wiiw

APRIL 2016

Research Report 410

Correcting External Imbalances in the European Economy

Doris Hanzl-Weiss and Michael Landesmann

The Vienna Institute for International Economic Studies
Wiener Institut für Internationale Wirtschaftsvergleiche

Correcting External Imbalances in the European Economy

DORIS HANZL-WEISS
MICHAEL LANDESMANN

Michael Landesmann is Scientific Director of the Vienna Institute for International Economic Studies (wiiw) and Professor of Economics at Johannes Kepler University Linz, Austria.
Doris Hanzl-Weiss is Research Economist at wiiw.

Abstract

This paper examines current account developments in different country groups amongst the lower- and medium-income European economies (LMIEs) both prior to the crisis and following it. The Baltic countries, the Western Balkan as well as the Southern EU countries (Greece, Portugal and Spain) showed rather dramatic deteriorations in their current accounts prior to the outbreak of the financial crisis in 2008/2009, while in the Central and Eastern European countries current account deficits never exploded. What drove current account developments before the crisis and have external imbalances been sustainably corrected? We investigate whether and to which extent adjustments took place in terms of trade performance, real effective exchange rates and components of unit labour costs. Finally, we look at developments of the tradable and non-tradable sectors of the economy and find that 'structural' current account problems are grounded in persistent weaknesses of the tradable sector. As such, policy implications would entail that countries which suffer from longer-term 'structural' external imbalances have to strongly focus their policy attention on a recovery of the tradable sector.

Keywords: trade and current account imbalances, real effective exchange rates, unit labour costs, structural developments, tradable sector, non-tradable sector, lower- and medium-income European economies (LMIEs), Central and Eastern European countries, Western Balkan countries, Southern EU countries

JEL classification: O10, F14, J3

CONTENTS

1. Introduction 1

2. Stylised facts on current account developments 3

3. Composition of the current accounts and changes during the two time periods 6

4. Export performance 9

5. Real effective exchange rates and unit labour costs 12

6. Structural strengths and weaknesses 18

7. Conclusions and policy implications 20

References 22

Annex 23

TABLES AND FIGURES

Figure 1 / Current account in % of GDP 4
Figure 2 / Debt in % of GDP, 2002, 2008, 2013 – private, public, external 5
Figure 3 / Composition of the current account of the balance of payments, 2003-2013, in % of GDP 6
Figure 4 / Changes in current account positions, in % of GDP 8
Figure 5 / Export shares (goods and services), 2003-2013, in % of GDP 9
Figure 6 / (Global) export market shares, 2000-2013, (2000 = 1.0) 10
Figure 7 / Real Effective Exchange Rates vs (rest of) EU-28 (average 1994-2004 = 100) 12
Figure 8 / Change in global export market shares and change in REER, total economy and manufacturing 13
Figure 9 / Change in global export market shares and change in REER, 2000-2008, 2008-2014 14
Figure 10 / Components of ULCs – Changes: 2004-2008, 2008-2010, 2009-2013 total economy 16
Figure 11 / Components of ULCs detailed – Changes: 2004-2008, 2008-2010, 2009-2013 17
Figure 12 / Contributions to GDP growth by sectors, percentage points 2004-2008 and 2009-2013 (from constant prices) 19

Annex 1: List of countries and country groupings

Annex 2: Changes in current account positions, individual countries
Figure A2.1 / CEE-5 countries, in % of GDP 24
Figure A2.2 / Bulgaria, Romania and Baltics, in % of GDP 25
Figure A2.3 / Spain, Greece and Portugal, in % of GDP 26
Figure A2.4 / Western Balkan countries, in % of GDP 27

Annex 3.1: Export shares
Table A3.1 / Main 6 export products in the region, 2013, USD mn 31
Figure A3.1 / Export shares (goods and services), 2003-2013, in % of GDP, individual countries 28

Annex 3.2: Main export products
Figure A3.2 / Share of main 6 export products in % of GDP, 2013 29

Annex 4: Real effective exchange rates (REER) vs (rest of) EU-28 (average 1994-2004 = 100), various deflators
Figure A4.1 / Nominal unit wage costs, manufacturing 33
Figure A4.2 / Price deflator, exports of goods and services 34
Figure A4.3 / Price deflator GDP, market prices 35

Annex 5: NACE Rev. 2 classification scheme for tradables and non-tradables
Table A5.1 / Classification of industries 36

Annex 6: Contributions to GDP growth by sectors
Figure A6.1 / CEE-5 countries 37
Figure A6.2 / Baltic countries 38
Figure A6.3 / Bulgaria and Romania 38
Figure A6.4 / Spain, Greece and Portugal 39
Figure A6.5 / Western Balkan countries 40

1. Introduction

Many of the **lower- and medium-income European economies** (**LMIEs**[1]) showed rather dramatic deteriorations in their current accounts prior to the outbreak of the financial crisis in 2008/2009. Consequently, a strong policy focus has since been whether these economies move towards a more sustainable path with regard to external balances in the future. In this paper we shall examine current account developments in different country groups amongst the LMIEs both prior to the crisis and following it and analyse structural and real exchange rate developments which might lead to a correction of their longer-term positions with regard to external imbalances.

The main questions of our analysis include:

› What drove the development of current account imbalances before the crisis?

› How has adjustment of current account imbalances occurred after the crisis?

› Can we see signs that external imbalances of Europe's LMIEs are being sustainably corrected?

› What has driven real exchange rates developments since the crisis and can we rely on these to correct external imbalances in the longer run?

There is a vast amount of literature dealing with the rise of current account deficits before the crisis (e.g. Jaumotte and Sodsriwiboon, 2010; Chen et al., 2012), the adjustment process thereafter or both (see for example Gaulier and Vicard, 2012; Atoyan et al., 2013; Kang and Shambaugh, 2014). A number of factors have been explored in great detail.

The main storyline and the most used explanation can be summarised as follows (see Atoyan, 2013): With the beginning of the euro and thus financial integration, financial flows were facilitated and borrowing costs declined quickly. This resulted in a credit boom leading to sharply increasing imports and widening current account deficits. Funds were going to the non-tradables sector in the periphery – into the construction sector in Spain and Ireland; into excess consumption in Greece and Portugal (Giavazzi and Spaventa, 2010; Gaulier and Vicard, 2012). Exports were less of a problem in the pre-crisis period (e.g. there was rather similar export behaviour in surplus and deficit countries; see European Commission, 2012).

The immediate crisis effect comprised a domestic demand compression and trade collapsed. In the euro area, current account deficits continued to be financed through the TARGET 2 payment system; thus imports did not have to be reduced radically (Atoyan, 2013). In some non-euro countries, the crisis led to problems in refinancing their external liabilities. Hungary, Latvia and Romania had to ask for official

[1] We refer here to member countries within the European Union in Southern and Central-Eastern Europe as well as candidate and prospective candidate countries in Southeast Europe; see list of countries and country groupings used in this paper and their abbreviations in Annex 1.

international balance of payments assistance from the EU and the IMF in late 2008 and early 2009. Poland was admitted to the IMF's Flexible Credit Line in May 2009 to weather the global economic crisis (Forgó and Jevčák, 2015). Developments in some of the Central European economies (Czech Republic, Hungary, Poland, Slovakia, Slovenia) were different from most of the other LMIEs in that external imbalances never exploded, trade balances moved prior to the crisis towards zero or became slightly positive and there was much less need for adjustment in the wake of the crisis.

In this paper we shall again look at these issues more closely. Section 2 investigates current account developments over the pre-crisis and crisis periods and analyse associated debt developments. Section 3 examines in more detail the different components of the current accounts with a focus on trade accounts. Section 4 takes a closer look at export performance of LMIEs. Section 5 then focuses on real effective exchange rates (REERs) and examine by means of a decomposition which factors were responsible for REER developments prior to and after the crisis. We shall also investigate to which extent export market share developments are related to REERs. Section 6 examines structural developments with a focus on the contributions of tradable and non-tradable sectors to economic growth pre- and post-crisis. Section 7 concludes.

2. Stylised facts on current account developments

In the following we look at the lower- and medium-income European economies which encompass the following country groupings: the Southern EU countries (Greece, Portugal, Spain), the Central and Eastern European new Member States ('CEE-5'; Czech Republic, Hungary, Poland, Slovakia, Slovenia), the Baltic countries ('Baltics'; Estonia, Latvia, Lithuania), Bulgaria and Romania, and the Western Balkan countries ('WBC-6'; Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia, and Kosovo; this group will at times comprise fewer states if there are data problems). As regards time periods, we look at the period before the crisis in 2008 and the period after the crisis.

We start with an overview of current account developments (Figure 1): the interesting feature here is the difference between the CEE-5 group and the other LMIE economies. The CEE-5 continuously maintained a current account deficit of about 5% of GDP on average during the pre-crisis period. All the other LMIEs experienced sharply deteriorating current accounts, reaching levels of -12% (Southern EU economies) up to -20% in the Western Balkan economies.

The crisis led to very sharp corrections in the current accounts in some of the economies (e.g. in the Baltics from a position of -17% in 2007 to +4% in 2009; in Bulgaria and Romania from -19% in 2007 to -2.5% in 2010) and in some economies to more gradual but also very substantial adjustments (in the Southern EU economies from -12% in 2008 to +1% in 2014; and in the Western Balkan economies from -20% in 2008 to -8% in 2013).

The literature refers to a 'sudden stop' that initiated these dramatic corrections as foreign net capital inflows slowed dramatically or even reversed as foreign investors were no longer willing to finance such large deficits in the current accounts. The CEE-5 were again an exception as the change in current account positions pre-crisis to post-crisis was relatively mild; however, they also moved from -5% in 2008 into positive territory by 2013.

We shall analyse shortly which components of the current account were responsible for these adjustments during the different phases of the crisis period. This will again reveal interesting differences across the different LMIE economies. Before that, however, we show the patterns of sectoral debt development in these groups of economies, pre-crisis and post-crisis, as these also reveal drivers behind the current account developments. These are depicted in Figure 2.

What we can see is that in all groups of economies, it was mostly or entirely the growth in private sector debt prior to the crisis that was driving the growth in external debt (corresponding to sustained current account deficits). Only in one group of economies (the Southern EU economies) we can see a mild growth in public sector debt-to-GDP ratios over the period 2002 to 2008. In all the other economies there was either no growth in that ratio at all (CEE-5 and Baltics) or even a fall (BG&RO and WBC-5). Hence the principal borrowing from abroad which accounted for the financing needs of the current account

deficits over the pre-crisis period was done by the private sector (mostly the corporate sector, in some countries also the household sector).

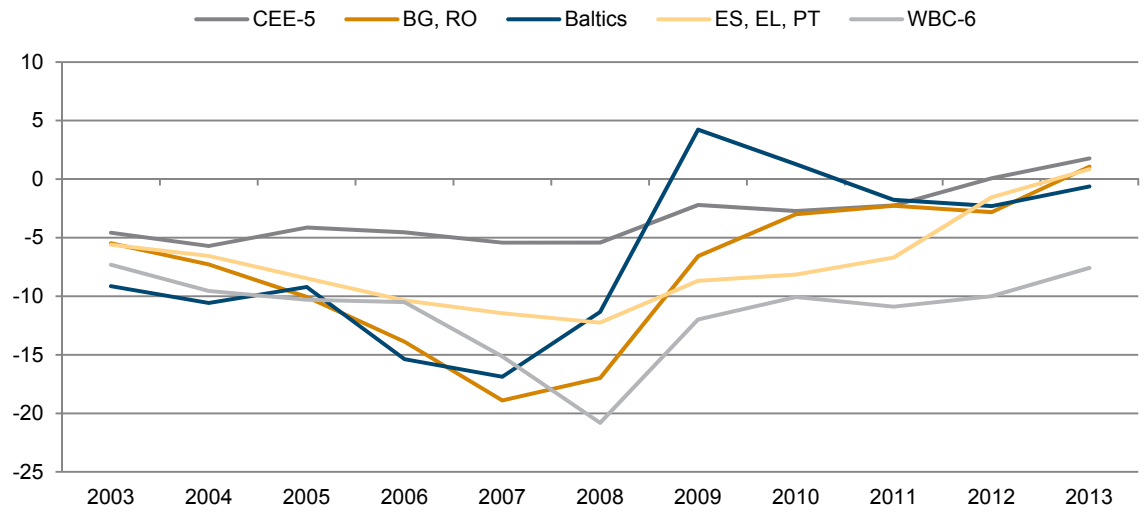
After the financial crisis had hit the economies, the picture changed (see the developments 2008 to 2013): private sector debt-to-GDP ratios remained stagnant or declined, reflecting the unwillingness of financial institutions to continue to lend ('credit crunch') or the private sector by itself adjusting its net savings behaviour in the direction of 'deleveraging', i.e. reducing its debt burden through repayments and reduced demand for new credit.

Public debt-to-GDP, on the other hand, increased, in some cases massively (see ES, EL, PT). The reasons behind this are the workings of 'automatic stabilisers' in periods of recession or reduced growth (lower tax revenues and increased spending, e.g. on unemployment benefits), while additional discretionary spending was rather rare in these economies as most followed a very restrictive fiscal policy during the crisis years; the exception was, at times massive, spending in some countries on bank rescue operations (notably in Spain, later on also in Slovenia).

External debt-to-GDP did not increase much during the crisis years as current account deficits disappeared (because of milder or stronger forms of 'sudden stops'; see above) or declined substantially; only the Western Balkan countries still ran significant current account deficits, which most likely reflect unrecorded items in the balance of payments statistics in countries which are heavily dependent on remittances from migrants; these flow back in various ways, not all tractable by national statistical offices.

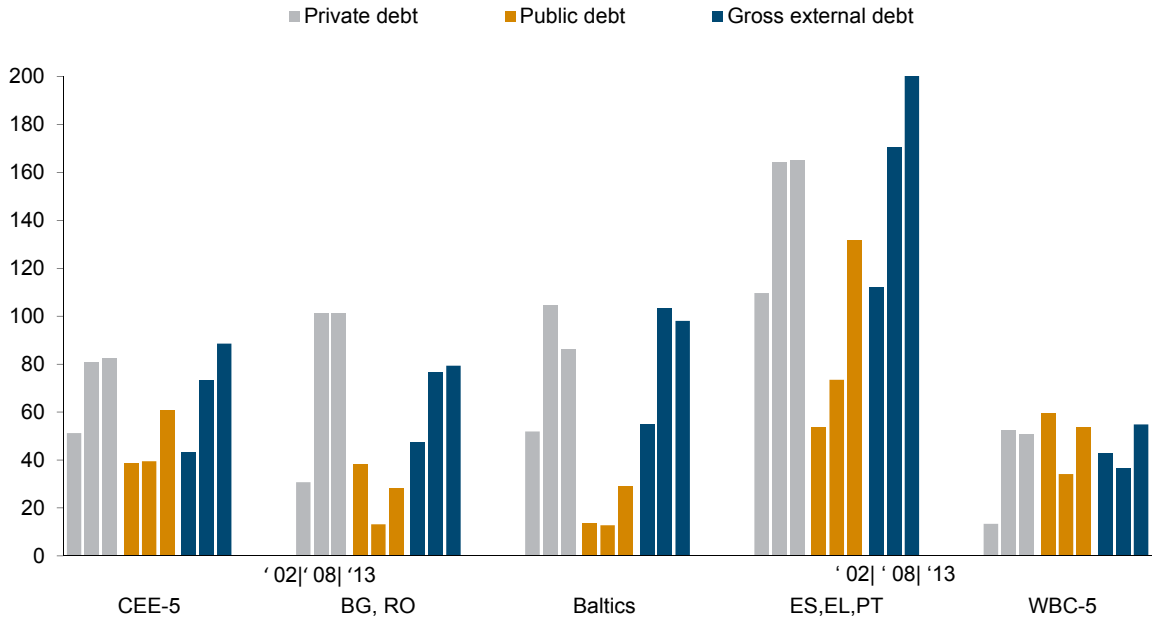
Let us now return to the current accounts and examine the movements of its various components, and track developments over the various phases of the crisis.

Figure 1 / Current account in % of GDP



Remark: The Western Balkan countries 'WBC-6' include Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia and Kosovo.
Source: wiiw Annual Database incorporating national and Eurostat statistics.

Figure 2 / Debt in % of GDP, 2002, 2008, 2013 – private, public, external

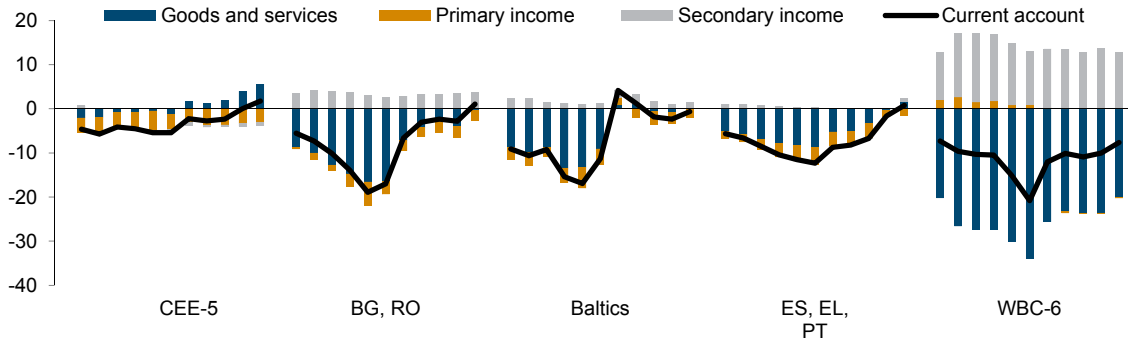


Remark: The Western Balkan countries ‘WBC-5’ include Albania, Bosnia and Herzegovina (BA), Macedonia, Montenegro and Serbia. - Data 2002: Private debt for Baltics refers to 2004 (without EE), for WBC-5 to 2003 (without BA). Public debt for ES, EL, PT refers to ES, PT only and to 2003. Gross external debt for ES, EL, PT refers to 2003; BA and ME gross external public debt.
Source: wiiw Annual Database incorporating national and Eurostat statistics

3. Composition of the current accounts and changes during the two time periods

Figure 3 shows the developments in the classical components of the current accounts: the trade balances (exports of goods and services minus imports of goods and services), the primary income accounts (showing the net receipts of factors of production from abroad; in the case of the LMIEs this refers mostly to profits made by international companies in these economies which are either repatriated or reinvested) and the secondary income accounts, which mostly show the remittance flows from migrants working abroad.

