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**Research Report**

## External competitiveness of EU candidate countries

ECB Occasional Paper, No. 141

**Provided in Cooperation with:**

European Central Bank (ECB)

*Suggested Citation:* Orszaghova, Lucia; Savelin, Li; Schudel, Willem (2013) : External competitiveness of EU candidate countries, ECB Occasional Paper, No. 141, European Central Bank (ECB), Frankfurt a. M.

This Version is available at:

<https://hdl.handle.net/10419/154594>

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**OCCASIONAL PAPER SERIES**

**NO 141 / JANUARY 2013**

**EXTERNAL  
COMPETITIVENESS  
OF EU CANDIDATE  
COUNTRIES**

By Lucia Orszaghova,  
Li Savelin and  
Willem Schudel





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# EXTERNAL COMPETITIVENESS OF EU CANDIDATE COUNTRIES<sup>1</sup>

By Lucia Orszaghova<sup>2,3</sup>, Li Savelin<sup>2</sup>  
and Willem Schudel<sup>2</sup>

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<sup>1</sup> We would particularly like to acknowledge the contributions made in the early stage of this paper by A. Geis, M. Habib and E. Mileva. Moreover, we would like to thank B. Vonessen and L. Stracca, as well as F. Di Mauro, C. Osbat, S. Özyurt and M. Rau-Goehring for their valuable input. This Occasional Paper benefited from an affiliation with the Competitiveness Research Network (CompNet), a European body devoted to the study of competitiveness.

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ISSN 1607-1484 (print)

ISSN 1725-6534 (online)

EU catalogue number QB-AQ-13-008-EN-C (print)

EU catalogue number QB-AQ-13-008-EN-N (online)

# CONTENTS

<b>ABSTRACT</b>	<b>4</b>
<b>ABBREVIATIONS AND GLOSSARY</b>	<b>5</b>
<b>NON-TECHNICAL SUMMARY</b>	<b>7</b>
<b>1 INTRODUCTION</b>	<b>9</b>
<b>2 TRADE DYNAMICS AND EXPORT GROWTH</b>	<b>12</b>
<b>3 PRICE AND COST COMPETITIVENESS</b>	<b>15</b>
<b>4 STRUCTURAL TRADE INDICATORS</b>	<b>19</b>
<b>5 INTENSIVE AND EXTENSIVE MARGINS</b>	<b>22</b>
<b>6 COMPLEXITY OF EXPORT PRODUCTS</b>	<b>25</b>
<b>7 DYNAMISM IN SECTOR SPECIALISATION</b>	<b>29</b>
<b>8 INTRA-INDUSTRY TRADE</b>	<b>32</b>
<b>9 FOREIGN DIRECT INVESTMENT</b>	<b>34</b>
<b>10 INSTITUTIONAL AND STRUCTURAL COMPETITIVENESS</b>	<b>36</b>
<b>11 CONCLUSION</b>	<b>39</b>
<b>REFERENCES</b>	<b>41</b>
<b>APPENDICES</b>	<b>44</b>
1 Main export products in EU candidate countries	44
2 Product distribution according to different classifications	46

## ABSTRACT

As the current financial crisis has shown, macroeconomic imbalances such as persistent current account and trade deficits, can seriously undermine a country's resilience to economic shocks. Maintaining and enhancing external competitiveness has thus become of increasing concern, particularly to European Union (EU) candidate countries whose economic growth models have been challenged in recent years. Drawing on previous studies, this paper assesses developments in the external competitiveness of EU candidate countries between 1999 and 2011. Taking a broad approach to the issue of competitiveness, the paper considers various indicators of both short and long-term competitiveness, including those related to domestic prices and costs, export performance, and institutional and structural issues. In the context of EU integration, comparisons are drawn with developments in the EU12. We find that, during the pre-crisis period, all candidate countries experienced robust export market growth, but also suffered losses in price and cost competitiveness. In terms of export characteristics, progress has been heterogeneous and also fairly slow when compared with the EU12. All candidate countries have increased their number of export products and trading partners, but only a few have been able to export more complex products. As regards structural issues such as corruption and bureaucratic efficiency, all countries have performed quite poorly with the exception of Iceland.

**JEL code:** F1, F43, O52, P22

**Keywords:** EU candidate countries, external competitiveness, export growth, export specialisation, export product complexity, extensive and intensive margins, intra-industry trade, foreign direct investment, structural characteristics

**ABBREVIATIONS AND GLOSSARY**

**COUNTRIES**

HR	Croatia	MK	the former Yugoslav Republic (FYR) of Macedonia
IS	Iceland	RS	Serbia
ME	Montenegro	TR	Turkey

**GROUPS OF COUNTRIES**

Baltic States	Estonia, Latvia and Lithuania
Central Europe	Central European countries, i.e. the Czech Republic, Hungary, Poland, Slovakia and Slovenia
Emerging Europe	In this study, it includes the EU12 and EU candidate countries (apart from Iceland), as well as Albania and Bosnia and Herzegovina
EU	European Union, i.e. EU15 and EU12 countries
EU candidate countries	Countries that were granted EU candidate status by March 2012, i.e. Iceland, the former Yugoslav Republic of Macedonia, Montenegro, Serbia and Turkey. Croatia, an EU acceding country, is also included in this study
EU10	The 12 “new” EU Member States excluding Cyprus and Malta
EU12	Countries that joined the EU after 1 May 2004, i.e. the 12 “new” EU Member States: Bulgaria, the Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia
EU15	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom
SEE	South-eastern European countries, i.e. EU candidate countries excluding Iceland
Western Balkans	Generally considered to include Croatia, the former Yugoslav Republic of Macedonia, Albania, Bosnia and Herzegovina, Montenegro, Serbia and Kosovo (UN resolution 1244). In the text, we consider the group of candidate countries excluding Iceland and Turkey

**ABBREVIATIONS**

CEFTA	Central European Free Trade Agreement
CPI	Consumer Price Index
EFTA	European Free Trade Association
EMU	Economic and Monetary Union
FDI	foreign direct investment
FTA	free trade agreement
GDP	gross domestic product
HHI	Herfindahl-Hirschman Index
HS96	Harmonised System; 1996 version

IIT, HIIT, VIIT	intra-industry trade, horizontal IIT, vertical IIT
IMF	International Monetary Fund
OECD	Organisation for Economic Cooperation and Development
PPP	purchasing power parity
PPS	purchasing power standard
RCA	revealed comparative advantage
REER	real effective exchange rate
SITC	Standard International Trade Classification
TFP	total factor productivity
ULC	unit labour costs



**NON-TECHNICAL SUMMARY**

In a globalising economy, maintaining and enhancing external competitiveness has become of increasing concern to countries around the world. This applies in particular to EU candidate countries, whose small economies have to rely mainly on export-led growth. Improving competitiveness is also important in the context of the enhanced economic convergence required in order to join the Economic and Monetary Union (EMU).

As such, this paper assesses developments related to the external competitiveness of EU candidate countries over the period 1999-2011. Defining “competitiveness” as a multidimensional concept, the paper first considers different measures of price and cost competitiveness which are regarded as standard indicators of export performance, especially in the short term. Subsequently, it discusses specific aspects of exports, including structural and technological characteristics, which have become increasingly important in recent decades. The analysis is then followed by a discussion on foreign direct investment and structural and institutional variables, which we identify as factors driving competitiveness.

The years preceding the global financial crisis were a period of economic catching up for the candidate countries (with the notable exception of Iceland, an advanced economy). The development model of these countries has been characterised by robust economic growth driven by strong domestic demand which has gone hand-in-hand with current account and trade deficits financed mostly by net capital inflows. At the same time, the overall export performance has improved to some extent, as these countries have opened up to trade and increased their world export market shares, albeit to a lesser degree than other countries in emerging Europe. Unit labour costs have increased and real effective exchange rates have deteriorated gradually, which seems natural given the catching-up process underway. However, labour productivity has not grown in accordance with the cost of labour, and real prices have risen faster than the level of economic convergence displayed by these countries, thereby negatively affecting competitiveness.

As regards export characteristics, we observe some positive developments, but any improvements have been unevenly distributed among EU candidate countries and have overall been less profound than in the EU12. Most of these countries have diversified their exports, both in terms of the number of products and the number of trading partners, possibly boosting their resilience to demand shocks at the level of individual countries or sectors. Moreover, some candidate countries (most notably Turkey) have shifted exports towards more complex industrial goods (such as metal products and machinery), sectors which have also been growing faster globally. Several countries have not managed to “climb up the quality ladder” in this way, continuing to focus on export sectors marked by stagnant world trade such as agriculture and textiles. In addition, Iceland and Montenegro have remained dependent on a small number of raw materials for their exports. As such, EU candidate countries’ outlook for export growth is rather uncertain, especially if one takes into consideration that these countries are vulnerable to competition from other emerging markets. Meanwhile, all countries have increased their exports to the EU, but only Turkey has managed to position itself in fast-growing emerging markets. As regards trade margins, the growth of exports and export revenues has generally transpired in the context of well-established trade relations. Also, there is some evidence to suggest that candidate countries have increasingly become part of international production chains.

The onset of the crisis has affected candidate countries in different ways. The slump in external demand has led to falling export market shares, indicating that these countries have been hit harder than others in terms of exports. This can partly be explained by the fact that they rely heavily on

exports to countries in the EU periphery, which themselves have witnessed a significant economic slowdown in recent years. Moreover, the decrease is particularly pronounced in candidate countries with a fixed exchange rate regime, as these have had difficulties improving price and cost competitiveness.

All candidate countries have attracted considerable foreign direct investment. Most of this, however, has been directed towards the service and non-tradable sectors, and has thus had little impact on export performance. The onset of the crisis has led to increased volatility in FDI flows, which is problematic given the persistent current account deficits of most candidate countries. With regard to structural and institutional factors, some major improvements have been made by South-eastern European countries, enhancing the competitiveness of their business environment and increasing their attractiveness to foreign investors. However, important reforms have lagged behind. Moreover, when compared with other European economies, the SEE countries perform quite poorly in respect of several structural indicators, especially corruption. Iceland differs in this regard, performing much better than the other candidate countries (or even EU Member States) on nearly all structural issues.

In conclusion, the outlook for the EU candidate countries remains uncertain. Suffering from persistent current account and trade deficits and with exports threatened by the economic slowdown in Europe, these countries face the challenge of improving external competitiveness. The focus must be on maintaining price competitiveness, stabilising labour costs and improving productivity; all of which require extensive and difficult reforms. Other measures to boost exports include diversifying export markets and sectors. Finally, further efforts on the part of SEE countries to improve their business environment by implementing effective legislation and reducing bureaucratic hindrance and corruption could help draw the interest of foreign investors. Under current circumstances, it will be quite a challenge to attract foreign investment. This only serves to underline that the management of FDI and its diffusion to tradable sectors, particularly manufacturing, is also of great importance.

## I INTRODUCTION

The current economic crisis has highlighted the potentially detrimental effects of excessive macroeconomic imbalances on a country's resilience to international economic shocks. This issue is particularly important for EU candidate countries, which have reported large current account deficits and widening trade deficits over the past decade. The pre-crisis growth model prevalent in most candidate countries, driven by consumption and financed by external sources, has proved to be unsustainable and many of these countries are now facing the challenge of achieving sustainable and balanced growth. The small size of most of their economies (with the exception of Turkey) implies the critical importance of an export-led growth. As such, addressing external competitiveness has arguably become a more salient issue to candidate countries than ever before. Moreover, improving competitiveness is also significant in terms of accession to the EU, since a successful EMU requires lasting economic convergence among Member States.

In the years preceding the onset of the crisis, policy-makers had little concern for the issue of competitiveness in EU candidate countries. These countries have geared their policies towards political, trade and financial integration with the EU. While Turkey and Iceland have gradually deepened their relations with the EU over a long period of time, most of the Western Balkan countries have focused on economic integration with the rest of Europe ever since peace has returned to the region. This has led to a period of rapid catching up: SEE countries reported an average annual growth rate of 5.1% between 2000 and 2007, thereby slightly outperforming an average rate of 4.8% for the EU12.<sup>2</sup> Iceland, the only advanced economy among the EU candidate countries, has also achieved considerable growth (registering an average growth rate of 4.6%, compared with 2.6% for advanced economies<sup>3</sup>). These developments have led to economic convergence in Europe: GDP per capita levels in SEE countries increased beyond 50% of the EU27 average in 2007, while it was only 39.1% in 2000. Having said this, considerable differences remain between the per capita incomes of these countries (see Chart 4).<sup>4</sup>

Yet, despite these successes, the economic model of candidate countries (which in many ways is similar to that of EU12 countries) has been characterised by a widening of current account deficits, which distinguishes it from the model of other emerging countries such as China.<sup>5</sup> Driven by changes in underlying structural characteristics, such imbalances are not unnatural to transition economies. However, the current account deficits of emerging Europe have been relatively large and persistent when assessed in a historical perspective (IMF 2008).<sup>6</sup> Moreover, they widened progressively before the crisis emerged in candidate countries, in some cases (e.g. Montenegro and Iceland) reaching very high values (see Chart 1).

Looking at the sub-balances of the current account, all EU candidate countries (with the single exception of Iceland in 2002) have reported persistent merchandise trade deficits. To some extent, these have been offset by large transfers of remittances and a positive service balance, especially in Western Balkan countries.

