participants of the economy from the analysis. It also implies that the goals of the single producers are the same as the overall goals and interests of all participants of an economy.

> The underlying assumption is, that summing up micro-economic business entities, one obtains the macro-economy.

By shifting the perspective from micro-economic entities to macro-economic level, the supposed analogy leads to the following reasoning:

> The first assumption is that national economies take part in an international competition against each other for something, and
>
> The second assumption is that certain qualities will enable single economies to perform relatively better than their competitors.

It is necessary to be aware of the above framework of assumptions in order to understand the idea of 'price competitiveness'. Their plausibility and their contestability, however, will not be further discussed in this paper.

2.4 Defining Parameters

In order to argue within the above depicted framework of assumption, one would first have to define a 'success' indicator that makes economies' 'success' measurable and comparable. Only once this goal has been set, indicators that would represent the countries' 'abilities to perform relatively better than their competitors' could be defined. These ***determinants*** of relative 'success' would then be the 'competitiveness' indicators.

2.4.1 Setting a 'Success' Indicator

The idea of 'price competitiveness' refers to a 'relative success of selling on international markets'. The very idea of 'competition' necessarily requires the 'success indicator' to show a performance relative to other economies. When the idea of "price competitiveness" as determinant for export flows was created by Balassa (1962), he therefore set a 'success' indicator that fulfils this requirement: "increasing one's national share of world export volume" (compare Balassa 1962, p.31, Lipschitz/McDonald 1992, Sachverständigenrat 1981, paragraph 442, Kravis/Lipsey 1992, Deutsche Bundesbank 2003, p.21 and European Commission 2009, p.18*).*

In contrast, Lipschitz/McDonald (1992) show that tradable goods and services of one country do not only compete with foreign goods once exported, but do also compete on domestic markets with imported goods and services. Therefore, they prefer to replace 'export volumes' with "total sales volumes of tradable goods and services" (p.38).

This paper focuses its assessment on the conventional 'success' indicator – 'growing shares in world export' – together with the alternative proposed by Lipschitz and McDonald (1991) in an IMF paper – "growing shares in world sales of tradables". Alternative parameters, like trade balance equilibria are left out of the present analysis. [7]

[7] When searching for "success" parameters in trade, literature offers various perceptions: one possibility is to define it as net trade surplus (as mentioned in Düthmann 2006 p.15-16, and Horn/Stephan 2005), another one is to define it as trade balance equilibrium or as current account equilibrium (compare Trabold 1995, p.169, Marsh/Tokarick 1996, Reichel 2002, p.18). Concerns regarding current account equilibria can also be found throughout the EU Commission's Special Report on Competitiveness (EU Commission 2009).
Nevertheless, one remark regarding the equilibrium objective should be made: when setting balance equilibria as the desired parameter for an economy, the hypothetic framework of "competition" is left once for all: a trade balance equilibrium can – hypothetically – be achieved by all countries simultaneously, and these "successes" would not be relative to other countries' "successes": getting closer to equilibrium will not lead to a worsening of another country's equilibrium.
Still, current account equilibria come more and more into focus of discussion when talking about "competitiveness" issues. (European Commission 2009, Reichel 2002, Deutsche Bundesbank 2007). In more recent literature, export share growth is considered to be the necessary, but not sufficient "success" parameter. Although mid-term current account equilibria are outside of the conventional competition scheme, they are often mentioned jointly with the indicator of export share increases and considered to be the second necessary key indicator.

2.4.2 Setting the 'Competitiveness' Indicator: the Concept of 'Price Competitiveness'

Having set the 'success' parameter, one needs to define the determinant, the 'competitiveness' indicator.

The term 'price competitiveness' itself again implies certain assumptions.

As Lipschitz/McDonald point out, presumption when conceiving a 'price competitiveness indicator' is that it should possess one critical property: "when it points to a loss of 'competitiveness' by a country, the producers of traded goods in that country should see an erosion of shares both in domestic and foreign markets." (1992, p.38)

When searching for determinants of increasing shares in international trade or in sales of tradables,

> the hypothesis is that export flows/sales of tradables can be increased by offering similar products at relatively lower prices.

This hypothesis itself constitutes the concept of 'price competitiveness' and is expressed in one single indicator, the relative price of tradable goods.

In order to validate this concept, it has to be tested: an indicator showing a relatively lower price development than the competitors' price developments is thereby expected to lead to increasing shares of national and international sales of tradable goods and services.[8]

III. Conventional Measurement Indicators for 'Price Competitiveness'

An indicator that reflects the very idea of 'price competitiveness' would compare prices of certain goods and services of one country to the prices of another country, denoted in a common currency.

3.1 Defining the Scope of Goods and Services to be Assessed

When assessing 'price competitiveness', the scope of considered goods has to be defined with caution, as the hypothesis of a price competition on international markets conveys two conditions:

1) The first condition is that the assessed goods and services necessarily need to be cross-country-border tradable.

[8] First tests to validate this concept have been undertaken by Marsh/Tokarick in 1994 (p.23) and 1996 (p.701). Results showed that for most countries the "price competitiveness" indicator could not explain export flows (for discussion of various empirical studies see Reichel 2002, p.330-331).

The competition can take place on foreign markets – a country exports its tradables – or on the domestic market – the domestic tradables then compete against imported foreign tradables.

Goods and services that cannot be transported – e.g. typical non-tradable services[9] or the immobile construction sector – or that cannot be marketed outside the country because of regulations or trade restrictions,[10] have to be left out of the analysis, as they cannot be subject to international competition.[11]

As most services were non-tradable until recently, services were mostly not included in 'price competitiveness' analyses. But due to technological change, trade in services has become nowadays an important quantity and should not be neglected.[12]

2) The second condition for 'price competitiveness' is that the competing goods and services can be marketed internationally at different prices.

As commodities are mostly sold at single world market prices (see Golub p.10), a competition via different prices cannot occur for these goods. Therefore, agricultural goods, raw materials and energy commodities have also to be excluded from the analysis.

On the contrary, empirical studies show that manufactured goods do still obtain different prices on international markets (see Golub 2000. p.10).

Reference goods for 'international competitiveness' in trade should – in theory – be 'all tradable goods and services that trade to heterogeneous prices'. However, in practice, most national accounts do not record tradable goods and services separately from non-tradables. As measuring volumes of services represents an additional difficulty, the 'best practice' approximation to measure tradables traded at heterogeneous prices is therefore to measure volumes of manufactured goods (Golub 2000, p.10).

3.2 The 'Real Effective Exchange Rate'

Prices are commonly measured with help of indices that refer to a certain base period (see below). In period 0, the indicator shows the value 100. In successive periods, the indicator shows if the change in price level in the domestic country has been stronger or weaker than in its comparator country. Thus, the indicator

[9] typical examples for non-tradable services are a haircut, transport etc.
[10] e.g. medicines/drugs requiring a marketing approval, or technical quality standard regulations
[11] Still, prices of non-tradables do enter production in the form of domestic input goods and are therefore still relevant in the form of costs. This issue will be discussed later.
[12] Examples for tradable services are all financial and insurance services, call centre supports, tourism etc.

compares the price development in percentage changes towards the base year of two countries, but not their respective price levels.

This specific indicator is conventionally known as 'real exchange rate'. The real exchange rate is obtained, when dividing price changes of domestic goods and services by price changes of foreign goods and services, denoted in a common currency.

$$\text{RER} = e * \frac{p_d}{p_f}$$ [13]

Source: Marsh/Tokarick 1996, p.701

When comparing domestic prices to more than one foreign country's prices, one obtains the "Real Effective Exchange Rate" (Krugman/Obstfeld 1997, p.421-423): Prices of several foreign countries enter the formula according to a specific weighting scheme where all weights add up to one.

The Real Effective Exchange Rate (REER) is often described, in analogy to other real and nominal values, as the movement of the nominal effective exchange rate, adjusted for inflation differentials (see Deutsche Bundesbank 1994. p.48). But as stressed by Maciejewski (1983) and Gandolfo (2002. p.14), the REER is not a deflated nominal exchange rate: the nominal (effective) exchange rate reflects the relative price of two or more currencies, whereas the real (effective) exchange rate reflects the relative prices of goods and services of two or more countries, expressed in one common currency.

When the domestic price increase is stronger than the weighted average of the comparator countries' price increases, the REER is said to 'appreciate', in the opposite case, it is said to 'depreciate'. An 'appreciation' of the REER is understood as a 'loss in price competitiveness', whereas a 'depreciation' of the REER is understood as 'gain in price competitiveness'. (compare Deutsche Bundesbank 2007, p.42)

3.3 Composing the Indicator 'Real Effective Exchange Rate'

The REER is composed of three elements:

1. the comparator countries and their respective weights in the formula
2. their nominal exchange rates towards the domestic currency, and
3. a parameter for measuring prices in the domestic and foreign countries.

[13] e being the nominal exchange rate, p_d the price index in Home and p_f the price index in Foreign. For the exchange rate, the price notation (direct notation) of nominal exchange rates "1 local currency = x foreign currency" is used throughout this document

The different options for defining country weights and measuring relative prices will be discussed in the following sections.

3.3.1 Defining Comparator Countries and their respective Weights

Conventionally, countries are compared to their main trading partners. Institutions that calculate REERs have different weighting schemes: they calculate the weights according to a trade partners' export shares, or to their import shares, or to averages of export and import shares. An alternative method is a double-weighting system that allows to measure at the same time the competitive situation of domestic export goods on foreign markets and of domestic goods towards import goods on domestic markets (for more details see Durand 1986).[14]

Assigning weights per country will influence the value of the indicator and is therefore not unambiguous. The International Monetary Fund (IMF), central banks and private institutions compose weighting schemes and compute (various coexisting) effective exchange rates. (Gandolfo 2002, p.15; Marsh/Tokarick 1996, p.708) But weighting schemes can also be defined according to a specific research question (compare Golub 2000, p.i)[15]

Problems of the conventional weighting schemes

Trade partners and their weights are defined for a certain base situation – and not adapted over time (see Deutsche Bundesbank 1998a). When trade shares change considerably over time, as has been the case with Newly Industrialized Countries, this may not be properly reflected in the REERs. The German Central Bank addressed this problem by enlarging the group of comparator countries after a certain period (Deutsche Bundesbank 1998a).

Countries that do not trade much between each other may still offer similar products on the same foreign markets. In a weighting scheme that relies on actual export/import shares between the reference countries, this competitive situation would not be reflected. This issue is settled via the double-weighting scheme (see Turner and Van't dack 1993, p.15).

[14] "Double export weights calculate for each market the total supply as the sum of home supply (i.e. the part of the domestic production that is not exported) and foreign supply (all competitor countries' exports to the market). The share of each country in the total market is then calculated. In a further step these weights per market are weighted together for each exporting country in the total market. Double export weights take into account that exporters to a given country compete not only with domestic producers there, but also with other exporters to that market ('third market effect')." (European Commission – Ameco 2009)

[15] In a case study for South Africa, Golub modified the weighting scheme in order to compare South Africa to its African neighbour countries, irrespective of their actual trade volumes to the rest-of-the world.

3.3.2 Defining Parameters for Measuring Price Level Changes

The following sections will present and evaluate various conventional price and cost indicators.

3.3.2.1 Price Indicators

The following section discusses Consumer Price Indices, Producer Price Indices, Export Unit Values and Export Price Indices. National price parameters are supposed to reflect national production costs.

3.3.2.1.1 Consumer Price Index (CPI)

"Consumer Price Indices (CPIs) are economic indicators constructed to measure the changes over time in the prices of consumer goods and services acquired, used or paid for by households" (Eurostat 2009), using a standardized basket of goods of a typical urban consumer (Sullivan/Sheffrin 2003).

Pros

As the percentage change of the CPI is one measure for national inflation, the CPI is calculated by most national agencies and is one of the most closely watched national economic statistics. Compared to other price development indices (like PPIs or GDP-Deflators), CPIs show more similar composition across countries, which makes them a more reliable basis for international comparison. Internationally widespread and timely availability make them very useful in practice (Golub 2000, p.12; Köppen 1997, p.160).

Cons

The most important argument against the use of CPIs is that they may not offer representative information, as they cover a different group of goods:

As CPIs cover consumption goods, they do not include investment goods or intermediary products – two groups that constitute a very important part of manufacturing exports (Deutsche Bundesbank 1998b, p.47). Moreover, CPIs do not include only tradable, but also non-tradable goods. But the tradable goods' and the non-tradable goods' sectors can diverge largely in price development[16], especially in fast-growing economies. In an open economy, imported goods are included in the basket of goods of CPIs. But prices of imported goods are expected to reflect

[16] One reason can be different productivity growth, but this is not necessarily reflected in prices. (see Krugman/Obstfeld p.430)

foreign – and not domestic – 'price competitiveness' and are, moreover, endogenous to the nominal exchange rate.[17]

As Turner and Van't dack (1993) point out, price controls on consumer prices may distort the informative value of CPIs. In addition, indirect taxes like VAT are applied to consumption goods. As these are refunded when exporting, this element can lead to different pricing for exported goods and services (Deutsche Bundesbank 1998b, p.47).

Moreover, consumer prices are endogenous to the business cycle and more volatile than other indicators: a rising demand in consumption can lead to a stronger rise in CPI, as well as a sluggish demand can lead to a weaker rise in CPI. Changes in CPI can therefore also – assuming pricing-to-market behaviours – reflect a (short-term) reduction or increase of profit mark-ups instead of changes in 'price competitiveness'. (Golub 2000, p.12)

3.3.2.1.2 Producer Price Index (PPI)

"A PPI is an index designed to measure the average change in the price of goods and services, either as they leave the place of production or as they enter the production process. Thus, producer price indices fall into two clear categories: input prices (that is, at purchaser prices) and output prices (that is, at basic or producer prices)." (IMF 2004, p.66) The coverage of a PPI varies across countries: in some countries, PPIs refer only to the industrial sector, whereas in other, the producers of services are also included. Agricultural production is included in some countries, and excluded in other. For output indices, retail margins are excluded by definition, as are transportation costs and indirect taxes, whereas input indices include transportation costs and wholesaler margins. (IMF 2004, p.67)

Pros

In contrast to CPIs, PPIs focus not on domestically consumed goods, but on domestically produced goods. One can expect PPIs – especially output prices indices – to be the measure that reflects domestic production costs the closest, as they include all price changes of input goods like costs of energy, domestic and imported intermediary goods and services, and labour and capital costs. Like CPIs, PPIs are indicators for national inflation (Golub 2000, p.12) and therefore tracked by national agencies. They are timely available for many (developed) countries.

[17] E.g., a nominal depreciation of the currency will have the effect of a rise of import prices, that can, if imported goods are an important component of domestic consumption and therefore of the CPI, push up the CPI value. After a depreciation of the nominal exchange rate, the REER based on relative CPIs will therefore be lowered on the one hand because of the nominal depreciation, but at the same time elevated because of a higher domestic Consumer Price Index (Golub 2000, p.12). Thus, in some cases, a nominal depreciation can even result in a real appreciation.

Cons

Internationally, PPIs are much more variable in composition than CPIs and therefore often not suitable for international comparison (Golub 2000, p.12). Like CPIs, PPIs by definition do not differentiate between tradable and non-tradable goods, especially when they include domestically produced services that are for a big part non-tradable.

This problem can be overcome by opting for a 'PPI in Manufacturing'. When a country's exports and imports mainly consist of manufactured goods, this is one possibility to approximate price changes in tradable goods.

PPIs are, like CPIs, endogenous to changes in import prices, as imported intermediate goods and services may constitute – especially in manufacturing industry – an important part of input goods. Via imported input goods, PPIs are also endogenous to the nominal exchange rate.

Also, transportation costs can play a role, depending on the distance to foreign markets, in final prices of exports – but are not included in PPI by definition.

As pricing will always also depend on demand, on domestic as well as on foreign markets, changes in producer prices do not necessarily reflect changes in production costs or changes in productivity, but possibly pricing-to-market strategies (Atkeson/Burstein 2008).

3.3.2.1.3 Export Prices

The above presented price indices have shown to be only an approximation to goods that compete on international markets, as the groups of goods and services they cover are not exactly congruent with tradables. Another common approximation is to define the group of goods that competes internationally as the totality of a country's exports.

There are two possibilities of measuring price changes of exports: Export Unit Values and Export Price Indices.

3.3.2.1.3.1 Export Unit Values (XUV)

One possibility is to simply divide the nominal export values by the export volume. These figures are called 'Export Unit Values' (XUVs) and show a fictive, average price per export unit (Köppen 1997, p.154; Reichel 2002. p.330; Silver 2007). XUVs are compiled from data collected by customs authorities.

Pros

Their widespread use is mainly due to relatively low cost of collection, compared to establishment price surveys that are necessary for PPI construction. Data should be available for most countries (Silver 2007).

Cons

In custom-free economic unions, trade within the union is not recorded. But a much bigger problem is that changes in the fictive, average 'unit' price may not be the result of a price change over time, but a result of a change in the denominator: if the types of goods that a country exports change over time and the structural composition of export volume is different from year to year, the calculated 'unit good' of one year is not comparable to the one of former years (Köppen 1997, p.154). Turner and Van 't dack (1993, p.112) estimate XUVs to be the least helpful indicator. And as Silver (2007) points out in an IMF study, "continued use [of XUVs] would mislead economic analysis" (p.1).

This problem can be avoided when export price changes are measured with help of index methodologies (comparable to CPIs or PPIs), by recording prices of reference goods over time.

3.3.2.1.3.2 Export Price Indices

The second possibility to record price changes of export goods is to compose representative price indices – this methodology would require extension of PPIs on export and import goods and a regular collection of data at representative establishments (IMF 2004, p.68). This methodology would reflect price changes more accurately than XUVs.