Figure 3 / Composition of the current account of the balance of payments, 2003-2013, in % of GDP



Remark: Components refer to BOP 6th edition as far as available, BOP 5th edition before. Primary income refers to Income Accounts, secondary income to current transfers.
The Western Balkan countries 'WBC-6' include Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia and KosovoSource: wiiw Annual Database incorporating national and Eurostat statistics.

Figure 3 reveals important qualitative differences in the developments of these components in the different groups of economies which drive the movements in the current accounts prior to the crisis:

› Most importantly, the difference between CEE-5 and all other LMIE groups of economies: not only did the current account situation not deteriorate in the pre-crisis period in the CEE-5 while it deteriorated very sharply in all other economies, but we can also see that the striking underlying component is the development of the trade balance, i.e. the relative export to import performance. In the CEE-5 the trade balance reached (on average) a zero deficit position even before the crisis, while in all other economies we see sharply deteriorating trade deficits. In the extreme cases, the trade deficit reached as much as 20% to 30% of GDP.

› Another feature which should be pointed out is that the current account deficit, which amounted on average to 5% of GDP in the CEE-5 prior to the crisis, was almost entirely due to a negative primary income balance and reflected the profits earned (and either repatriated or reinvested) by international companies. To some degree, this phenomenon is also present in other economies (BG&RO; Baltics; ES&EL&PT) but not to the same extent.

› Finally, we also see the special position of the Western Balkan economies where the extremely large (and persistent even after the crisis) deficit in trade is partly covered by large surpluses in the secondary income balance which – as mentioned above – is mostly due to remittances from migrants working abroad.

Next we examine the shifts in the different components of the current accounts which took place following the start of the financial crisis. This should shed light on what accounted for the 'corrections' (from high deficits) in the current accounts which took place following the impact of the crisis. We shall again focus on inter-country differences.

The three panels in Figure 4 depict the contributions of the different components to overall changes in the current accounts in three different periods; the pre-crisis period (developments over the years 2004-2008), the immediate crisis years (2008-2009) and the longer period of 'current account adjustment' during the crisis years (2009-2013). There is also one additional decomposition in these figures which goes beyond what was presented in Figure 3: the contribution of the trade balance has been further decomposed into the separate contributions of exports and of imports to the changes in the current accounts positions.

The picture which emerges is highly interesting and differentiated across country groups and across the different periods (for the individual countries see figures in Annex 2):

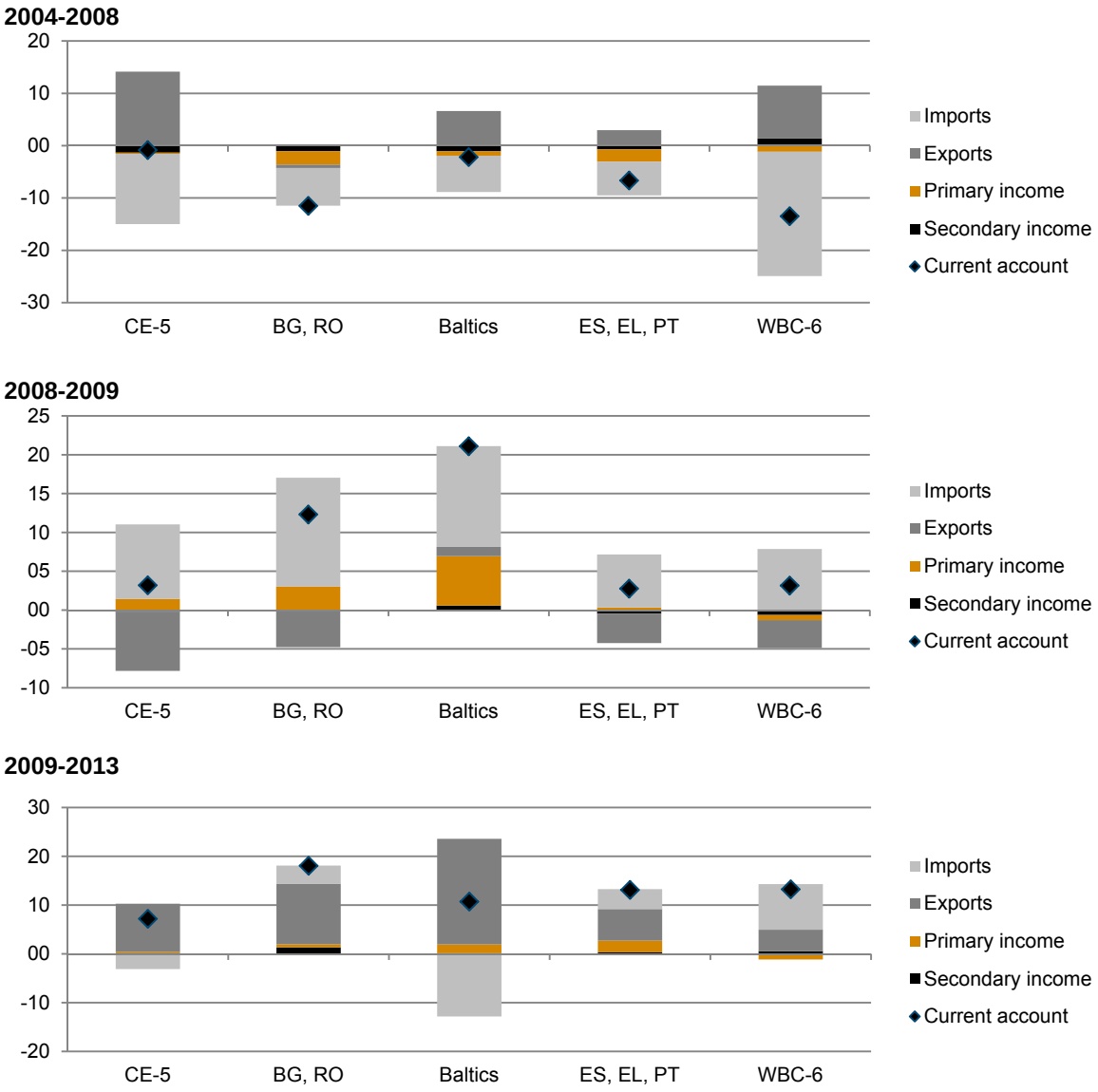
› First of all we see the remarkable shifts in countries which experienced a marked deterioration in the current accounts positions prior to the crisis (BG&RO, ES&EL&PT, WB-6) to improved positions in the current accounts during the crisis years. This improvement is dramatic also in the case of the Baltics, which also started from strongly negative current accounts, but the deterioration (as shown in Figure 4) was less dynamic pre-crisis than in the other above-named economies. They then also experienced a move towards a strongly improved current accounts position in the wake of the crisis.

› An interesting point is that the two periods of the crisis years shown in the bottom panels (the immediate crisis impact period 2008-2009, and the years 2009-2013 encompassing the entire period following the crisis) differ quite strongly in terms of the nature of current account adjustments. Here the decomposition of the trade balance into contributions from exports and imports is particularly interesting: it shows that the 'improvement' in the current accounts when the crisis impacted – in 2008-2009 – was strongly driven by a sharp contraction of imports while exports also declined. Notably, in this immediate crisis phase the CEE-5 suffered more strongly from export contraction than the other country groups, presumably because these economies were more strongly linked to cross-border production networks (on this see Francois and Wörz, 2009). In the immediate crisis years, the primary income balance 'contributed positively' to the recovery of the current accounts in three of the country groups: BG&RO, CEE-5 and the Baltics, presumably because of the dramatic decline in profits made by international firms operating in these countries.

› The picture changes dramatically when we compare the immediate crisis impact and the longer period following the crisis: we can see that there is a switch from exports contributing negatively to the current account balance in the immediate crisis years to these contributing positively over the entire period of adjustment over the crisis years. This positive contribution of recovering exports is particularly strong in the Baltics, followed by BG&RO and the CEE-5; the contributions of exports were smaller in the Southern EU economies (ES, EL, PT) and the Western Balkan economies. The strong overall

recovery of the Baltic economies also meant that imports started again to contribute significantly negatively to current accounts developments; this feature is shared by the CEE-5, which also had a more stable recovery, but not by the other groups of economies.

Figure 4 / Changes in current account positions, in % of GDP



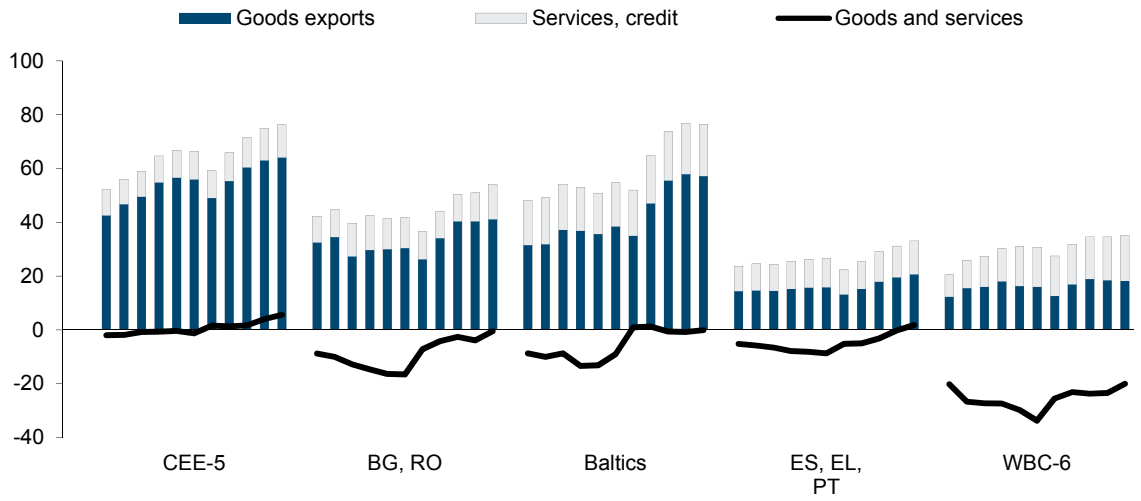
Remark: The Western Balkan countries 'WBC-6' include Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia and Kosovo.
Source: wiiw Annual Database incorporating national and Eurostat statistics.

To sum up this part of the analysis: We see current account improvements in all LMIE economies following the impact of the crisis, but the degree to which these are the result of improved export performance is quite different in the different country groups. We shall now turn to a more detailed analysis of export performance.

4. Export performance

In this section we examine export behaviour before and after the crisis. In the context of our analysis, this variable is important as it indicates whether small or medium-sized open economies – such as the ones in our LMIE sample – have the capacity to put their trade balances on a sustainable trajectory. Longer-term trends in the role of exports in domestic production and the development of shares in world markets can serve as important indicators for the trajectory of LMIE economies in terms of competitiveness and sustainability of external accounts. LMIEs are vulnerable in their catching-up phase when import requirements are high to support a technological modernisation process and they face strong competition from both more advanced economies (which sell higher-quality products) and other less advanced economies (which compete on price).

Figure 5 / Export shares (goods and services), 2003-2013, in % of GDP

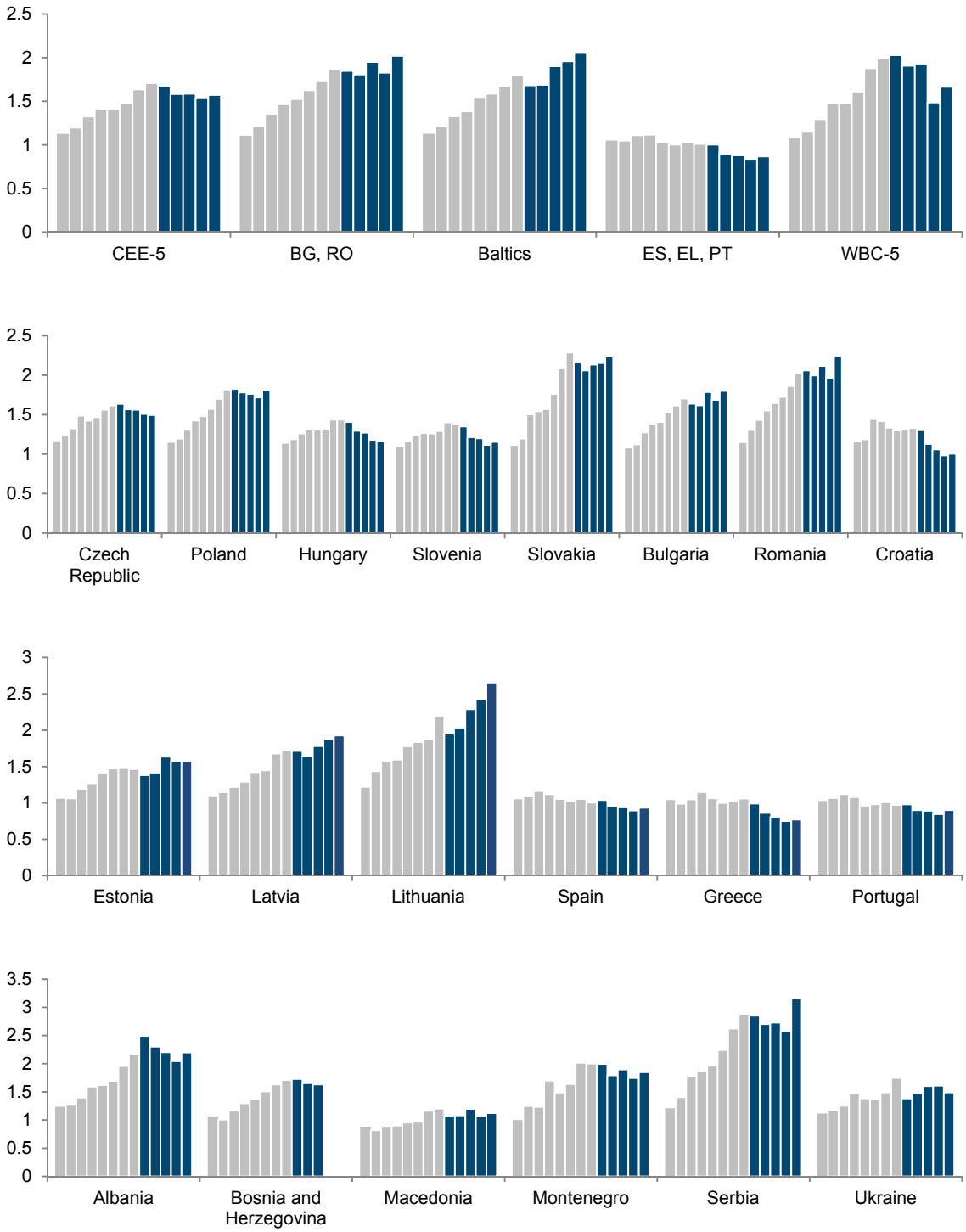


Remark: The Western Balkan countries 'WBC-6' include Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia and Kosovo.
Source: wiiw Annual Database incorporating national and Eurostat statistics.

Figure 5 shows the share of exports of goods and services in GDP for our country groups. Again, there are significant differences between the country groups, both with regard to pre-crisis and post-crisis developments (for the individual countries, figures are added in Annex 3):

› In contrast to all other groups of LMIE economies, the CEE-5 had a rising share of exports in GDP over the pre-crisis period and this trend continued (after the dip in 2009) over the crisis period. This shows the importance of export activity in these countries nurtured by a successful integration of these economies in cross-border production networks (see e.g. Stöllinger and Stehrer, 2015). Furthermore, the ratio exports-to-GDP has reached a very high level (around 60% prior to the crisis and 65% thereafter).

Figure 6 / (Global) export market shares, 2000-2013 (2000 = 1.0)
Goods and services % of world total exports, 2001-2008; 2009-2013



Remark: WBC-5 includes Albania, Bosnia and Herzegovina, Macedonia, Montenegro and Serbia.
For Montenegro 2001 = 100.
Source: wiiw Annual Database incorporating national and Eurostat statistics.

› The other groups of economies showed a flat development of the exports-to-GDP ratio prior to the crisis and these ratios stayed at relatively low levels (about 40% for BG&RO and the Baltics, and very low ratios of about 20% in the Southern EU group and the Western Balkans; for the latter this is particularly alarming as these are very small economies indeed). Post-crisis there is not much improvement in this ratio in the Southern EU economies and the Western Balkans. An exception amongst the group of economies with formerly very low export ratios given their size is the Baltics, which substantially increased their export ratios over the crisis period; there was also an improvement in BG&RO.

The next indicator is the development of shares in global exports, which is depicted in Figure 6 (to facilitate cross-country comparison we indexed this indicator by setting the share of every country group in 2000 to 1.0). We see that all LMIE economies achieved rising shares in global export markets over the pre-crisis period, except the Southern EU economies (ES, EL, PT) which showed stagnating shares. The fact that global market shares increased while export-to-GDP ratios stagnated in most of the country groups (bar the CEE-5 group) is the result of reasonably high GDP growth rates in these economies prior to the crisis.