2 Average real GDP growth (PPS-adjusted); based on data from the IMF and own calculations.

3 The aggregated group of 34 developed countries covered by the IMF's World Economic Outlook of April 2012.

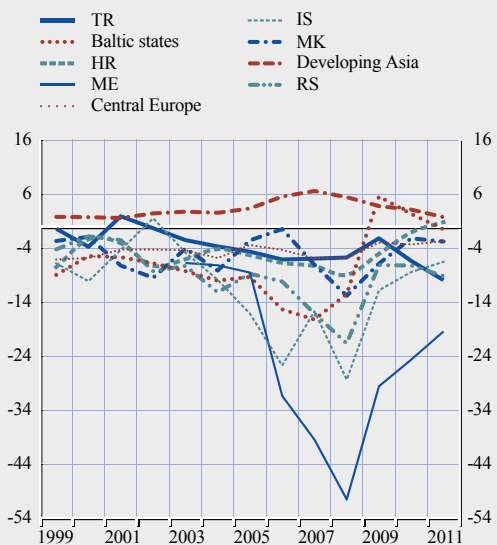
4 GDP per capita in PPS terms is referred to here. Sources: Eurostat and own calculations. Note that Eurostat only provides data for Serbia and Montenegro from 2005 onwards.

5 For a discussion on the specificities of the European economic model, see Herrmann et al. (2008) or Atoyan (2010).

6 For a discussion on the sustainable level of current account deficits, see European Commission (2012).

**Chart 1 Current account balances**

(as a percent of GDP)



Sources: IMF and own calculations.

Contrary to central European countries, which have registered a gradual narrowing in the gap between imports and exports (the Czech Republic has even had a trade surplus since 2005), EU candidate countries have not seen a similar improvement in their trade balances. Although the trade imbalances for Turkey have remained moderate relative to those for Western Balkan countries, there has been a widening gap in the run-up to the crisis.

Several studies<sup>7</sup> have concluded that financial liberalisation and integration, including the dominant position of foreign banks in most of the new EU Member States and Western Balkan countries, have facilitated capital flows to emerging Europe and have thus contributed to the imbalances. Driven by EU accession prospects, countries in the vicinity of the EU15 have enjoyed market confidence and received large capital inflows, primarily in the form of FDI. Net FDI flows into emerging Europe were, on average, 3.9% of GDP between 2000

and 2007, exceeding those for emerging Asia by more than two percentage points.<sup>8</sup> However, there has been large heterogeneity between individual countries. Some countries, such as Montenegro and Bulgaria, have attracted FDI to the extent of 13% of GDP. In contrast, net FDI flows to Turkey have oscillated at around 1.4% of GDP. Other capital, such as loans, has also been flowing into these countries; mostly in the direction of the Western Balkans (on average, this exceeded 7% of GDP between 2000 and 2007) and mostly being used for consumption, thus boosting imports. In addition, financial market integration has played an important role in Iceland, albeit in a different way. Driven by the expansion of the country's banking sector into the EU market after its liberalisation in the early 2000s, Iceland recorded net FDI outflows of 8.8% of GDP during the period 2000-07 and an outflow in net investments averaging 24% of GDP between 2003 and 2006.

Darvas et al. (2008) argue that exchange rate regimes have played a significant role in terms of the diverging developments in emerging Europe.<sup>9</sup> The inflexible currency arrangements adopted in most Western Balkan countries (as well as in the Baltic States) have translated into higher inflation levels and low real interest rates, encouraging borrowing in foreign currencies. This has led to unsustainable credit growth and higher consumption in many countries, thereby contributing to a deterioration of respective trade balances. Montenegro, which has opted for unilateral euroisation, has experienced a boom-bust cycle, with private sector credit growth exceeding 180% in 2007. This was in addition to robust domestic demand-driven GDP growth (of 10.7% in 2007) and very large

7 See, for example, Hermann et al. (2008) or Abiad et al. (2007). Financial integration leads to larger current account differentials, as it is associated with growth and thus higher welfare gains and increased consumption. Productivity gains may result in higher per capita income. Abiad et al. (2007), however, argue that external finance has a self-limiting influence, as current account deficits and capital inflows decline with growing wealth.

8 The text here refers to average net FDI flows into the EU12, EU candidate countries and potential candidate countries (i.e. excluding Iceland); figures are weighted according to GDP in PPS terms. Sources: IMF and own calculations. The term "emerging Asia" is based on the definition employed by the IMF's World Economic Outlook.

9 In addition, please refer to Kathuria (2008) or Backé et al. (2004).

current account and trade deficits (see Chart 1 and Chart 2). Countries with floating exchange rate regimes, such as most central European countries, have had more flexibility in controlling inflation and appear to have succeeded better in maintaining macroeconomic stability during the crisis.

The crisis has hit EU candidate countries hard – both via trade and financial integration channels – and many of them have had recourse to IMF lending. In the SEE region, the crisis first led to a shock in cross-border borrowing, which was then followed by an outflow of capital from other categories, once markets had become risk-averse. These countries also suffered from a collapse in domestic demand and the subsequent contraction of demand from within the EU. Their recovery, with the exception of Turkey, has been rather slow. In Iceland, the economic bubble burst in 2008, when the financial sector collapsed under the weight of debt accumulated during an aggressive expansion abroad. Since then, however, the position of Iceland has improved steadily, thanks to successful crisis resolution.

This paper aims to contribute to the current policy discussion on measures for achieving sustainable growth and the steady convergence of emerging economies. It looks at the external competitiveness of EU candidate countries between 1999 and 2011, covering both the pre-crisis period as well as the latest developments, and assessing their external sustainability in the future. While candidate countries are analysed as a group as much as possible, particular aspects of individual countries are discussed where relevant. From the perspective of their integration with the EU, comparisons are also drawn with developments in the new EU Member States (EU12).

In line with the latest ECB studies,<sup>10</sup> this paper adopts a broader approach to competitiveness, which we define as “the extent to which a country is able to compete in global markets”. As there is no agreed approach on how to define and measure competitiveness, the paper considers various sources of macroeconomic data. With sustained growth being the objective, our underlying assertion is that successful export performance is a long-term sign of a country’s competitiveness. The paper is organised as follows: Section 2 provides a concise overview of trade dynamics and export growth developments across the candidate countries. This is followed by a discussion of the price and cost-related aspects of competitiveness. The majority of the paper (Sections 4-8) involves a detailed assessment of the export performance registered and its underlying structural and technological characteristics. The study focuses on issues such as product specialisation, extensive and intensive margins, export product complexity and intra-industry trade. Our analysis is completed by a discussion of the two main factors behind export performance: foreign direct investment (Section 9) and institutional and structural issues (Section 10).

10 See e.g. European System of Central Banks Monetary Policy Committee Task Force (2005); Baumann et al.(2007); Morgese et al. (2008); and Di Mauro et al. (2011).

## 2 TRADE DYNAMICS AND EXPORT GROWTH

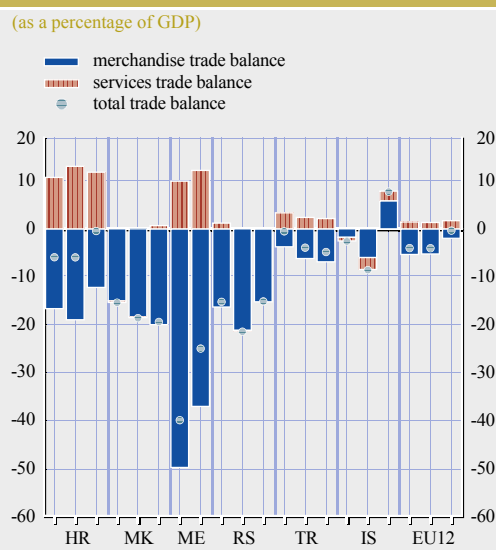
Building on the macroeconomic analysis presented in the introduction, this section elaborates further on the different components of the country's trade and its dynamics over the period observed. The baseline assumption of this paper is that a successful export performance, as measured in terms of gains in export market shares, is a long-term sign of a country's competitiveness and of sustainable GDP growth. This is particularly critical for most EU candidate countries, as the small size of their economies (with the exception of Turkey) implies the importance of external demand.

All candidate countries increased their export and trade openness over the period under study. Having said this, the ratio for Croatia has been improving rather slowly since the beginning of the crisis.<sup>10</sup> The growing trade of EU candidate countries – both in terms of volume and value – could be related to the transition and integration process (particularly as regards SEE countries), by means of which these countries have integrated (or reintegrated) global and European markets through trade liberalisation, trade-related reforms and the signing of trade agreements.<sup>11</sup> With a few exceptions, the year-on-year growth of both exports and imports was positive, and often displayed a double-digit increase.<sup>12</sup> Furthermore, since the trade collapse occurring in 2009, most candidate countries (with the exception of Croatia and to a lesser extent Turkey) have seen their exports return to or surpass pre-crisis levels, both in terms of volume and value.

Nonetheless, exports-to-imports coverage ratios deteriorated in the run-up to the crisis in most countries, driven by domestic demand growth which exceeded that of exports. The trade balance of Iceland and Croatia has in fact turned positive since the onset of the crisis (see Chart 2), but the remaining countries continue to report trade deficits, with exports covering between 63% and 72% of imports in 2011. In contrast, EU10 countries, on average, achieved balanced trade results in 2011, while Iceland's exports-to-imports coverage ratio surged to 116%.

In comparison with the EU10, we still observe a large gap in terms of trade performance, particularly with regard to the Western Balkan countries whose transition process was delayed by the violent conflicts of the 1990s.

**Chart 2 Contribution of services and merchandise trade to total trade balance**



Sources: IMF and own calculations.  
Notes: Period averages for 1999-2003 (except ME), 2004-08 and 2009-11. EU12 average weighted by GDP in PPP terms.

10 Export openness is calculated as total goods and services exported divided by GDP. Trade openness is calculated as the ratio of exports plus imports divided by GDP. Both ratios tend to be inversely proportional to the size of a country's GDP. Both ratios are calculated using data from the IMF's World Economic Outlook (WEO).

11 Please refer to Di Mauro et al. (2008) or Fabrizio et al. (2007).

12 All candidate countries suffered from a large reduction in trade during 2009 due to the collapse in world demand. Moreover, for some countries, certain years are particularly significant, e.g. 2001 in the case of both the FYR of Macedonia (due to an internal conflict) and Turkey (due to a political and economic crisis). Sources: WEO and own calculations.



With the exception of Iceland (which reports values similar to the EU15 average), the per capita values of exports and imports of EU candidate countries have stayed at levels which are considerably lower than those for EU10 countries.<sup>13</sup> Moreover, this gap has increased over the period observed, partly due to the fact that growth was generally slower than in EU10 countries, particularly in merchandise trade.<sup>14</sup>

When disaggregating the trade balance into services and merchandise trade (see Chart 2), we observe that trade in services accounts for a considerable share of export revenues in most of the EU candidate countries. Moreover, Croatia, Montenegro and Turkey report trade surpluses for services over the entire period. All candidate countries register a positive service balance as of 2009, in line with most EU12 countries. Conversely, the whole group (with the single exception of Iceland in 2002 and thereafter in 2008) consistently reports substantial trade deficits for goods, most notably in the run-up to the crisis. Despite the salience of service exports in several EU candidate countries, the majority of our analysis (Sections 4-8) concentrates on merchandise exports because of issues related to data availability and disaggregation.

Similar to other emerging economies around the world, EU candidate countries have recorded increasing export market shares at the expense of advanced economies, particularly before the crisis (see Chart 3). Iceland's market share remained virtually constant between 1999 and 2011, which still implies that the country has performed better than some other advanced economies. Turkey and Serbia have seen the most notable increases in world export market shares over the period under study (during the period 1999-2011 for Turkey and during the period 2006-11 for Serbia), attaining market share growth of 30% and 25% respectively (see Chart 3). In the case of Serbia, exports were very limited after the country emerged from the shadow of a violent conflict and an international trade embargo. EU candidate countries, however, have lagged behind the EU10, which saw average export market shares increase by 80% over the same period. Only two EU10 countries – Slovenia (with an expansion of 1%) and Hungary (with an expansion of 32%) – reported export growth figures below or close to those of the candidate countries. Furthermore, when only merchandise exports are taken into account, the market shares for some candidate countries show a volatile pattern, particularly for Montenegro, which relies on services for a considerable share of its export revenues. Since the onset of the crisis, developments in world export market shares have been rather heterogeneous between the candidate countries, pointing to competitiveness problems in some of them. The export shares of the FYR of Macedonia and Serbia have grown continuously throughout the period, whereas the impact of the crisis has been particularly severe in Montenegro and Croatia, which both suffered from a reduction in their market shares.

In sum, despite the positive developments in overall trade levels and gains in world export market shares, the exports of EU candidate countries remain below those of the new EU Member States. Moreover, trade has not yet contributed to GDP growth in the candidate countries, as they have registered trade deficits in excess of sustainable levels, particularly in terms of merchandise trade.

13 In 2011, per capita exports in the SEE countries reached only 30% of the EU10 average, which is about 10 percentage points lower than the level ten years earlier. Sources: IMF and own calculations.

14 The (unweighted) export values of EU candidate countries (excluding Montenegro) increased, on average, by 7.5% between 1999 and 2011, whereas exports of the EU10 grew by 10.9% during the same period. Sources: IMF and own calculations.

The remainder of the paper discusses different aspects of the external competitiveness of candidate countries and includes a detailed analysis of merchandise exports at a disaggregated level. It attempts to provide explanations for the divergent developments observed and also points to the main challenges that these countries may face in the near future.

### 3 PRICE AND COST COMPETITIVENESS

Assessments of prices and production costs are among the standard tools that are used to measure the external competitiveness of a country. In general, an appreciation of the domestic currency or a sharp increase in domestic prices reduces a country's capacity to compete in global markets. However, a deterioration of price and cost indicators could also be one element accompanying the convergence process (in line with the Balassa-Samuelson effect), and it may be compensated by improvements in non-price competitiveness. Thus, the following analysis is only one aspect of the broad, complex approach to competitiveness presented in this paper.