Even if at first sight, export/import goods seem to represent the group of internationally competing goods quite appropriately, there are three main objections to this approach:

1) When only taking into account prices of actually exported goods, domestically produced goods that are not exported (maybe because they are not 'price competitive' internationally) are left out by definition. This may offer a wrong picture of the overall price development of domestic production. (Deutsche Bundesbank 1998b, p.47).

2) When only observing exported goods, price competition on domestic markets between domestically produced goods and imported goods is not taken into account.

3) Pricing-to-market-behaviour in export markets will "heavily influence export prices" (Golub 2000, p.12) and show changes in export prices that are not linked to abilities of producers to produce at lower prices (Golub 2000, p. 12).

3.3.2.1.4 Evaluation of the Price Indicators

None of the four presented price indicators represents adequately the group of tradable goods and services. An index of tradable goods and services, computed with an internationally homogeneous methodology, would be the most appropriate, but is not available at international institutions (check e.g. Eurostat 2009, ECB 2009), even if the practical need had been called for by economists since 1979 (Goldstein/Officer 1979).

Meanwhile, the above price indices have to serve as approximation. Following theory, a PPI of manufacturing at factor prices could approximate the tradable goods to the best extent. But the ever-growing sector of tradable services is then not taken into account. However, in practice, CPIs are often used, as other data are not available or internationally comparable.

All price indicators have also shown to be endogenous to other parameters, as to import prices, nominal exchange rates and to domestic and/or foreign demand. The 'price competitiveness indicator', the REER, can therefore not be understood as a purely exogenous variable that would determine the 'success' parameter.

The idea of 'price competitiveness' puts forward the idea that a country's relative price changes can allow conclusions on a country's potential to increase its sales volumes, on domestic and foreign markets. Nevertheless, empirics show two difficulties:

One the one hand, homogeneous products, like commodities, are traded to almost single prices. (Golub 2000. p.10) An analysis of relative prices of these products will not offer any information on a country's producers' ability to perform better or worse than other countries' producers.

On the other hand, heterogeneous products, like manufactured goods, have shown to be traded internationally at prices that are not solely determined by unit costs of domestic production. Empirics show instead, that producers rather chose to set prices according to specific pricing opportunities on their international target markets ("pricing-to-market strategies")(Atkeson/Burstein 2008, Stephan 2005). In these cases, comparing prices of these tradable goods will not allow many conclusions on the domestic producers' abilities to produce at lower costs or to generate higher profits, but on the pricing opportunities in different target markets.

3.3.2.2 Cost Indicators

Changing the perspective from 'prices' to 'unit costs' should therefore reveal more accurate information on producers' cost situation in the countries where their production site is located. In most 'price competitiveness' studies, the published REERs are not only calculated with help of price indicators, but also with help of cost indicators (compare Deutsche Bundesbank 1998b, 2002, 2007; Golub 2000, European Commission 2008, et alii). Most common reference costs for identifying 'price competitiveness' is usually the 'Unit Labour Costs' indicator (Deutsche Bundesbank 1998b, p.43).

3.3.2.2.1 Unit Labour Costs (ULC)

As data on total costs of production are only scarcely available on a regularly basis on international level, labour costs are often used as proxy instead. By doing so, one assumes that Unit Labour Costs (ULC) can reflect adequately total unit costs – either because ULC might constitute the main element of total unit costs, or because they might constitute a fixed fraction of total unit costs.

To obtain nominal ULC, one has to divide compensation of employees by real Gross Domestic Product (GDP).

$$\text{Nominal Unit Labour Costs} = \frac{\frac{compensation\ of\ employees \times total\ employment}{total\ persons\ employed}}{real\ GDP} \quad [18]$$

Source: European Commission, AMECO 2009, Nominal Unit Labour Costs

ULC will depend on changes in labour costs and changes in labour productivity. Labour productivity is measured as real GDP per total units of labour input (measured as hour worked, or as persons employed).

$$\text{Labour productivity} = \frac{real\ GDP}{total\ persons\ employed}$$

Source: Eurostat 2009, Sustainability Indicators, Growth in Labour Productivity

Calculating ULC is therefore the same as multiplying the compensation of employees by the reciprocal value of the labour productivity.

Pro

Besides the above developed arguments, focusing on costs rather than on prices conveys some additional technical advantages: endogeneity effects like the reaction of CPIs or PPIs to import prices and exchange rates are excluded (Golub 2000,

[18] Compensation of employees includes wages and salaries plus social contributions of employers. (European Commission, Ameco Database 2009)

p.13), and labour costs are expected to be less endogenous to business cycles than CPIs (Köppen 1997, p.161).

Cons

Still, the use of ULC confronts one with the following problems (compare Golub 2000, p.13): First, data on labour productivity and data on labour compensation are not always internationally available, reliable, or comparable. Second, labour productivity may show short run counter-cyclical movements, as firms may 'hoard' labour in recessions. But third, the most important point is that ULC ignore, per se, other costs of production, like intermediate goods, non-labour taxes, and capital costs. Changes in these costs would not be captured by the ULC indicator.

Another important point is that movements in ULC may reflect factor substitution rather than changes in efficiency (Golub 2000, p.13). That is, an increase in capital stock – i.e. a change in the capital/labour ratio of input factors – will induce a calculated higher labour productivity. From this higher labour productivity will follow – by calculation – lower ULC. But this fall in ULC could be overcompensated for by the higher capital unit costs: the share of labour cost in total unit cost will fall, and the share of capital cost in total unit cost will rise; however, total unit cost may be the same, or higher, or lower.

Thus, falling ULC do not necessarily reflect falling total unit costs.

As long as one expects ULC to reflect total unit costs, a very important condition has to be fulfilled: the fraction of labour costs over total unit costs has to be similar across the compared economies (see Deutsche Bundesbank 1995) ***and*** also within the single economies over the observation period. If labour costs constitute, e.g., 70% of unit costs in one economy, and 25% in the other one, a valid comparison of **%**-change of ULC over time across these countries is not possible. The same critique applies when an economy raises strongly its capital stock during the observed period: the fraction of labour costs in total unit costs will be different from year to year, and thus cannot be compared.

3.3.2.2.2 Unit Labour Costs in Manufacturing

In order to reflect changes in production costs of only tradable goods and services, analysis often concentrates on 'Unit Labour Costs of the Manufacturing Sector' (ULC_{Manu}). Reasons for this reduction are the following: first, as a big part of services are non-tradable, they are expected – at first sight – to not play a role in the exporting sector. Second, because counting volumes (units) in services is much more difficult, data on ULC in Services is not available for many countries, which impedes a cross-country comparison.

Pros

In addition to the presented general advantages of ULC, ULC_{Manu} approximate best the group of tradable goods. Turner and Van 't dack (1993, p.112) estimated ULC_{Manu} to be the relatively best reference for calculating 'price competitiveness' in industrialized countries.

Cons

In economics, labour is traditionally perceived to be the most important input factor in production. This is still the case in non-industrialized parts of the primary sector and also in the service sector, but in the tertiary sector, the prominence of labour costs has declined over time.

With technological progress, labour as one factor of production is constantly replaced by capital, reducing progressively the share of labour costs over total costs. In manufacturing industry of today, labour costs represent only a small fraction of total unit costs: The German central bank estimated the labour costs to make only 25% of total unit costs in manufacturing in Germany in 1994 (Deutsche Bundesbank 1994, p.53).

Since the 1980s, the manufacturing sector has been more and more outsourcing services that formerly were part of one and the same enterprise (Burke/Epstein 2001, p.14, Feenstra 1998, Molnar/Pain/Taglioni 2007, p.26-27), as for example IT-services, maintenance, accounting, personnel recruitment, financial management, not to mention a big amount of temporary workers that work especially in the manufacturing sector but are recorded in National Accounts as employed in the service sector (staffing service firms).

Reducing the analysis to the manufacturing sector may be appropriate for countries in which manufactures make 80-90% of exports. Still, this proceeding would require all comparator countries to have the same structure in export goods towards export services.

However, domestic services that are not directly exported do still enter the domestic production process of manufactured goods in form of intermediate services (Joebges 2008, p.7). Therefore, their labour costs do still play a role for the domestic production costs of tradable goods. If labour costs in the service sector and labour costs in the manufacturing sector diverge widely, the evaluation of only ULC_{Manu}, as a proxy for ULC of tradable goods, will offer misleading results. (Joebges 2008, p.7; Schröder 2008a, Brautzsch/Ludwig 2008)

3.3.2.2.3 Evaluation of the Cost Indicators

'Unit Labour Costs (in Manufacturing)', when used as a proxy for unit price of tradable goods and services, leads to several problems: First, it does often not include tradable services, as data are scarcely available. Secondly, it does not reflect total unit costs, and in the case of ULC_{Manu}, it does not properly reflect all domestic labour costs that contribute to manufacturing. Third, it depends not only on changes in productivity, but also on changes in capital stock.

ULC is the preferred indicator in many 'price competitiveness' studies. Still, it has to be used with caution: only countries with the same technological level (i.e., ratio of labour to capital costs in total unit costs) can be compared. Thus, ULC_{Manu} cannot be used when assessing developing countries or transition countries that trade with highly industrialized countries. Also, the indicator cannot be used when a country increases its capital stock significantly during the observation period. As this has been the case in the Central and Eastern European countries in the last decade, ULC may be a misleading indicator for this purpose.

Labour Costs as main indicator for producers investment decisions

A reason why ULC are nevertheless the main focus of interest in 'competitiveness' issues might still be another one: it allows international producers some insight into profit opportunities.

Production conditions that differ from country to country are mainly the following: geographical condition like climate and proximity to trading partners; technological infrastructures and ways of transportation; health and education of the working population; political system and its stability, property rights and law enforcement, taxation rules, currency issues, trade restrictions etc. Some of these conditions are not always easily quantifiable.

From a producer's perspective, the relevant issue is her/his return on investment (ROI). Data on return on investment are almost not available on a country basis, as they are mostly not public. Therefore, a producer who decides to invest in a new production site, or to relocate (parts of) an existing one, will require other information that allow conclusion on profit opportunities linked to a certain country (compare Höh 2008).

The quantifiable input factors of production are, roughly spoken, capital in form of investment goods and land/buildings, input goods like energy, raw materials and intermediary goods, and the input factor labour. International capital movements have been strongly liberalized in the last decades, and commodities, energy and intermediary inputs are tradables that can enter the production process independently of the location.

Commodities are traded at fairly equalized world market prices (Golub 2000, p.10), whereas levels of labour remuneration, as well as tax levels (OECD 1998), may vary from country to country. As labour, in contrast to capital and goods movements, is still largely immobile due to stricter immigration rules (Rodrik 1998, p.1-3), labour is perceived as one of the most important input factors that is directly bound to national boundaries. Research on Foreign Direct Investment (FDI) decisions showed that low wages were at the centre of decision for production relocation (Burke/Epstein 1998, p. 15, Crotty/Epstein/Kelly 1998).

Comparing ULC will allow a producer some insight on this specific variable cost of production. ULC are supposed not only to reflect the national labour cost level, but also the productivity of labour, that is to speak, the efficiency of a country's working population in the production process, that may be due to average technology standards and health, education and training of the working population.

Thus, the ULC indicator can be considered to be important information for a producer's decision on production (re)location (Schröder 2008b, p.4-5).[19]

However, when calculating a REER based on ULC, all formal objections to the ULC indicator, as described above, do still apply. Additionally, knowing a country's aggregate relative ULC development does not allow a producer insight on his/her possible return on investment, as this will depend on many other variables.

Especially when labour is only a small fraction of total production inputs, it cannot be taken as the decisive factor for a (re)location decision. Proximity of intermediary suppliers and quality of externally procured services may play an important role. However, in the past few years, many producers' decisions have mainly been based on the parameter of labour costs (Höh 2008, pp.1-2, Burke/Epstein 1998, p.15,), even if some of them have been proven wrong in the following years (Joebges 2008, Kinkel/Maloca 2008, PriceWaterhouseCoopers 2009).

3.4 Evaluation of the 'Real Effective Exchange Rate' as a 'Competitiveness' Indicator

Beside the pros and cons of the various price and cost indicators, the 'Real Effective Exchange Rate' itself, as an indicator for international 'price competitiveness', requires some critical consideration.

3.4.1 General Limitations to the Interpretation of the 'Real Effective Exchange Rate'

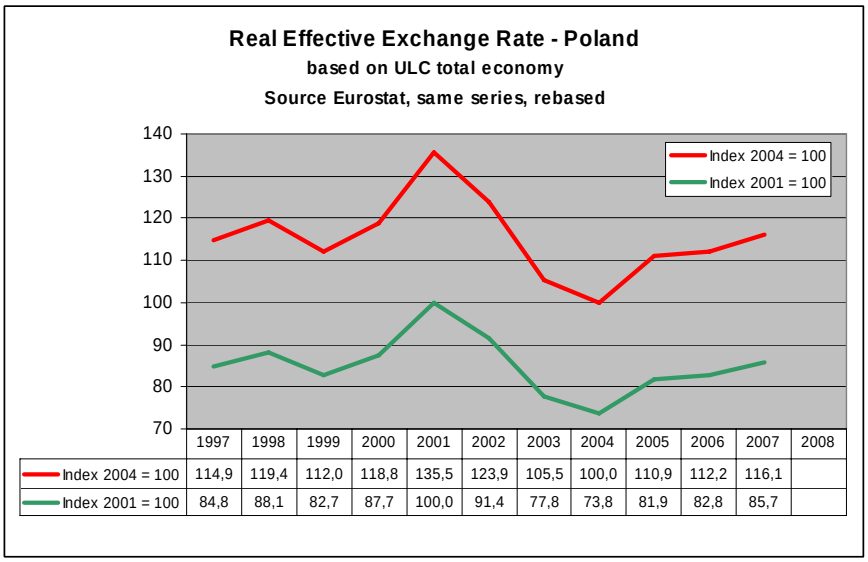
REERs are composed of index indicators, as consumer prices, producer prices, export prices and also labour productivities are measured with help of indices.

[19] A study by Marin showed that foreign investors where often able to reach higher labour productivities in CEEs, compared to CEE domestic producers (Marin 2004, p.4).

When composing an index, one period has to be defined as the 'base' period (i.e. year x=100). The REER will reflect %-changes and show values above or below the 100-base period: When the domestic average price/cost level increases more than the average of the foreign average price levels, the REER will show a value higher than 100. When the average domestic price level increases less than the average of the foreign average price levels, the REER will show a value below 100.

The base year of an index can be set deliberately or arbitrarily – in any case, the choice will influence the indicator's nominal values of the following periods. When viewing data series with exchange rate and relative price level fluctuations, one can for example choose as a base period a year in which relative prices are on a peak: this should then lead to decreasing REER values (a 'depreciation') for the following periods (compare green graph below). Inversely, when choosing as base period a year in which the domestic relative price level is at bottom, the values of REER will automatically rise (an 'appreciation') in the following periods (compare red graph in example below).

Graph 1: Identical series with different base years – example REER Poland



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Index 2004 = 100	114,9	119,4	112,0	118,8	135,5	123,9	105,5	100,0	110,9	112,2	116,1	
Index 2001 = 100	84,8	88,1	82,7	87,7	100,0	91,4	77,8	73,8	81,9	82,8	85,7	

Source: Eurostat 2009, own calculations

When understanding the REER as indicator for 'competitiveness', one should not automatically interpret values > 100 as 'gains in competitiveness': This reasoning could only work for one very specific situation: only in a case where, in the chosen base year, the nominal exchange rate would truly reflect Purchasing Power Parity (PPP)[20] could the REER be correctly noted as 100.

[20] PPP theory assumes that the nominal exchange rate reflects purchasing power and is therefore only a 'translation' of same prices, expressed in different currencies. For more details on the PPP-theory, see Krugman/Obstfeld 1996, pp.409-427. Compare also Deutsche Bundesbank 2004.

In this single case, all values of following periods below or above 100 would reflect a departure from an equilibrium situation and a relative lower or higher price development than the compared countries' average price development. As discussed in many papers, the PPP-theory has shown not to hold empirically. (Krugman/Obstfeld 1997, p.409-419)

Another objection is that PPP-theory assume the 'law of one price' to hold on international markets. This assumption is contrary to conceptions that intend to measure diverging price level developments, and can therefore not hold simultaneously (see also Gandolfo 2002, p.224).

Still, the REER does reflect movements in relative prices/costs and in nominal exchange rates, always referring to the situation in the base year of the index. The REER is not able to show if price/cost levels in the following years are higher or lower across countries; it can only show if price ***changes*** – measured in % – are stronger or weaker than in other countries. This is especially a problem when comparing countries with high price levels to countries with very low price levels.

The nominal value of a 'price competitiveness' indicator should not be mistaken as information on 'success' or 'performance'. Only if the hypothesis that a certain development of relative prices leads to relative increasing exports – or alternatively to relative increasing sales of tradable goods and services – holds, the hypothesis of 'price competitiveness' would be true.

Policy makers observe the 'competitiveness indicator' because of its expected impact on future developments. But still, within these discussions, the nominal value of the indicator is sometimes misunderstood as already offering some information on 'success'. But the indicator itself only offers information on relative price developments.

3.4.2 Further determinants of Export Share Increases

The 'price competitiveness' hypothesis states that the REER should be the decisive determinant for a country's 'relative success in exports'. But another, crucial determinant of export quantities is ignored when only focusing on the supply side: exports are not only determined by relative prices, but also by foreign demand. [21]

$$Ex = f(Y_f, p_f, p_d, e)^{22}$$

Source: Reichel 2002, p.328

[21] The same applies to sales volumes of tradable goods and services, following the definition by Lipschitz and McDonald. Sales of tradables depend on foreign and on domestic demand.