After the crisis, shares in global market shares stagnated or fell in most of the LMIEs with the exception of the Baltics. Particularly worrying seems to be the picture for the Southern EU economies and the Western Balkan economies which already had shown a very weak export performance prior to the crisis (see earlier discussion on export ratios). Further detailed analysis of export developments can be found in Annex 3 where individual country information is presented including a detailed breakdown of goods export structure.

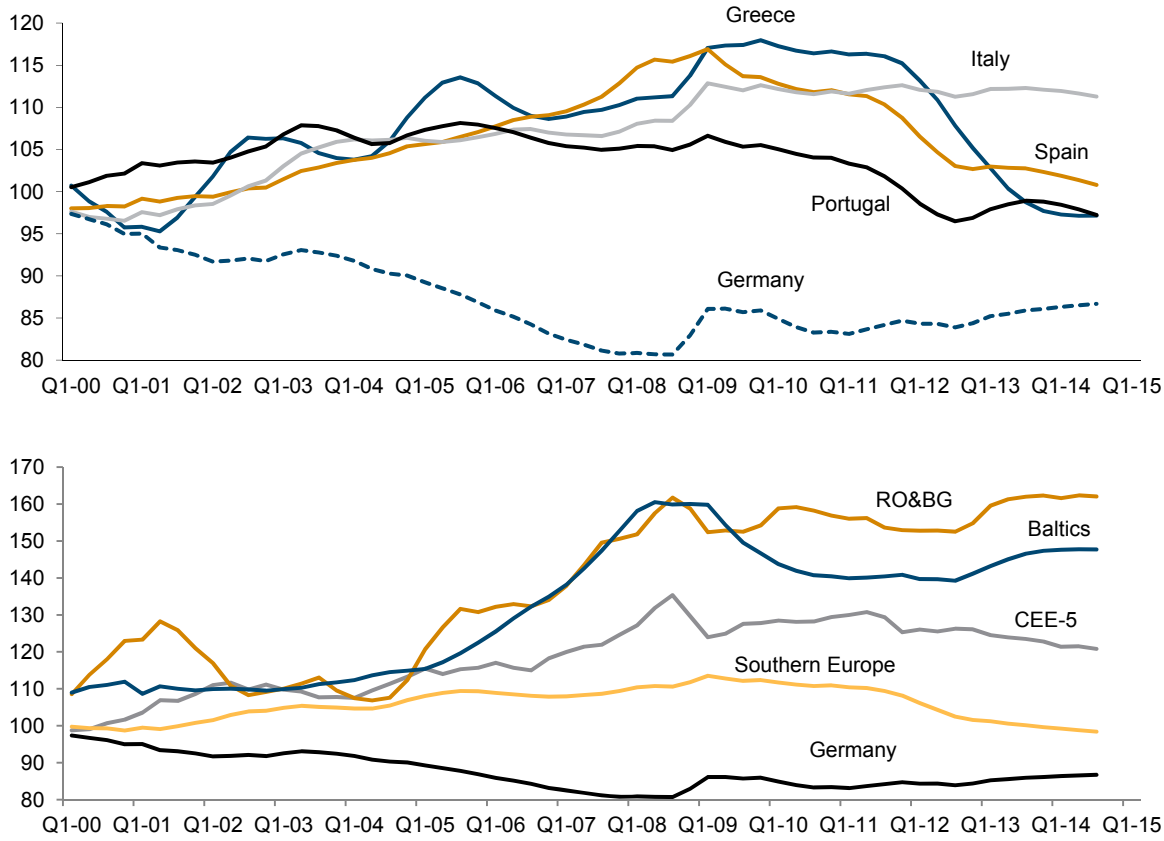
We shall now move to a discussion of the real exchange rate.

5. Real effective exchange rates and unit labour costs

Did real effective exchange rates (REER) drive external imbalances (through a loss in cost competitiveness) prior to the crisis? Could cost competitiveness be restored through adjustment of the real exchange rate after the crisis?

Figure 7 uses one of the indicators of the 'real exchange rate', namely unit labour costs compared across economies measured in the same currency (i.e. euros) and indexed in a manner that set the average unit labour costs over the period 1994-2004 to 100. This allows us to see how nominal unit labour costs of different economies (or groups of economies) have moved relative to each other. It is thus an indicator of relative cost competitiveness.

Figure 7 / Real effective exchange rates vs (rest of) EU-28 (average 1994-2004 = 100)
Nominal unit labour costs, total economy



Source: AMECO, own calculations.

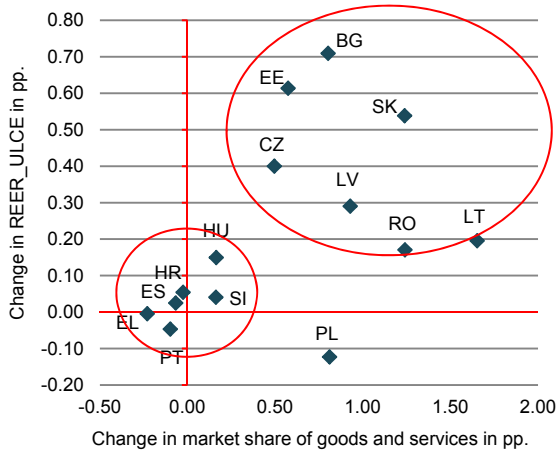
In the top panel of Figure 7 a rather familiar picture is shown: the developments of unit labour costs since 2000 of four Southern EU economies relative to those of Germany. This picture has been taken by most commentators as evidence that the Southern EU economies had become very uncompetitive over the period 2000-2008, with a relative unit labour cost gap of 20% to 30% opening up between Germany and individual Southern EU economies. These relative unit labour cost developments have been seen as a principal factor behind the very detrimental current account/trade balance developments of the EU's Southern economies over the pre-crisis period. In particular, these have been attributed to very unfavourable relative real exchange rate developments between Germany and this group of Southern EU member countries.

It is the purpose of the analysis in this section to be somewhat more differentiated with regard to the role of relative cost (and unadjusted price) measures as the principal argument behind the critical external imbalances phenomenon in the European economy.

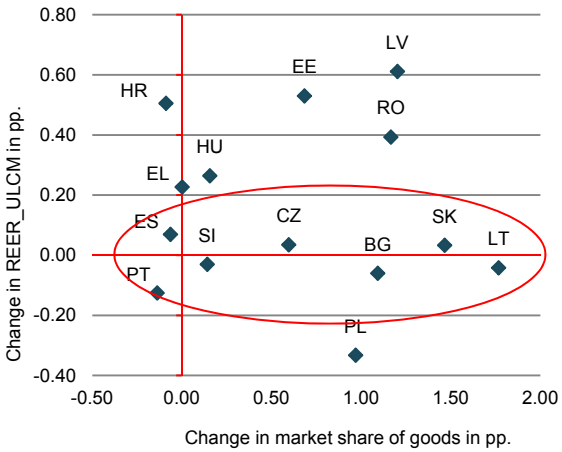
The bottom panel in Figure 7 should provide a first signal to be cautious as concerns an unqualified use of such an argument. It shows – in comparison with the bottom panel – that other LMIEs (i.e. those of Central and Eastern Europe) experienced much steeper increases in this measure of appreciation of real exchange rates than did the Southern European economies over the pre-crisis period. Both panels also show that all LMIEs did experience – albeit to different degrees – some real exchange rate depreciation over the post-crisis period in relation to Germany. But we shall return to post-crisis REER developments later on.

Figure 8 / Change in global export market shares and change in REER, total economy and manufacturing, 2000-2014 (2000 = 0.0)

Total economy



Manufacturing

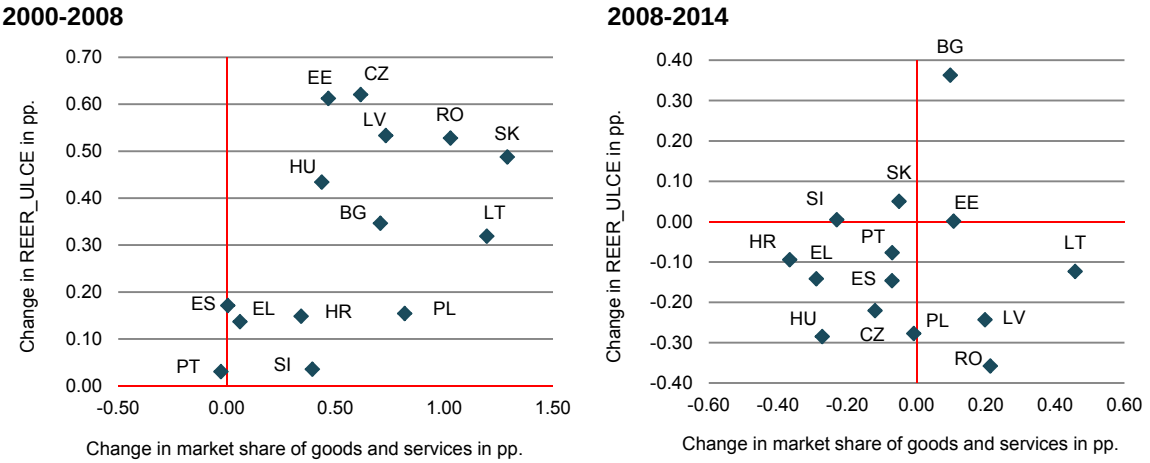


Source: AMECO Database, Eurostat.

Given the generally accepted view that REER (as traditionally measured) is considered to be the most relevant variable to judge gains and losses in competitiveness, we want to point the reader to the evidence in Figure 8 which shows very little relationship between REER developments and changes in global export market shares. Figure 8 shows this relationship for the whole period 2000 to 2014, with respect to the total economy and just the manufacturing sector, Figure 9 for the total economy for the

two sub-periods separately, i.e. the pre-crisis and post-crisis periods. We can see in these figures that there were groups of Central and Eastern European economies which experienced much stronger REER appreciation over the pre-crisis or the overall period than did the Southern European economies and improved nevertheless considerably their international market share positions. This should make us cautious with regard to using this measure of competitiveness as a good indicator for changing competitiveness positions especially in the case of low-/medium-income economies which are – structurally and developmentally – potential catching-up economies.

Figure 9 / Change in global export market shares and change in REER, 2000-2008, 2008-2014



Source: AMECO Database, Eurostat.

What is the weakness of the depicted REER indicator (and a host of others, some of which are shown in Annex 4 Figures A4.1-A4.3)? Basically, it is an aggregate indicator of cost competitiveness which does not explicitly take account of either important structural changes (i.e. changes in industrial composition and product composition) or relative quality improvements of products produced and sold by countries on international markets, both of which are important features of catching-up processes of low-/medium-income economies. We will not dwell on this point any further and refer the reader to the – by now – vast literature on quality assessment and changes in product composition in the international trade literature (see e.g. Landesmann, Leitner and Stehrer, 2015).

Despite our criticism of the measure of unit labour costs (ULCs) as an adequate indicator to assess competitiveness for low-/medium-income economies, we nonetheless move on to a decomposition analysis in order to analyse the roles of the different variables which lie behind ULC developments over the pre-crisis and post-crisis periods. Again, we shall see that interesting inter-country differences emerge from this decomposition analysis.

The following decomposition formula is applied:

$$\Delta \text{ ULC} = \underbrace{-\Delta \text{ Output} + \Delta \text{ Employment}}_{\text{Change in labour productivity}} + \underbrace{\Delta \text{ Compensation Rate (in NCU)}}_{\text{Change in compensation per worker}} - \Delta \text{ Exch. Rate}$$

Exchange rate is defined as NCU/EUR. It is clear that for those countries that adopted the euro at a particular juncture or maintained a fixed currency regime in relation to the euro, changes in the exchange rate play no role in driving ULCs.

With regard to Figures 10 and 11, depicting this decomposition, we want to point to the following characteristics of ULC developments in LMIEs over the pre-crisis period (2004-2008) and the two periods thereafter (i.e. we again show the immediate impact of the crisis over the period 2008-2010 and then the developments over the longer period 2009-2013):

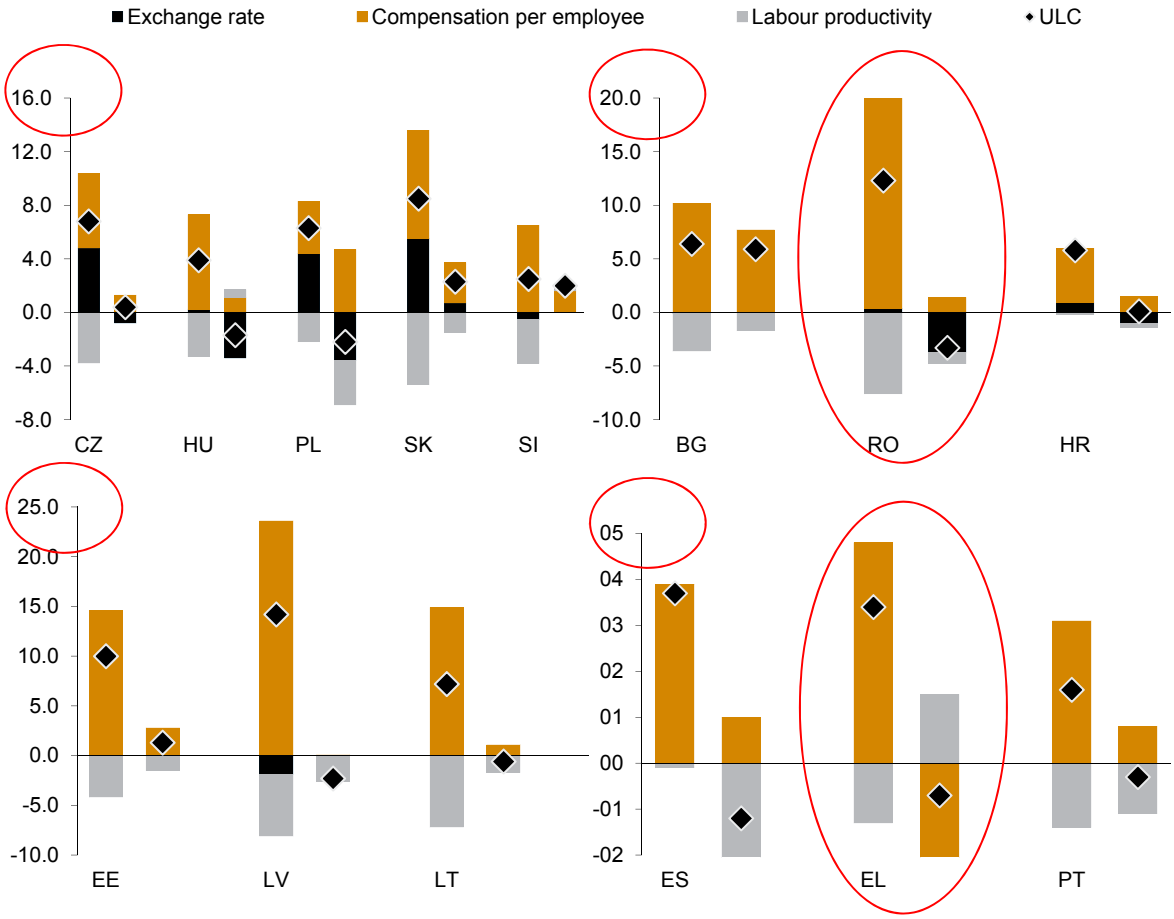
› First of all, it is important to recognise that nominal exchange rate adjustments did play important roles in a number of countries which did not yet belong to the EMU: in Hungary, Poland and Romania there were substantial nominal exchange rate devaluations (relative to the euro) in the immediate crisis phase, and in the pre-crisis period nominal exchange rate appreciations were a significant factor of REER developments in the Czech Republic, Poland and Slovakia.

› Second, wage developments were important for REER developments, with compensation per employee rising quite strongly in many of the LMIEs prior to the crisis. Notice, however, the difference in the scale of the vertical axis for the Southern European economies from the other economies: while annual wage growth was high in those economies pre-crisis, wage growth was considerably higher in many of the other economies. Post-crisis, wages fell considerably in Latvia, Lithuania and Greece and wage growth slowed down or was close to zero in many of the other LMIEs. Interestingly, wages continued to grow quite strongly in Bulgaria.

› Third, we come to the third component determining ULC developments, i.e. productivity developments, which we want to examine more closely. Here we have the advantage of Figure 11 further decomposing labour productivity growth into output growth/decline and employment growth/decline. This decomposition reveals further interesting features that lie behind ULC developments, particularly over the crisis period. Usually, productivity growth should depress ULC growth, hence we would expect the bars in Figure 10 to be in negative territory. However, we find that this is not always the case over the crisis period – see the developments in HU, SL, RO, HR, EL in the immediate crisis period (2008-2010) and HU, SL and EL also over the longer post-crisis period (2009-2013). Figure 11 shows what lies behind this negative contribution of labour productivity to ULC developments (i.e. pushing ULCs up rather than down): the three economies mentioned above, HU, SL and particularly Greece (EL), suffered from severe output contraction which outstripped employment contraction (thus productivity growth was negative) and output contraction was also felt over the longer period in Croatia (HR), RO, LV, ES, and PT.

In summary, we want to emphasise two features with regard to what the decomposition analysis of ULC developments showed: firstly, nominal exchange rate depreciations played a significant role in REER adjustments during the crisis in countries which still had a flexible exchange rate relative to the euro area; secondly, the contraction of output induced by the crisis (and accompanying austerity policies) in quite a few of the LMIEs had a significant detrimental impact on ULC developments, basically because output contraction exceeded employment contraction.