As depicted in Chart 3, EU candidate countries experienced an appreciation of their CPI-based REER during the pre-crisis period. Since the onset of the global crisis, the currencies of countries with floating exchange rate regimes have depreciated substantially, which has increased their competitiveness at least in comparison to EU candidate countries with fixed exchange rate regimes. This development has been particularly strong in Iceland, where the CPI-based REER lost more than 30% of its value between 2007 and 2011, due to the nominal depreciation of the Icelandic krona in 2008. Similarly, the CPI-based REER for Turkey dropped to 2006 levels in 2011. From this perspective, a floating exchange regime appears to be a good absorber of external shocks.

Higher inflation (essentially a convergence of prices and wages to the level of EU countries) is an important aspect of the economic catching-up process and is often ascribed to the Balassa-Samuelson effect. As long as any real appreciation reflects productivity growth, it does not indicate a loss of competitiveness. In order to assess this relation, we plot the PPP-based price levels<sup>15</sup> of EU candidate countries against their GDP per capita in Chart 4 (adjusted for PPP). So as to benchmark these values to the EU, we compute both indicators as a percentage of the EU27 average, using country-specific, time-varying trade weights vis-à-vis EU Member States.

All candidate countries experienced a strong real appreciation of their currencies in the run-up to the crisis, with Croatia, Montenegro and Serbia following a steady curve throughout the whole period.<sup>16</sup> Moreover, all countries have experienced an improvement in real convergence, even though the real appreciation outpaced convergence gains in terms of GDP per capita (adjusted for PPP) in all countries. Central European countries also experienced a real exchange rate appreciation, but this stayed at low levels relative to per capita income. EU candidate countries thus suffered a loss in competitiveness (particularly in the pre-crisis period) when compared with developments in central Europe. Serbia, Turkey and, in particular, Iceland, have witnessed some improvement in their relative price levels since the onset of the crisis.

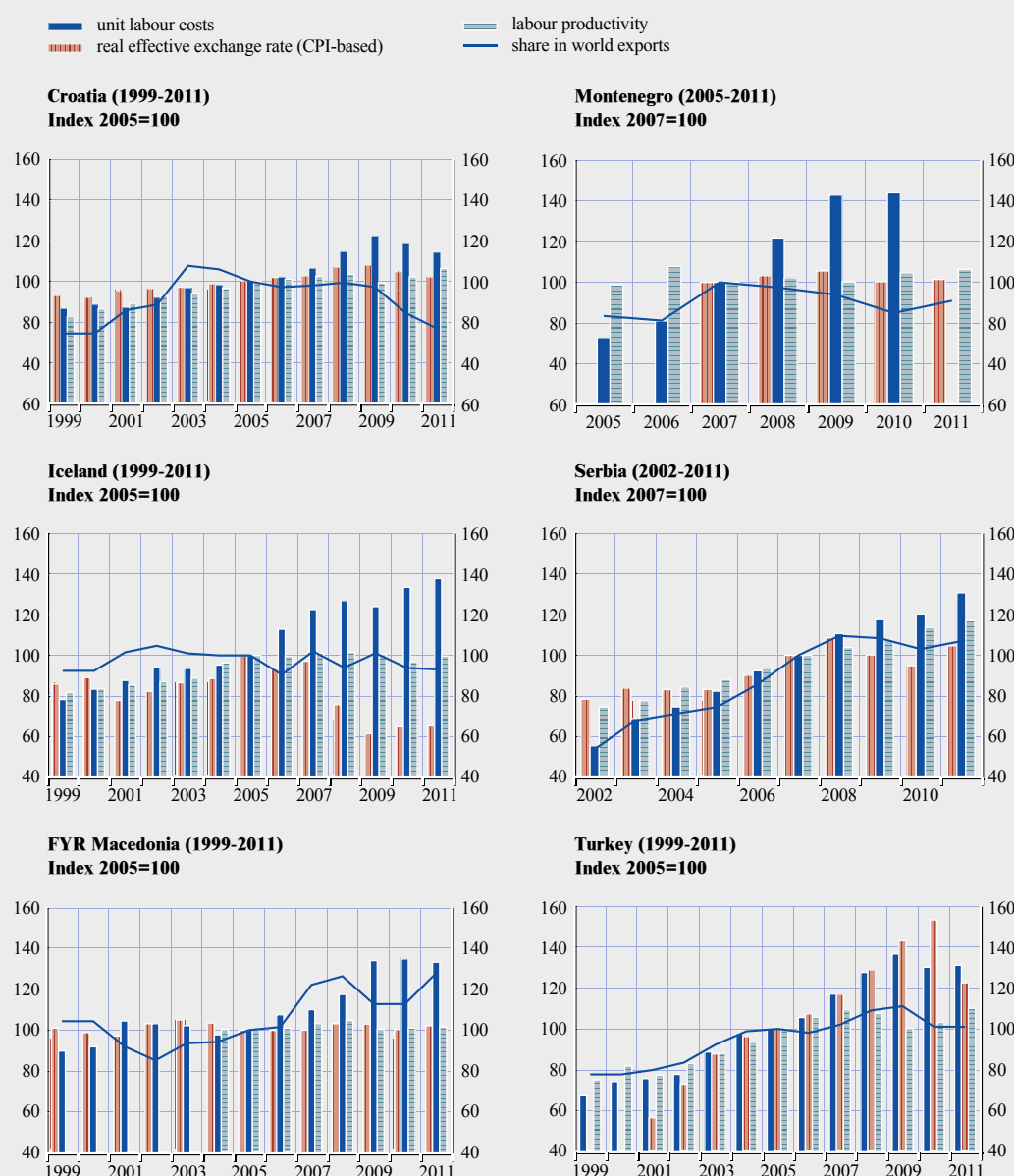
Turning to cost-related factors (see Chart 3), all six EU candidate countries have experienced an increase in unit labour costs. In the FYR of Macedonia, the main sectors fuelling this surge have been predominantly non-tradable (such as construction, public administration and defence). Yet, wage growth in manufacturing (the country's largest export sector) has remained weaker than the country average, although the sector's average gross wage levels have remained lower than in neighbouring countries. Since 2006, average gross wages for the total economy in Serbia and Montenegro have risen by over 50%. But it should be noted that the increase in Serbia was offset by the depreciation of the Serbian dinar against the euro (with a 50% rise in average wages in

15 Country's nominal exchange rate over implied PPP-based exchange rate, relative to the same calculations using the EU average nominal exchange rate (i.e using the transitivity of bilateral relative prices).

16 The same applies to the FYR of Macedonia from 2002 onwards (after the country had overcome internal ethnic conflict) and to Turkey after the economic crisis of 2000/01.

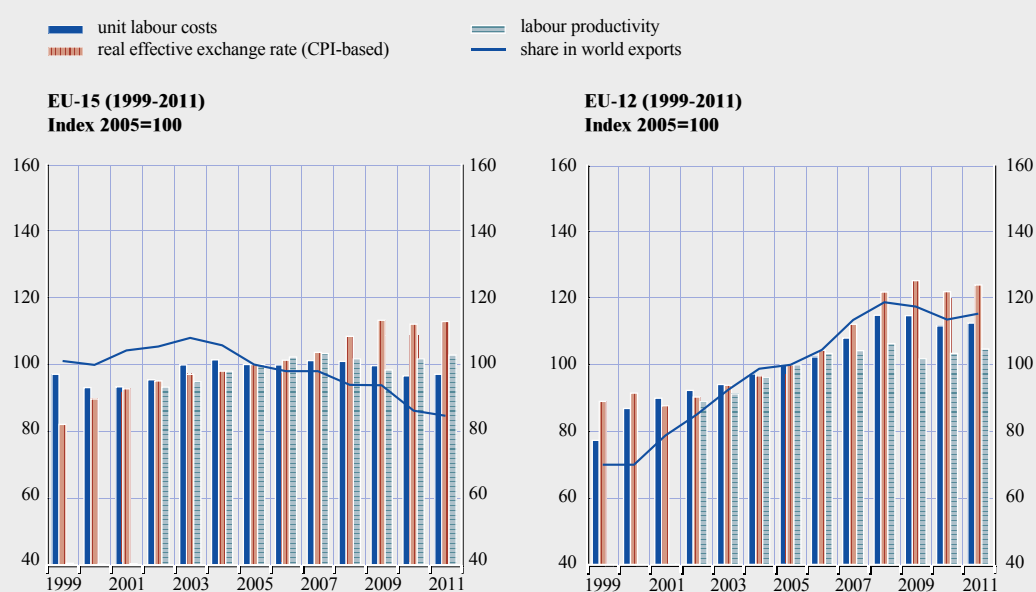
dinar corresponding to an increase of only 12% in euro terms). Even though general wage growth has been less pronounced in Croatia than in most other candidate countries, wages remain high relative to productivity levels. They are also (in absolute value terms) among the highest in the region. In Turkey, average gross wages in the majority of sectors have increased over the past year; accounting for more than 50% of the rise in nominal ULC between 2002 and 2011.

**Chart 3 Developments in prices and costs compared to variations in world export market shares**



Sources: Bank for International Settlements, European Commission, IMF, Haver Analytics, national statistics and own calculations.  
 Notes: Before 2006, REER calculations for Serbia were based on retail price indices (RPIs). Since February 2006, they have been calculated using consumer price indices (CPIs). World export market shares are calculated on the basis of total exports of goods and services. The base year for all indices is 2005 (2007 in the case of Montenegro and Serbia). The charts for the EU15 and EU12 are generated using country averages.

**Chart 3 Developments in prices and costs compared to variations in world export market shares (cont'd)**



Sources: Bank for International Settlements, European Commission, IMF, Haver Analytics, national statistics and own calculations.  
 Notes: Before 2006, REER calculations for Serbia were based on retail price indices (RPIs). Since February 2006, they have been calculated using consumer price indices (CPIs). World export market shares are calculated on the basis of total exports of goods and services. The base year for all indices is 2005 (2007 in the case of Montenegro and Serbia). The charts for the EU15 and EU12 are generated using country averages.

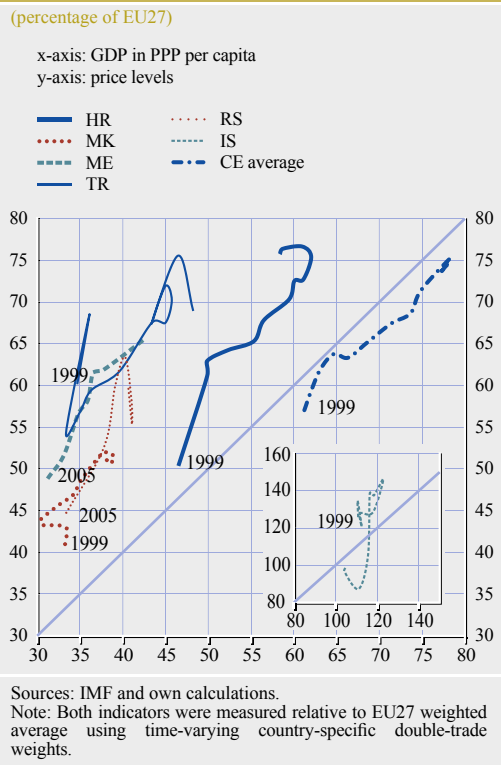
Furthermore, labour costs have remained stubbornly high since the onset of the crisis, pointing to inflexibility in labour markets (see also Section 10 on institutional and structural issues). In addition, there has been no general freeze in wages similar to the trend observed in some of the Baltic States. This development poses a challenge, particularly to EU candidate countries with a fixed exchange rate regime. As currency devaluation is not an option for them, at least not without incurring serious costs, these countries can only rely on internal devaluation through price and wage adjustments to improve their competitiveness.

Labour productivity increased in all EU candidate countries over the period under study.<sup>17</sup> Still, overall growth rates of labour costs have outpaced growth rates of labour productivity during the past decade (see Chart 3), indicating a loss of competitiveness. Moreover, low levels of labour force participation and a high degree of informal employment in the Western Balkans reinforce the notion that labour markets are rigid (see also Section 10). Labour productivity has grown continuously in these countries since the start of the crisis, but mainly as a result of falling or weak employment patterns (and not due to GDP growth outpacing that of employment). This development is unsustainable from a longer-term perspective. In contrast, in the case of Turkey, the rising labour productivity has been mostly due to an increase in real GDP, which outpaced employment growth in 2010 and 2011.

Apart from labour productivity, there are other determinants that affect the productivity of a country. Total factor productivity accounts for the portion of output which is not explained by the quantity

<sup>17</sup> Following Morgese et al. (2008), labour productivity is calculated by dividing real GDP by the number of employed persons in an economy.

**Chart 4 Relative price levels to relative GDP per capita**



of input used in production. It is therefore a useful indicator of general productivity gains in an economy in addition to labour and capital. During the pre-crisis period, TFP increased in EU candidate countries.<sup>18</sup> In SEE, improvements were mostly driven by the efficiency gains realised from a reallocation of resources in the transition from a centrally planned economy to a market-based economy. However, TFP levels have been on a downward path since the onset of the crisis (and since 2004 in the case of Turkey). This is of concern since post-transition gains have been realised and stronger, knowledge-based and within-sector TFP growth is now necessary. Unlike all other candidate countries, Iceland has experienced positive TFP growth over the past three years.

Altogether, EU candidate countries suffered a loss in price and cost competitiveness in the run-up to the crisis. Regaining this ground is a challenging task, particularly for countries with fixed exchange rate regimes; a point clearly illustrated by the reduction in the world export market shares of Montenegro and Croatia (see previous section).

18 The analysis is restricted to four candidate countries as no TFP data were available for Serbia and Montenegro. Moreover, the data are for the period 1999-2009 only, except with regard to Iceland (the data for this country covers the period 1999-2011). Source: The Conference Board Total Economy Database, January 2012.