[22] Ex: exports, Y_f : foreign demand, p_f: foreign price levels, p_d: domestic price level, e: nominal exchange rate in price notation

Moreover, determinants other than price changes may be responsible for changes in trade quantities: qualitative aspects like product innovations, improved quality of products, after-sales services, proximity to international customers, common language or history, historically grown trade relations, common institutions (e.g. common currency), regional specialization, preferential tariffs, trade liberalization, and off-shoring of international supply-chain production. Also, the intense integration of world wide trade – 'globalization' – can be an important factor for rising exports – and rising export shares – for countries that newly start to take part in international trade.

When Balassa introduced the idea of "competitiveness of a country" as "ability to sell" to foreign countries – in analogy to business entities – in 1962, he did not only focus on price factors, but defined it as one factor among other non-price factors (compare Balassa 1962, p.29, Reichel 2002, p.18).

IV. Evaluation of the Concept of 'Price Competitiveness'

The concept of 'price competitiveness' is a hypothesis that relates relative price changes to relative sales of tradable goods. It implies a set of assumptions – described in chapter I of the paper – that might be very controversial and also very contestable. When using the concept, notwithstanding these concerns, one faces several difficulties: The first difficulty is the lack of internationally comparable data on prices, costs, productivities and sales of tradable goods and services. The second difficulty is the impossibility of comparing countries with different composition in exports or with different technological standard. The third difficulty is to compare countries with very different initial price/cost levels in the base period of observation.

Special attention when dealing with the term 'price competitiveness' should lie on the following: the hypothesis of 'price competitiveness' reduces the 'success' of an economy to relative increases in exports.

Though when trying to define what the 'success' of an economy could be, opinions diverge widely: It starts from defining it as maximizing welfare for its citizens (Reichel 2002, p.14), over offering equal opportunities to its citizens (World Bank 2006, p.1-17), to many other possible understandings (Reichel 2002, p.14-26). The most frequently cited means for achieving these goals (that should not be confused with the objectives themselves) are economic growth and distributive elements (World Bank 2006, pp.1-17, OECD 2008a). Among different strategies to enhance economic growth,[23] participation in international trade and increased exports are

[23] Economic growth theories will not be elaborated on in this paper.

conventionally considered to be very important means (compare Onaran/Stockhammer 2005).

The underlying assumption, when focusing on export growth, is that it will contribute to domestic output growth, and thereby create employment, which should enhance the welfare of a country's inhabitants.

Still, to pursue increased welfare for its citizens, and/or to strive for economic growth does not necessarily imply that a country is in competition with another country, i.e., that these goals can only be achieved to the detriment of other economies.

At this point, three objections have to be made:

1. Export growth can, but does not necessarily always lead to growth of total GDP.[24]
2. Growth of GDP can, but does not necessarily always lead to higher welfare, as this requires the distribution of GDP gains (compare OECD 2008).
3. Still, when export growth leads to GDP growth and to increased welfare, this does still not necessarily mean that countries are in competition with each other (compare Krugman 1997), as this would imply that economic growth and welfare increase can only be pursued to the detriment of other countries.

The conception of 'competitiveness of national economies' is obviously derived from the analogy of business entities to national economies (see Krugman 1994, p.34, Krugman 1996, p.18). Though in market economy, an enterprise has to maximize its profits, potentially by a strategy of maximizing its sales volume, the idea that national economies are entities that – in analogy to business entities – have to maximize their exports, i.e., have to 'sell' the maximum units of production to their neighbour countries in order to be 'successful', remains a questionable hypothesis (compare Krugman 1997).

[24] Compare "export-led" regimes to other regimes in Onaran/Stockhammer 2005.

V. Empirical Findings in Central and Eastern Europe

5.1 Scope: Central and Eastern European New Member States of the European Union in the last decade

The present empirical assessment concentrates on the Central and Eastern European countries (CEE) that joined the European Union in 2004 and 2007.[25]

Graph 2: The European Union and its Member States

Source: Wikimedia Commons 2009

As members of the European Union, these CEE transition countries share a common economic policy framework: EU policy, like subsidies of the EU structural funds and – especially – EU trade regulations and liberalization of trade and capital markets towards EU15.

[25] The Baltic States Estonia, Latvia and Lithuania, and Poland, Hungary, Czech Republic, Slovakia and Slovenia – European Union's eight new member states since 2004 – and Bulgaria and Romania – the two new member states since 2007.

Table 1: European Union Member States and Enlargement Steps[26]

European Union Member States and Enlargement Steps				
	EU27			
	EU25			
	EU15		**NMS12**	
	EU12		**NMS10**	
1957	Belgium France Germany Italy Luxembourg The Netherlands			
1973	Ireland Denmark United Kingdom			
1981	Greece			
1986	Portugal Spain			
1995		Austria Finland Sweden		
2004			Estonia Cyprus Czech Rep. Hungary Latvia Lithuania Malta Poland Slovak Rep. Slovenia	
2007				Bulgaria Romania

Source: European Union – own compilation

This common ground makes them more comparable – besides better data availability and comparability due to data collection and harmonization by EU institutions. For simplification, this group of EU New Member States will be called 'CEE countries' in the following.

The period assessed is roughly the last decade: For many CEE countries, Eurostat[27] provides data only since 1997 until 2007.[28] The represented tables and graphs show the latest comparable data series that were available.

[26] EU: European Union; NMS: New Member States
[27] Eurostat is the statistical office of the European Union
[28] For some series, data were only available since 2000 and till 2005 (so for some World Bank series).

5.2 Assessing Indicators for 'Price Competitiveness'

In order to analyze the 'price competitiveness' of the CEE countries, the supposed 'determinant' – the 'Real Effective Exchange Rate' – and the 'success' indicator – 'increases in export shares/increase in shares of tradables' – will have to be matched.

5.2.1 Real Effective Exchange Rates (REER)

Real Effective Exchange Rates (REERs) for CEEs are computed by institutions like the World Bank, Eurostat, The European Central Bank (ECB) and the Organisation for Economic Co-Operation and Development (OECD). They are not available for all CEE countries alike. Relative prices/cost parameters and trading partner weights vary by institution (see graph 3).

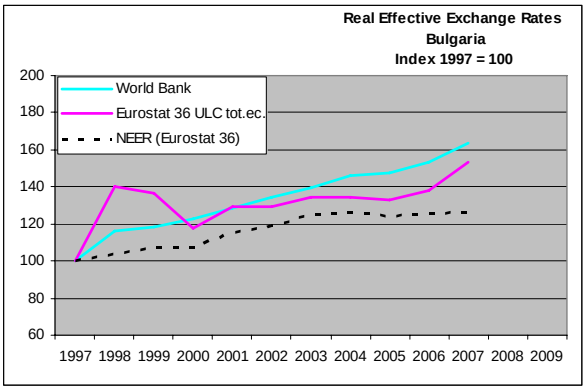
The graphs show REERs per country, based on CPIs and ULC – the latter for the total economy and for the manufacturing sector only.

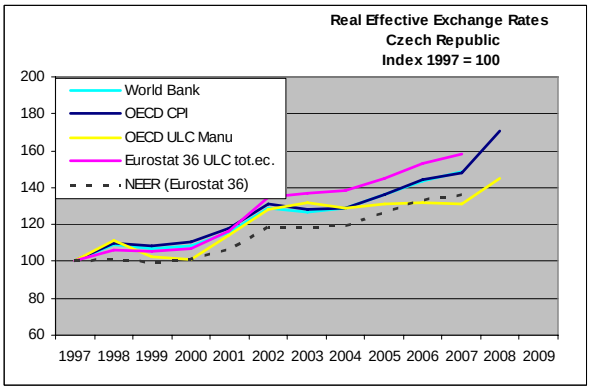
The REER graphs show explicitly the development of a country's prices/costs ***relative*** to the weighted average of the price/cost development of all comparator countries.[29] A value of 100 would represent a price/cost development in line with the average of all countries.

The dashed black line shows the Nominal Effective Exchange Rate (NEER).

The numbers of comparator countries vary by institution and are indicated in the legend[30].

Graph 3: 'Real Effective Exchange Rates' of CEE countries





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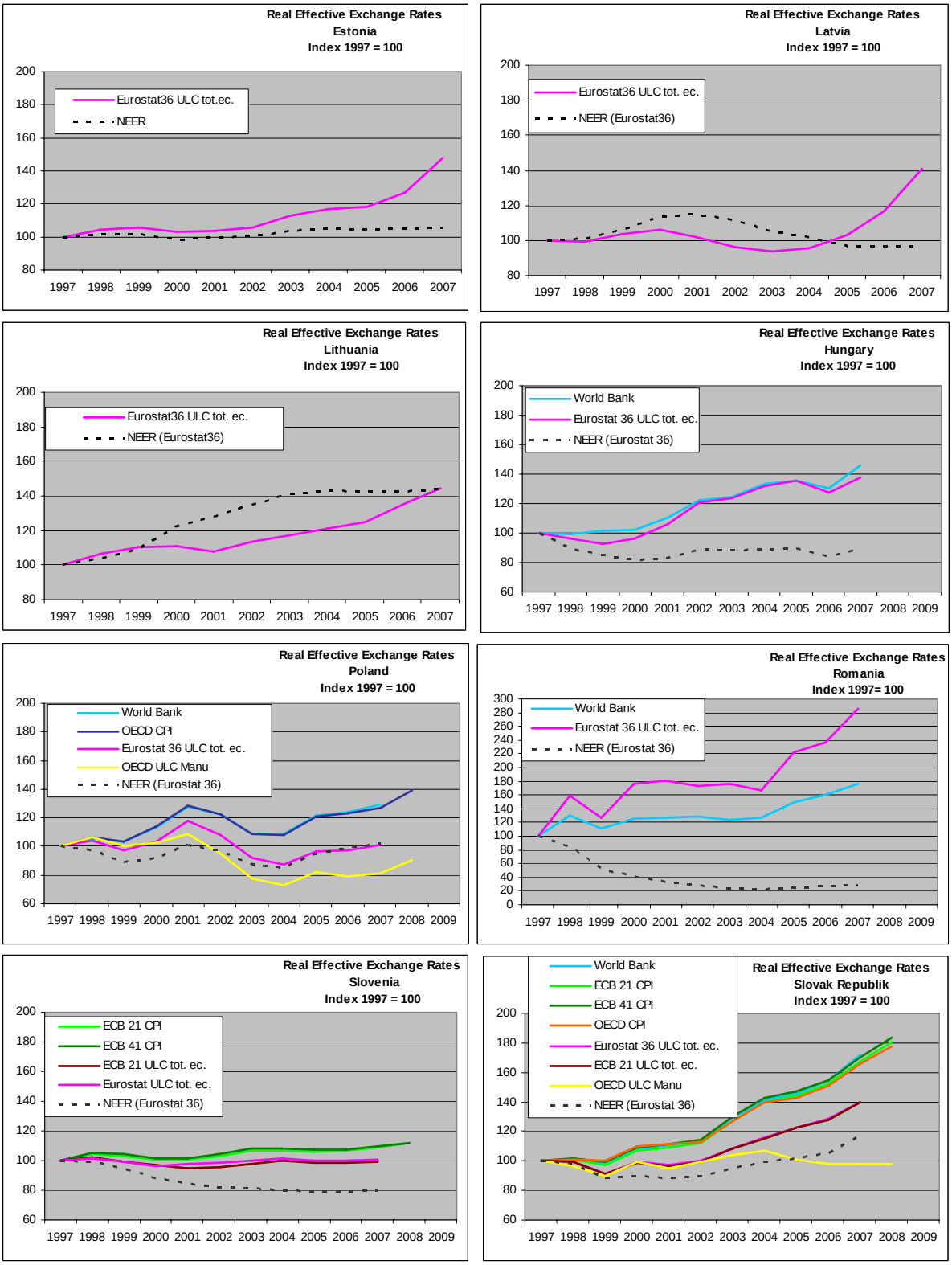
[29] This is not equivalent to the price/cost development within the country itself (=CPI or ULC): I.e. lines show by how much percentage points a country's Consumer Price/ULC/ULC in Manufacturing increase has been stronger than the weighted average price/cost increase of all comparator countries (or: how much the fall in prices/costs has been less strong than the weighted average fall in prices/costs of comparator countries).

[30] For Eurostat36: IC36 = EU27 + 9 other industrial countries (Australia, Canada, United States, Japan, Norway, New Zealand, Mexico, Switzerland, and Turkey)

Graph 3: 'Real Effective Exchange Rates' of CEE countries (cont.)



Source: ECB, Eurostat, Ecowin World Bank WDI, Ecowin OECD, own compilation.[31]

[31] all graphs are scaled from 60 to 200 for better optic comparability – with exception of the graph for Romania: it shows a very strong real appreciation (~+180%) and an important nominal

First observation is that the overall trend in 'price and cost competitiveness' for the ten NMS in the last ten years shows 'appreciations' towards 1997.

Real appreciation rates, based on CPIs, vary from +40% in the Baltics, Hungary and Poland, to +60% in Bulgaria and Romania, +70% in Czech Republic and +80% in Slovakia. The only exception is Slovenia that shows a constant price and cost development in accordance to its trade partner countries, while it devaluated nominally by -20%.

The second observation is that the number of trade partner countries (21 or 41 by ECB, 36 by Eurostat, overall weights by the World Bank and OECD) does not have much influence on the development of the REER. REERs based on CPIs show almost the same value, independent of their number of partner countries.[32] (see e.g. Slovakia).

The third observation is that the choice to compute either relative CPIs or relative ULC will make a difference: REERs can deviate strongly depending on their reference parameter (see Romania, Poland, Slovak Republic). It also differs strongly if one observes ULC in total economy or only in the manufacturing sector (see Czech Republic, Poland and Slovak Republic).

In the case of Hungary and Slovenia, the REERs show mostly the same values, independent of their reference parameter (prices or costs). In opposition, Czech Republic, Poland and Slovakia show deviating developments between price and cost based REERs. The REER based on ULC in Manufacturing (ULC_{Manu}) proves to be the lowest: in Poland, it even shows a 'depreciation", whereas the REER based on CPI shows an 'appreciation". In Slovakia, while the REER based on CPIs climbs up to +80%, the REER based on ULC_{Manu} is constant +/- 0%, and lies even below the NEER.

Hungary and Romania show the situation where a country devaluates its currency nominally, while the REER still appreciates. This hints to a very strong inflation rate (Romania) that could not be outweighed by the nominal devaluation.

The following sections will show the development of the price and cost indicators that are used for the above REER composition.

devaluation (~-80%) and is therefore scaled from 0 to 300. Scaling all other graphs from 0 to 300 would have affected their legibility.

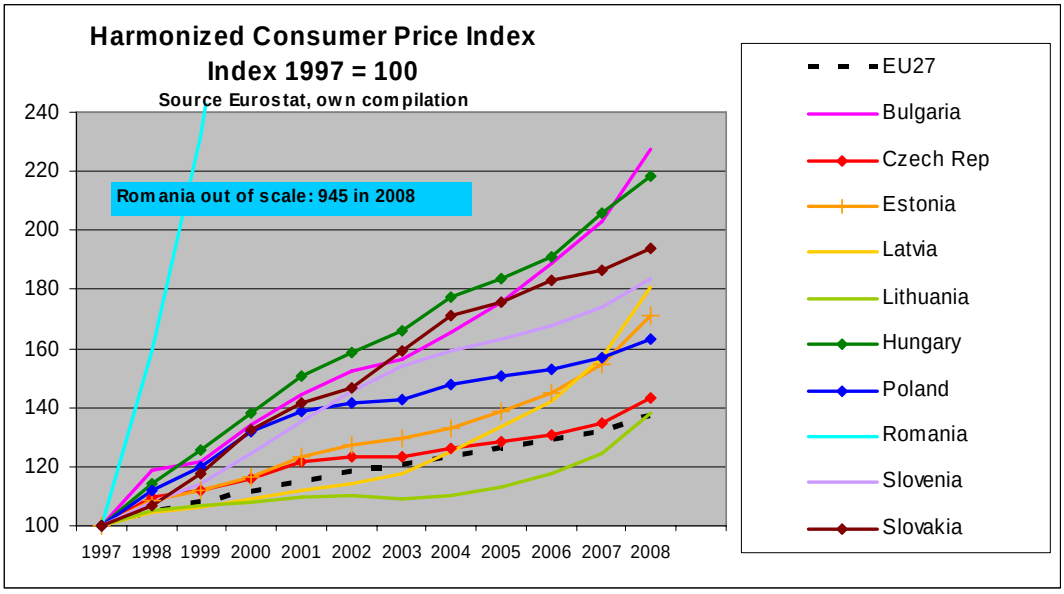
[32] The World Bank does not publish its reference value – as the line is almost congruent with REERs based on CPIs by OECD, Eurostat and ECB, it can be assumed that it is also based on CPIs.

5.2.2 Price Indicators

As REERs based on producer or export prices are not available for CEE countries, the following details on price indicators are restricted to consumer price developments.

As one can see, all CEE countries, with the exception of Lithuania (and Latvia until 2004) show stronger consumer price rises than the European Union average.

Graph 4: Harmonized Consumer Price Index in CEEs and EU27



Source: Eurostat 2009 – own compilation

The EU27 average has been chosen as an approximate benchmark of main trading partners instead of the world data, because EU data are computed in the same harmonized CPI methodology. As the EU15 make more than 90% of EU27's GDP,[33] values for EU27 represent approximately Western European countries.[34]

Evaluation of Consumer Price Increases

As the CPI development in CEE countries is stronger than the average CPI development of their main trading partners, the REER based on CPIs necessarily shows increasing values (see graphs 3 for REERs).