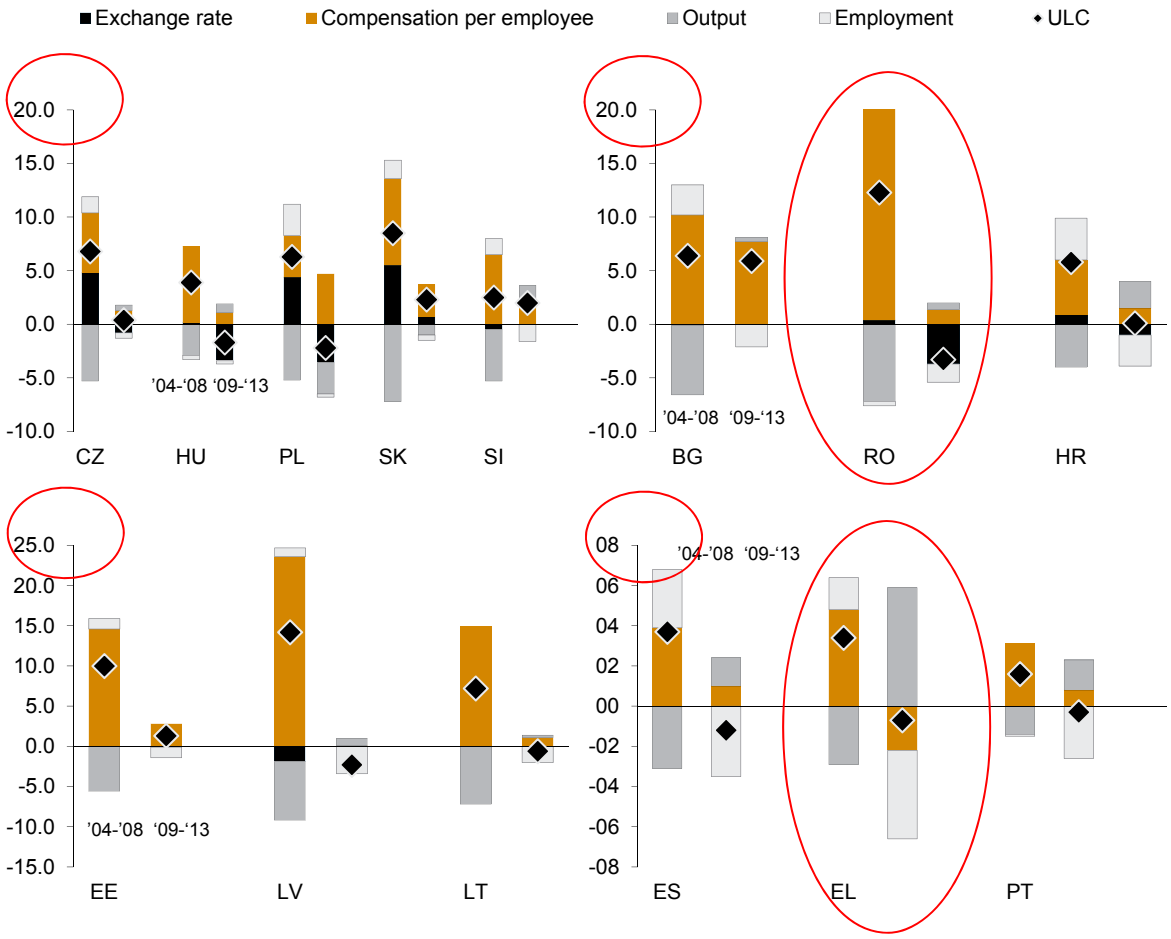
Figure 10 / Components of ULCs – changes: 2004-2008, 2008-2010, 2009-2013 total economy



Source: wiiw Annual Database incorporating national and Eurostat statistics.

For further illustration, let us investigate changes in two countries in particular: Romania and Greece. In the pre-crisis period, the picture of unit labour cost decomposition looks rather similar for the two countries (see Figure 10), with strongly growing compensation of employees on the one hand as well as growing labour productivity on the other. However, in the post-crisis period, these two countries differ: In Romania, the exchange rate devalued and productivity improved. In Greece, compensation of employees was cut drastically but productivity did not improve. Investigating in more detail productivity trends, we can see, in Figure 11, the reasons behind: in Greece, employment was built up before the crisis. After the crisis, employment fell sharply, but the drop in output was even more dramatic, outpacing employment reductions. Thus, productivity deteriorated and unit labour costs fell only slightly.

Figure 11 / Components of ULCs detailed – changes: 2004-2008, 2008-2010, 2009-2013 total economy



Source: wiiw Annual Database incorporating national and Eurostat statistics.

6. Structural strengths and weaknesses

The final step in our analysis which we regard as relevant for the topic of correcting for external imbalances, refers to structural adjustment patterns with regard to sectoral developments particularly in relation to the tradable and non-tradable parts of the economies.

Instead of analysing the individual sector developments, we shall group them into those which one can classify as tradable – generating exports – and those which are non-tradable and serve only the domestic market. Thus, based on the NACE Rev. 2 classification scheme (see Annex 5 for details) we can differentiate between:

› Those parts in the economy which are **tradable**: included here is the manufacturing sector (C) as the classic tradable goods sector, and tradable services (TS)[2], including for example financial and insurance activities.

› Those parts of the economy which are **non-tradable**: these sectors include the construction sector (F), non-tradable services (NTS)[3], with wholesale and retail trade featuring prominently, as well as non-market services[4].

Figure 12 shows the contribution of different sectors to GDP growth over the different sub-periods (pre- and post-crisis). What we can see is that in a number of countries, the tradable sector, i.e. manufacturing and tradable services, contributed strongly to growth, while in others the contributions of the non-tradable sector, i.e. construction as well as non-tradable services, were much more pronounced.

Prior to the crisis (i.e. looking at the period 2004-2008), we can see that the tradable sector played a major role in economic growth in the CEE-5, with manufacturing providing the strongest impetus, followed by the non-tradable services sector (NTS) and the tradable services (TS) sector. Also in Bulgaria and Romania as well as in the Baltics, the contributions of manufacturing and tradable services were quite pronounced, but in these countries non-tradable services played the major role in overall growth. We can also see a major contribution of the construction sector to growth. In the Southern EU countries, non-tradable services contributed most to growth, followed by tradable services and non-market services. Manufacturing, on the other hand, played a minor role. We can thus speak of a pattern of sectoral development biased towards the non-tradable sector in these countries. What has happened after the crisis? Have these structural developments, which in some countries had disfavoured the tradable sector prior to the crisis, been reversing?

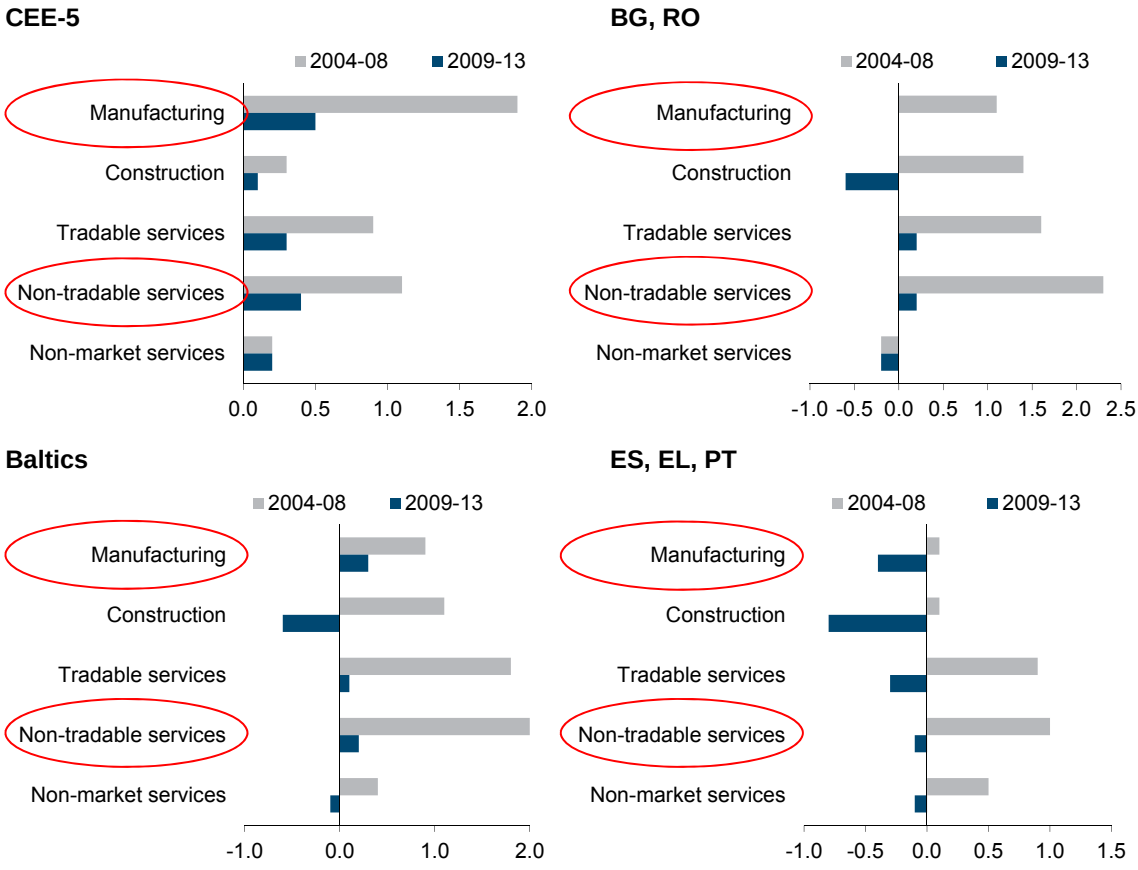
---

2 Tradable services (TS) include Transportation and storage (H), Information and communication (J), Financial and insurance activities (K) and Professional, scientific and technical activities (M).

3 Non-tradable services (NTS) include Wholesale, retail trade, repair of motor vehicles (G), Accommodation and food service activities (I), Real estate activities (L), Administrative and support service activities (N), Arts, entertainment and recreation (R), Other service activities (S), as well as Activities of households as employers & for own use (T).

4 Non-market services include Public administration and defence, compulsory social security (O), Education (P), Human health and social work activities (Q).

Figure 12 / Contributions to GDP growth by sectors, percentage points, 2004-2008 and 2009-2013 (from constant prices)



Source: wiiw Annual Database incorporating national and Eurostat statistics, own calculations.

In the post-crisis period (2008-2013), taking the CEE-5 first, growth returned to all sectors of the economy, but again manufacturing became the principal growth driver. Thus the CEE-5 continued their pre-crisis development path with the principal tradable sector playing the most important role for economic growth. In the other countries, construction took a heavy blow of adjustment and saw a prolonged period of negative performance. In the Baltics the manufacturing sector started to play a more important role in economic growth compared to the pre-crisis period. On the other hand, in Bulgaria and Romania growth was on average low across sectors and did not reach manufacturing. The Southern countries show an even less promising picture. In these countries, manufacturing suffered (apart from construction) most from the crisis and could not recover. There is thus no evidence that the structural bias in favour of non-tradable services and non-market services was being corrected. However, these aggregated data do mask certain adjustment processes that have taken place at the country level (for this, see figures for individual countries in Annex 6). In Greece, despite showing a sad overall picture, as shown by negative contributions to growth of all sectors of the economy, non-tradable services did make the largest contribution to GDP contraction. In Spain and Portugal, on the other hand, construction did adjust most, while non-tradable services (and in Spain non-market services) started to grow again.

7. Conclusions and policy implications

In this paper we have emphasised two issues in particular:

› That the problem of 'structural' external imbalances in the European economy is not a resolved issue despite the evidence of a closure of current account gaps in LMIEs during the crisis.

› There is very considerable heterogeneity across groups of LMIEs with regard to various developments which determine whether the external imbalances problem gets resolved in the longer run.

Let us review the evidence presented in this paper in more detail.

First, what we called 'structural current accounts problem' has relevance in the European economy both for countries inside and outside the EMU. 'Structural' refers here in particular to persistent weakness of the tradable sector and it is this weakness which has led to the build-up of considerable external debt in quite a few country groups of 'Europe's periphery'. The reasons for this weakness are manifold: in some country groups it can be traced back to phases of considerable 'deindustrialisation' from which these economies did not recover; in some of these and in other economies, this weakness got entrenched by a strong inflow of capital invested predominantly in non-tradable sectors leading to a spiralling negative impact on the competitiveness of the tradable sector via real exchange rate revaluations. While these developments have taken place, we have also witnessed that there were strong processes of agglomeration of manufacturing activity at work in the European economy (the development of what has been termed the 'Central European Manufacturing Core', encompassing Germany, Austria, the Czech Republic, Slovakia, Hungary and Poland – see Stöllinger and Stehrer, 2015; Landesmann, Leitner and Stehrer, 2015) and these tendencies have made it significantly more difficult for peripheral countries to redevelop sufficient competitive export capacity in the manufacturing sector.

The evidence presented in this paper has shown that these tendencies have in the most vulnerable countries of Europe's periphery (the South and Southeast) not been significantly reversed in the course of the crisis. In fact, in quite a few of these the tradable sector (manufacturing in particular) has suffered more than the average economy from contraction. This, in turn, is likely to have hysteretic (i.e. long-term capacity) effects on the ability of these economies to close current account gaps in the future.

Second, in a detailed analysis of real exchange rate developments, both over the longer term and in the course of the crisis, we have shown that the interpretation of real exchange rate developments with regard to competitiveness requires great caution. Firstly, there is the question of causality: there is evidence that some economies experienced phases of rapid real exchange rate appreciations without losing competitiveness and in fact gained considerably in global market shares. This is due to these economies benefiting from considerable structural upgrading of their export sectors, and real exchange rate appreciations were the consequence of such (structural and quality) improvements. Longer-term real exchange rate developments, as traditionally measured, are hence poor predictors of whether a country will improve or lose its market share position in international markets if one ignores the

underlying potential of structural improvements. Secondly, we have pointed in a detailed decomposition of real exchange rate developments to the potential negative impact which output and employment contraction (which are also important drivers of real exchange rates in the post-crisis period) could have on the longer-term competitiveness of tradable sectors in these economies.

The policy implications of the analysis conducted in this paper are the following:

Countries which suffer from longer-term 'structural' external imbalances have to strongly focus their policy attention on a recovery of the tradable sector. This is not simply a function of real exchange rate adjustments, as the upgrading and expansion of export capacities requires strong investment activities in the tradable sector. This can be assisted by foreign direct investment, but since these flows have become thinner in the post-crisis period (see Hunya, 2015), other domestic and EU policy instruments have to be used. We emphasise in other contributions (see e.g. Landesmann, 2015a, 2015b) the use of industrial policy instruments which have to be tailored to the specific requirements of Europe's peripheral economies. While there is a renewed emphasis in the European policy debate on industrial policy which has drawn lessons from the negative aspects of 'old industrial policy' (see EC, 2005), most current proposals at the EU level on industrial policy are aimed at improving the performances of Europe's advanced economies in higher-tech sectors and insufficient attention has been given to the specific requirements of LMIEs in this respect. Combined with the use of innovative industrial policy instruments, there has to be an emphasis on institutional upgrading so that industrial policy intervention might show positive rather than negative results (on this see Stöllinger and Holzner, 2013). Furthermore, we would argue that concern about real exchange rate developments is still valid, but this has to be directed towards a joint sustained move towards supply-side improvements (i.e. targeting structural change and productivity improvements) as well as a consideration of balanced wage-productivity and human capital developments. Incomes policies together with education, training and labour market policies should be part of a targeted policy which aims at competitive real exchange rate developments and not simply wage setting. Finally, any reforms of capital markets or policies oriented towards attracting foreign direct investment should carefully consider that a focus has to be the allocation of capital towards (and access to finance of) the tradable sector and avoid repetition of distorting capital allocations towards non-tradable activities.

References

Atoyan, R, J. Manning and J. Rahman (2013), 'Rebalancing: Evidence from Current Account Adjustment in Europe', *IMF Working Paper* WP/13/73, March.

Chen, R., G. M. Milesi-Ferretti and T. Tressel (2012), 'External Imbalances in the Euro Area', *IMF Working Paper* WP/12/236, September.

Darvas, Z. (2012), 'Intra-euro rebalancing is inevitable, but insufficient', *Bruegel Policy Contribution* Issue 2012/15, August.

European Commission (2005), 'Implementing the community Lisbon programme: A policy framework to strengthen EU manufacturing – towards a more integrated approach for industrial policy', COM(2005) 474.

European Commission (2012), 'Current account surpluses in the EU', European Commission DG ECFIN, *European Economy 9/2012*.

Forgó, B. and A. Jevčák (2015), 'Economic Convergence of Central and Eastern European EU Member States over the Last Decade (2004-2014)', European Commission DG ECFIN, *Discussion Paper 001/July 2015*, July.

Francois, J. and J. Wörz (2009), 'The Big Drop: Trade and the Great Recession', Vox, Centre for Economic Policy Research (CEPR), London, 2 May.

Gaulier, G. and V. Vicard (2012), 'Current account imbalances in the euro area: competitiveness or demand shock', Banque de France, *Quarterly Selection of Articles* No. 27, Autumn.

Giavazzi, F. and L. Spaventa (2010), 'Why the current account may matter in a monetary union: lessons from the financial crisis in the Euro area', *CEPR Discussion Papers* No. 8008.

Hunya, G. (2015), 'Recovery in the NMS, Decline in the CIS', *wiiw FDI Report Central, East and Southeast Europe*, 2015/06, June.

Jaumotte, F. and P. Sodsriwiboon (2010), 'Current Account Imbalances in the Southern Euro Area', *IMF Working Paper* WP/10/139, June.

Kang, J. S. and J. C. Shambaugh (2014), 'The Rise and Fall of European Current Account Deficits', European Policy, Sixty-first Panel Meeting, Hosted by the Bank of Latvia, Riga, 17-18 April 2015.

Landesmann, M. (2015a), 'Structural Dynamics of Europe's Periphery – Which Are the Main Issues?', *Journal of Economic Policy Reform*, Special Issue, 2015.