## 4 STRUCTURAL TRADE INDICATORS

In addition to price and cost-related competitiveness, Sections 5 to 8 focus on the structural trade-related aspects of merchandise exports. Here, we employ the working assumption that the nature of economic specialisation of a country matters for its growth performance and export growth prospects.<sup>19</sup> Highly concentrated economies, especially those that depend on commodity exports, tend to display more volatile growth. Similarly, sector and market specialisation effects, such as the capacity to reorient towards fast-growing markets, can also influence export growth patterns.

This section analyses the structure of exports from EU candidate countries in terms of specialisation across both industrial sectors and trade partners. We employ two alternative indices of specialisation: a standardised revealed comparative advantage index (RCA) based on Balassa (1965)<sup>20</sup> and the index of international specialisation proposed by Lafay (1992), as well as a concentration index known as the Herfindahl-Hirschman Index.<sup>21</sup> The RCA index is a single-flow indicator of trade specialisation, while the Lafay index can be defined as a net-trade indicator of specialisation (Iapadre, 2003) as it measures specialisation with regard to the total trade structure of a given country. The indices thus provide two different perspectives on specialisation, even though both are fundamentally based on comparing each sector relative to a reference group of countries.<sup>22</sup>

Export diversification (in terms of both industrial sectors and trade partners) is considered inevitable for improving a country's resilience to economic demand shocks and for fostering further export growth. Candidate countries feature varying levels of export diversification. The export

19 Our export analysis uses data from UN Comtrade and concentrates on merchandise exports only, mainly due to a higher degree of goods specification and data availability.

20 The standardised or symmetric index for revealed comparative advantage proposed by Laursen (1998) is based on the RCA index proposed by B. Balassa (1965).

$$Balassa\ RCA_{k,i} = \frac{\frac{X_{k,i}}{\sum_{k=1}^n X_{k,i}}}{\frac{X_{k,World}}{\sum_{k=1}^n X_{k,World}}} \quad Laursen\ RCA_{k,i} = \frac{Balassa\ RCA - 1}{Balassa\ RCA + 1}$$

In the Balassa RCA index, the numerator indicates the share of exports from sector  $k$  in country  $i$  over total exports (all sectors) of country  $i$ . The denominator indicates the same share in world exports. The Laursen RCA represents a monotonic transformation of the Balassa index and contrary to the Balassa RCA, it is a symmetric index. If it is positive, the country is relatively specialised in the export of good  $k$ .

Index of international specialisation proposed by Lafay (1992).

$$LFI_{k,j} = \left( \frac{X_{k,j} - M_{k,j}}{X_{k,j} + M_{k,j}} - \frac{\sum_{k=1}^n (X_{k,j} - M_{k,j})}{\sum_{k=1}^n (X_{k,j} + M_{k,j})} \right) \frac{X_{k,j} + M_{k,j}}{\sum_{k=1}^n (X_{k,j} + M_{k,j})}$$

$X_{k,j}$  and  $M_{k,j}$  represent exports and imports of sector  $k$  in country  $i$  towards and from the rest of the world. The Lafay index considers the deviation of the product normalised trade balance from the overall normalised trade balance. Given this, the sum of Lafay indices for all sectors of a given country equals zero. The existence of a comparative advantage is revealed if the index is positive, whereas negative values show de-specialisation.

21

$$HHI = \sqrt{\sum_{i=1}^n \left( \frac{X_i}{X} \right)^2}$$

$X_i$  is the country's exports of a specific product and  $X$  its total exports. The lower the index, the less concentrated the country's exports. See Appendix 1 for HHI in 2010 (2009 for the FYR of Macedonia).

22 The calculations are based on HS96 (six-digit) and SITC, third revision (three-digit) data. The periods of analysis for individual countries are: 1999-2010 for Croatia, Iceland and Turkey; 1999-2009 for the FYR of Macedonia; 2005-10 for Serbia; and 2006-10 for Montenegro. Exports reported to UN Comtrade are valued on a FOB (free on board) basis, while imports are valued in a CIF (cost of insurance and freight) basis.

performance of Iceland and Montenegro is derived from a limited number of sectors (mostly related to commodities), while Turkey and Serbia export a greater variety of products. One positive development to be found when considering the most disaggregated (HS six-digit) data is that all candidate countries, with the exception of Turkey, have broadened their range of export products. In Turkey, the electrical machinery, textiles and vegetable sectors have been particularly affected by a narrowing of the product range, while the variety of exports related to chemicals (organic and inorganic) and railway/tramway machinery has expanded. The expansion is the highest in the FYR of Macedonia and Montenegro (at 14% for both countries) and in Iceland (at 30%), as a result of a base effect. In the case of Iceland, this is mostly due to a diversification of exports of different metal products, but also because of high-technology manufactured goods such as optical instruments and machinery. Still, once industries are aggregated to a higher level (SITC three-digit data) the variety of exported goods remains fairly constant. This would indicate that countries have mostly diversified their production base within already established sectors.

A common characteristic among these countries is their strong dependency on imports, which is reflected by their (at times) considerable current account deficits. In order to obtain a more coherent picture, we have replicated the above analysis by looking at the sectors in which a country produces more than it consumes, and thus where added value is being generated for its GDP. When controlling for imports, the range of exported products of each candidate country is significantly reduced, even though the relative ranking of countries in terms of diversification remains unchanged.<sup>23</sup> Also, the revealed comparative advantage of the main goods exported remains relatively stable when looking at net exports instead of gross exports.

Candidate countries have expanded their trade within the region, but also with other regions such as the Middle East, Northern Africa and Sub-Saharan Africa.<sup>24</sup> Turkey, in particular, has managed to increase the number of export partners, establishing trade relations with several fast-growing economies, and this has proved to be a factor of resilience during the current crisis. In contrast, most of the countries in the Western Balkans have not managed to increase exports to fast-growing Asian economies: indeed, the reverse has even been the case. In terms of diversification of trading partners, all countries, with the exception of Serbia and Montenegro, have managed to increase their total number of trading partners during the period under study. While the relevant figure for Montenegro has remained constant, Serbia actually has registered a reduction in the total number of trading partner countries. Having said this, most of the “lost” trade flows were of a low value – e.g. less than 0.2% of total exports in 2006. In comparison with other candidate countries, Turkey and Iceland display a higher net increase in their number of trading partners.

However, even when a country exports a great variety of products or exports to a large number of countries, it is still vulnerable to demand shocks if, for example, one product dominates the total export value or if this product is exported to a small number of trading partners. The Herfindahl-Hirschman Index is thus a useful tool for measuring the level of market concentration shown by a country. With the exception of Iceland, all candidate countries have decreased their HHI levels for exports. In terms of absolute values, however, the index confirms a high concentration for the exports of Montenegro and Iceland.<sup>25</sup> Since aluminium exports accounted for about 40% of total exports in 2010, both of these countries are sensitive to fluctuations in global commodity prices.<sup>26</sup>

23 Since very few countries actually report their re-exports, total exports minus total imports for a given sector serves as an approximation for this observation.

24 For a list of the main trading partners of each candidate country, please see Appendix 1.

25 Please refer to Appendix 1 for HHI values for 2010 (for 2009 in the case of the FYR of Macedonia).

26 Both countries show a high concentration when using two, three and four-digit SITC classifications. The table in Appendix 1, depicts the major export products and export partners of each candidate country.

This became clear during the first year of the crisis, when both countries experienced a sudden reduction in the value of their aluminium exports. Having said this, the underlying resource endowments driving such exports differ considerably between the two countries. In contrast to Montenegro, Iceland does not possess any aluminium ore reserves, but can produce aluminium competitively due to its virtually unlimited supply of cheap geothermal energy. This would suggest that, despite the resources available, Montenegro's aluminium industry may be more vulnerable than its counterpart in Iceland. Meanwhile, Montenegro has managed to reduce its concentration index over the past years, but mainly due to the sluggish export performance delivered by its aluminium industry. Conversely, the extent of Iceland's concentration has increased.

As regards geographical concentration, in value terms, the European Union accounts for the majority of the total goods exports of all candidate countries. In Iceland, this figure even reached 76% in 2010. The EU has encouraged this deepening through an active trade policy, including via asymmetric trade preferences in respect of the Western Balkan countries.<sup>27</sup> The main export partners of the candidate countries are located in the euro area, in particular in southern Europe. Their export performance is therefore highly dependent on economic conditions in partner countries, and these have generally been weak since the onset of the crisis. Croatia, the FYR of Macedonia and Montenegro have been particularly vulnerable in this regard, due to their low regional diversification and the geographical concentration of their exports.<sup>28</sup> Turkey's growing trade with Middle Eastern countries, and other emerging economies, reduces its vulnerability to market fluctuations in the euro area. Even though the EU accounted for 76% of Iceland's trade in 2010, the country still has a strong comparative advantage in terms of its exports (aluminium and different forms of fish) and a highly diversified group of trading partners, which helps it to position itself in the global market.

Apart from an increase in exports to EU countries, trade among the Western Balkan countries has also grown significantly. Following the end of hostilities, the countries re-integrated their (once common) markets, most notably Serbia, the FYR of Macedonia, Montenegro and Bosnia and Herzegovina. Furthermore, since 2007, all Western Balkan countries have been part of the Central European Free Trade Agreement, and have thus replaced a matrix of bilateral free trade agreements.

In sum, while candidate countries are increasingly diversifying their exports, many still rely on a small number of products and export destinations, which makes for more volatile export prospects. The effects and interactions of product and geographical diversification are further analysed in the following section on the extensive and intensive margins.

27 Iceland forms a part of the European Economic Area and has enjoyed the advantages of the Single Market since 1994. Turkey concluded a customs union (excluding agricultural products) with the EU in 1995. Western Balkan countries have benefited from autonomous trade preferences since 2000, i.e. providing that almost all exports enter the EU without any customs duties or limits on quantities. The Stabilisation and Association Agreements (and Interim Agreements in the case of Serbia) aim to progressively establish a free trade area between the EU and Western Balkan countries. Furthermore, the EU has supported an increase in regional trade through CEFTA, which provides for a free trade zone between Western Balkan countries and Moldova.

28 For example, a high share of Croatia's natural gas exports is destined for Italy and 70% of the t-shirts produced in the FYR of Macedonia are exported to Germany.

## 5 INTENSIVE AND EXTENSIVE MARGINS

Building on the previous discussion on product and geographical diversification, this section analyses the export structure of candidate countries in terms of intensive and extensive margins. For the purpose of this analysis, we define the variation in the intensive margin as the intensification of a country's existing trade relations by an increase in the value of goods exported to already established trade partners. The variation in the extensive margin constitutes an expansion of the range of products exported to existing trade partners, an expansion of the number of export destinations for a variety of products already sold abroad, or the export of new products to new markets. A rise in the intensive margin thus indicates a further deepening of established trade relations, while an increase in the extensive margin reflects a country's capacity to increase the number of trading partners and/or products.

This paper applies both a static and a dynamic approach to the analysis of trade flows in candidate countries, as per Besedes et al. (2007). The static approach uses a point-to-point comparison of trade relations in the initial year and the last year of the dataset. A dynamic approach encompassing the entire time frame is also conducted in order to account for relationships that started and ended within the period, allowing for the measurement of the average length of trade relationships. The paper looks at both the value and the number of trade relations, which are combinations of product and export partners.

Consolidating existing export relations is crucial for achieving sustainable export growth. Although new trade flows can to some extent contribute to reducing current account deficits, a country's trade performance can become vulnerable and volatile if it is not in a position to preserve and deepen these relations over time. In keeping with other studies (see, for example, Besedes et al., 2007) which find that it is generally easier for developing economies to form new export relationships than to preserve already established ones, a large number of trade relations in the candidate countries only exist for one year.<sup>29</sup>

All candidate countries increased their number of active trade flows between 1999 and 2010.<sup>30</sup> Table 1 depicts the contribution of each margin to total export revenues in 2010. Trade relations which were already in place during the initial year of this period accounted for the largest share of total export value in 2010. If we take into account the low survival rate of new trade relationships in the first export years and only consider those export relationships which were in place in both 2009 and 2010, the result is a further decreased role of the extensive margin, especially in Croatia and Montenegro. Having said this, this development may well have been affected by the economic turbulence of 2008 and 2009. When looking at the total *number* of trade flows, however, more than

29 Close to 60% of all export relations (combination export partner and traded good) last between one and two years. While the share goes as high as 80% of total relations in Montenegro, it is more modest in Turkey at 57%. The remaining four countries are situated in between. Turkey is also the country for which the share of long-lasting relations (12 years) is the highest with 10% of total export flows. It almost doubles when minor trade relations are excluded (below USD 10 000). Serbia also shows a higher share of longer export relations than the other countries. The time span, nevertheless, is shorter than for Turkey (only six years are available for Serbia as an independent country). On a more general note, the candidate countries have either very short exchanges (one to two years) or longer-lasting (ten to twelve).

30 A trade flow is defined here as the combination of a single product and a single trade partner. Based on the UN Comtrade database, data cover merchandise exports at the HS six-digit level. For Serbia and Montenegro, the period under consideration is 2006-10; for the FYR of Macedonia, the period 1999-2009 (due to problems with data availability). The results for the other four countries are equally valid when considering the shorter time span.

half of export flows in 2010 were generated by an increase in the extensive margin.<sup>31</sup> This confirms that candidate countries have been successful in generating new export relationships, but the value of related trade flows has remained modest compared to those for established relationships.

When applying the static analysis for different periods,<sup>32</sup> we find that the contribution of new export flows to total exports was the highest between 1999 and 2007, while it has been rather weak in all candidate countries since the onset of the crisis. The share of the extensive margin in the export growth of these countries has remained between 4% and 7% per annum throughout the period, confirming the importance of existing trade relations for total exports.

In the FYR of Macedonia, Iceland, and Serbia, the share of the intensive margin<sup>33</sup> in total export revenues has remained fairly constant (around 50% in the FYR of Macedonia, 85% in Iceland, and 90% in Serbia). Established trade relations have significantly lost relative importance in Croatia and Turkey, with share of total exports decreasing between 1999 and 2010 (from 73% to 56% in Croatia and from 87% to 66% in Turkey) despite a rise in export values in absolute terms.