But REERs also include the Nominal Effective Exchange rate: its influence gets obvious when juxtaposing figures for Slovenia and the Czech Republic:

From 1997 to 2008, the consumer price increase in Slovenia is ~+80% – but due to a nominal devaluation of the Slovenian tolar, the REER based on CPIs only rises by

[33] See table 2 on page 47 .
[34] In the following graphs, benchmarks are chosen according to data availability: If weighted average data for total world are not accessible, benchmark will be the weighted average for OECD countries, or for EU27 countries, or for EU15, or, if this is not available, for the Eurozone.

~10% in the same period. On the contrary, the Czech Republic, that had a much lower consumer price increase than Slovenia (~+40%, i.e. almost in line with the EU27 average), shows an REER appreciation of ~+65%. This appreciation is mainly due to the nominal appreciation of the Czech koruna (~+50%), and not so much to the rise in consumer prices (see graph 3).

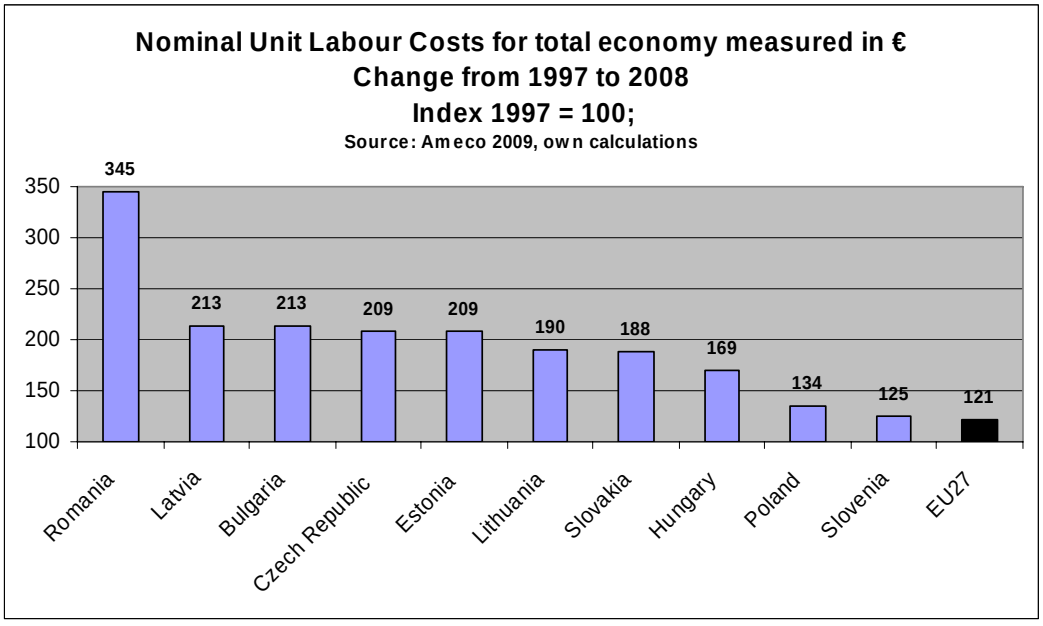
5.2.3 Cost Indicators

REERs based on ULC are issued on base of ULC in total economy and ULC in manufacturing.

5.2.3.1 Nominal Unit Labour Costs in total economy

In all CEE countries, the increase of Nominal Unit Labour Cost – calculated for the total economy ($ULC_{tot.ec.}$) – is higher in 2008, with reference to 1997, than the average increase in the EU27 for the same period. Romania, Latvia and Bulgaria show the strongest change towards 1997, while Slovenia and Poland are almost at the EU27 average.

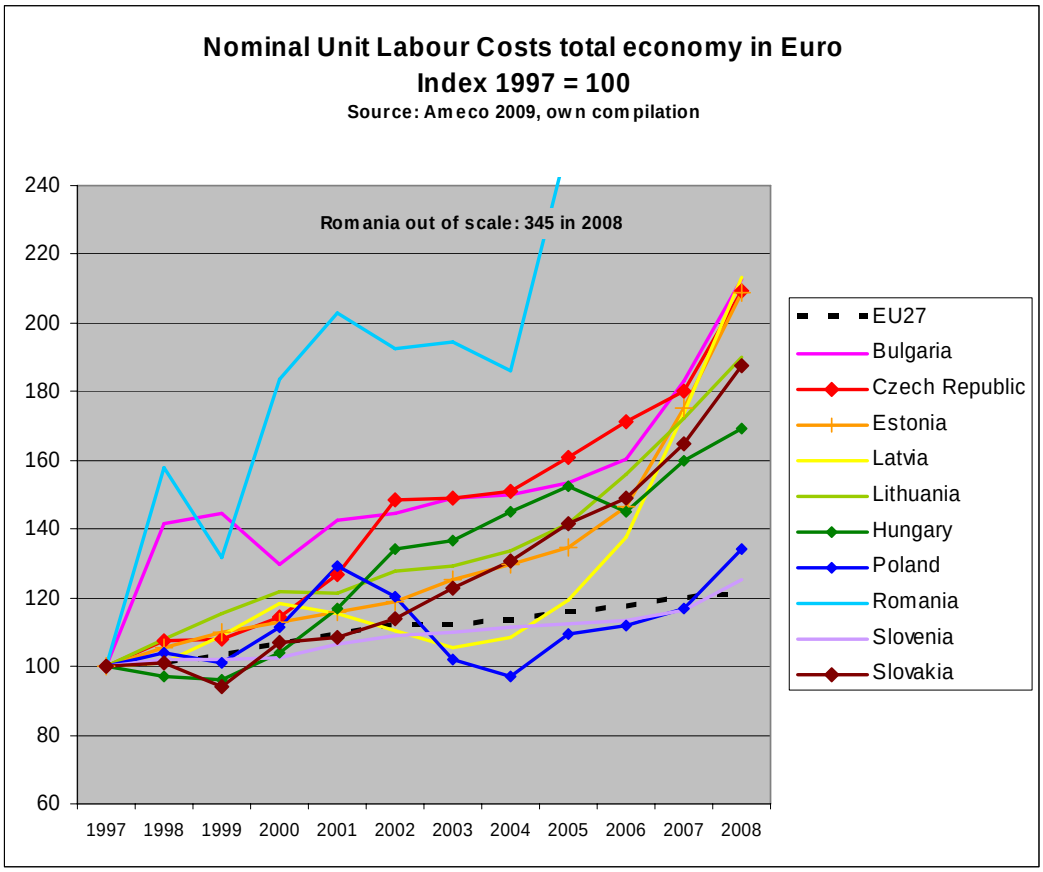
Graph 5: Change of Nominal Unit Labour Costs – for total economy – in 2008 towards 1997



Source: European Commission, Ameco 2009 – own calculations

In earlier years, increases where partly below the EU average for: Hungary till 2000, Slovakia till 2002, Poland between 2003 and 2007 and Slovenia till 2007.

Graph 6: Increase in Nominal Unit Labour Costs of total economy in Euro, indexed



Source: European Commission, Ameco 2009 – own compilation

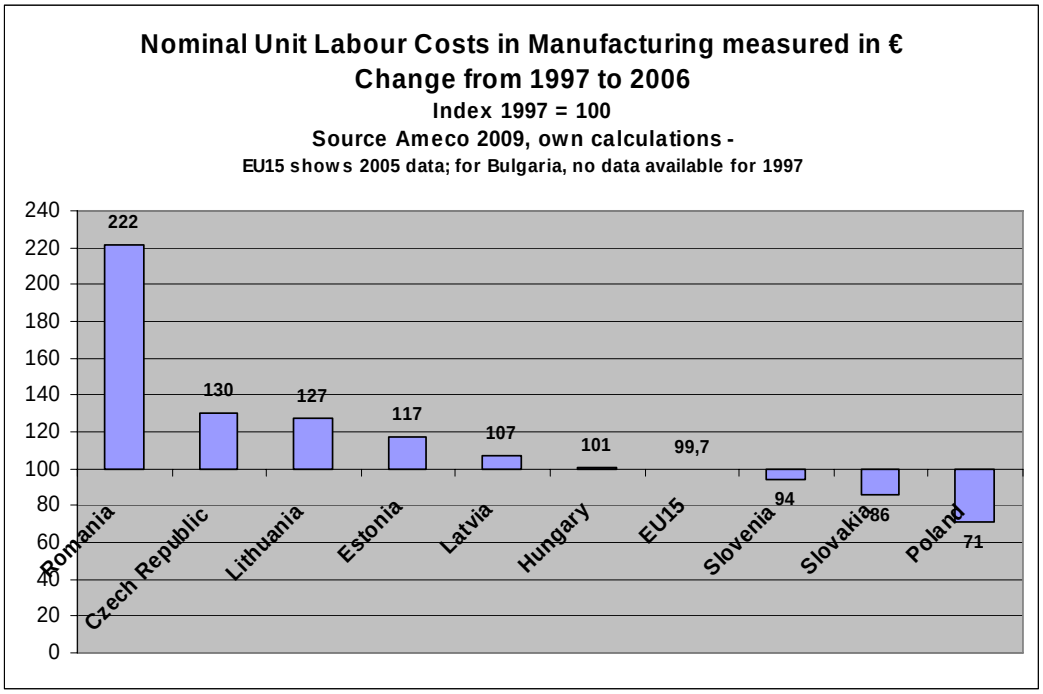
These developments are reflected in the REERs based on $ULC_{tot.ec.}$ (see graphs 3): REERs rise for all CEE countries, with exception of Slovenia, where the rise in $ULC_{tot.ec}$ is in line with its main trading partners, and with Poland, that moves around its main trading partners.[35]

[35] the strong movements of $ULC_{tot.ec}$ are mainly due to nominal exchange rate fluctuations.

5.2.3.2 Nominal Unit Labour Costs in Manufacturing

Nominal Unit Labour Costs in Manufacturing (ULC_{Manu}) show a different picture: Towards 1997, nominal ULC_{Manu} in 2006 have risen in Romania, Czech Republic, Lithuania, Estonia and Latvia. There is almost no change in Hungary and in the EU15, whereas Slovenia, Slovakia and Poland show a decrease in ULC_{Manu}.

Graph 7: Change of nominal Unit Labour Costs – only Manufacturing Sector – in 2006 towards 1997[36]



Source: European Commission, Ameco 2009 – own calculations

Decreased ULC_{Manu}, compared to increased $ULC_{tot.ec}$ allow two hypotheses: possibly wage and salary increases have been much stronger in the non-manufacturing sectors than in the manufacturing sector, or/and labour productivities in the manufacturing sector were considerably higher than in total economy.[37] [38]

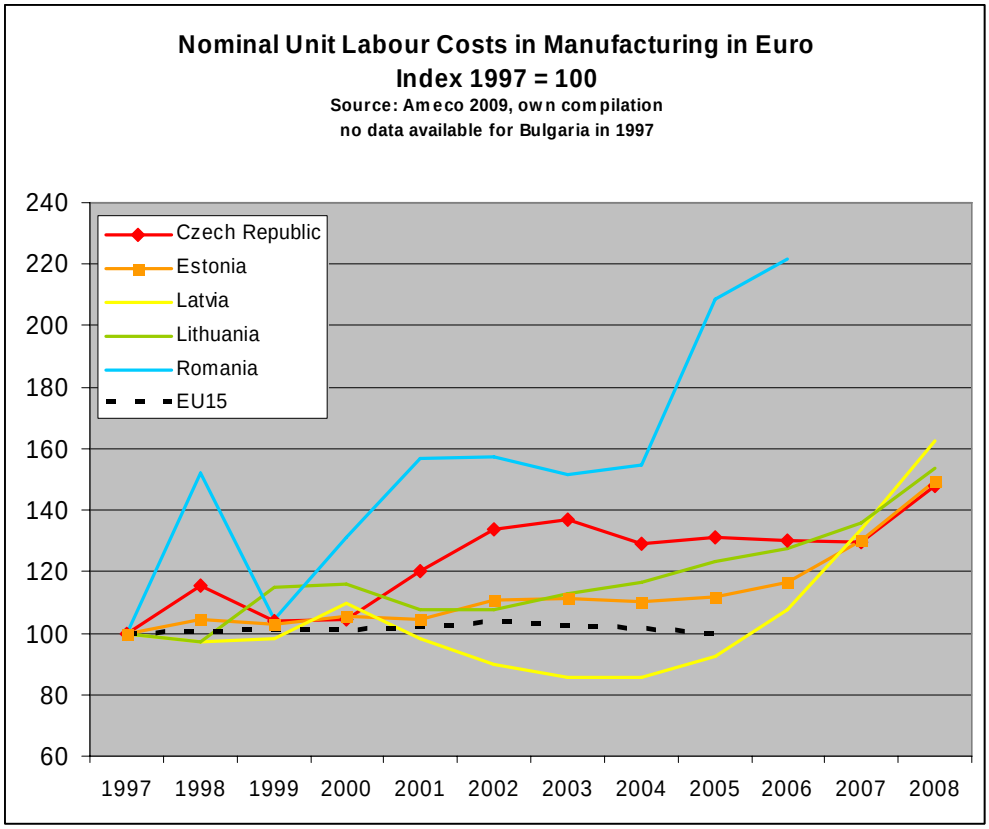
[36] Data for the manufacturing sector where only available till 2006

[37] Unfortunately, data on ULC of the service sector are not available for CEE countries, nor were data on labour productivities of the manufacturing sector only.

[38] The findings impose the idea that the Balassa-Samuelson-effect may hold in CEE countries, however, empirical findings concerning this were contradictory for CEEs (see Egert/Podpiera 2008, Cincibuch/Podpiera 2006).

Looking at the development of ULC_{Manu} over time offers the following additional information:

Graph 8: CEE countries with rising nominal Unit Labour Costs in Manufacturing towards 1997



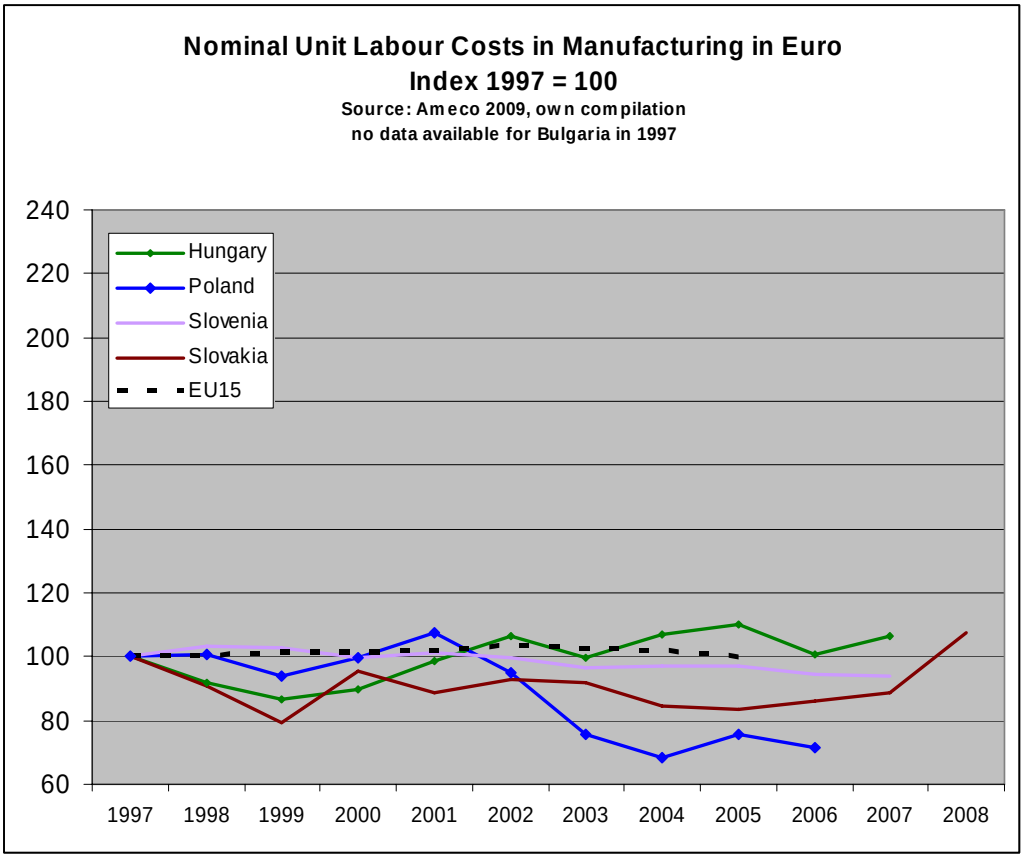
Source: European Commission, Ameco 2009 – own calculations

The Baltic states show very strong ULC_{Manu} increases in recent years: In Latvia, the ULC_{Manu} decrease towards 1997 – between 2001 and 2005 – turns into a very strong increase till 2008: instead of the indicated +7% in 2006 (graph 7), the increase reaches +63% in 2008. In Estonia, ULC_{Manu} also start to rise more strongly in 2007 and reach +50% towards 1997 in 2008. Lithuania's ULC_{Manu} rose steadily since 2003 and finally reached +53% in 2008.

Meanwhile, the Czech Republic shows a strong rise of ULC_{Manu} in 2001 and 2002 (~+35%), that is kept almost constant in the following periods.

The remaining countries show an almost constant development of ULC_{Manu} in the manufacturing sector.