Landesmann, M. (2015b), 'Industrial Policy in the European Economy', *Intereconomics*, Vol. 50, No. 3.

Landesmann, M. and D. Hanzl-Weiss (2013), 'Structural Adjustment and Unit Labour Cost Developments in Europe's Periphery: Patterns before and during the Crisis', *wiiw Research Reports*, No. 390, September.

Landesmann, M., S. M. Leitner and R. Stehrer (2015), 'Competitiveness of the European Economy', *wiiw Research Reports*, No. 401, May.

Stöllinger, R. and M. Holzner (2013), 'State Aid and Export Competitiveness in the EU', *wiiw Working Papers*, No. 106, December.

Stöllinger, R. and R. Stehrer (2015), 'The Central European Manufacturing Core: What is Driving Regional Production Sharing?', *FIW Research Report* 2014/15 No. 02, February.

Annex

ANNEX 1: LIST OF COUNTRIES AND COUNTRY GROUPINGS

Abbreviations:

AL	Albania	ME	Montenegro
BA	Bosnia and Herzegovina	MK	Macedonia
BG	Bulgaria	PL	Poland
CZ	Czech Republic	PT	Portugal
EE	Estonia	RO	Romania
ES	Spain	RS	Serbia
EL	Greece	SI	Slovenia
HR	Croatia	SK	Slovakia
HU	Hungary	UA	Ukraine
LT	Lithuania	XK	Kosovo
LV	Latvia		

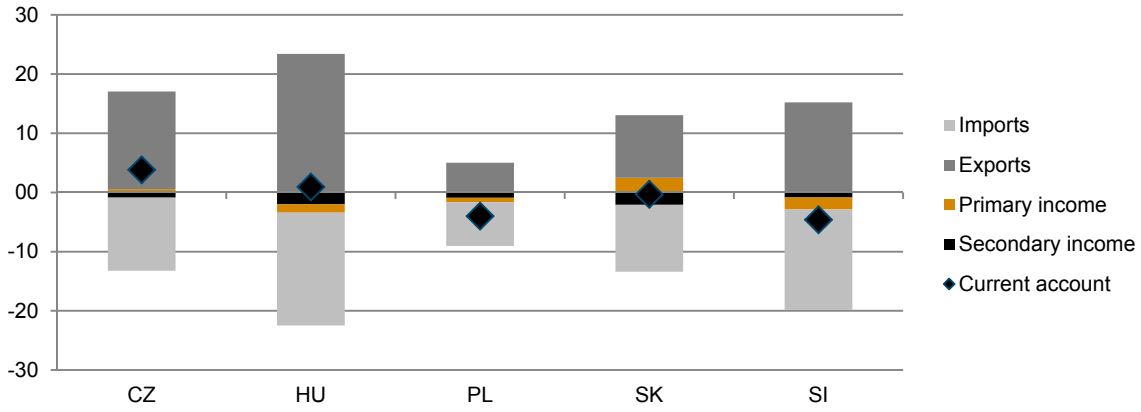
Country groupings:

Baltic countries	Baltic countries including Estonia, Latvia and Lithuania
Candidate countries	Candidate countries to join the EU including: Albania, Macedonia, Montenegro, Serbia and Turkey
CEE-5	Central and East European Countries; including: Czech Republic, Hungary, Poland, Slovakia, and Slovenia
LMIEs	Lower- and medium-income European economies; including all countries from the CEE-5, Bulgaria and Romania, the Baltic countries, the Southern EU countries and the Western Balkan countries (i.e. all countries included in the list of abbreviations)
Potential candidate countries	Potential candidate countries to join the EU including: Bosnia and Herzegovina, Kosovo
Southern EU countries	Southern EU countries including Greece, Portugal and Spain
WBC-6	Western Balkan countries including: Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia and Kosovo

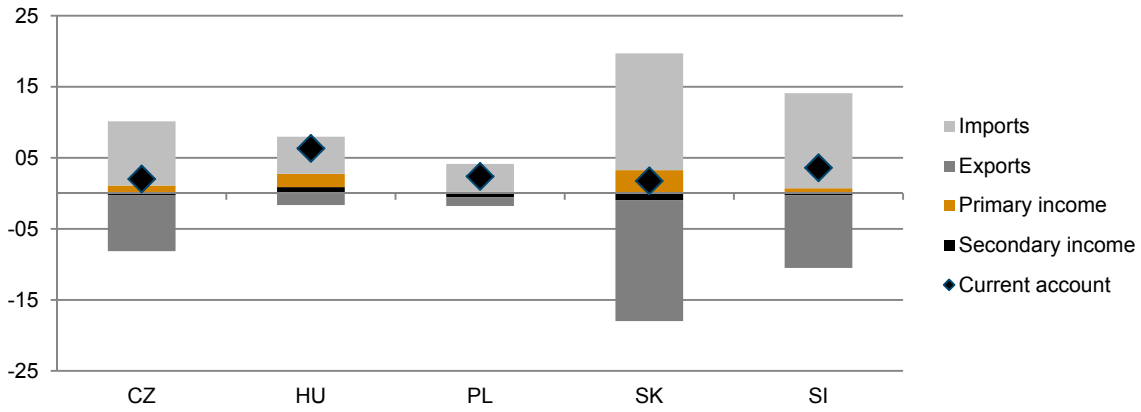
ANNEX 2: CHANGES IN CURRENT ACCOUNT POSITIONS, INDIVIDUAL COUNTRIES

Figure A2.1 / CEE-5 countries, in % of GDP

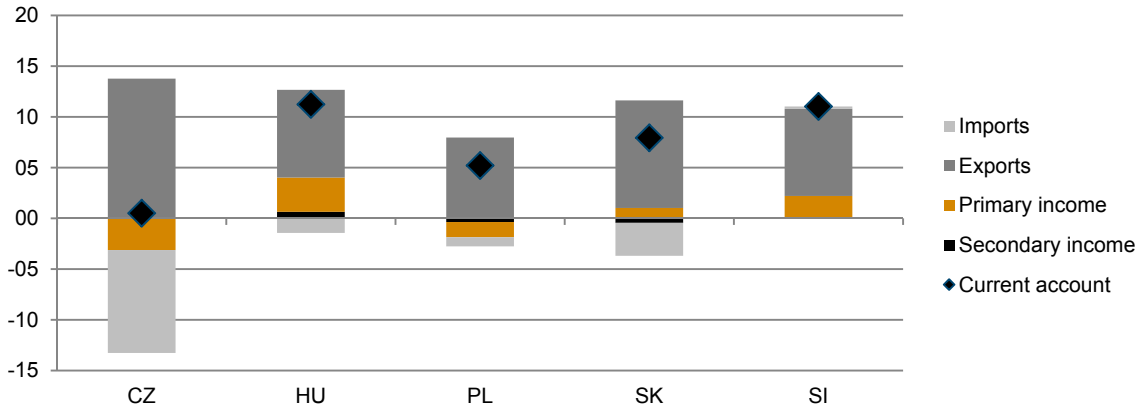
2004-2008



2008-2009



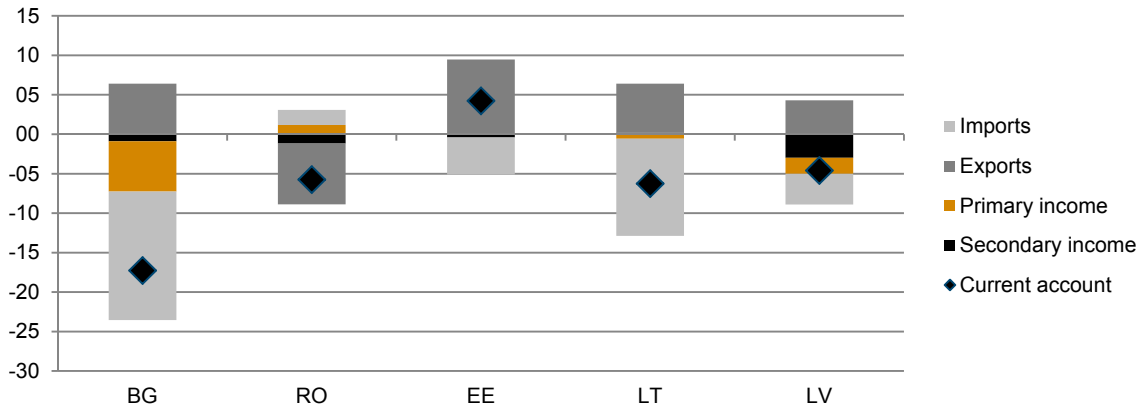
2009-2013



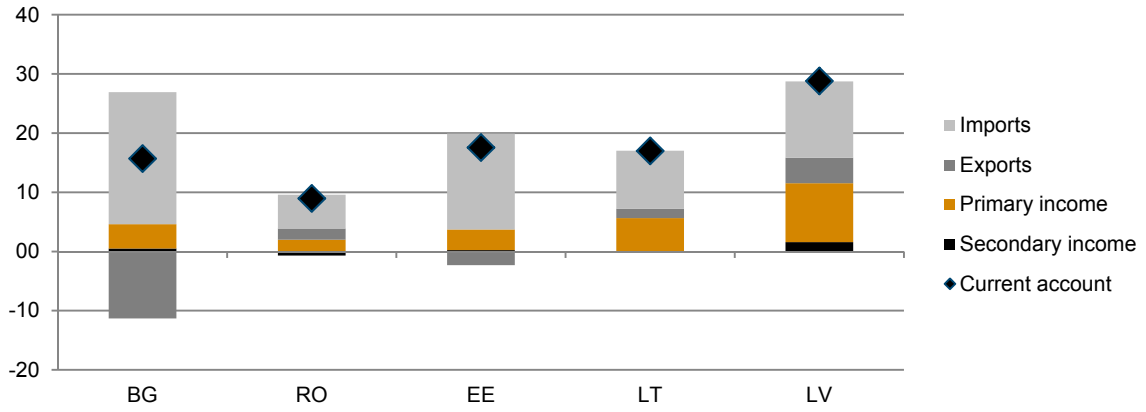
Remark: The Western Balkan countries 'WBC-6' include Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia and Kosovo.
Source: wiiw Annual Database incorporating national and Eurostat statistics.

Figure A2.2 / Bulgaria, Romania and Baltics, in % of GDP

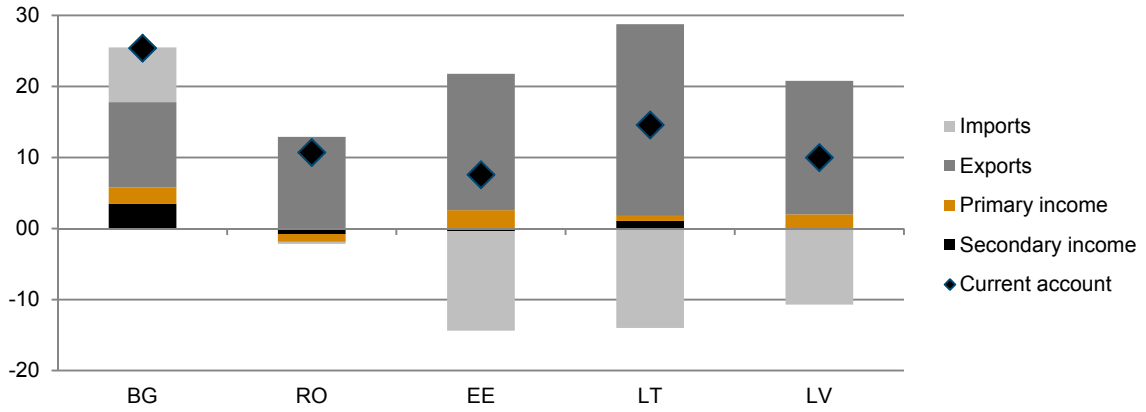
2004-2008



2008-2009



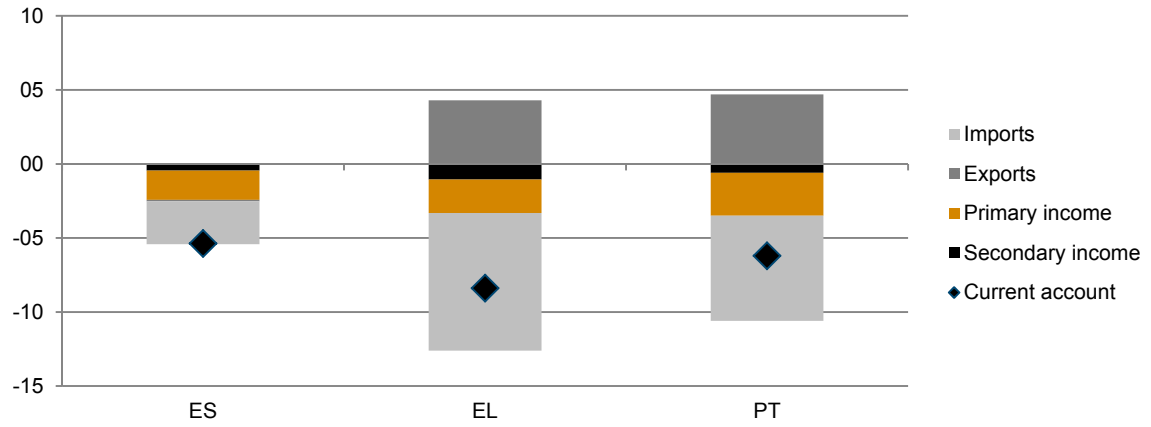
2009-2013



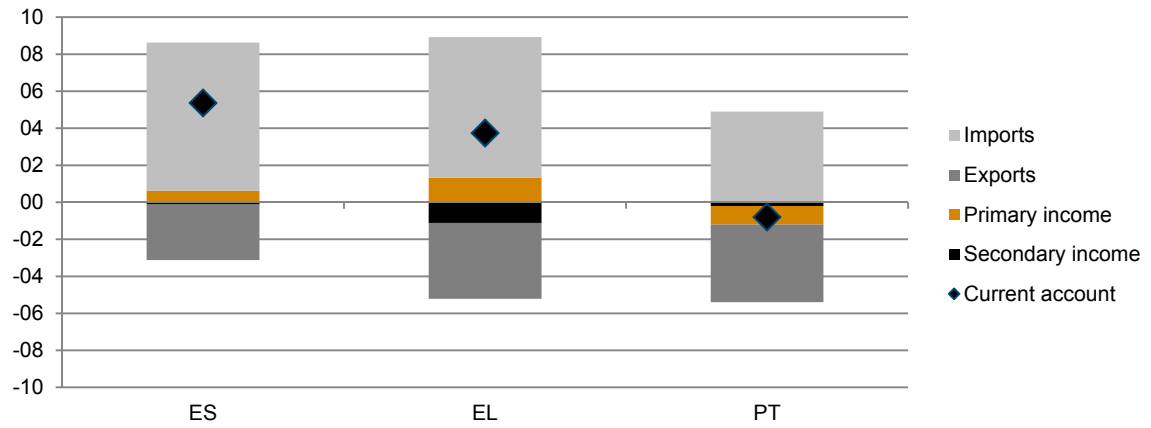
Remark: The Western Balkan countries 'WBC-6' include Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia and Kosovo.
Source: wiiw Annual Database incorporating national and Eurostat statistics.

Figure A2.3 / Spain, Greece and Portugal, in % of GDP

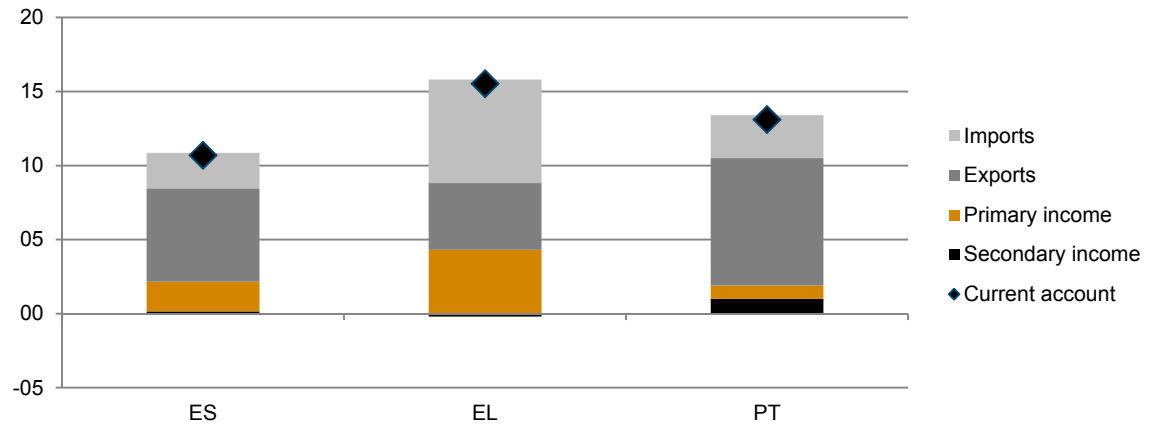
2004-2008



2008-2009



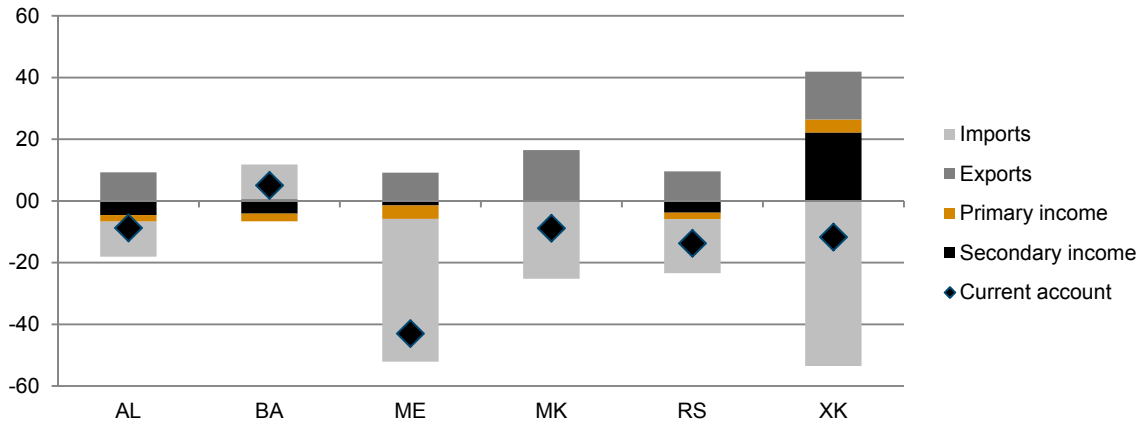
2009-2013



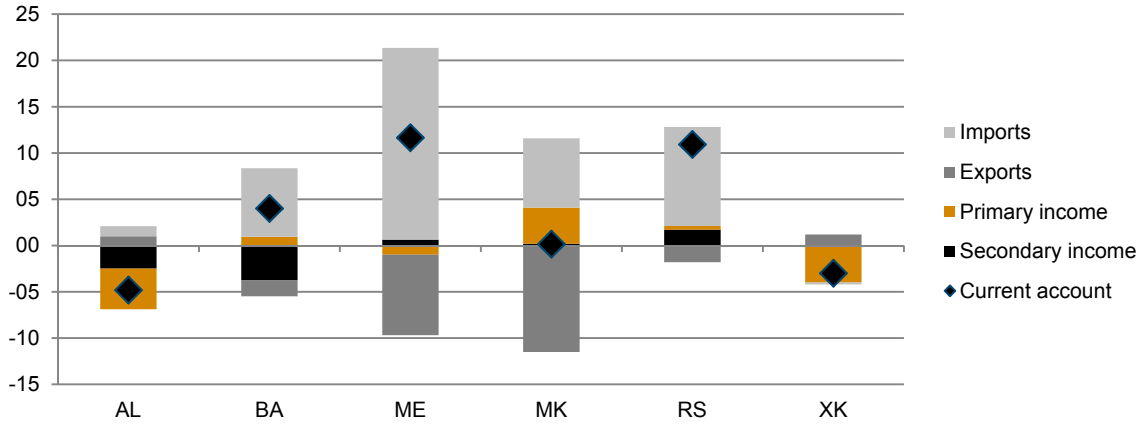
Remark: The Western Balkan countries 'WBC-6' include Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia and Kosovo.
Source: wiiw Annual Database incorporating national and Eurostat statistics.