Montenegro and Serbia show opposite trends. In Montenegro, 27% of total export value in 2010 was derived from trading partner/export product combinations which were not in place in 2006: this implies that the extensive margin has played a more important role here than in any other candidate country. This observation is largely in line with the relatively short-lived export relations of Montenegro, where around 60% of all export flows do not survive the first two years.<sup>34</sup> In Serbia, 87% of total export value in 2010 came from trade flows which were already in place in 2006. After the partition of Serbia and Montenegro in 2006, Serbia maintained most of its existing trade relationships, which could help to explain the strong growth of the intensive margin in Serbia and of the extensive margin in Montenegro. Having said this, the short period of available data for both countries complicates the identification of deepened or persistent trade flows, especially as the period 2006-10 mainly covers the crisis years.

Table 1 Intensive and extensive margins

(percentages)		
	Intensive margin	Extensive margin
<b>1999-2010</b>		
Croatia	56	44
Iceland	86	14
FYR of Macedonia	52	48
Turkey	66	34
<b>2006-2010</b>		
Croatia	83	17
Iceland	91	9
FYR of Macedonia	86	14
Montenegro	73	27
Serbia	87	13
Turkey	93	7

Sources: UN Comtrade and own calculations.

Notes: The numbers refer to the contribution of the intensive and extensive margins to total export values in 2010 (2009 for the FYR of Macedonia). The intensive margin here represents trade relations in place in both 1999 and 2010.

31 Extensive margins are defined as trade relationships in place in 2010 but not in 1999. The contrast between numbers and values is rather remarkable. The share of the extensive margin in the *number* of export flows over the period 1999-2010 (or 2009 in FYR Macedonia) was between 70% and 80% in Croatia, Iceland, FYR Macedonia and Turkey, while the share of the extensive margin in values was lower. These numbers are also fairly solid when excluding flows below 10,000 USD. While the candidate countries have been successful in generating new export relations since 1999, the value of these flows has remained modest when compared with established relations. This being said, higher amounts and extended trade may be achieved over time. However, given that a flagrant majority of the export relations do not survive three years – or stop and later resume – it does indeed give a gloomy picture.

32 This is a year-to-year analysis for different periods, with all data being compared to trade relations existing in 1999.

33 The share of the intensive margin defined as the share of trade relations in place in 1999 and 2010 for Croatia, Iceland and Turkey, 2006 and 2010 for Montenegro and Serbia and 1999 and 2009 for FYR Macedonia, due to data availability.

34 If only export flows with a value of USD 10,000 are considered, the mortality rate decreases to 50%.

The majority of trade flows for candidate countries are either of a very short duration (two years or less) or of a long-lasting nature.<sup>35</sup> If all small trade flows (i.e. those with a value below USD 10,000) are excluded, the pattern changes slightly in favour of longer-lasting trade relations. This confirms the importance of a deepening of existing trade relationships and their preservation over time (as mentioned above). Iceland, the FYR of Macedonia and Turkey have all had relatively volatile trade relations. They are the candidate countries with the highest frequency of export flows that have been interrupted and then resumed. Croatia appears to have the most stable trade relations, as nearly 90% of its export flows are either continuous or have been resumed after an interruption of just one year. Turkey is still the candidate country where the share of long-lasting export relations is the highest (14% of flows lasting 10-12 years).

Looking at the last decade in its entirety, we find that the majority of the trade relations of candidate countries are characterised by either longer-term trading relationships or exchanges lasting less than a few years. Although the intensive margin has been the main contributor to total export value, the share of established trade relations in total export value has stagnated or decreased. Similarly, the importance of the extensive margin has increased, but its contribution to export revenues has been rather volatile over the period under study and still remains slightly below the EU12 average.<sup>36</sup> Altogether, despite the improvements in diversification, the establishment of new trade relationships remains challenging.

35 This would be 9-12 years for the majority of countries and up to six years for Montenegro and Serbia (due to the issue of data availability).

36 As suggested by Schitter et al. (2012), the role of the extensive margin in EU12 countries appears to be dominated by the specific event of their accession to the EU. It is particularly strong around the period of their accession; a point which is also related to the elimination of any remaining non-tariff trade barriers.



## 6 COMPLEXITY OF EXPORT PRODUCTS

In addition to diversification, a country can increase its total export value by “climbing up the value chain” or, in other words, by improving the complexity of the products that it exports. In order to assess the stage of industrial development, numerous studies have categorised the various sectors of the economy according to different characteristics. The analysis presented here is based on three different classifications of export structure: factor intensity (Yilmaz, 2003), technological intensity (Lall, 2000) and educational intensity (Peneder, 2007). While different approaches for classifying products may be used, the categories overlap to some extent.<sup>37</sup> Still, for each classification there are important caveats which need to be taken into consideration when interpreting the data.<sup>38</sup>

The categorisation proposed by Yilmaz is derived from classical trade theory, which suggests that countries specialise in products according to their relative factor endowments. Products are divided on the basis of four different factors of production – raw materials, labour, physical capital and research intensive goods – depending on the factor that is most intensively used in their production.

Under Lall’s taxonomy, products are grouped according to the level of technology used. Five categories are identified: primary products, resource-based products, and low, medium and high-technology products.<sup>39</sup> Lall argues that the comparative advantage of resource-based products is mostly based on the local availability of natural resources. Low-technology producers tend to grow at a slower pace and are vulnerable to low-wage competitors as they compete on price rather than quality. Once the low-wage advantage has been exploited, a country has to move into more technology-intensive activities. International trade in the output of high-technology industries is expanding at a faster rate, ensuring that these provide better prospects for growth.

Peneder’s approach defines products according to the level of education required. Three main classifications of industries are used: those involving low, intermediate and high educational intensity.<sup>40</sup> Over the past decade, demand for high-skilled labour has increased in both advanced and emerging economies. Education is thus a key aspect in the development of a country’s industrial sector. Having said this, it should be noted that educational intensity is not just about people’s skills, but also about the level of education required to produce a particular good.<sup>41</sup>

Chart 5 depicts how merchandise exports have developed over time in terms of the three aforementioned factors, with technology-related changes pictured on the left, production factors in the middle and education on the right. The exports of candidate countries differ substantially in respect of production factors, technology and specialisation of education. In particular, Iceland and

37 Appendix 2 provides examples of products in each classification category.

38 The most striking caveat is that a judgement is inevitably involved when assigning products to different categories. Also, Peneder’s taxonomy was constructed according to the structure of five developed countries and it may be that developing countries score rather poorly due to differences in their production base and human capital (i.e. vis-à-vis education).

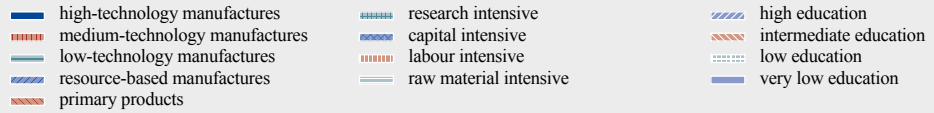
39 Lall’s taxonomy was chosen with regard to the export characteristics of the candidate countries. In contrast to other classification systems (e.g. that of the OECD or Hatzichronoglou, 1999), it covers all merchandise export categories and not just manufactured products, making it more appropriate for developing countries.

40 Lall also classifies products on the basis of seven categories of education (encompassing a very low to very high educational level). For the purposes of our analysis, we maintain the categories of very low and low educational intensity and aggregate the five others into the intermediate and high educational intensity categories.

41 We use data from UN Comtrade: SITC two-digit (Yilmaz), SITC second revision, three-digit (Lall) and HS96 six-digit (Peneder). Note that Peneder’s taxonomy is based on the two-digit ISIC activity breakdown and that we use correspondence tables from UN Comtrade for our dataset. The periods analysed are: 1999-2010 for Croatia, Iceland and Turkey; 1999-2009 for the FYR of Macedonia; 2005-10 for Serbia; and 2006-10 for Montenegro.

## Chart 5 Complexity of merchandise exports

(percentages)

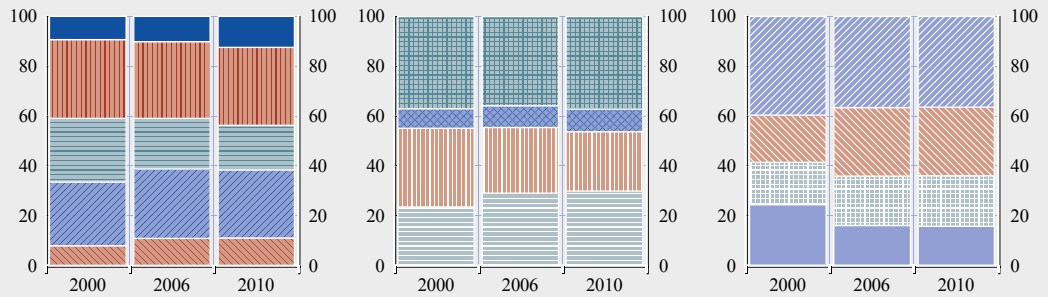


### Technological intensity

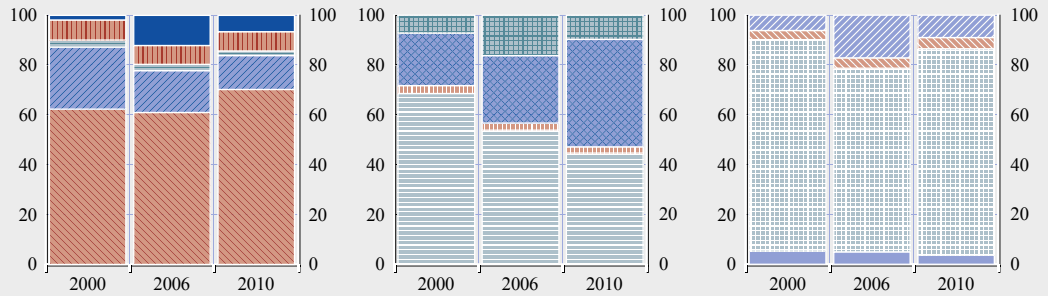
### Factor intensity

### Educational intensity

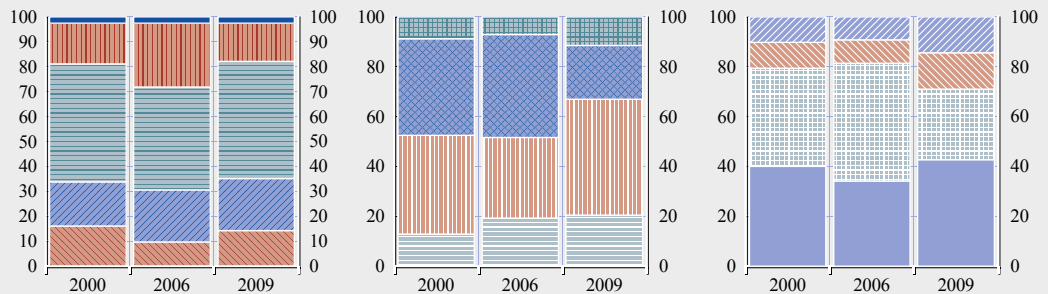
#### Croatia



#### Iceland



#### FYR of Macedonia



Sources: UN Comtrade and own calculations.

Chart 5 Complexity of merchandise exports (cont'd)

(percentages)

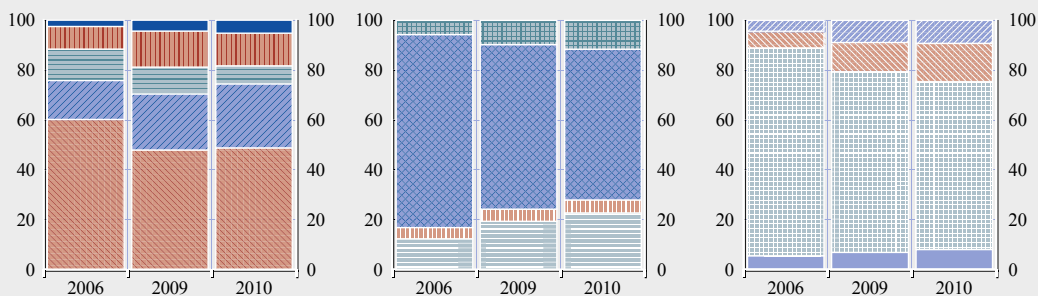
- high-technology manufactures
- medium-technology manufactures
- low-technology manufactures
- resource-based manufactures
- primary products
- research intensive
- capital intensive
- labour intensive
- raw material intensive
- high education
- intermediate education
- low education
- very low education

**Technological intensity**

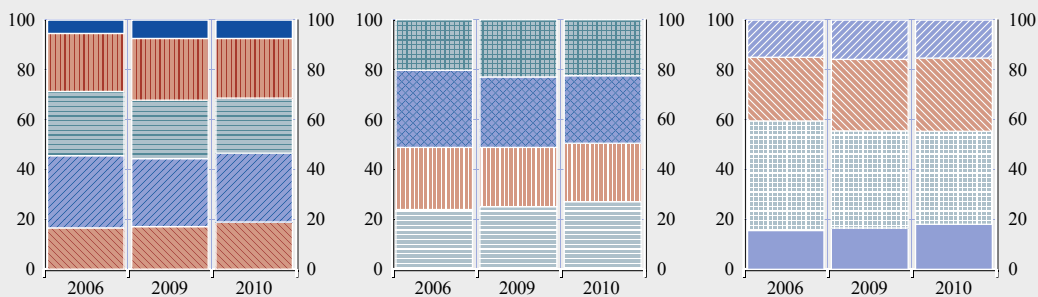
**Factor intensity**

**Educational intensity**

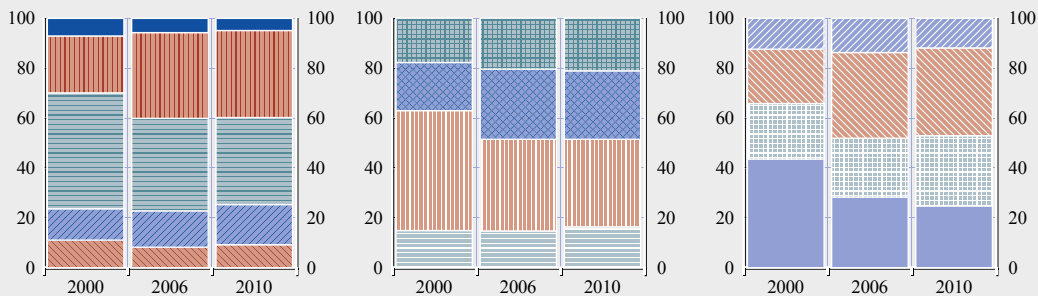
**Montenegro**



**Serbia**



**Turkey**



Sources: UN Comtrade and own calculations.