Graph 9: CEE countries with falling nominal Unit Labour Costs in Manufacturing towards 1997



Source: European Commission, Ameco 2009 – own calculations

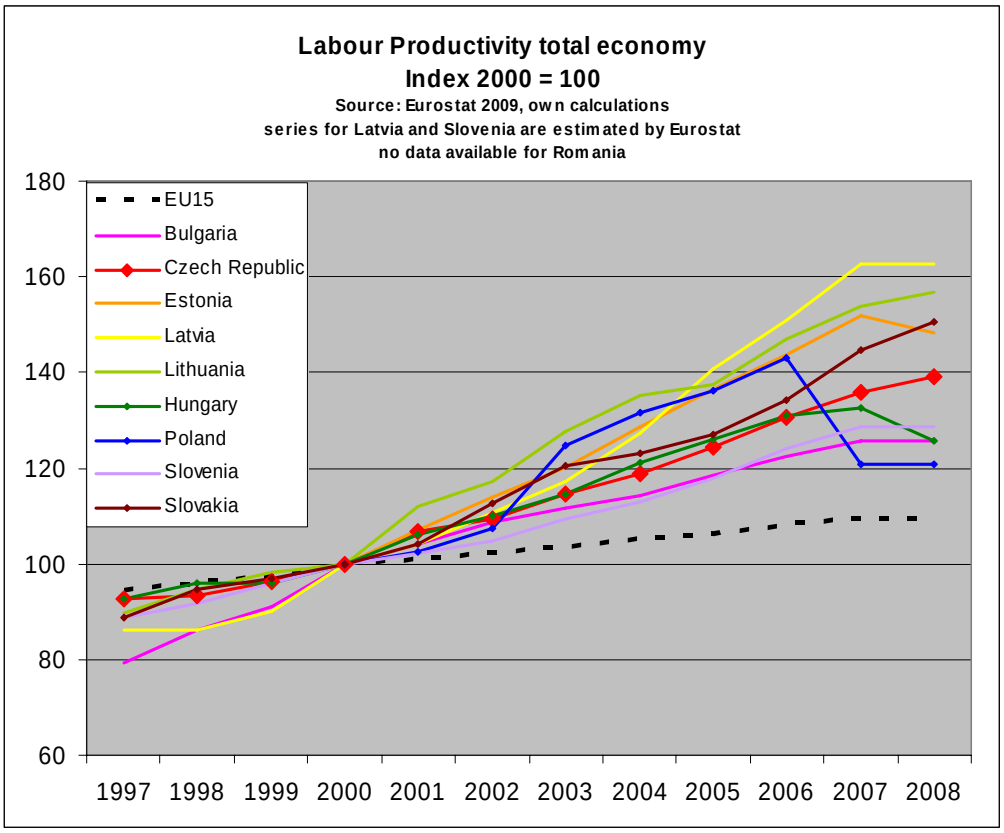
The values for Hungary fall until 1999 and then start to rise slightly in the following years – from 2002 onwards, they are higher than in 1997. ULC_{Manu} in Slovakia are lower towards 1997 till 2007, and then start to rise in 2008. The strongest decline in ULC_{Manu} towards 1997 takes place in Poland (~-30%): until 2004 it is partly due to the nominal devaluation. Nevertheless, the nominal exchange rate appreciates in 2005 and 2006, whereas the ULC_{Manu} remain low.

The EU15 average is stable during the total period, which allows the interpretation that labour costs increases were aligned to productivity gains.

5.2.3.3 Labour Productivities

Labour productivities of total economy have risen in all CEE countries compared with 2000 and 1997[39] – stronger than the average labour productivity rise in the EU15.[40].

Graph 10: Labour Productivities total economy indexed[41]



Source: Eurostat 2009 – own calculations

The EU15 reaches a productivity increase of ~10% in 2008 compared with 2000, whereas the CEE gains about 20-60%.

A rise in labour productivity can be the result of higher labour efficiency, or of a higher ratio of capital to labour input.

[39] Data for Estonia and Poland only available since 2000. No labour productivity data available for Romania

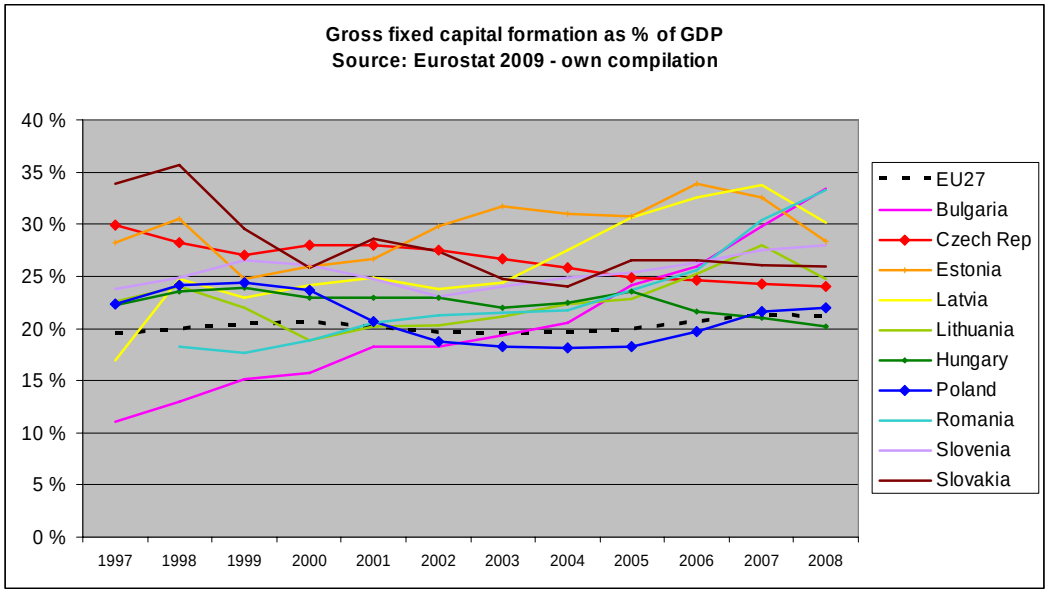
[40] Internationally comparable data on labour productivities per hour worked are available for the total economy, but not sector-wise (neither manufacturing sector nor service sector).

[41] Reason for indexing on 2000 instead of 1997: data for Estonia and Poland only available since 2000.

5.2.3.4 Gross Fixed Capital Formation

In the last decade, gross fixed capital formation (GFCF) as % of GDP was higher in all CEE countries than in EU27 average (~20% in EU27).

Graph 11: Gross Fixed Capital Formation as % of GDP



Source: Eurostat 2009 – own compilation

Exception are Bulgaria and Romania, which start below EU27 average, but show important rises of GFCF shares in the following years (up to ~33% in 2008), and Poland that is slightly below EU27 average during 2002-2006. Czech Republic and Slovakia, already industrialized countries, start with high GFCF shares (~30-35%) that show a decreasing trend within the last decade (to 24-26%). Also Hungary shows a decreasing trend (to 20%) – i.e. GFCF growth in these countries has been outperformed by the high GDP growth (annually 11%, 14,5% and 9,9% respectively).

5.2.4 Evaluation of 'Price and Cost Competitiveness' Indicators

In spite of strong – above-average – rising labour productivities in the CEE countries in the last decade, the price and the cost indicators (CPIs and ULC) show above-average compared to EU15 or EU27.

Relative ULC rose less than Relative Consumer Prices in most CEE countries (see graphs 3). This is due to strong rises in labour productivities. But rising ULC mean that compensation of employees rose even more than labour productivities (see ILO 2007).

Additionally, the strong increases in labour productivities hint to another cost factor: instead of higher labour efficiency, it can be the result of an increased capital stock. In this case, increased capital costs add to the risen labour costs.

These developments are reflected in the rising relative prices and costs, expressed in the REERs. (Poland is the only exception: its REER based on ULC_{Manu} is slightly lower as against 1997 (~-10%).) 'Appreciating' REERs are conventionally interpreted as 'loss of competitiveness' and are expected, following the hypothesis of 'price competitiveness', to lead to contracting export shares or contracting shares of tradable goods and services.

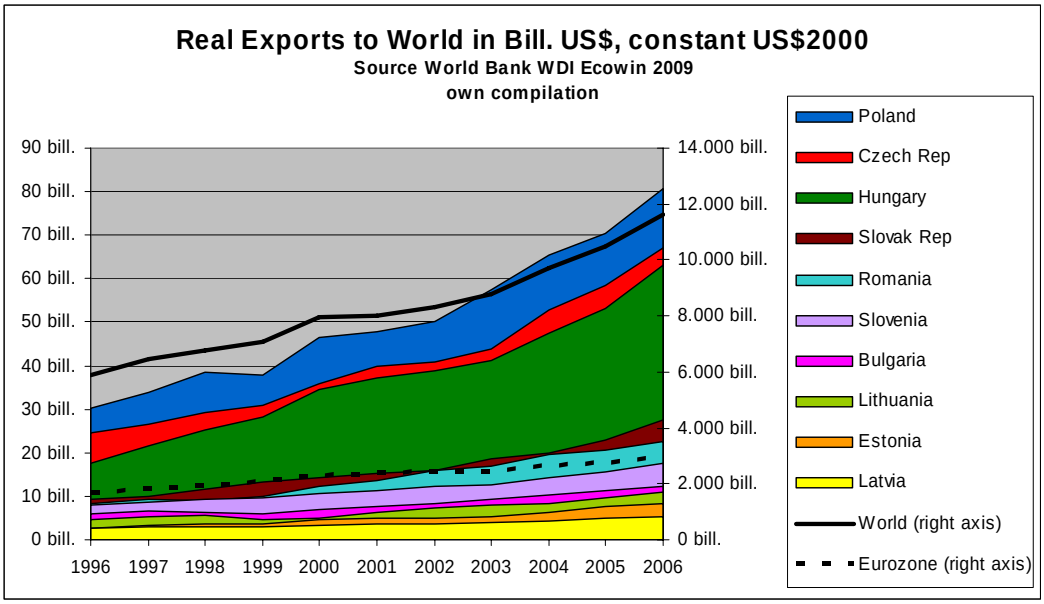
5.3 Export and Tradable Goods Sales

In order to validate the 'competitiveness' indicator, the 'success indicator', i.e. data on exports and tradable goods sales for the CEE, have to be assessed.

5.3.1 Exports and Export Shares

In all CEE countries, export volumes to the world have risen in the last decade. The strongest increases – in levels – took place in Poland, Czech Republic and Hungary.

Graph 12: Exports to World in Volumes – 1996 to 2006[42]



Source: World Bank: World Development Indicators 2009 – own compilation

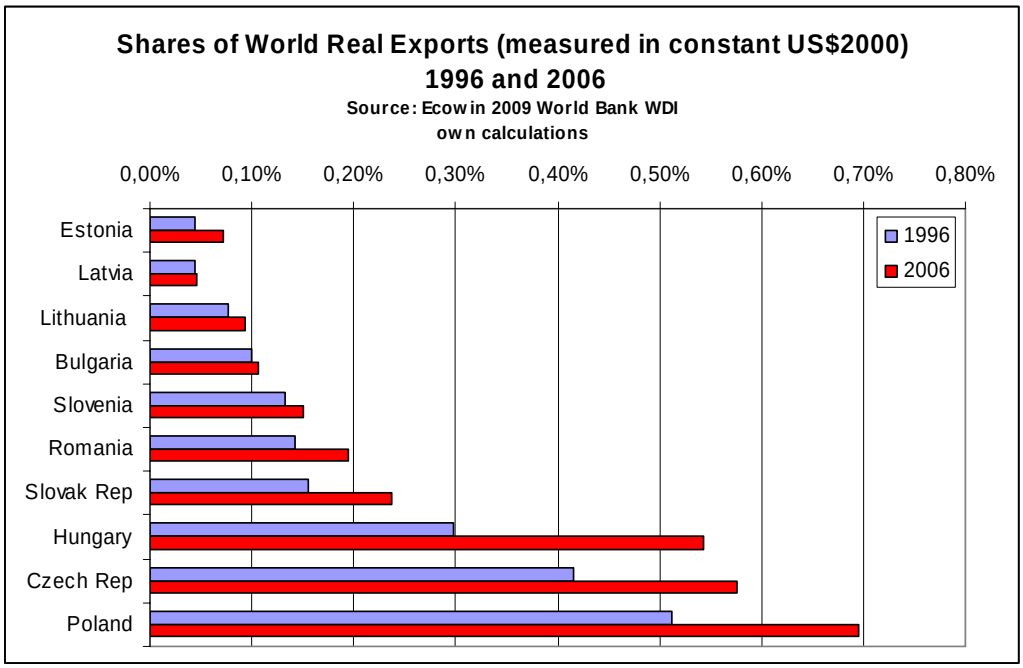
As trade has increased considerably in the last decade throughout the world, growing exports of CEE economies is not a surprising result. The question – within the idea of a competition between countries – is if the shares in world trade have

[42] Latest available data for world export volumes are from 2006.

increased over time, as only this could represent a relative improvement towards other countries.

From 1996 to 2007, shares of export volumes have increased for all CEE countries, without exception.

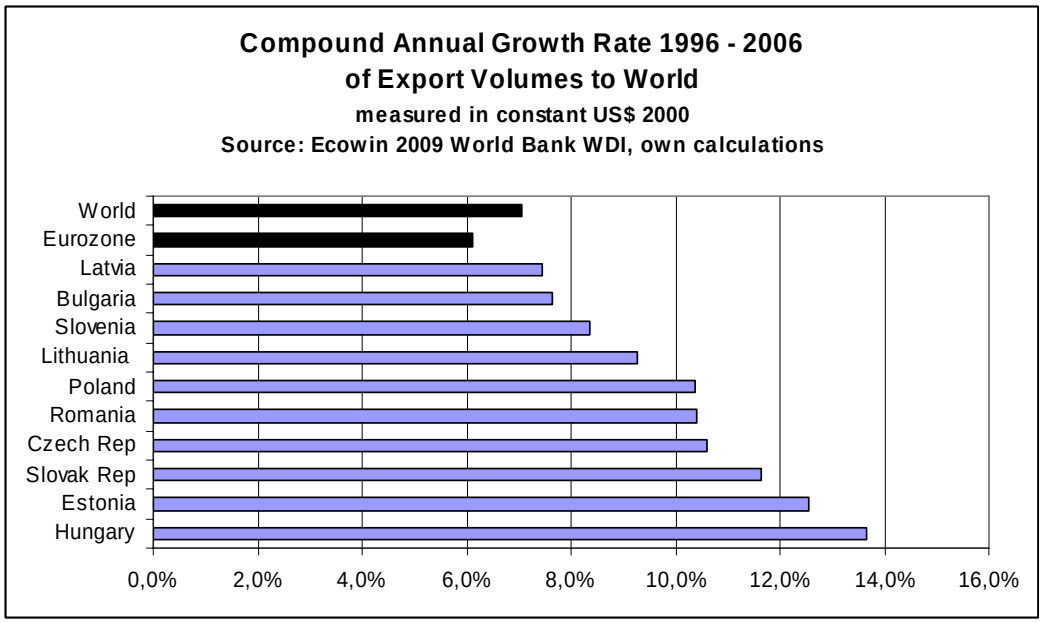
Graph 13: Shares of World Real Exports, 1996 and 2006



Source: World Bank: World Development Indicators 2009 – own calculations

A rise in world export share means that a country's growth rate of export volumes is stronger than the worldwide average growth rate. From 1996 to 2006, export volumes grew worldwide by ~7% in average per year. Eurozone average shows an export volume growth rate below the world's average (~6% in average per year), whereas all CEE countries have higher export volume growth rates than the world average (~7,5-13,5% in average per year).

Graph 14: Compound Annual Growth Rate of Export Volumes to World[43]

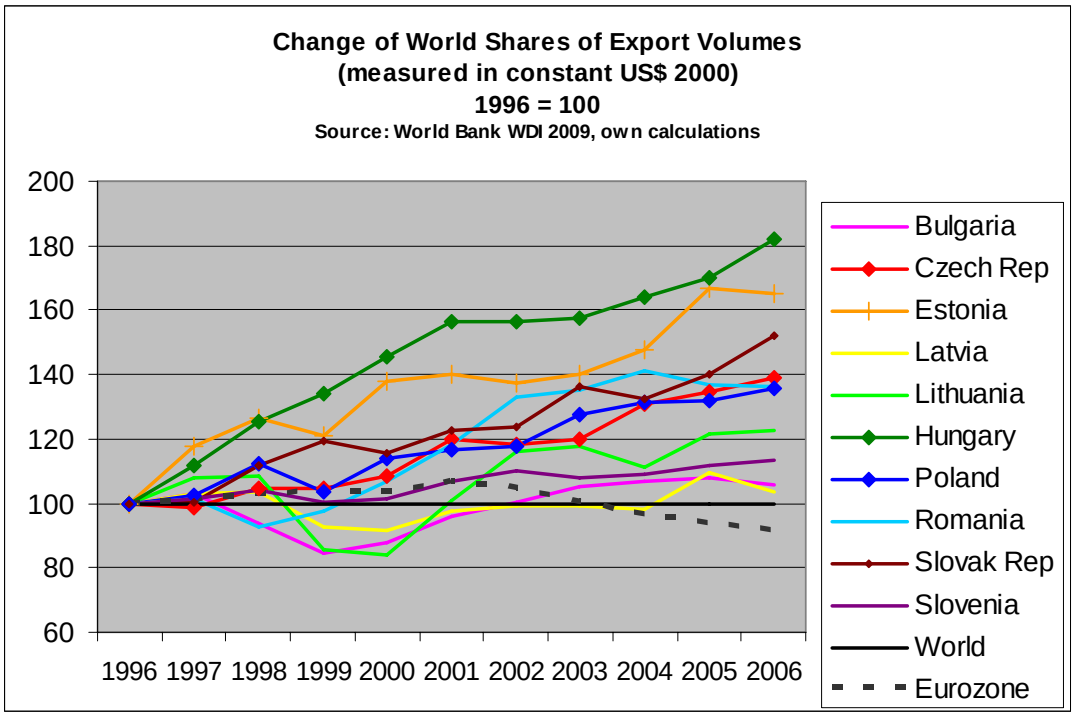


Source: World Bank: World Development Indicators 2009 – own calculations

[43] Data for EU27 or EU15 were not available. Eurozone has to serve as proxy instead.