Figure A2.4 / Western Balkan countries, in % of GDP

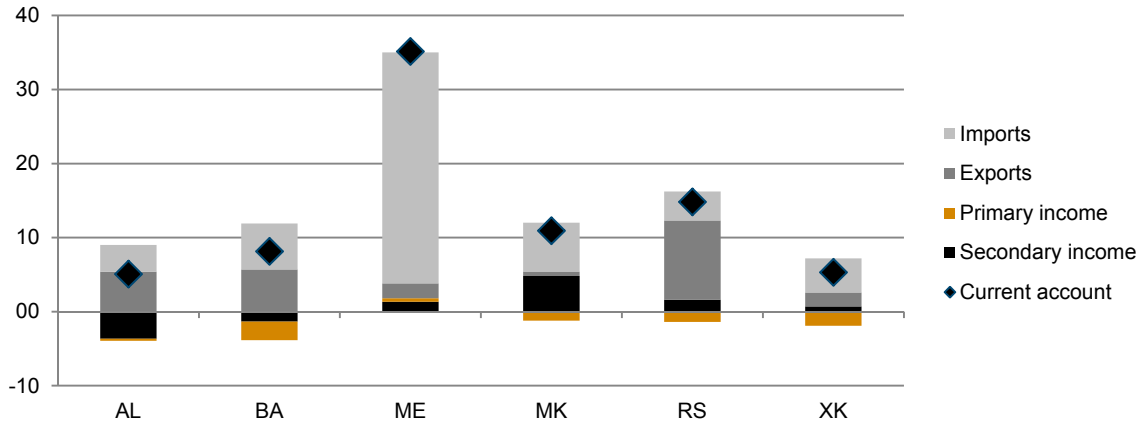
2004-2008



2008-2009



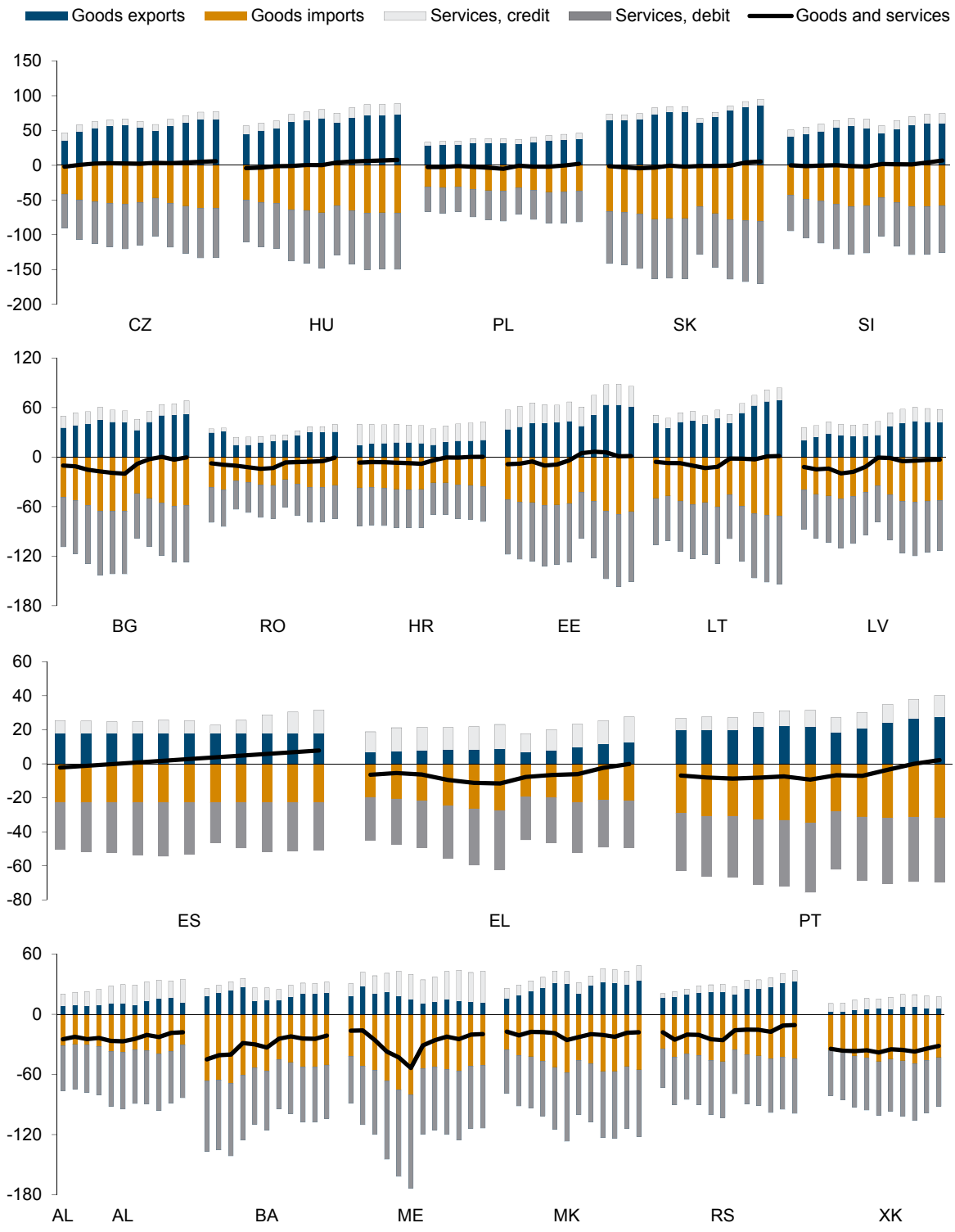
2009-2013



Remark: The Western Balkan countries 'WBC-6' include Albania, Bosnia and Herzegovina, Macedonia, Montenegro, Serbia and Kosovo.
Source: wiiw Annual Database incorporating national and Eurostat statistics.

ANNEX 3.1: EXPORT SHARES

Figure A3.1 / Export shares (goods and services), 2003-2013, in % of GDP, individual countries



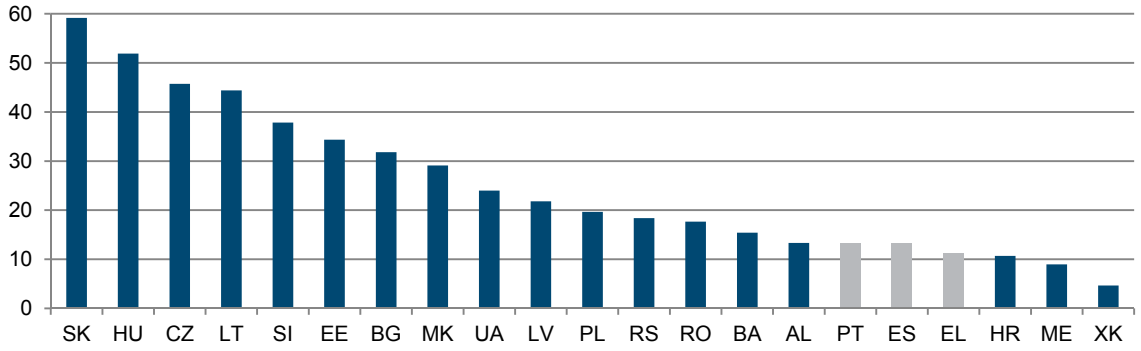
Source: wiiw Annual Database incorporating national and Eurostat statistics.

ANNEX 3.2: MAIN EXPORT PRODUCTS

In order to go beyond aggregate export behaviour discussed in the main part, we will now go into greater detail in two respects. First, we look at individual countries and not only at country groups; second, we focus on the detailed structure of exports in contrast to aggregate export size. More specifically, we analyse the main six export products for the year 2013.

Looking first at the percentage of the main 6 export products in GDP in Figure A3.2 (based on the NACE Rev. 1 classification, 2-digit level) we can see a very broad range of shares from the most integrated and specialised country, where the 6 main export products account for almost 60% of GDP, and the least one, where that share is only 5%. On the upper end there are Slovakia, Hungary, the Czech Republic and Lithuania with shares between 60% and 40%. Indeed these countries encompass four of the CEE-5, while only Poland shows a smaller share (20%). On the lower end there are Montenegro and Kosovo with 9% and 5%, respectively. As we can see, both the Southern EU countries (Portugal and Spain with both 13% and Greece with 11%) as well as the Western Balkan countries range at the lower end. Macedonia poses an exception with a percentage of almost 30%. In between are the Baltic countries, with Lithuania exhibiting the highest share (44%), followed by Estonia (34%) and Latvia (22%). For comparison purposes: The ratio of the main 6 exports products in GDP accounts for 24% in Germany (and 22% in Austria).

Figure A3.2 / Share of main 6 export products in % of GDP, 2013



Source: UN COMTRADE, wiiw calculations.

In the following Table A3.1 the main 6 export products are listed in detail for each country. It reveals some common characteristics, but more particular the individual specialisation pattern for each country. As such only the main points are discussed here:

› The **CEE-5** (Czech Republic, Hungary, Poland, Slovakia, Slovenia) are very much specialised in medium-to-high-tech products: In four countries (CZ, HU, PL, SK) motor vehicle exports are the main export category, in Slovenia it ranks third. In addition, machinery & equipment, radio, television & communication equipment as well as chemical exports (on top in Slovenia) stand out. In Poland, also food exports are a key category.

› **Romania** is to some extent comparable to the group of CEE-5 countries: motor vehicles are also the most exported product, followed by electrical machinery and machinery & equipment. **Bulgaria**,

however, shows a completely different export structure: here basic metals rank first, followed by coke products and products of agriculture.

› Looking at the **Baltic countries** (Estonia, Latvia and Lithuania), each country has a different top export product, but some products show up in all countries (food, coke, chemicals). Food products rank first in Latvia and are also important in the other two countries. Coke products are the most important export product in Lithuania and are also among the main export products in the other two countries. Radio, TV & communication equipment are prominent in Estonia (on the first place) and also Latvia.

› In the **Southern European countries** some differences but also similarities can be found: In Spain and also Portugal, motor vehicles are the most prominent export product. On the lower ranks Spain, Portugal and Greece feature coke products (emerging as the most prominent export product recently in Greece), food products and chemicals.

› In the **Western Balkan countries**, basic metals exports and also food exports stand out. In Serbia, motor vehicles have recently become the main export product. In Albania, low-technology industries such as leather and wearing apparel are important. In Montenegro, electrical energy is the main export product.

Table A3.1 / Main 6 export products in the region, 2013, USD million

CZECH REPUBLIC: Exports USD million		in % of GDP
Main 6 export products	95311	*45.7*
34 Motor vehicles, trailers and semi-trailers	29978	
29 Machinery and equipment n.e.c.	19930	
31 Electrical machinery and apparatus n.e.c.	13917	
30 Office machinery and computers	11249	
32 Radio, television and communication equipment and apparatus	10209	
24 Chemicals, chemical products and man-made fibres	10028	

POLAND: Exports USD million		in % of GDP
Main 6 export products	103331	*19.6*
34 Motor vehicles, trailers and semi-trailers	25925	
15 Food products and beverages	19532	
29 Machinery and equipment n.e.c.	17611	
24 Chemicals, chemical products and man-made fibres	16698	
27 Basic metals	12017	
25 Rubber and plastic products	11548	

HUNGARY: Exports USD million		
Main 6 export products	69298	*51.9*
34 Motor vehicles, trailers and semi-trailers	20397	
32 Radio, television and communication equipment and apparatus	12148	
24 Chemicals, chemical products and man-made fibres	10807	
31 Electrical machinery and apparatus n.e.c.	10187	
29 Machinery and equipment n.e.c.	9221	
15 Food products and beverages	6539	

SLOVAKIA: Exports USD million		
Main 6 export products	57824	*59.2*
34 Motor vehicles, trailers and semi-trailers	22249	
32 Radio, television and communication equipment and apparatus	13497	
29 Machinery and equipment n.e.c.	7829	
27 Basic metals	5922	
31 Electrical machinery and apparatus n.e.c.	4226	
23 Coke, refined petroleum products and nuclear fuel	4100	

SLOVENIA: Exports USD million		
Main 6 export products	18049	*37.8*
24 Chemicals, chemical products and man-made fibres	5291	
29 Machinery and equipment n.e.c.	3937	
34 Motor vehicles, trailers and semi-trailers	3273	
31 Electrical machinery and apparatus n.e.c.	2169	
27 Basic metals	1855	
28 Fabricated metal products, except machinery and equipment	1524	

ESTONIA: Exports USD million		
Main 6 export products	8677	*34.4*
32 Radio, television and communication equipment and apparatus	2072	
15 Food products and beverages	1462	
23 Coke, refined petroleum products and nuclear fuel	1346	
31 Electrical machinery and apparatus n.e.c.	1345	
29 Machinery and equipment n.e.c.	1327	
24 Chemicals, chemical products and man-made fibres	1124	

LATVIA: Exports USD million		
Main 6 export products	6735	*21.8*
15 Food products and beverages	1796	
20 Wood and products of wood and cork (except furniture), articles of straw and plaiting materials	1470	
XX (Not specified)	932	
24 Chemicals, chemical products and man-made fibres	886	
32 Radio, television and communication equipment and apparatus	871	
23 Coke, refined petroleum products and nuclear fuel	782	

LITHUANIA: Exports USD million		
Main 6 export products	20615	*44.4*
23 Coke, refined petroleum products and nuclear fuel	7318	
24 Chemicals, chemical products and man-made fibres	3525	
15 Food products and beverages	3385	
01 Products of agriculture, hunting and related services	2395	
29 Machinery and equipment n.e.c.	2274	
34 Motor vehicles, trailers and semi-trailers	1719	

BULGARIA: Exports USD million		in % of GDP
Main 6 export products	17342	*31.8*
27 Basic metals	4342	
23 Coke, refined petroleum products and nuclear fuel	3878	
01 Products of agriculture, hunting and related services	2990	
24 Chemicals, chemical products and man-made fibres	2116	
29 Machinery and equipment n.e.c.	2032	
15 Food products and beverages	1985	

CROATIA: Exports USD million		
Main 6 export products	6187	*10.7*
23 Coke, refined petroleum products and nuclear fuel	1334	
24 Chemicals, chemical products and man-made fibres	1324	
29 Machinery and equipment n.e.c.	1187	
15 Food products and beverages	1003	
31 Electrical machinery and apparatus n.e.c.	780	
28 Fabricated metal products, except machinery and equipment	559	

GREECE: Exports USD million		
Main 6 export products	27117	*11.2*
23 Coke, refined petroleum products and nuclear fuel	14031	
15 Food products and beverages	3917	
24 Chemicals, chemical products and man-made fibres	3103	
27 Basic metals	2914	
01 Products of agriculture, hunting and related services	2264	
29 Machinery and equipment n.e.c.	887	

ROMANIA: Exports USD million		in % of GDP
Main 6 export products	33867	*17.7*
34 Motor vehicles, trailers and semi-trailers	10039	
31 Electrical machinery and apparatus n.e.c.	6714	
29 Machinery and equipment n.e.c.	5709	
01 Products of agriculture, hunting and related services	4293	
24 Chemicals, chemical products and man-made fibres	3705	
27 Basic metals	3406	