Montenegro represent special cases due to the high concentration of their product base. Furthermore, despite some restructuring in the overall composition of trade, all countries have moved only slowly away from products requiring unskilled labour, a low level of technology and significant resources (including primary products). This makes them increasingly vulnerable to competition from emerging Asia and possibly other low-wage regions.

Turkey appears to have been moving away from exporting low-technology manufactures (e.g. textiles) faster than the other candidate countries. In line with observed increases in capital and research-intensive goods, it has expanded its market share in medium-technology and resource-based manufactures (e.g. cars) which require higher-skilled workers. Similarly, the unit values for several types of machinery and transport equipment have increased over time. If we assume that the unit value of a good reflects its quality, this observation is in keeping with the above finding that Turkey is improving the complexity and quality of its production.

The FYR of Macedonia, similarly to Turkey, also experienced some improvements towards medium-technology and capital-intensive products during the pre-crisis period. This trend appears to have reversed in 2009. Still, the import data for the FYR of Macedonia's main export partners following the trade collapse of 2009 would confirm a modest decline in the share of low-technology and labour-intensive products in favour of more advanced exports.<sup>42</sup>

Due to strong concentration and limited diversification, primary products and low-skill products dominate the exports of Iceland and Montenegro (see Chart 5 and also Section 4). There is variation in terms of factor intensity, as Montenegro's aluminium exports are mainly capital-intensive, while Iceland exploits two factors – raw materials and capital – for its fish and aluminium exports. At the same time, both countries have increased their exports of high-technology products (pharmaceuticals and aircraft parts in the case of Iceland). Once net exports are considered, the sophistication of exports seems to deteriorate. This is a characteristic shared by all candidate countries except Croatia.

In comparison with the other candidate countries, Croatia has a relatively sizeable output of high-technology, research and higher education-intensive goods. The country has gradually been increasing its exports of pharmaceuticals and machinery, which may imply that it is improving its technological base and moving up the quality ladder. These results are even stronger when looking at net export data, where a clear retreat from low-technology and labour-intensive products (e.g. in the textile industry) and an orientation towards research-based and high-technology goods can be seen. Furthermore, the analysis of export unit values supports these findings, as the export unit values for several of these sectors (e.g. medicaments and machinery) have increased over the period.

Despite the improvements over the last years, the majority of the exports of EU candidate countries are still generated by unskilled labour and resource-intensive sectors. Given increasing competition from emerging Asia, this may pose a challenge for their further growth. In order to better understand the restructuring process, in the following section we focus our attention on the major export sectors of these countries.

<sup>42</sup> Export data for the FYR of Macedonia are only available for the period up to 2009. Thus, we base our judgment on the country's import data for the period thereafter.

## 7 DYNAMISM IN SECTOR SPECIALISATION

In order to retain competitiveness in global markets, countries need to have a domestic industry that evolves in line with global demand. Exports in fast-growing sectors (and also exports to growing economies) are vital for enhancing future economic performance, while flexibility in the reallocation of resources towards new, promising activities is important for improving competitiveness.

Chart 6 presents the development of the key exports of candidate countries in relation to that of their respective sectors in the global market.<sup>43</sup> This enables us to assess whether these countries have specialised in sectors marked by expanding or declining global demand. Moreover, the analysis of major industries over a longer time span allows us to draw conclusions about how candidate countries have restructured their exports during this period.

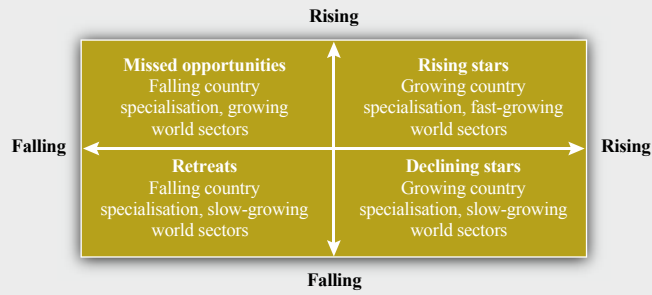
Given the export structure of candidate countries, the analysis takes into consideration all merchandise sectors. The results thus have to be interpreted with caution, as world prices for numerous sectors (especially commodities) tend to be more volatile. Furthermore, the definition of fast-growing sectors may closely depend on the level of disaggregation. To account for the volatile character of world prices, we look at the time span between 1999 and 2010, i.e. to the extent that data are available. The size of the bubbles represents the net export share of each sector in 2010. The different shades of blue reflect where the volume of exports is higher than that of imports, whereas the grey shaded areas show where import volumes are predominant.

Serbia and Turkey have successfully expanded their exports in sectors featuring growing global markets, whereas the other four countries have either specialised in slow-growing sectors or the growth of their key exports has not been able to match the global sectoral averages. Furthermore, the bubble charts for Croatia, Serbia and Turkey present a slightly larger number of products, which is indicative of an on-going restructuring and greater diversification of their product base. In contrast, the charts for Iceland and Montenegro illustrate the high degree of concentration of their merchandise exports. Since the data for Serbia and Montenegro involve a more limited time span and are thus more strongly affected by the crisis, there is a slight downward bias in the trends for these countries due to the plummeting world prices for aluminium and iron registered over the period. In this also reflects the structural loss of competitiveness suffered by their main industries over the past years.

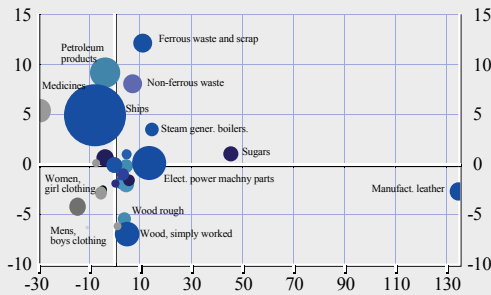
As already discussed previously, it is evident that a significant share of the export base of candidate countries is accounted for by products of low complexity. Agricultural products, textiles and basic metal goods are, in general, some of the most important exports of these countries. Apart from the limitations to growth already mentioned (particularly in terms of the low-wage competition from other parts of the world), specialisation in clothing and textile products seems to be particularly vulnerable when one considers the low growth in global demand for these products. Yet, a significant retreat away from this industry can be observed in Croatia, Turkey and Serbia, and very slowly in the FYR of Macedonia. In Croatia, the textile industry used to be one of the country's biggest export sectors at the beginning of this century, but its share in total exports has gradually diminished, with imports starting to outweigh exports in 2011.

<sup>43</sup> The 15 largest export sectors in any given year over the observed period are included in the charts. Hence, the number of product categories presented varies between the six candidate countries.

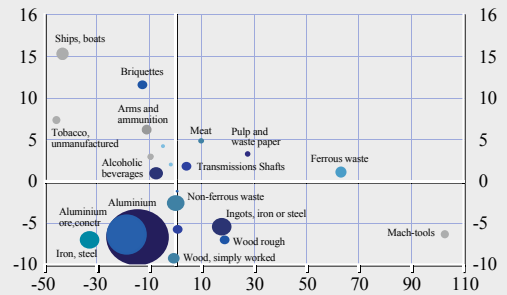
**Chart 6 Developments in the structure of country exports relative to global market variations**



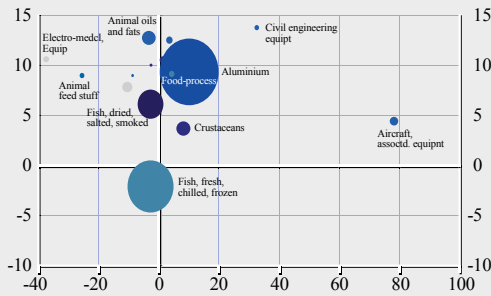
**Croatia (1999-2010)**



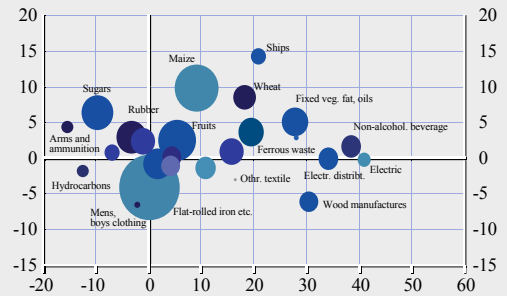
**Montenegro (2006-2010)**



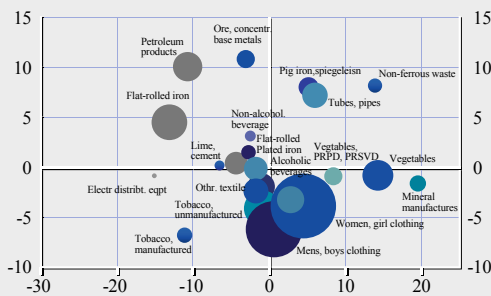
**Iceland (1999-2010)**



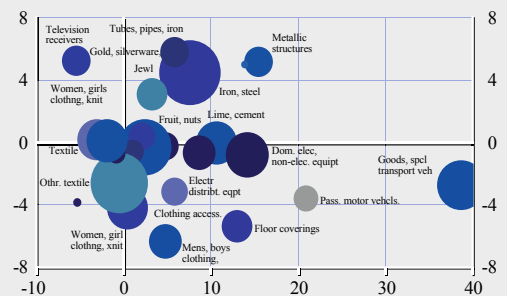
**Serbia (2005-2010)**



**FYR Macedonia (1999-2009)**



**Turkey (1999-2010)**



Sources: UN Comtrade and own calculations.  
 Notes: X axes: growth rate of a country in a specific sector minus the growth rate of this sector in the global market.  
 Y axes: growth rate of a specific sector in the global market minus the growth rate of global exports  
 The size of bubbles is proportional to a country's share in total exports in 2010.



The growth rates for different agricultural products and processed foods – the major export sectors of Iceland, Serbia and Turkey – have been quite diverse compared with the relevant global averages. Serbia and Turkey, however, remain competitive in most of these sectors, showing faster growth than the sectoral average.

In addition, most EU candidate countries have managed to seize the advantage of growing global demand for metal products. Machinery exports have increased across the board, especially in Turkey, where this sector is of a relatively larger size than in the other candidate countries. Despite this trend, Croatia's shipbuilding industry faces some structural shortcomings, having become less competitive in global markets over the past decade.

Given these developments, we posit that, in general, the export structure of candidate countries appears to be dominated by slower-growing industries. Moreover, some countries have faced structural shortcomings in their major industries and have not managed to catch up with the average export growth levels registered in global markets. This may impede the future economic performance. Having said this, a slight reallocation towards new, higher-growth industries can also be observed.

## 8 INTRA-INDUSTRY TRADE

Over the past decade, two-way trade of similar goods (intra-industry trade, IIT) has emerged as an increasingly important determinant of international trade. It accounts for a considerable share of trade growth in most industrialised countries, particularly in the EU15. Although emerging markets have generally been more involved in inter-industry trade, they have become increasingly engaged in IIT, specialising in different types of products.<sup>43</sup>

In this section, we assess to what extent this increasingly important type of trade has played a role in the candidate countries. We use the aggregated Grubel-Lloyd Index (GLI) to calculate intra-industry trade.<sup>44</sup> A trade flow between two countries for a particular product is considered as being two-way (or IIT) if the minority flow (exports or imports) represents at least 10% of the majority flow. Furthermore, one can distinguish between horizontal and vertical IIT; the former consisting of two-way trade in which the unit value of the traded product does not differ considerably between the two trade partners, while the latter is composed of the remaining two-way trade flows. This is based on the assumption that differences in prices within a product category reflect differences in quality. The threshold used in this analysis is that of a 15% unit value difference, within which two-way trade is considered to be horizontal intra-industry trade (HIIT) and beyond which it is considered to be vertical intra-industry trade (VIIT).<sup>45</sup>

Table 2 shows that none of the candidate countries exceeded the average level of IIT of the EU10 (let alone the EU15) during the period under study (with the single exception of Croatia in 1999). Moreover, IIT has been stagnant in all of these countries, especially in terms of IIT with the EU15, except for Serbia and Turkey. The GLI for these two countries has increased markedly, converging with Croatia's IIT levels by 2010. The IIT levels for Iceland, the FYR of Macedonia and Montenegro are very low, being registered at below 6% in 2010.

43 See Fontagné (2007).

44 The Grubel-Lloyd Index measures the level of intra-industry trade in a country, with  $k$  being the trading sector:

$$IIT = \left[ 1 - \frac{\sum (X^k - M^k)}{\sum (X^k + M^k)} \right]$$

It takes a value between 0 and 1: 1 indicates that all trade is intra-industry (and that no inter-industry trade is present) and 0 that all trade is inter-industry. As a result, the lower the index, the less a country is involved in intra-industry trade. The index depends heavily on the product aggregation that is used. This section uses trade data from the CEPII's BACI database at the HS six-digit level.