The increase of export shares has been especially strong for some countries in the last 3-6 years.

Graph 15: Change in Export Shares over the last decade

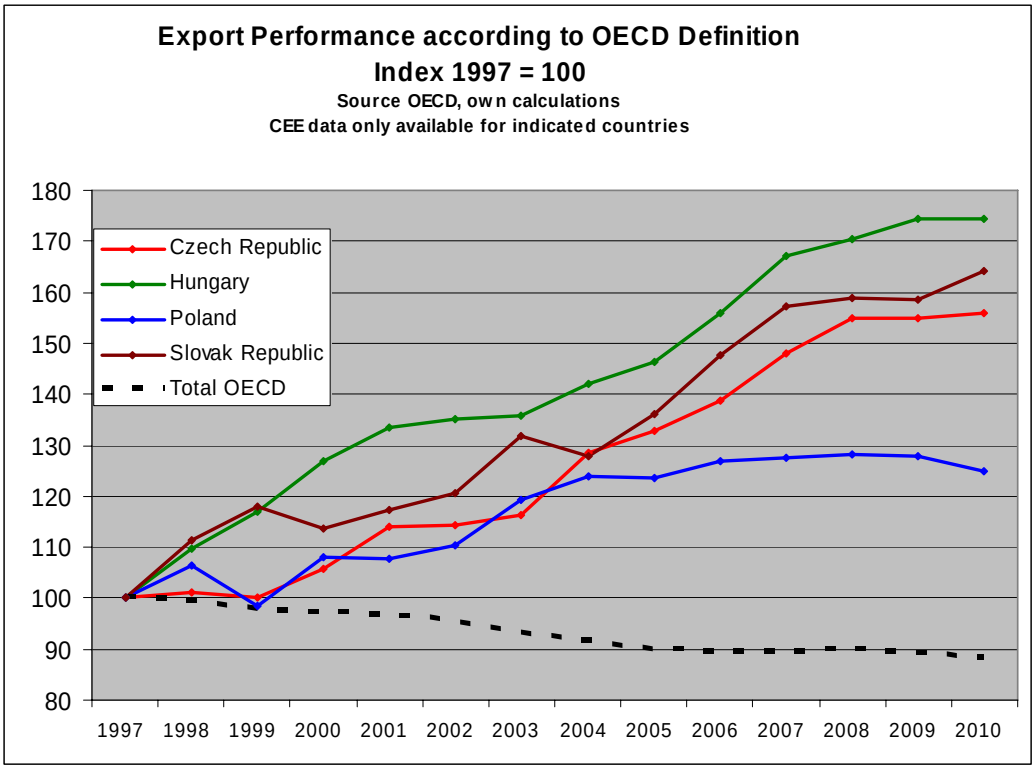


Source: World Bank: World Development Indicators 2009 – own calculations

5.3.2 Export Performance according to OECD

Another possibility to assess export performance is the OECD methodology.[44] Hungary, Slovakia and the Czech Republic, as well as Poland to a lower degree, show very strong export performances, especially compared to the OECD average, which even shows an export performance decrease towards 1997.[45]

Graph 16: Export Performance according to OECD Definition



Source: OECD – Economic Outlook 2008 – own calculations

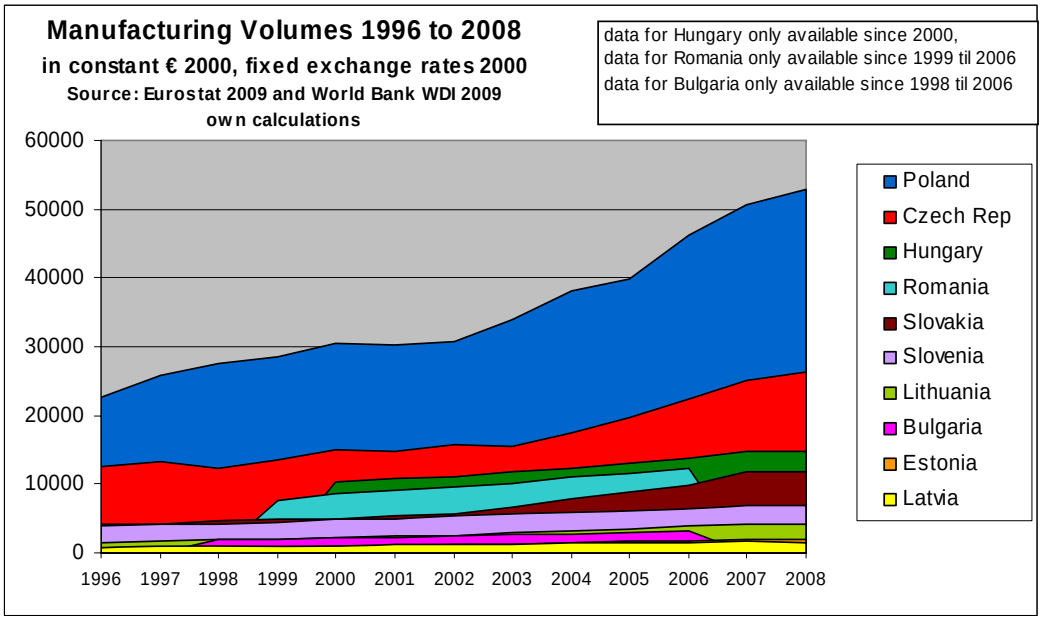
5.3.3 Manufacturing Volumes and Shares

As comparing sales in exports is neither coherent with theory that requires one to assess all tradable goods and services that are sold on foreign ***and*** on domestic markets, nor does it exclude commodities that trade at homogeneous prices; one approach for correcting this is to consider – instead of exports – sales of manufacturing goods. Tradable services are not included in that figure, but are supposed to only make a smaller fraction of total tradables.

[44] For more details see OECD 2008b.
[45] Data for CEE countries are only published by OECD for Czech Republic, Hungary, Poland and Slovakia.

In all CEE countries, sales of manufacturing goods – in volumes – increased in the last decade. The strongest increases – in levels – took place in Poland, Czech Republic and Slovakia.[46]

Graph 17: Sales of Manufacturing Goods in Volumes – 1996 to 2008



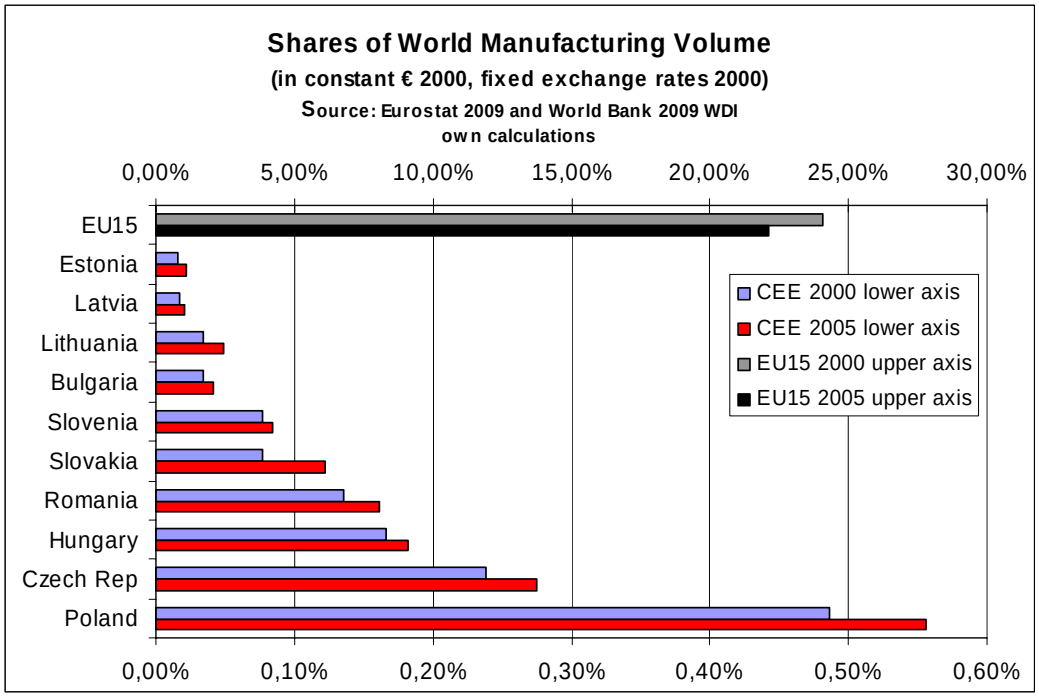
Source: Eurostat 2009 and World Bank: World Development Indicators 2009 – own calculations

In order to show the competitive position of a country, it is not the change in levels, but the change in world shares that is relevant.

[46] Data for Hungary only available since 2000.

From 2000 to 2005, shares of manufacturing volumes have increased for all CEE countries without exception, while the manufacturing volumes' share of the EU15 contracted.[47]

Graph 18: Shares of World Manufacturing Volumes, 2000 and 2005

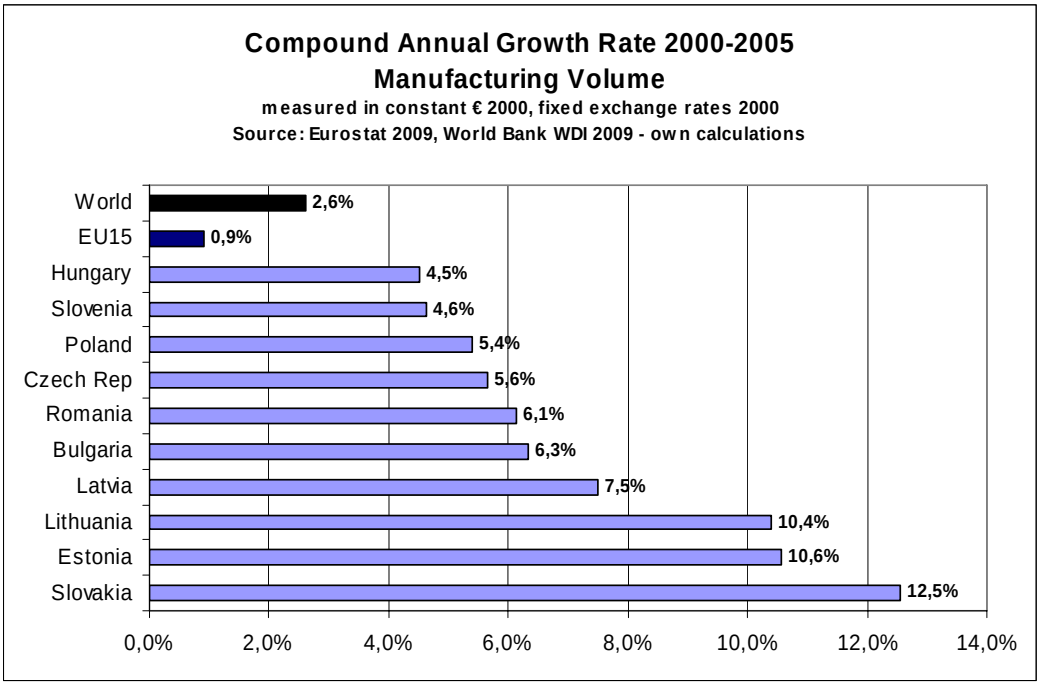


Source: Eurostat 2009 and World Bank: World Development Indicators 2009 – own calculations

[47] Latest data for world manufacturing volume is 2005, earliest data for Hungary is 2000.

From 2000 to 2005, manufacturing volumes grew worldwide by less than ~3% on average per year. In EU15, growth rates of manufacturing volumes only attained ~1%, whereas all CEE countries show considerably higher annual average manufacturing growth rates of 4,5 to 12,5%. The highest is Slovakia with 12,5%, followed by the small Baltic countries (7,5-10,6%).

Graph 19: Compound Annual Growth Rate of Manufacturing Volumes



Source: Eurostat 2009 and World Bank: World Development Indicators 2009 – own calculations

5.3.4 Evaluation of the 'Success' Indicators

All three indicators for evaluating a country's 'success' in export or tradable goods sales – export shares, export performance and shares of manufacturing – show important relative improvements towards EU15 and towards the rest of the world, for all ten CEE countries, without exception.

The actual developments in export and manufacturing are in obvious contradiction to the 'competitiveness' indicators, the REERs, that indicate strong 'appreciations' for all ten CEE countries. Following the idea of 'price competitiveness', 'appreciations' are interpreted as 'loss in competitiveness' and should lead to decreasing export and manufacturing shares – whereas the contrary has proven to be the case for CEE countries in the last decade. As this also applies to the last years, a time lag effect can be excluded.

5.4 Alternative Explanations

As conventional 'price and cost competitiveness' indicators are not able to explain the 'success' in export/manufacturing for CEE countries, alternative explanations have to be searched for.

5.4.1 Integration to World Market

For CEE countries – transition countries since the fall of the Soviet Union – a possible explanation for the strong – and above-world-average – export growth could possibly be a former isolation from – and a more recent integration into – the world market. Comparing export shares of the economies over time could offer some information on changes in trade integration.

Table 2: Export growth – 1999 towards 2008 – at current market prices in €[48]

	Exports in mill €		Comp. Annual Growth	Exports in € per capita		Comp. Annual Growth	Exports as % of GDP		Exports in € as % of EU27	
	1999	2008	CAGR	1999	2008	CAGR	1999	2008	1999	2008
EU27	2.949.463	4.750.305	5,4%	5.800	10.300	6,6%	34,4%	38,0%	100,00 %	100,00 %
EU15	2.781.383	4.320.608	5,0%	7.000	11.700	5,9%	33,9%	37,5%	94,50 %	89,50 %
Bulgaria	6.547	14.090	8,9%	700	2.700	16,2%	53,8%	41,3%	0,20 %	0,40 %
Czech Rep	33.439	90.898	11,8%	3.000	10.900	15,4%	59,3%	61,2%	1,10 %	2,20 %
Estonia	4.080	8.483	8,5%	2.700	9.000	14,3%	76,5%	53,5%	0,10 %	0,20 %
Latvia	3.178	6.418	8,1%	1.200	4.300	15,2%	46,6%	27,8%	0,10 %	0,20 %
Lithuania	5.059	13.703	11,7%	1.100	5.700	20,1%	49,4%	42,4%	0,10 %	0,40 %
Hungary	30.745	82.271	11,6%	2.800	8.500	13,1%	68,2%	78,2%	1,00 %	1,70 %
Poland	40.885	101.260	10,6%	1.000	3.700	15,6%	26,0%	28,1%	1,40 %	2,80 %
Romania	10.813	33.373	13,3%	400	2.000	19,6%	32,4%	24,4%	0,30 %	0,70 %
Slovenia	10.222	22.285	9,0%	5.000	12.500	10,7%	49,4%	60,0%	0,40 %	0,50 %
Slovakia	14.258	34.017	10,1%	2.200	9.900	18,2%	74,3%	52,4%	0,40 %	1,00 %
CEE NMS total	159.224	406.797	11,0%	2.010	6.920	14,7%	43,4%	42,4%	5,10 %	10,10 %

Source: Eurostat 2009 – own calculation

From 1999 to 2008, exports grew much stronger in CEE than in EU15 (11% vs. 5% in average per year).

Still, with an average share of 42.4% in 2008, exports' contribution to GDP is comparable in the CEE average to the EU15 average (37.5%). However, for the CEE average, the export contribution to GDP declined since 1999 (from 43.4% to 42.4% of GDP), whereas it increased for the EU15 average (from 33.9% to 37.5%).

In detail, it declined in Bulgaria, in the Baltics, in Romania and in Slovakia, while it increased strongly in Hungary and Slovenia and slightly in Czech Republic and Poland.

As export growth rates are very high in CEE economies, the export shares shrinkages in 2008 towards 1999 can only be explained by GDP growth rates that even outperformed export growth.

[48] Data for Romania only available from 1999 onwards

Table 3: GDP growth – 1999 towards 2008 – at current market prices in €

	GDP in mill €		Comp. Annual Growth	GDP in € per capita		Comp. Annual Growth	population		GDP in € as % of EU27	
	1999	2008	CAGR	1999	2008	CAGR	2007	% of EU27	1999	2008
EU27	8.583.701	12.506.964	4,3%	17.800	25.100	3,9%	496.267.466	100,0%	100,00 %	100,00 %
EU15	8.202.847	11.525.534	3,9%	21.800	29.200	3,3%	392.948.478	79,2%	95,60 %	92,20 %
Bulgaria	12.164	34.118	12,1%	1.500	4.400	12,7%	7.659.764	1,5%	0,10 %	0,30 %
Czech Rep	56.415	148.556	11,4%	5.500	14.200	11,1%	10.334.160	2,1%	0,70 %	1,20 %
Estonia	5.335	15.860	12,9%	3.900	11.800	13,1%	1.341.672	0,3%	0,10 %	0,10 %
Latvia	6.818	23.115	14,5%	2.900	10.200	15,0%	2.276.100	0,5%	0,10 %	0,20 %
Lithuania	10.241	32.292	13,6%	2.900	9.600	14,2%	3.375.618	0,7%	0,10 %	0,30 %
Hungary	45.075	105.244	9,9%	4.400	10.500	10,1%	10.055.780	2,0%	0,50 %	0,80 %
Poland	157.470	360.639	9,6%	4.100	9.500	9,8%	38.120.560	7,7%	1,80 %	2,90 %
Romania	33.388	137.035	17,0%	1.500	6.400	17,5%	21.546.873	4,3%	0,40 %	1,10 %
Slovenia	20.710	37.126	6,7%	10.400	18.200	6,4%	2.018.122	0,4%	0,20 %	0,30 %
Slovakia	19.185	64.884	14,5%	3.600	12.000	14,3%	5.397.318	1,1%	0,20 %	0,50 %
CEE NMS total	366.799	958.869	11,3%	4.070	10.680	11,3%	102.125.967	20,6%	4,20 %	7,70 %

Source: Eurostat 2009 – own calculation

GDP growth rates in CEE attained 6.7%-17.0% (11.3% in average). In contrast, GDP growth rates in EU15 average are much lower (3.9% in average).