SPAIN: Exports USD million		
Main 6 export products	180698	*13.2*
34 Motor vehicles, trailers and semi-trailers	51470	
24 Chemicals, chemical products and man-made fibres	40587	
15 Food products and beverages	29818	
29 Machinery and equipment n.e.c.	21057	
27 Basic metals	19027	
23 Coke, refined petroleum products and nuclear fuel	18740	

PORTUGAL: Exports USD million		
Main 6 export products	30133	*13.3*
34 Motor vehicles, trailers and semi-trailers	6281	
23 Coke, refined petroleum products and nuclear fuel	6013	
15 Food products and beverages	5485	
24 Chemicals, chemical products and man-made fibres	4966	
29 Machinery and equipment n.e.c.	3883	
17 Textiles	3505	

ALBANIA: Exports USD million		in % of GDP
Main 6 export products	1706	*13.3*
11 Crude petroleum and natural gas	658	
19 Leather and leather products	336	
18 Wearing apparel	268	
27 Basic metals	222	
13 Metal ores	142	
26 Other non-metallic mineral products	80	

MACEDONIA: Exports USD million		
Main 6 export products	3136	*29.1*
27 Basic metals	811	
24 Chemicals, chemical products and man-made fibres	778	
18 Wearing apparel	577	
15 Food products and beverages	345	
29 Machinery and equipment n.e.c.	335	
01 Products of agriculture, hunting and related services	291	

SERBIA: Exports USD million		
Main 6 export products	8368	*18.4*
34 Motor vehicles, trailers and semi-trailers	2229	
15 Food products and beverages	1811	
24 Chemicals, chemical products and man-made fibres	1124	
27 Basic metals	1076	
31 Electrical machinery and apparatus n.e.c.	1074	
29 Machinery and equipment n.e.c.	1053	

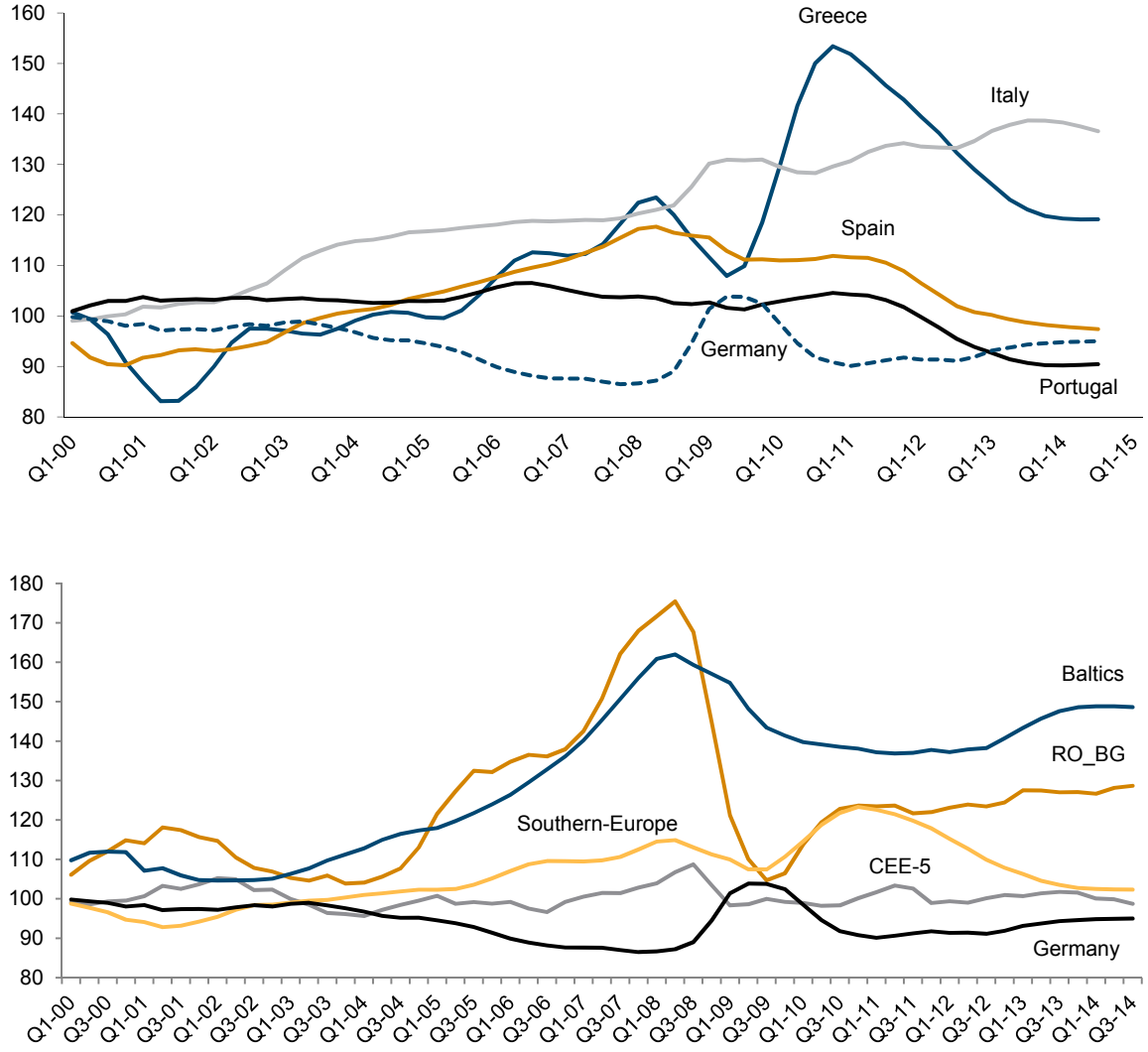
BOSNIA AND HERZEGOVINA: Exports USD mn		in % of GDP
Main 6 export products	2797	*15.4*
27 Basic metals	726	
36 Furniture	578	
15 Food products and beverages	416	
19 Leather and leather products	410	
28 Fabricated metal products, except machinery and equipment	345	
29 Machinery and equipment n.e.c.	322	

MONTENEGRO: Exports USD million		
Main 6 export products	395	*8.9*
40 Electrical energy, gas, steam and hot water	127	
27 Basic metals	123	
15 Food products and beverages	69	
37 Recycling	39	
29 Machinery and equipment n.e.c.	20	
20 Wood and products of wood and cork (except furniture), articles of straw and plaiting materials	18	

KOSOVO: Exports USD million		
Main 6 export products	330	*4.7*
27 Basic metals	181	
15 Food products and beverages	54	
40 Electrical energy, gas, steam and hot water	29	
13 Metal ores	28	
25 Rubber and plastic products	26	
17 Textiles	12	

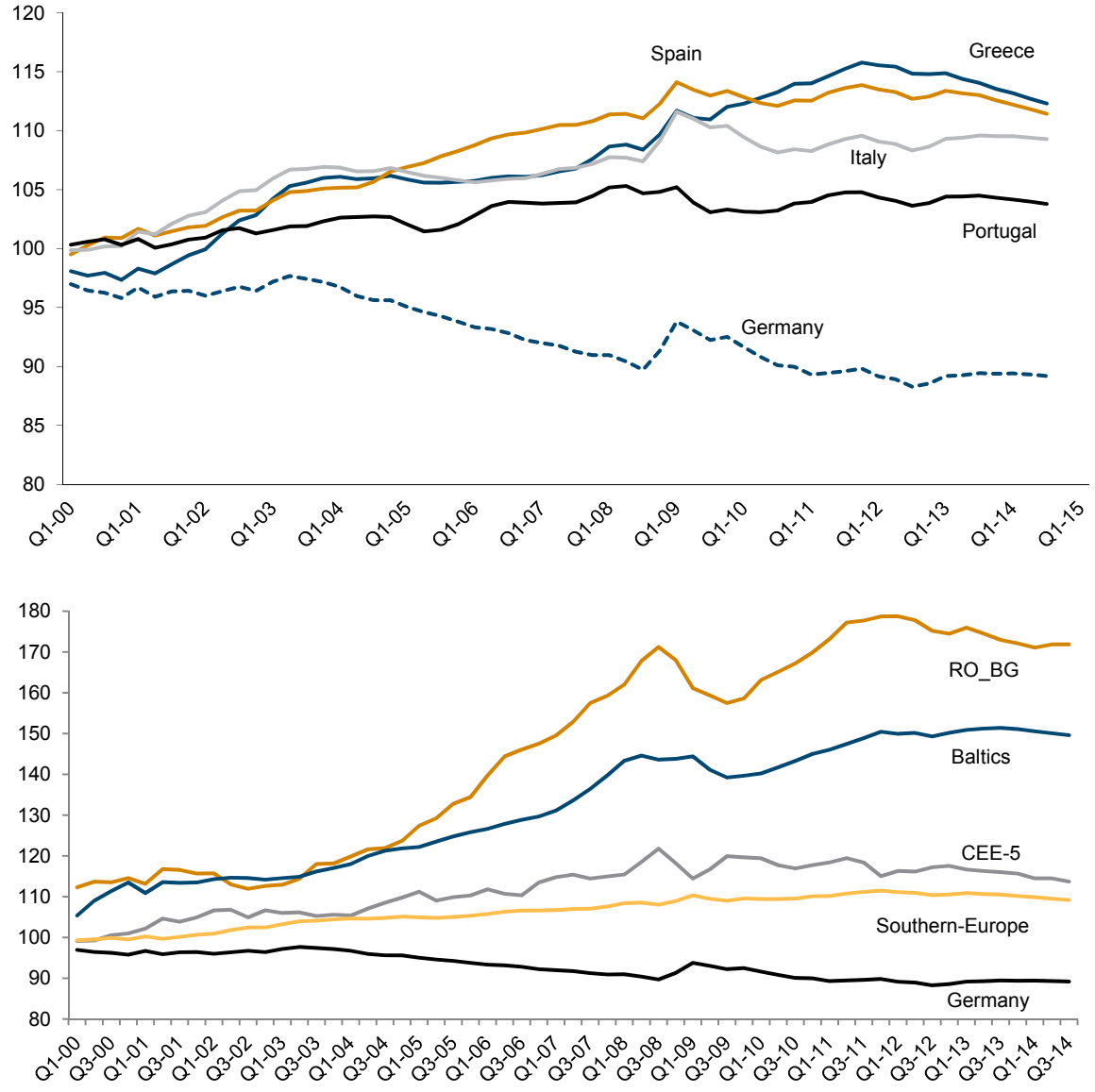
ANNEX 4: REAL EFFECTIVE EXCHANGE RATES (REER) VS (REST OF) EU-28 (AVERAGE 1994-2004 = 100), VARIOUS DEFLATORS

Figure A4.1 / Nominal unit labour costs, manufacturing



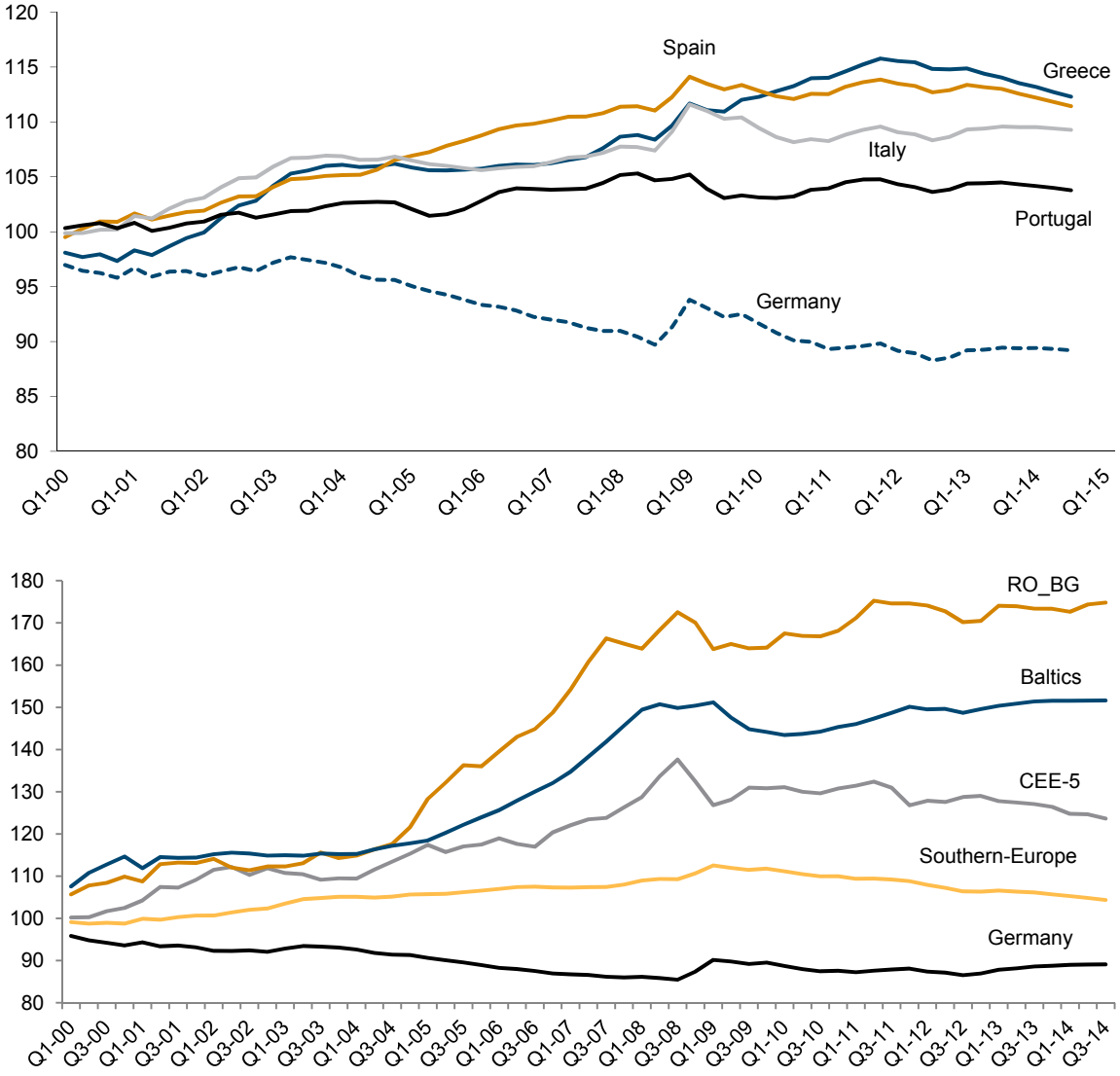
Source: AMECO, own calculations.

Figure A4.2 / Price deflator, exports of goods and services



Source: AMECO, own calculations.

Figure A4.3 / Price deflator GDP, market prices



Source: AMECO, own calculations.

ANNEX 5: NACE REV. 2 CLASSIFICATION SCHEME FOR TRADABLES AND NON-TRADABLES

Table A5.1 / Classification of industries

N1 (NACE Rev. 1), A17		N2 (NACE Rev. 2), A21	
A Agriculture, hunting and forestry		A Agriculture, forestry and fishing	
B Fishing		B Mining and quarrying	
C Mining and quarrying		C Manufacturing	
D Manufacturing		D Electricity, gas, steam and air cond.supply	
E Electricity, gas and water supply		E Water supply, sewerage, waste manag.,etc	
F Construction		F Construction	
G Wholesale, retail trade, repair motor veh.	NT	G Wholesale, retail trade, repair of motor veh.	NT
H Hotels and restaurants	NT	H Transportation and storage	T
I Transport, storage and communications	T	I Accommodation and food service activities	NT
J Financial intermediation	T	J Information and communication	T
K Real estate, renting & business activities	NT	K Financial and insurance activities	T
L Public admin., defence, compuls.soc.sec.	NMS	L Real estate activities	NT
M Education	NMS	M Professional, scientific and techn.activities	T
N Health and social work	NMS	N Administrative and support service activ.	NT
O Oth. community, social & personal serv.	NT	O Public admin., defence, compuls.soc.sec.	NMS
P Private households with employed pers.	NT	P Education	NMS
Q Extra-territorial organisations and bodies	excluded	Q Human health and social work activities	NMS
		R Arts, entertainment and recreation	NT
		S Other service activities	NT
		T Activ. of househ.as employers & for own use	NT
		U Activ. of extraterritorial organisat.& bodies	excluded

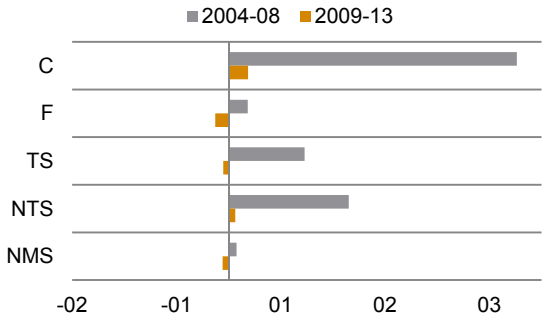
Note:

T - Tradable services	I+J	T - Tradable services	H+J+K+M
NT - Non-tradable services	G+H+K+O+P	NT - Non-tradable services	G+I+L+N+R+S+T
NMS - Non-market services	L+M+N	NMS - Non-market services	O+P+Q

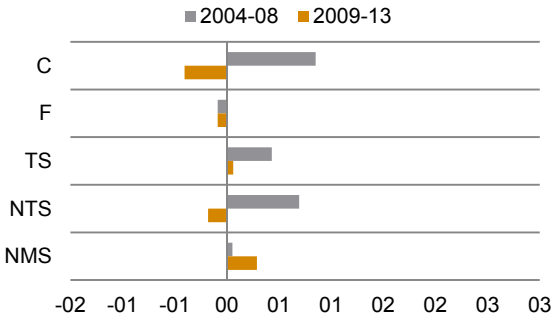
ANNEX 6: CONTRIBUTIONS TO GDP GROWTH BY SECTORS

Figure A6.1 / CEE-5 countries
percentage points 2004-2008 and 2009-2013 (from constant prices)