45 See Abd-El-Rahman (1991), Caetano et al. (2007) and Fontagné et al. (2005). Please refer to OECD (2002) for a more detailed description.

**Table 2 Grubel-Lloyd Index**

Country	1999	2003	2007	2010
Croatia	17.5 (19.4)	16.2 (20.0)	16.4 (20.7)	13.9 (18.1)
Iceland	6.5 (5.0)	4.6 (4.8)	8.0 (3.3)	4.4 (5.8)
FYR of Macedonia	9.5 (11.1)	4.9 (2.8)	5.9 (4.5)	4.7 (3.6)
Montenegro	n/a	n/a	2.6 (1.8)	3.8 (2.0)
Serbia	7.5 (7.4)	7.1 (7.6)	9.7 (11.4)	11.6 (14.5)
Turkey	9.7 (11.6)	10.6 (14.5)	12.3 (19.3)	11.4 (18.4)
EU10 average	16.4 (18.8)	17.2 (20.5)	18.9 (22.1)	20.7 (24.7)
EU15 average	28.4 (34.4)	27.8 (34.6)	27.0 (34.4)	26.5 (34.9)

Sources: CEPII and own calculations.

Notes: Figures correspond to GLI based on trade with the world (with EU15). For ease of reading, the GLI is multiplied by 100.

In terms of the share of horizontal and vertical IIT in total IIT, candidate countries perform similarly to EU10 countries. Both groups of countries engage mostly in IIT of different quality with EU15 countries.<sup>46</sup> When we further distinguish between low and high-quality VIIT,<sup>47</sup> we observe that the IIT between SEE countries and the EU15 consists of low-quality VIIT, suggesting that these countries compete with their trading partners in the EU15 mainly on price. This is in keeping with the findings of previous sections. In addition, Croatia's low-to-high unit value ratio for VIIT is close to that of other EU10 countries, while the other SEE countries lag well behind. Conversely, Iceland's VIIT with the EU15 has mainly consisted of high unit value products, exceeding even the EU15 average. Having said this, these high figures should be considered in the context of Iceland's narrow (but specialised) export base, as indicated by the low overall levels of IIT.

To sum up, convergence in terms of the production structures of EU countries has remained limited, with only Turkey and Serbia being successful at expanding their IIT levels over the observed period. Moreover, most of the intra-industry trade for these countries is due to VIIT and a specialisation in products of lower unit value, which may be a challenge for their future growth.

46 Over the past decade, HIIT has, on average, accounted for between 15% (Iceland) and 23% (Croatia) of total IIT with the EU15. The corresponding figure in respect of the EU10 is nearly 20%.

47 Low-quality IIT consists of two-way trade in which the unit value of export flows from a candidate country is less than 85% of the unit value of the related import flows (and vice versa for high-quality VIIT).

## 9 FOREIGN DIRECT INVESTMENT

The varying successes of the export sectors of candidate countries warrant a further look at the determinants of their export performance. Consequently, in the following sections, we focus on foreign direct investment and the structural and institutional environment of these countries, as both these factors tend to have long-term effects on productivity and competitiveness.

All EU candidate countries have attracted considerable FDI over the past decade, which to a large extent has helped in covering their current account deficits. However, the level of inward FDI per capita has differed substantially across the board, with Iceland, Croatia and Montenegro having been the most successful of the candidate countries in attracting FDI during this period. Turkey is the candidate country for which FDI inflows have increased the most. Meanwhile, the FDI stocks per capita of the FYR of Macedonia and Serbia have been among the lowest, and these have mostly been directed towards the tradable sectors.

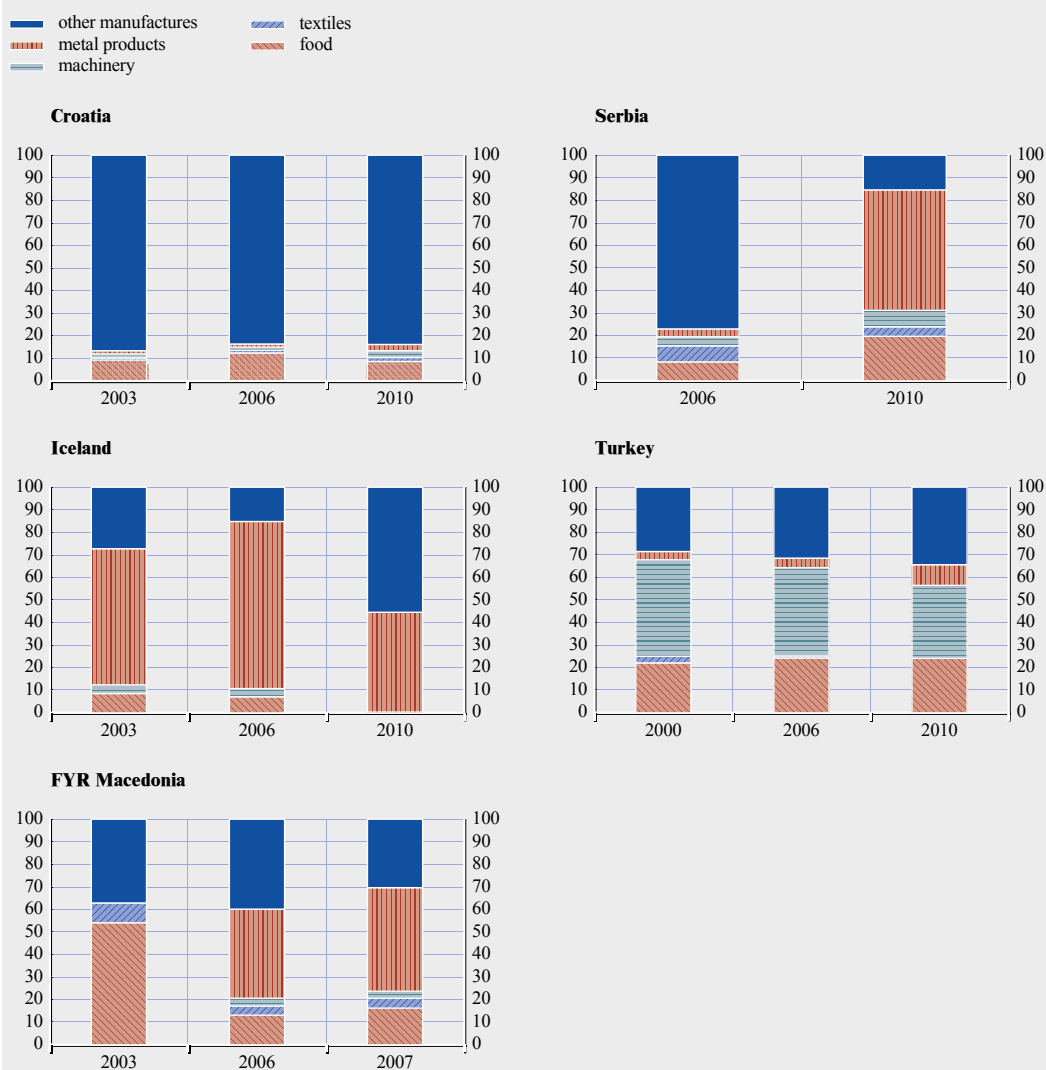
FDI flows have become more volatile since the onset of the financial crisis. Croatia, the FYR of Macedonia, Montenegro and Serbia all saw their inward FDI stocks shrink in 2010 (indeed, in Montenegro, they have decreased by 50% since the crisis began). The FDI stocks of Iceland and Turkey have started to grow again after a dip in 2009. Given that the vast majority of foreign investment entering candidate countries comes from EU Member States, FDI flows are likely to face continuing downward pressure due to the crisis. If this situation persists, it could pose considerable problems for these countries (especially Montenegro), both in the short and longer run.

As we can observe in Chart 7, FDI has not been flowing consistently into the main export sectors. This has arguably reduced the degree of pass-through from FDI inflows to export growth. In fact, the non-tradable sectors (e.g. financial services, telecommunications, electricity provision and tourism) of several countries, in particular Croatia and Montenegro, have attracted the lion's share of foreign capital, with this partly neglecting the major manufacturing export sectors (such as the shipbuilding industry in Croatia and aluminium smelters in Montenegro). In contrast, the FYR of Macedonia, Serbia and Turkey have successfully attracted sizeable investments in their manufacturing industries, such as those related to metal and machinery production (e.g. the automobile industry). These countries appear to be increasingly integrated into international production chains; a development which has also coincided with the expansion in their IIT for manufacturing. In addition, Serbia's food industry has also received a considerable proportion of the country's FDI inflows. Iceland is the candidate country that has received by far the most FDI per capita, with the primary recipient of this being aluminium, the country's main industry.

When investigating the relationship between FDI and trade performance, one can expect a natural lag of several years between the time an investment is made and the moment from which it starts to pay off in terms of output. However, establishing a strong link is very difficult when relying on descriptive statistics only, particularly given the fact that most FDI has not flowed into the tradable sectors. Turkey, the country for which FDI inflows have increased the most over the past decade, has also witnessed the largest growth in exports – these more than tripled over the period. Nevertheless, FDI to Iceland has increased by a similar percentage as in Turkey, but its exports have not grown nearly as fast. In fact, export growth in Croatia and the FYR of Macedonia was almost on a par with that seen in Iceland, even though inward FDI growth was considerably lower in these two countries. FDI data for Serbia and Montenegro are only available from 2005 onwards, which makes it more difficult to obtain a clear picture of the long-term links between foreign direct investment and trade.

Chart 7 Inward FDI stocks by industrial sector<sup>1)</sup>

(percentages)



Sources: OECD, national central banks and own calculations.

1) The charts include FDI flows into goods producing sectors only so as to facilitate the comparison with the developments in goods exports discussed in previous sections. Montenegro is excluded due to data limitations.

Of all non-service sectors, the petroleum industry in Croatia has been the largest recipient of FDI among the candidate countries over the past decade, but it has not expanded its exports at all. In contrast, the electrical power machinery sector, which has received only modest amounts of FDI, has been much more successful in this regard.

The above mixed results indicate that an active FDI policy may be needed in order to attract investments into the tradable sectors – ones which could strengthen the export profile of candidate countries. Indeed, foreign capital has become increasingly scarce and volatile. Consequently, if these countries wish to remain attractive to foreign investors, they must strengthen their economic and institutional fundamentals.

## 10 INSTITUTIONAL AND STRUCTURAL COMPETITIVENESS

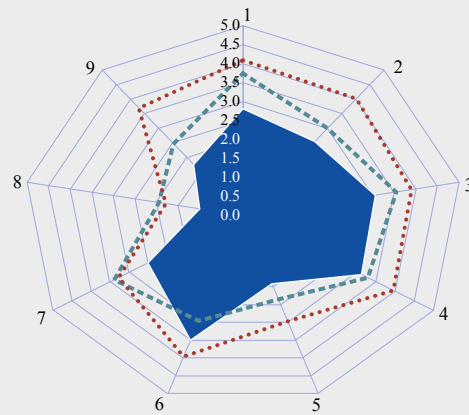
Governments can do much to improve the export performance of their countries by focusing on the structural foundations of the economy. A well-developed infrastructure and a highly educated workforce help making businesses work more efficiently and effectively. Solid public institutions, an effective government, a bureaucracy free of corruption and an independent judiciary are also important in this regard. Addressing these issues is of particular relevance for most EU candidate countries, as they endeavour to attract FDI.

Chart 8 shows how EU candidate countries perform with regard to nine different indicators of structural competitiveness vis-à-vis the pertinent averages for the EU15 and EU12. The performance

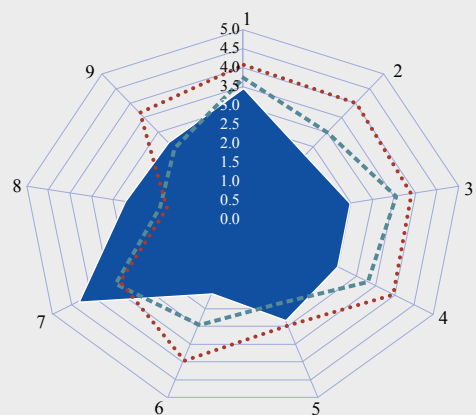
**Chart 8 Structural competitiveness (2010)**

- |                          |                             |                         |
|--------------------------|-----------------------------|-------------------------|
| 1 Ease of doing Business | 4 Government effectiveness  | 7 Labour flexibility    |
| 2 Corruption             | 5 Quality of education      | 8 Tax burden            |
| 3 Regulatory quality     | 6 Quality of infrastructure | 9 Judicial independence |

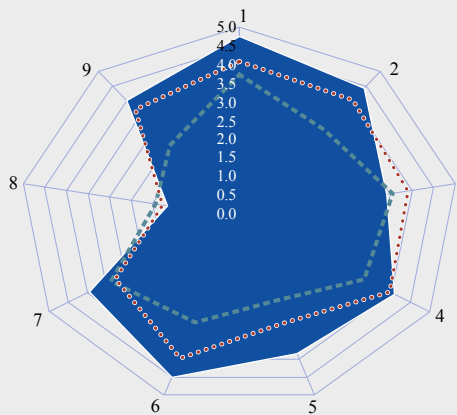
### Croatia



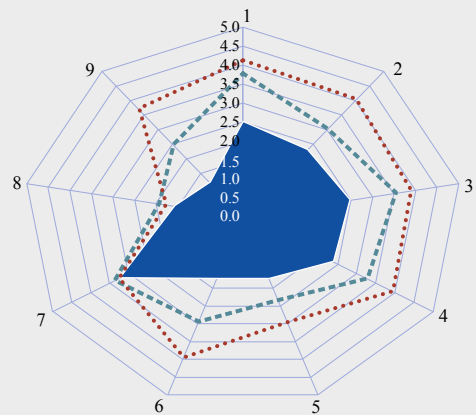
### Montenegro



### Iceland



### Serbia



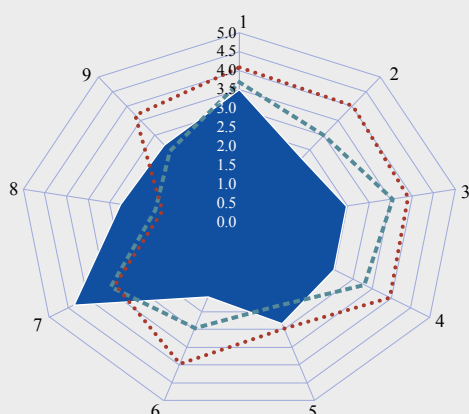
Sources: World Bank and World Economic Forum.