Manufacturing grew even less in EU15 average (2.0%), while it grew strongly in CEE countries (10.3% in average), almost symmetrically to GDP.

Table 4: Manufacturing growth – 1999 towards 2006 – at basic factor prices in €[49]

	Manufacturing in mill € Value Added at basic prices		Comp. Annual Growth	Manufacturing in € VA per capita		Comp. Annual Growth	Manufacturing as % of Tot Value Added		Manufacturing in € as % of EU27	
	1999	2006	CAGR	1999	2006	CAGR	1999	2006	1999	2006
EU27	1.495.184	1.776.445	2,5%	3.100	3.600	2,2%	19,5%	17,1%	100,00 %	100,00 %
EU15	1.423.686	1.637.828	2,0%	3.800	4.200	1,4%	19,5%	16,8%	95,20 %	92,20 %
Bulgaria	1.832	3.545	9,9%	200	500	14,0%	16,9%	17,2%	0,10 %	0,20 %
Czech Rep	13.535	26.916	10,3%	1.300	2.600	10,4%	26,6%	26,3%	0,90 %	1,50 %
Estonia	805	1.977	13,7%	600	1.500	14,0%	16,8%	17,2%	0,10 %	0,10 %
Latvia	851	1.665	10,1%	400	700	8,3%	14,0%	11,8%	0,10 %	0,10 %
Lithuania	1.613	4.343	15,2%	500	1.300	14,6%	17,9%	20,1%	0,10 %	0,20 %
Hungary	9.258	17.485	9,5%	900	1.700	9,5%	23,5%	22,5%	0,60 %	1,00 %
Poland	26.361	44.895	7,9%	700	1.200	8,0%	19,0%	18,8%	1,80 %	2,50 %
Romania	6.328	20.539	18,3%	300	1.000	18,8%	21,2%	23,8%	0,40 %	1,20 %
Slovenia	4.575	6.413	4,9%	2.300	3.200	4,8%	25,7%	23,6%	0,30 %	0,40 %
Slovakia	4.206	9.694	12,7%	800	1.800	12,3%	24,4%	24,1%	0,30 %	0,50 %
CEE NMS total	69.365	137.472	10,3%	800	1.550	9,9%	21,4%	21,5%	4,70 %	7,70 %

Source: Eurostat 2009 – own calculations

Comparing the 2008 export contribution to GDP in the CEE economies to the situation in 1999 does not hint to an isolation from world trade in 1999, as average shares are stable and even slightly declining on average.

Instead, the above figures show very strong GDP growth of the transition economies in the last decade, where manufacturing and exports can be understood as important economic growth drivers. This is in contrast to EU15, where GDP grew at much lower rates and the manufacturing share declined.

[49] Data only available till 2006

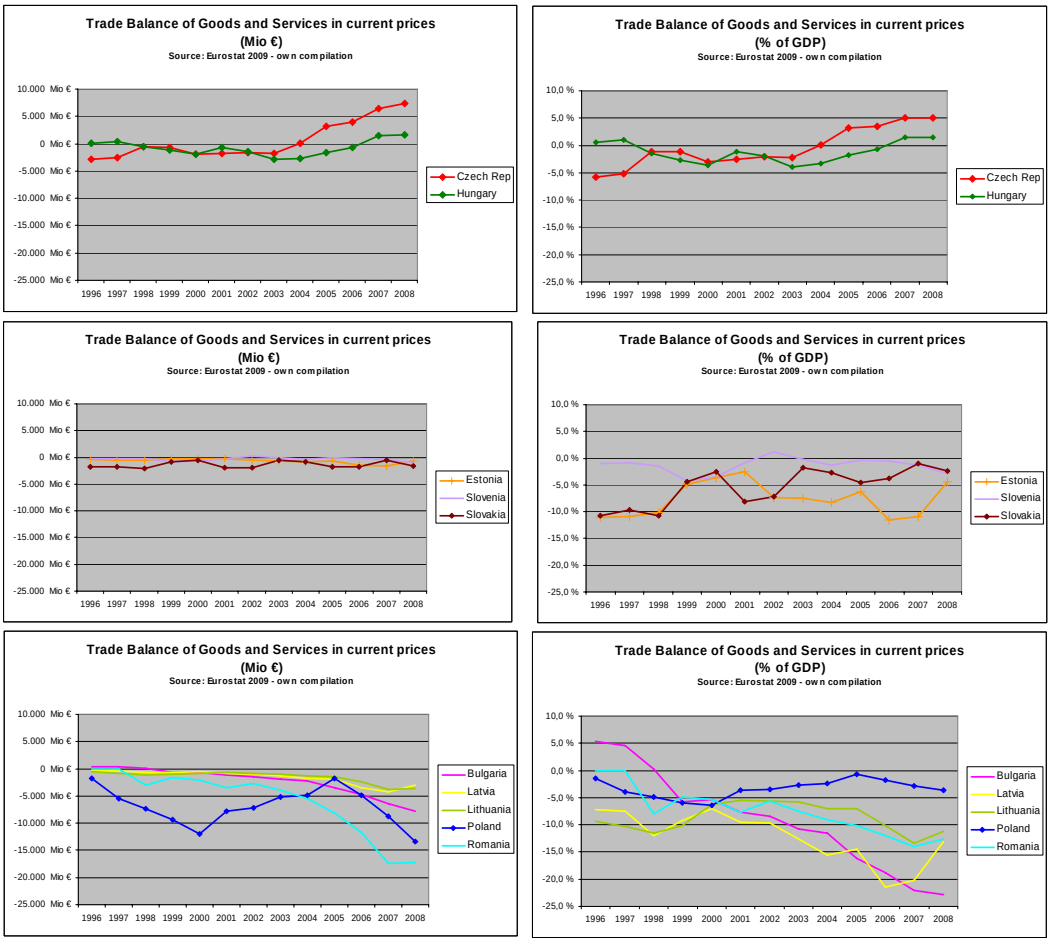
Table 5: Import growth – 1999 towards 2008 – at current market prices in €

	Imports in mill €		Comp. Annual Growth	Imports in € per capita		Comp. Annual Growth	Imports as % of GDP		Imports in € as % of EU27	
	1999	2008	CAGR	1999	2008	CAGR	1999	2008	1999	2008
EU27	2.719.658	5.119.429	7,3%	5.600	10.300	7,0%	31,7%	40,9%	100,00 %	100,00 %
EU15	2.549.704	4.540.822	6,6%	6.800	11.500	6,0%	31,1%	39,4%	93,80 %	88,70 %
Bulgaria	6.122	28.404	18,6%	700	3.700	20,3%	50,3%	83,3%	0,20 %	0,60 %
Czech Rep	31.944	106.706	14,3%	3.100	10.200	14,1%	56,6%	71,8%	1,20 %	2,10 %
Estonia	4.037	12.799	13,7%	2.900	9.500	14,1%	75,7%	80,7%	0,10 %	0,20 %
Latvia	3.381	12.695	15,8%	1.400	5.600	16,7%	49,6%	54,9%	0,10 %	0,20 %
Lithuania	5.015	22.921	18,4%	1.400	6.800	19,2%	49,0%	71,0%	0,20 %	0,40 %
Hungary	30.221	84.138	12,0%	3.000	8.400	12,1%	67,0%	79,9%	1,10 %	1,60 %
Poland	47.404	154.478	14,0%	1.200	4.100	14,6%	30,1%	42,8%	1,70 %	3,00 %
Romania	10.968	59.632	20,7%	500	2.800	21,1%	32,9%	43,5%	0,40 %	1,20 %
Slovenia	10.722	26.523	10,6%	5.400	13.000	10,3%	51,8%	71,4%	0,40 %	0,50 %
Slovakia	12.584	55.169	17,8%	2.300	10.200	18,0%	65,6%	85,0%	0,50 %	1,10 %
CEE NMS total	162.398	563.464	14,8%	2.190	7.430	14,5%	44,3%	58,8%	5,90 %	10,90 %

Source: Eurostat 2009 – own calculations

Imports grew even more strongly in CEE economies, due to a high demand-pull for investment and consumption goods. As a consequence, with the exception of Czech Republic and Hungary, all CEE countries show trade balance deficits.

Graph 20: Trade Balances of CEE countries in current prices in Mio € and in % of GDP



Source: Eurostat 2009 – own compilation

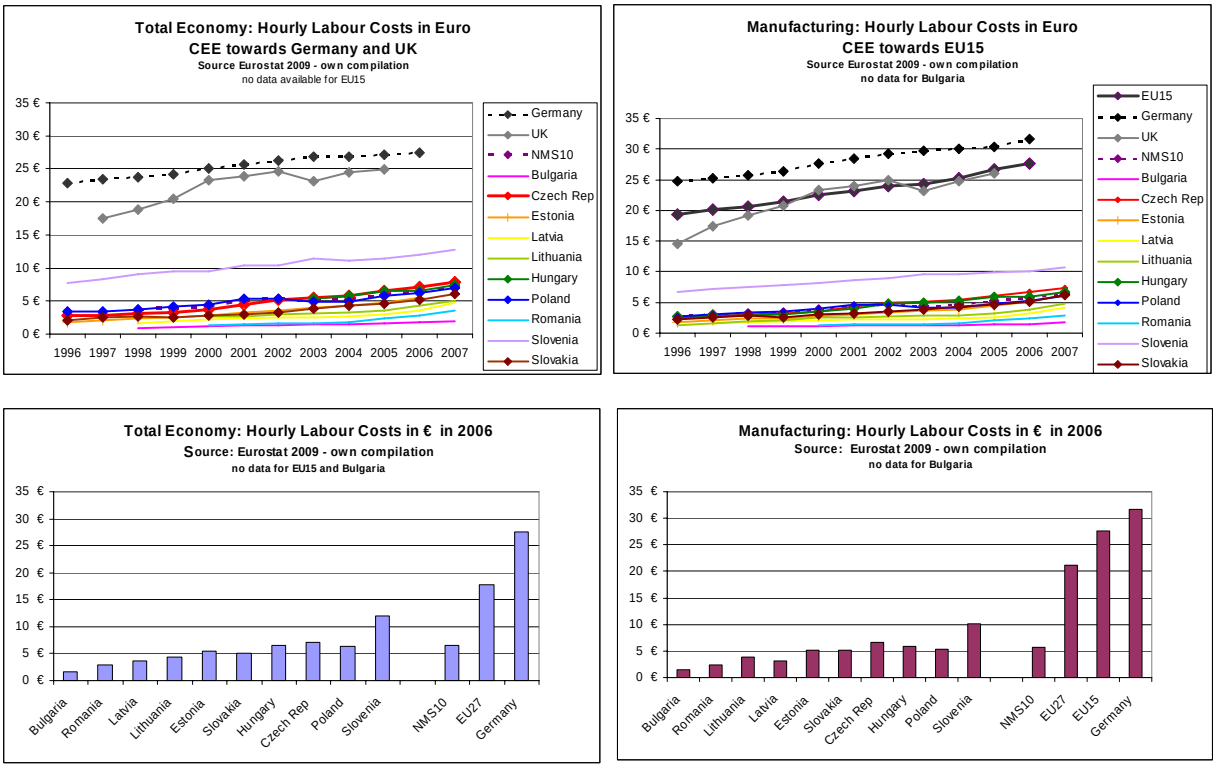
5.4.2 Initial Levels of Compared Prices, Costs or Sales Volumes

The 'Price Competitiveness' Indicator – the REER – relates ***%-changes*** – of prices and costs levels – of the compared countries. So does the 'success indicator' that compares ***%-changes*** of sales volumes. These changes, expressed in percentages, refer to certain, initial levels in a defined base year. The lower the initial level in the chosen base year – of prices or unit costs – or the smaller the initial quantity – of export volumes – the stronger will mark an increase, when it is calculated in % of this initial level.

The CEE countries' high price and cost increases compared to its trading partners – in the 'competitiveness' indicators – as well as the high export and manufacturing share increases – in the 'success' parameters – may therefore also be a result of very low initial levels/small initial quantities.

As data on price levels are not available easily for CEEs, a possibility to compare initial levels is the labour cost per hour.

Graph 21: Hourly Labour Costs in €, Total Economy and Manufacturing Sector



Source: Eurostat 2009 – own compilation

Labour costs per hour – in levels – are very low in CEE countries compared to EU15 countries, in the manufacturing sector and in the Total Economy.

The increases in labour costs seem enormous in CEE countries, compared to EU15 industrialized countries, when counted in percentage. Nevertheless, when viewing

the changes in labour costs per hour in € levels, one can see that in the last decade, labour costs have risen in CEE countries, but are still considerably below labour costs in Germany, UK or in EU15. [50]

The same applies to export volumes and manufacturing volumes. The %-changes refer to very low initial quantities in CEE.

As a result, this is one of the reasons for the growth rates of CEE economies to mark considerably higher than the ones of large industrialized economies. Comparing growth rates of very different initial levels in an REER may therefore produce misleading results.

VI. Conclusion

The 'price competitiveness' indicator – the Real Effective Exchange Rate – has shown to ***not*** offer an explanation on the CEE countries' export performance in the last decade.

The hypothesis of the 'price competitiveness' concept is that a price development within one country that is weaker than the average price development of all its trading partner countries in the same period should enable this one country to outperform its trading partner countries in international sales of tradable goods and services.

International producers are supposed to compete nation-wise against other nations' producers, by lowering more – or containing more – of their unit costs of production. The conventional parameters for the domestic producers' cost situation therein are either Unit Labour Costs, or domestic prices. The domestic price development is thereby supposed to reflect the domestic producers' production cost development.

Empirical results in CEE transition economies have shown to be in strong opposition to the expected correlation.[51] But the following reasoning could offer some explanation for this apparent contradiction:

One immanent weakness of the 'price competitiveness' indicator becomes evident: the Real Effective Exchange Rate compares %-changes of prices or costs. When the initial levels in of the compared countries differ significantly in the base year of the observation period, comparing %-increases can produce misleading results:

[50] Hourly labour costs for total economy are not available as average figure for EU15, nor for Italy, France or Spain. Therefore, data for UK and Germany, as the biggest economies, have to approximate EU15.

[51] An analysis of possible Balassa-Samuelson effects might offer some further explanation for the apparent paradox – but as actual empirical studies on the Balassa-Samuelson effect in CEE are contradictory (see Egert/Podpiera 2008, Cincibuch/Podpiera 2006), this aspect will not be furtherly discussed in the present paper.

Eastern European transition countries and highly industrialized Western countries show a considerable spread in price and cost levels. As the CEE transition countries showed strong economic growth in the last decade, along with rises in wage income and prices, the 'price competitiveness' indicator necessarily had to, due to its construction based on indices, produce values that express extreme 'losses of price competitiveness'. Regardless of the computed values of this indicator, production cost levels in CEEs have remained substantially below the average production costs in Western European countries.

The seemingly non-coherent empirical findings in CEE countries can furthermore be explained, when considering the single components of the 'price competitiveness' indicator:

In case of Unit Labour Costs, the definitional restrictions, as exposed in the theoretical part of this paper, offer some explanation: When computing the REER based on ULC, all compared economies need to have the same technological standard, ***and*** should not modify it over the observed period. In the adverse case, comparison of the countries via the ULC-REER is impossible.

This condition is obviously not fulfilled when comparing transition economies like the Central and Eastern European New Member States to highly industrialized countries. The technological standard of these two country groups differs considerably from the beginning, and – in addition – has changed over time in the transition economies.

Thus, computing REERs based on Unit Labour Costs could not, by definition, offer valuable results. In this point, the empirical findings are consistent with the 'price competitiveness' concept and are thus not surprising.

In the case of Consumer Price Indices, the empirical findings of CEE countries allow two different explanations:

On the one hand, and following the 'price competitiveness' argumentation, the Consumer Price Index is known to be endogenous to import prices. All CEE countries have increased their import volumes and import shares considerably in the last decade. Thus, the domestic Consumer Price Index is expected to include – to an important extent – price developments of the importing countries. Following the 'price competitiveness' concept, the import prices would reflect the foreign producers' cost, and 'competitiveness', situation. As imports have increased strongly in CEE countries, a CPI-based REER would obviously offer misleading results and thus not allow an explanation of export flows.

On the other hand, once abandoning the assumptions of the conventional 'price competitiveness' concept, an alternative interpretation might offer some explanation on the above empirical findings:

If pricing-to-market strategies have become a more and more common practice in the tradables industry, the price development within one country would not reflect the ***cost*** situation of the domestic producers of this specific country. Instead, the price development in this specific country would rather reflect the ***price-setting opportunities*** in this market. These opportunities would hold for all companies that sell in this country, independently of their provenience – domestic producers as well as foreign importers.