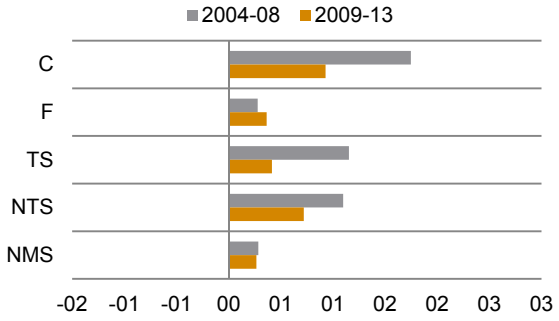
Czech Republic



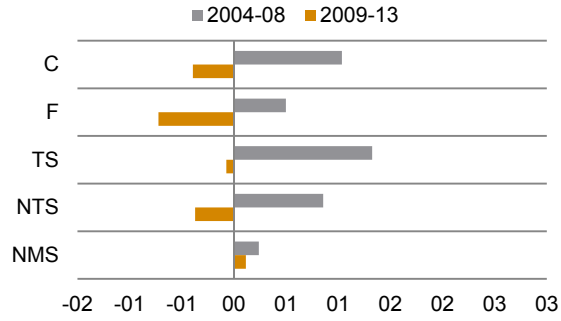
Hungary



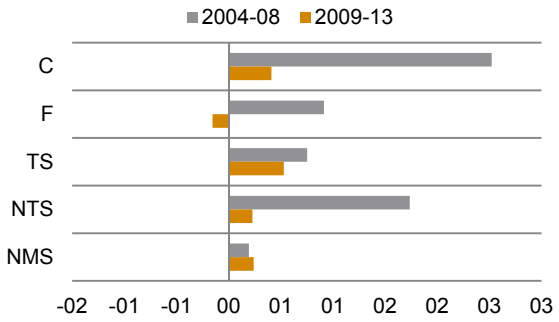
Poland



Slovenia



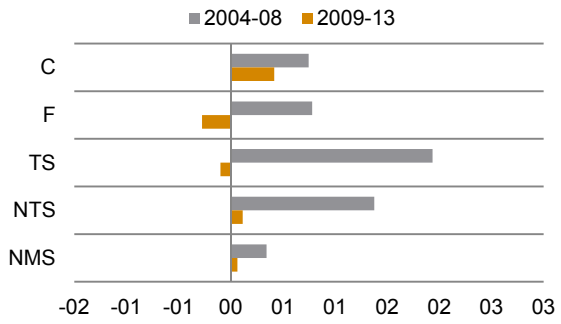
Slovakia



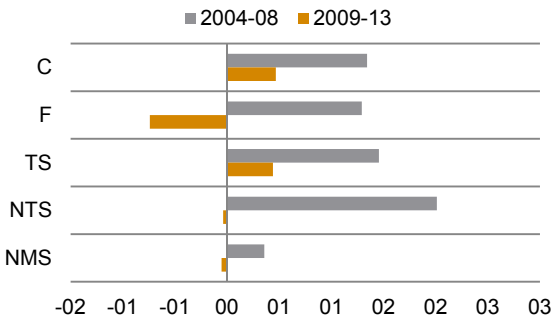
Note: Based on NACE Rev. 2 classification: C (Manufacturing), F (Construction), TS (Tradable Services, H, J, K, M) NTS (Non-tradable Services G, I, L, N, R, S, T), NMS (Non-market Services O, P, Q).
Contributions are calculated by multiplying the share in total GDP at constant prices by real growth at preceding year prices.
Source: wiiw Database incorporating national and Eurostat calculations.

Figure A6.2 / Baltic countries
percentage points 2004-2008 and 2009-2013 (from constant prices)

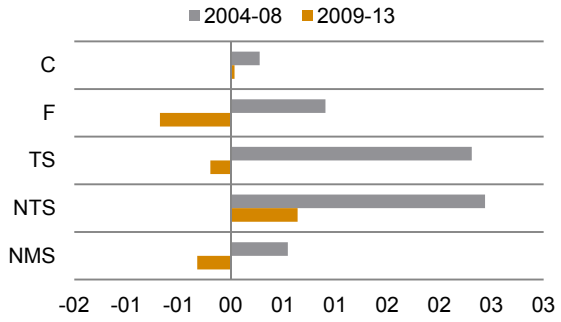
Estonia



Lithuania



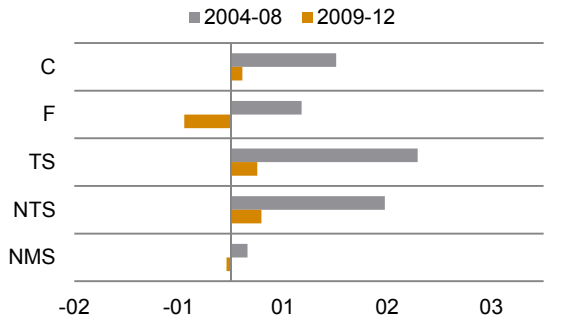
Latvia



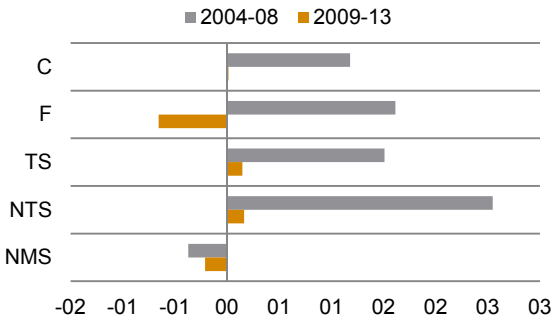
Note: Based on NACE Rev. 2 classification: C (Manufacturing), F (Construction), TS (Tradable Services, H, J, K, M) NTS (Non-tradable Services G, I, L, N, R, S, T), NMS (Non-market Services O, P, Q).
Contributions are calculated by multiplying the share in total GDP at constant prices by real growth at preceding year prices.
Source: wiiw Database incorporating national and Eurostat calculations.

Figure A6.3 / Bulgaria and Romania
percentage points 2004-2008 and 2009-2013 (from constant prices)

Bulgaria



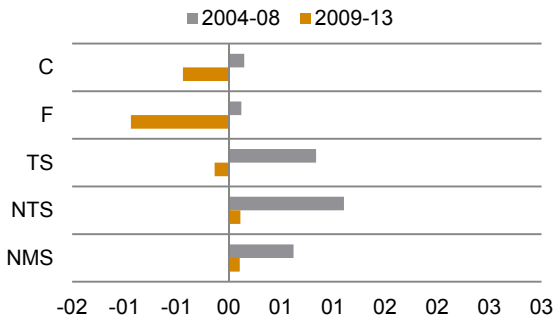
Romania



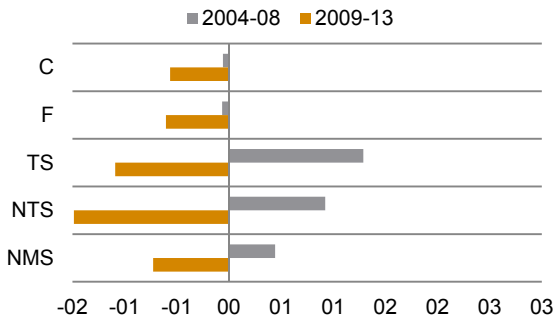
Note: Based on NACE Rev. 2 classification: C (Manufacturing), F (Construction), TS (Tradable Services, H, J, K, M) NTS (Non-tradable Services G, I, L, N, R, S, T), NMS (Non-market Services O, P, Q).
Contributions are calculated by multiplying the share in total GDP at constant prices by real growth at preceding year prices.
Source: wiiw Database incorporating national and Eurostat calculations.

Figure A6.4 / Spain, Greece and Portugal
percentage points 2004-2008 and 2009-2013 (from constant prices)

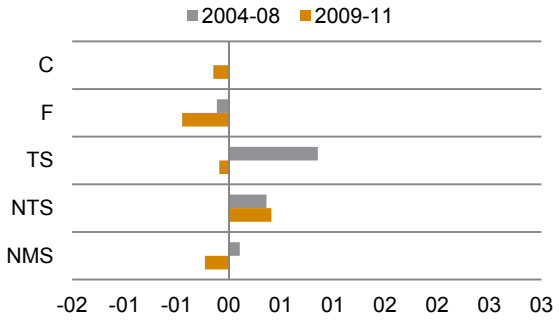
Spain



Greece

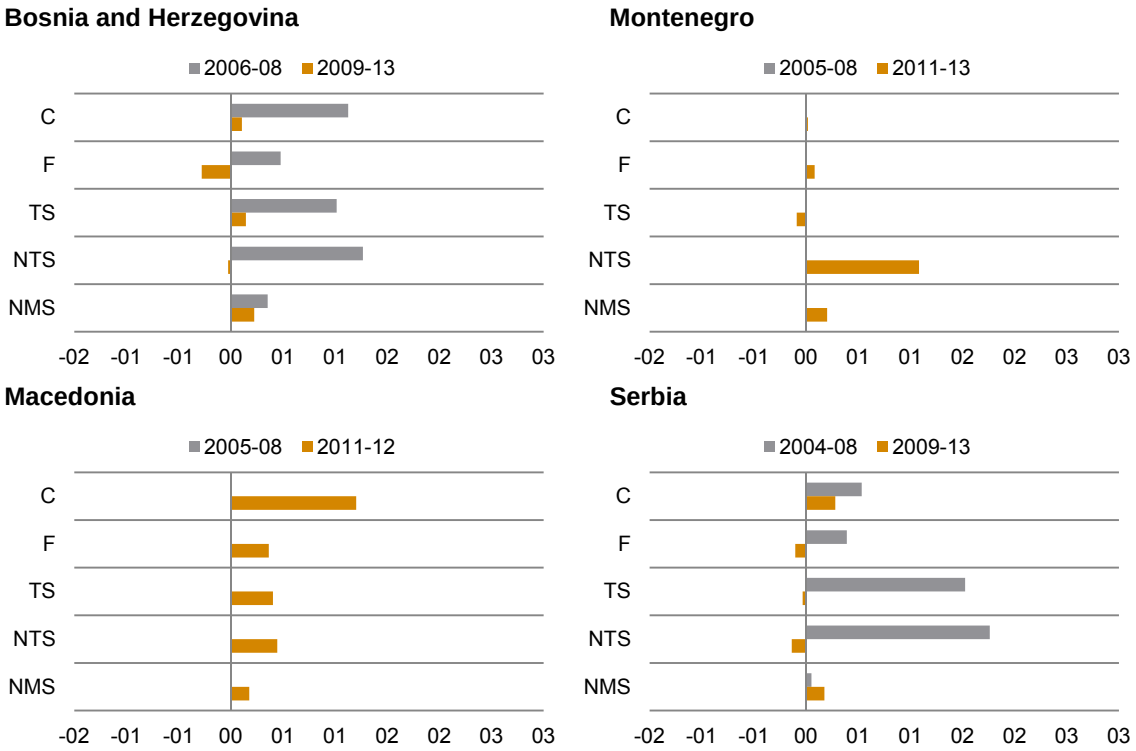


Portugal



Note: Based on NACE Rev. 2 classification: C (Manufacturing), F (Construction), TS (Tradable Services, H, J, K, M) NTS (Non-tradable Services G, I, L, N, R, S, T), NMS (Non-market Services O, P, Q).
Contributions are calculated by multiplying the share in total GDP at constant prices by real growth at preceding year prices.
Source: wiiw Database incorporating national and Eurostat calculations.

Figure A6.5 / Western Balkan countries
percentage points 2004-2008 and 2009-2013 (from constant prices)



Note: Based on NACE Rev. 2 classification: C (Manufacturing), F (Construction), TS (Tradable Services, H, J, K, M) NTS (Non-tradable Services G, I, L, N, R, S, T), NMS (Non-market Services O, P, Q).
Contributions are calculated by multiplying the share in total GDP at constant prices by real growth at preceding year prices.
Source: wiiw Database incorporating national and Eurostat calculations.

SHORT LIST OF THE MOST RECENT WIIW PUBLICATIONS

(AS OF APRIL 2016)

For current updates and summaries see also wiiw's website at www.wiiw.ac.at

CORRECTING EXTERNAL IMBALANCES IN THE EUROPEAN ECONOMY

by Doris Hanzl-Weiss and Michael Landesmann

wiiw Research Reports, No. 410, April 2016
43 pages including 2 Tables and 26 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

THE ROLE OF FINANCIAL CONSTRAINTS FOR DIFFERENT INNOVATION STRATEGIES: EVIDENCE FOR CESEE AND FSU COUNTRIES

by Sandra M. Leitner and Robert Stehrer

wiiw Working Papers, No. 125, April 2016
37 pages including 9 Tables and 6 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

LEGITIMACY: YUGOSLAV LESSONS FOR UKRAINE

by Vladimir Gligorov

wiiw Essays and Occasional Papers, No. 2, April 2016
19 pages
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

WIIW MONTHLY REPORT 2016/4

ed. by Julia Grübler and Sándor Richter

- Graph of the month: General government expenditure by function
- Opinion Corner: Identity politics: about identity or politics
- Labour market integration and access to education for extra EU-28 immigrants
- Outmigration of Hungarian medical doctors before and after EU accession
- Trade-off between skills development and migration: the Croatian labour market
- The editors recommend for further reading
- Monthly and quarterly statistics for Central, East and Southeast Europe
- Index of subjects – April 2015 to April 2016

wiiw Monthly Report, No. 4, April 2016
43 pages including 1 Table and 27 Figures
exclusively for wiiw Members

WIIW MONTHLY REPORT 2016/3
ed. by Julia Grübler and Sándor Richter

- Graph of the month: Female migrants as a percentage of the international migrant stock by age group and major area of destination, 2015 / Female migrants as a percentage of the international migrant stock in Europe, 2015
- Opinion Corner: After the elections in Slovakia: what comes next?
- Health along the escape route
- Integration of migrants from different countries of origin in EU labour markets
- Intra-EU mobility and push and pull factors in EU labour markets: a panel VAR model
- The editors recommend for further reading
- Monthly and quarterly statistics for Central, East and Southeast Europe
- Index of subjects – March 2015 to March 2016

wiiw Monthly Report, No. 3, March 2016
45 pages including 1 Table and 30 Figures
exclusively for wiiw Members

GROWTH STABILISES: INVESTMENT A MAJOR DRIVER, EXCEPT IN COUNTRIES PLAGUED BY RECESSION
by Amat Adarov, Mario Holzner, Gábor Hunya, Isilda Mara, Sándor Richter and Hermine Vidovic, et al.

wiiw Forecast Report. Economic Analysis and Outlook for Central, East and Southeast Europe, Spring 2016
wiiw, March 2016
155 pages including 31 Tables, 58 Figures and 1 Box
hardcopy: EUR 80.00 (PDF: EUR 65.00)

CHOOSING THE RIGHT PARTNER: R&D COOPERATIONS AND INNOVATION SUCCESS
by Sandra M. Leitner

wiiw Working Papers, No. 124, March 2016
27 pages including 6 Tables and 3 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

CHANGING PATTERNS IN M&E-INVESTMENT-BASED INNOVATION STRATEGIES IN CESEE AND FSU COUNTRIES: FROM FINANCIAL NORMALCY TO THE GLOBAL FINANCIAL CRISIS
by Michael Landesmann, Sandra M. Leitner and Robert Stehrer

wiiw Working Papers, No. 123, February 2016
49 pages including 10 Tables and 13 Figures
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

WIIW MONTHLY REPORT 2016/2
ed. by Julia Grübler and Sándor Richter

- Graph of the month: Corruption Perceptions Index (CPI), 2015 and 2010 in comparison
- Opinion Corner: What are the consequences of the Iranian sanctions relief?
- Firm Growth and financing constraints – a comparative analysis
- Financing constraints in CESEE and FSU countries
- Effects of financing constraints on M&E-investment-based innovation strategies
- The editors recommend for further reading
- Monthly and quarterly statistics for Central, East and Southeast Europe
- Index of subjects – February 2015 to February 2016

wiiw Monthly Report, No. 2, February 2016
39 pages including 23 Figures
exclusively for wiiw Members

RUSSIA'S INTERVENTIONS: COUNTERREVOLUTIONARY POWER
by Vladimir Gligorov

wiiw Essays and Occasional Papers, No. 1, January 2016
25 pages
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

THE FUTURE DEVELOPMENT OF EU INDUSTRY IN A GLOBAL CONTEXT
by Robert Stehrer (wiiw, coordinator), Sandra Leitner, Manuel Marcias, Daniel Mirza and Roman Stöllinger

wiiw Research Reports, No. 409, January 2016
109 pages including 58 Tables, 45 Figures and 5 Boxes
hardcopy: EUR 8.00 (PDF: free download from wiiw's website)

IMPRESSUM

Herausgeber, Verleger, Eigentümer und Hersteller:
Verein „Wiener Institut für Internationale Wirtschaftsvergleiche“ (wiiw),
Wien 6, Rahlgasse 3

ZVR-Zahl: 329995655

Postanschrift: A 1060 Wien, Rahlgasse 3, Tel: [+431] 533 66 10, Telefax: [+431] 533 66 10 50
Internet Homepage: www.wiiw.ac.at

Offenlegung nach § 25 Mediengesetz: Medieninhaber (Verleger): Verein "Wiener Institut für Internationale Wirtschaftsvergleiche", A 1060 Wien, Rahlgasse 3. Vereinszweck: Analyse der wirtschaftlichen Entwicklung der zentral- und osteuropäischen Länder sowie anderer Transformationswirtschaften sowohl mittels empirischer als auch theoretischer Studien und ihre Veröffentlichung; Erbringung von Beratungsleistungen für Regierungs- und Verwaltungsstellen, Firmen und Institutionen.

wiiw

wiiw.ac.at