Consumer prices are known to be endogenous to consumer demand; following this approach, rising prices would reflect rather the demand-side (the domestic consumers' readiness to spend), instead of the supply-side (the domestic producers' production cost situation).

Following this reasoning, the 'price competitiveness' indicator based on CPIs could not offer valuable information on exports, but rather on imports. This critique is not specific to Eastern European countries, as it is general to the concept of 'price competitiveness'.

International policy agendas stress the importance of 'competitiveness' of national economies. As the above analysis shows, the values of a 'price competitiveness indicator' should always be interpreted with caution, and not misinterpreted as 'success indicators' themselves.

When viewing the data on CEE, one becomes aware that such a short-cut would be hazardous: The strong economic growth, especially in the manufacturing sector, in the Central and European transition countries, could hardly be described as a negative economic development. Still, this would be the result if one grimly interprets the computed values of the 'price competitiveness indicator' for CEE countries as a 'loss in competitiveness'.

As Reichel (2002) points out, a long-term 'appreciation' of the Real Effective Exchange Rate can even be interpreted – when due to rising income in manufacturing[52] – as the consequence of a technological up-grading and thus as a long-term economic success, and even as increased international competitiveness (p. 488).

Summing up, the conventional 'price competitiveness' indicator as defined by Balassa in 1962 is not suitable to explain export performances or economic growth perspectives in Central and Eastern European transition economies on its own.

The dominant use of the term 'competitiveness' in European policy discussion may be contested because of the questionability of its underlying assumptions, or because of the political and economic dynamics it conveys – regardless of this

[52] In contrast to Dutch-disease

fundamental critique, the above analysis shows that the 'price competitiveness' indicator cannot be applied to any country the same, irrespective of a country's specific economic situation.

VII. Appendix

7.1 Alternatives to Price and Cost Indicators – Profit Indicators

As depicted in the beginning, in the hypothesis of 'price competitiveness', an economy was supposed to be the same as of the sum of a country's producers. In fact, maximizing international sales volumes is the objective of a country's producers that operate on international markets. A valid 'competitiveness indicator' should therefore reflect producers' perspective and allow some insight in their future profit opportunities in a specific country.

Lipschitz and McDonald propose in 1992 an alternative to the commonly used price or cost indicators: As they point out, the relevant question for the producer will – eventually – be neither prices nor cost development, but the difference: the ability to generate profits (Lipschitz/McDonald 1992, p.39).

7.1.1 The Profit Share Indicator

In order to calculate profits of tradable goods on national levels, one would need data on prices and on unit costs. As price developments can be tracked with help of price indices, but total unit costs of production are not available as public data, Lipschitz/McDonald resort to composing an indicator that shows relative changes of ULC, relative to relative price changes in value added of traded goods:

$$\mathrm{REER}_{\mathrm{prof}} = \frac{REER_{ULC}}{REER_{PVT}}.$$ [53]

Source: Lipschitz/Mc Donald 1992, p.44

The above formula is identical to the relative wage shares in value added of tradable goods in domestic and foreign countries, and can therefore also be calculated as

$$\mathrm{REER}_{\mathrm{prof.}} = e^{*} \frac{wageshare_{d}}{wageshare_{f}},$$

only considering the tradable goods sector.

Source: Lipschitz/Mc Donald 1992, p.44.

In these terms, a country's producers would be estimated 'competitive' when they can increase their aggregated profit share relatively more than the average increase of profit shares of producers in other countries [54] (Lipschitz/McDonald 1992, p.46).

[53] $\mathrm{REER}_{\mathrm{prof}}$ being a Real Effective Exchange Rate based on profit rates of tradable goods; $\mathrm{REER}_{\mathrm{ULC}}$ a Real Effective Exchange Rate being based on ULC of tradable goods and $\mathrm{REER}_{\mathrm{PVT}}$ a Real Effective Exchange Rate measured with help of a prices index of value added deflator of tradable goods output.

7.1.2 Evaluation of the Profit Share Indicator

The relative wage share in the sector of tradable good and services represents explicitly the perspective of producers: the developments of profit generation. Moreover, by constructing a REER that calculates relative profit shares by country, this allows to link the information on profit development to a specific country – an idea that reflects the closest the idea of 'competitiveness' of a country. An economy in which profits shares for producers of tradables increase more than in other countries would be considered to become more attractive – and competitive – for international producers, and they might decide to maintain or relocate their production sites to this country. The production sites, in turn, would be expected to maintain or create employment.

In the exact definition by Lipschitz/McDonald (1992, p.38), the relative wage share refers only to tradable goods and services, which would be the most coherent with theory. In practice however, collecting these data would prove to be very difficult. One could therefore use wage shares in manufacturing – in order to approximate tradable goods – or wage shares of the total economy – in order to include the service sector. Problems with these derivations would be the same as discussed in the section on cost indicators.

Lipschitz/McDonald (1992) do also acknowledge that this indicator fails to offer information on the following issues: It cannot be applied to countries with different technological standards (p.64) and it should not be mistaken as the producers' rate of return on investment (p.48). Also, it does not offer information on producers' future perspectives on profit generation. Similar to the price and cost indicators, it does not offer any information on absolute profit levels by country, but only on percentage changes towards previous periods and other countries. Still, it can show how the distribution of Value Added evolves in a certain country, relative to other countries.

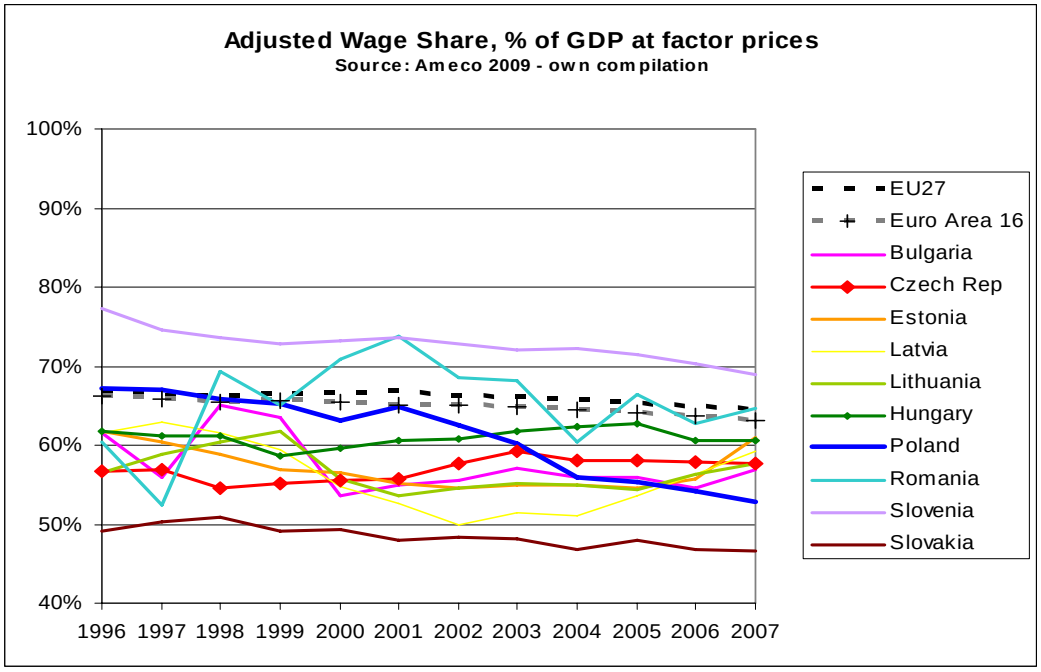
The relative wage share in the sector of tradable good and services as 'competitiveness' indicator is the indicator that is the most coherent with the assumptions that led to the hypothesis of 'price competitiveness'.

7.2 The Real Effective Exchange Rate based on Profit Shares in Central and Eastern European countries

The overall trend worldwide is increasing profit shares over time – the inverse of decreasing wage shares – as showed below for EU27 countries.

[54] Lipschitz and McDonald do still use the producers of a country and the country itself as synonymous terms.

Graph 20: Absolute Adjusted Wage Shares – total economy



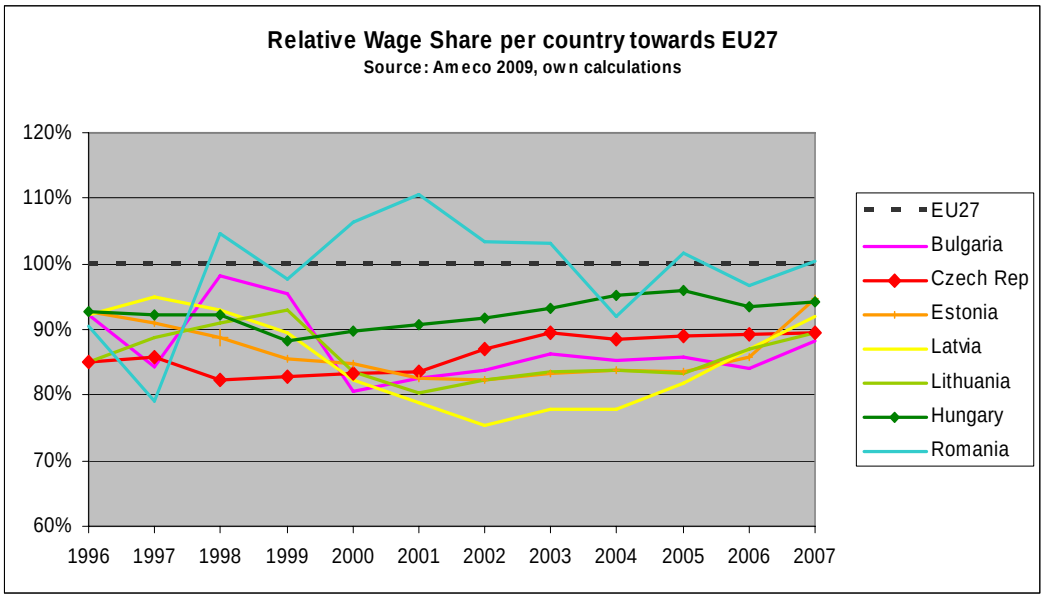
Source: European Commission: Ameco 2009 – own compilation

All CEE countries, with exception of Slovenia and Romania, show lower wage shares in total economy, i.e. higher profit shares, than the EU27 average.

According to Lipschitz/McDonald, it is the trend in the profit share, ***relative*** to the profit shares in other countries that could reflect incentives for international producers to favour a certain country as place of production (see chapter 3.2.2.3). Decreasing ***relative*** wage shares should thus show a 'gain in competitiveness'.

Czech Republic, Hungary, Bulgaria, Romania and the Baltics show towards EU27 higher relative profit shares – but as the wage shares in CEE fall less strongly than in EU15 and EU27 average, the ***relative*** wage shares show a rising trend, which would be interpreted as 'loss in competitiveness'.[55]

Graph 21: Relative Adjusted Wage Shares total economy: below EU27 average, but with appreciating trend [56]

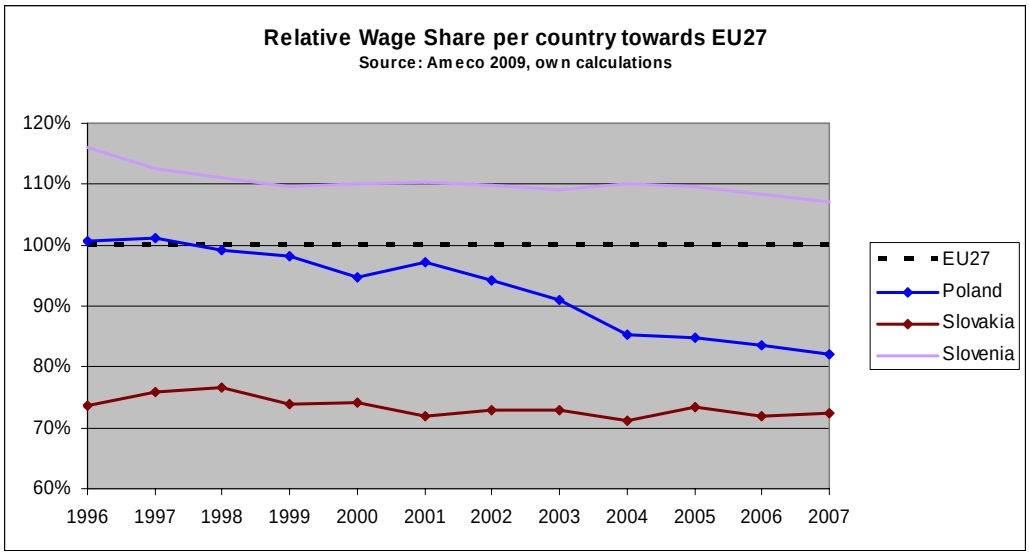


Source: European Commission: Ameco 2009 – own calculations

[55] This is also a result of labour costs that rise more than labour productivities.
[56] Average weighted EU27 wage shares for the manufacturing sector are only available for 1997 to 1999, thus, relative wage shares for the last decade can unfortunately only be computed for total economy.

In Slovenia, profit shares are lower than in EU27 average, but do increase stronger than EU27 average over time. In Slovakia, profit shares are higher than in EU27 average, and increase as much as EU27 average over time. In Poland, profit rates where along EU27 average in 1997 and increased considerably till 2007, (~+20% more than the average profit share increase for EU27).

Graph 22: Relative Adjusted Wage Shares total economy with depreciating trend



Source: European Commission: Ameco 2009 – own calculations

When labour costs rise less than labour productivity, this should lead to higher profit shares (see ILO 2007). A decrease in ULC points to a redistribution of Value Added: This has exactly been the case for Slovenia, Slovakia and Poland (compare graphs 7 and 21).

According to the idea of the relative profit shares indicator, 'success' in tradable goods sales would only be expected for Poland. But this finding is not in accordance with the actual overall increases in export and manufacturing shares of ***all*** CEE countries.

Thus, the $REER_{prof}$ cannot explain the relative export and manufacturing gains in CEEs.

VIII. References

8.1 List of Abbreviations

AMECO	Annual Macroeconomic Database of the European Commission
CEE	Central and Eastern European (Countries)
CPI	Consumer Price Index
ECB	European Central Bank
EU	European Union
EU15	15 member states of the European Union comprising all member states before Eastern Enlargement 2004 and 2007
EU27	27 member states of the European Union comprising all current member states
Eurostat	Statistical Office of the European Communities
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
IFS	International Financial Statistics by the International Monetary Fund
IMF	International Monetary Fund
Mill.	Million
NEER	Nominal Effective Exchange Rate
NMS	European Union New Member States from Enlargement 2004/2007
OECD	Organisation for Economic Co-Operation and Development
PPI	Producer Price Index
PPP	Purchasing Power Parity
REER	Real Effective Exchange Rate
RER	Real Exchange Rate
ROI	Return on Investment
ULC	Unit Labour Cost
VA	Value Added
WB	World Bank
WDI	World Development Indicators by the World Bank
XUV	Export Unit Values

8.2 List of Graphs

		page
Graph 1:	Identical series with different base years – example REER Poland	20
Graph 2:	The European Union and its Member States	24
Graph 3:	Real Effective Exchange Rates of CEE countries	26-27
Graph 4:	Harmonized Consumer Price Index in CEEs and EU27	29
Graph 5:	Change of Nominal Unit Labour Costs – for total economy – in 2008 towards 1997	30
Graph 6:	Increase in Nominal Unit Labour Costs of total economy in Euro, indexed	31
Graph 7:	Change of nominal Unit Labour Costs – only manufacturing sector - in 2006 towards 1997	32
Graph 8:	CEE countries with rising nominal Unit Labour Costs in Manufacturing towards 1997	33
Graph 9:	CEE countries with falling nominal Unit Labour Costs in Manufacturing towards 1997	34
Graph 10:	Labour Productivities total economy indexed	35
Graph 11:	Gross Fixed Capital Formation as % of GDP	36
Graph 12:	Exports to World in Volumes – 1996 to 2006	37
Graph 13:	Shares of World Real Exports, 1996 and 2006	38
Graph 14:	Compound Annual Growth Rate of Export Volumes to World	39
Graph 15:	Change in Export Shares over the last decade	40
Graph 16:	Export Performance according to OECD Definition	41
Graph 17:	Sales of Manufacturing Goods in Volumes – 1996 to 2008	42
Graph 18:	Shares of World Manufacturing Volumes, 2000 and 2005	43
Graph 19:	Compound Annual Growth Rate of Manufacturing Volumes	44
Graph 20:	Trade Balances of CEE countries in current prices in Mio € and in % of GDP	48
Graph 21:	Hourly Labour Costs in €, Total Economy and Manufacturing Sector	49
Graph 22:	Absolute Adjusted Wage Shares – total economy	63
Graph 23:	Relative Adjusted Wage Shares total economy: below EU27 average, but with appreciating trend	64
Graph 24:	Relative Adjusted Wage Shares total economy with depreciating trend	65

8.3	List of Tables	*page*
Table 1:	European Union Member States and Enlargement Steps	25
Table 2:	Export growth – 1999 towards 2008 – at current market prices in €	45
Table 3:	GDP growth – 1999 towards 2008 – at current market prices in €	46
Table 4:	Manufacturing growth – 1999 towards 2006 – at basic factor prices in €	46
Table 5:	Import growth – 1999 towards 2008 – at current market prices in €	47

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Publisher: Hans-Böckler-Stiftung, Hans-Böckler-Str. 39, 40476 Düsseldorf, Germany
Phone: +49-211-7778-331, IMK@boeckler.de, http://www.imk-boeckler.de

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ISSN: 1861-2180

Hans Böckler Stiftung

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