Notes: A country's performance in respect of the nine indicators is depicted by the blue shaded area. The green dotted line represents the average values of the EU12. The red dotted line (which lies beyond the green dotted line) represents the average values of the EU15.

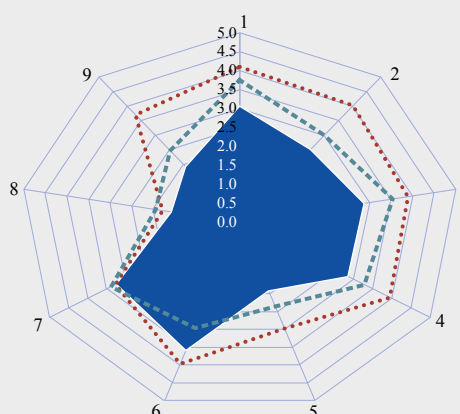
Chart 8 Structural competitiveness (2010) (cont'd)

- |                          |                             |                         |
|--------------------------|-----------------------------|-------------------------|
| 1 Ease of doing Business | 4 Government effectiveness  | 7 Labour flexibility    |
| 2 Corruption             | 5 Quality of education      | 8 Tax burden            |
| 3 Regulatory quality     | 6 Quality of infrastructure | 9 Judicial independence |

**FYR of Macedonia**



**Turkey**



Sources: World Bank and World Economic Forum

Note: A country's performance in respect of the nine indicators is depicted by the blue shaded area. The green dotted line represents the average values of the EU12. The red dotted line (which lies beyond the green dotted line) represents the average values of the EU15.

of SEE countries lags considerably behind the EU12 average for most relevant indicators, in particular the quality of governance. Conversely, Iceland outperforms the EU15 average in respect of most of these measures and its figures are among the best in the world. The country has had a longer history of stable democratic rule and economic liberalism than other candidate countries. Yet, the regulatory quality suffered somewhat during the aftermath of the crisis, mostly due to government interventions and capital controls.

None of the SEE candidate countries manages to match the EU12 average when it comes to corruption, regulatory quality and government effectiveness, all of which are considered to be among the most important barriers to conducting business in these countries.<sup>48</sup> Croatia and Turkey are close to the EU12 benchmarks,<sup>49</sup> but the other three SEE countries lag further behind. Corruption remains prevalent in the public services of all SEE countries, and improvements in this field have been slow over the past years. As regards judicial independence, all SEE countries (with the exception of Montenegro) lie considerably behind the EU12, with Serbia showing the worst score in this respect. Privatisation of state-owned enterprises has been slow, particularly in Croatia and Serbia, where political resistance is still at times quite strong. Inefficient government bureaucracies pose a major obstacle to conducting business in all SEE countries except for Montenegro. In sum, there is ample room for improvement in the legal systems of SEE candidate countries.

Labour market reforms have been successful in some SEE candidate countries, particularly in the FYR of Macedonia and Montenegro, which both outperform the EU12 and EU15 averages in terms of labour market flexibility. Having said this, labour force participation for the region, as

48 Please refer to The Global Competitiveness Report 2011-2012 of the World Economic Forum.

49 Croatia's performance with regard to government effectiveness is almost on a par with the EU12 average and the country has even surpassed a number of EU Member States in this area.



a whole, remains far below the EU average and unemployment is still rather high.<sup>50</sup> Tax burdens have been reduced in all candidate countries in recent years, but Croatia continues to suffer from relatively high business start-up costs and taxes.

In Croatia, large investments in the road network have paid off in terms of a higher quality of infrastructure, with the country scoring above other SEE countries and several EU Member States on this indicator. Improvements to infrastructure could potentially be advantageous for the whole region, especially for Serbia, given its central location. Also, with the exception of Montenegro, the SEE countries are not, as yet, up to the levels of the EU12 in terms of the quality of education.

Finally, the “Ease of Doing Business” index<sup>51</sup> ranks countries according to the overall score they achieve in respect of ten topics of importance to the conduct of business and hence the general business environment. Iceland and the FYR of Macedonia perform better in the index than the other EU candidate countries, exceeding the average scores of both the EU12 and the EU15. In contrast, Croatia and Serbia register much lower scores, reflecting their rigid political and legal systems.

As such, we observe that, in terms of institutional and structural competitiveness, all of the candidate countries – except Iceland – lag well behind the EU Member States. Having said this, some legislative reforms have been implemented (e.g. regarding labour flexibility and tax burdens) which should increase their attractiveness for foreign capital. Still, institutional quality remains an issue. For a stable and predictable business environment, candidate countries will need to make considerable improvements in this area.

50 In contrast, Iceland has a labour force (the working age population being defined as those above 15 years of age) participation rate of nearly 80%, which is higher than that of all EU countries.

51 Please refer to the 2012 “Doing Business” report of The World Bank.

## II CONCLUSION

This paper provides a comprehensive analysis of the external competitiveness of EU candidate countries in the period 1999-2011. Starting from the assumption that a strong export performance is a sign of a country's competitiveness in the long run, we have considered a broad list of indicators, such as those related to prices and costs, the structural and technological characteristics of merchandise exports, foreign direct investment, as well as institutional factors. Given the underlying ambition to join the EU, comparisons are drawn between developments in candidate countries and those taking place in the EU10 and EU12. With this analysis, we aim to contribute to the current policy discussion on measures for achieving sustainable growth and the sustained convergence of emerging European economies.

We find that, during the pre-crisis period, all candidate countries with the exception of Iceland (an advanced economy) experienced a time of economic catching up vis-à-vis the EU15, generally growing slightly faster than the EU12 average. At the same time, the overall competitiveness of EU candidate countries (as measured by export market share) has also improved, despite the fact that significant differences exist between individual countries and that their exports have generally remained below their potential level. The onset of the crisis has affected candidate countries in different ways, prompting, for example, a slowdown in the convergence process and a dip in export market shares.

Traditional price and cost indicators can only partially explain the divergent export performance observed. Indeed, over the pre-crisis period, all candidate countries experienced a loss in price and cost competitiveness. In the context of an economic catching-up process, it seems natural that unit labour costs and real effective exchange rates have increased. Yet, labour productivity has not grown in line with the increased cost of labour and prices have risen faster than the level of convergence, which has thus affected competitiveness and contributed to increasing trade deficits. The lack of adjustment in price and cost indicators since the start of the crisis, particularly in Croatia and Montenegro, continues to weigh on the external competitiveness of these countries.

Looking at export characteristics, we observe some positive developments in some candidate countries, but less so than in the EU12. Most candidate countries have diversified their exports, both in terms of the number of trading partners and the number of products exported, thereby enhancing their resilience to economic shocks. All of these countries have increased their exports to the EU. Some, in particular Croatia and Montenegro, rely heavily on exports to EU periphery countries which have experienced an important economic slowdown. This can partly explain their short-term vulnerability in terms of export performance (together with their loss of price and cost competitiveness), and an adjustment in their export orientation strategy may be needed in the near future.

As mentioned above, EU candidate countries have also improved their exports in terms of the number of products exported. Yet, Iceland and Montenegro remain dependent on a small number of raw materials for their exports. Moreover, several candidate countries have not yet managed to climb up the quality ladder and their exports are concentrated in fairly stagnant sectors, such as agriculture and textiles. The outlook for export growth is rather uncertain for these countries, as they are vulnerable to competition from other emerging markets. However, some candidate countries, most notably Turkey, have managed to shift their exports towards more complex industrial products (such as metal products and machinery) for which there is increased demand in global markets.

Candidate countries featuring larger economies have seen an increase in their share of intra-industry trade with the EU (most of this IIT still involves lower quality products) even though the new EU Member States (EU10) still outperform them in this respect. Furthermore, all candidate countries have received considerable FDI, mostly from EU countries. However, foreign capital has made little impact on export performance, as it has largely been directed towards the service and non-tradable sectors.

Finally, despite some major improvements in particular areas, SEE countries perform quite poorly overall with regard to several structural indicators, especially when compared with other European emerging economies. Iceland is an altogether different case here, performing much better than other candidate countries on nearly all structural issues.

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## APPENDICES

### I MAIN EXPORT PRODUCTS IN EU CANDIDATE COUNTRIES

Croatia						
	2010 Share of country exports		RCA	Lafay index	Technology	Main trading partners (2010)
Ship and boat construction	12%	(31%)	0.83	0.61	Medium technology	Italy (19%) Bosnia-Herzegov. (12%) Germany (10%) Slovenia (8%) Austria (5%)
Petroleum products	9%	(7.6%)	0.37	0.154	Resource-based manufactured	
Medicaments	3%	*	0.20	-0.185	High technology	
Electrical power machinery	3%	(9.4%)	0.70	0.771	High technology manufactured	
						<b>Herfindahl-Hirschman index</b>
						Partner concentration 0.27
						Product concentration 0.18
Montenegro						
	2010 Share of country exports		RCA	Lafay index	Technology	Main trading partners (2010)
Aluminium	40%	(67%)	0.97	0.886	Primary products	Serbia (28%) Greece (17%) Italy (15%) Hungary (9%) Bosnia-Herzegov. (7%)
Alcoholic beverages	6%	(4%)	0.87	0.223	Agro-based manufactured	
Electric current	5%	*	0.92	-0.263	Resource-based manufactured	
Simply worked wood	4%	(3%)	0.88	1.000	Medium technology manufactured	
						<b>Herfindahl-Hirschman index</b>
						Partner concentration 0.39
						Product concentration 0.40
Iceland						
	2010 Share of country exports		RCA	Lafay index	Technology	Main trading partners (2010)
Aluminium	41%	(47%)	0.97	0.921	Primary products	Netherlands (34%) Germany (14%) United Kingdom (10%) Spain (5%) USA (5%)
Fish (fresh, chilled)	25%	(28%)	0.97	0.954	Primary products	
Fish (dried, smoked)	8%	(9.5%)	0.99	0.992	Agro-based manufactured.	
Pig iron	4%	(4.2%)	0.88	0.971	Medium technology manufactured	
						<b>Herfindahl-Hirschman index</b>
						Partner concentration 0.40
						Product concentration 0.49
Serbia						
	2010 Share of country exports		RCA	Lafay index	Technology	Main trading partners (2010)
Flat-rolled iron	7%	(17%)	0.86	0.882	Low technology manufactured	Italy (11%) Bosnia-Herzegov. (11%) Germany (10%) Montenegro (8%) Romania (7%)
Copper	5%	(3%)	0.68	0.157	Primary products	
Maize (unmilled)	3%	(9%)	0.91	0.98	Primary products	
Rubber tyres	3%	*	0.68	0.496	Agro-based manufactured	
						<b>Herfindahl-Hirschman index</b>
						Partner concentration 0.25
						Product concentration 0.14

Sources: UN Comtrade and own calculations.

Notes: Numbers in brackets indicate the share of total net (positive) exports. When imports were accounted for, several main export sectors take a negative value (\*). The revealed comparative advantage (RCA) is calculated using the Balassa index approach (see footnote 20). For the Lafay index, see footnote 20, and for the Herfindahl-Hirschman Index, see footnote 21. Exports are at the SITC three-digit level and the technology categories are based on Lall (2000).



FYR Macedonia						
	2009 Share of country exports		RCA	Lafay index	Technology	Main trading partners (2009)
Women/girl clothing	10%	(25%)	0.89	0.897	Low technology manufactured	Serbia (24%) Germany (17%) Greece (11%) Bulgaria (8%) Italy (8%)
Men/boy clothing	7%	(18%)	0.89	0.900	Low technology manufactured	
Tobacco (unmanufactured)	3%	(8%)	0.94	0.806	Primary products	
Footwear	3%	(4.4%)	0.63	0.391	Low technology manufactured	
						<b>Herfindahl-Hirschman index</b>
						Partner concentration 0.34
						Product concentration 0.30
Turkey						
	2010 Share of country exports		RCA	Lafay index	Technology	Main trading partners (2010)
Passenger motor vehicles	5%	*	0.17	-0.037	Medium technology manufactured	Germany (10%) Italy (6%) France (5%) Iraq (5%) Russia (4%)
Iron and steel	5%	(9%)	0.81	0.709	Low technology manufactured	
Textile apparels (others, nes)	4%	(7%)	0.67	0.682	Low technology manufactured	
Petroleum products	3%	*	-0.11	-0.455	Resource-based manufactured.	
						<b>Herfindahl-Hirschman index</b>
						Partner concentration 0.19
						Product concentration 0.13

Sources: UN Comtrade and own calculations.  
Notes: Numbers in brackets indicate the share of total net (positive) exports. When imports were accounted for, several main export sectors take a negative value (\*). The revealed comparative advantage (RCA) is calculated using the Balassa index approach (see footnote 20). For the Lafay index, see footnote 20, and for the Herfindahl-Hirschman Index, see footnote 21. Exports are at the SITC three-digit level and the technology categories are based on Lall (2000).

## 2 PRODUCT DISTRIBUTION ACCORDING TO DIFFERENT CLASSIFICATIONS

### Product classification by technological intensity

<b>High-technology industries</b>	Aircrafts and spacecraft Medicinal and pharmaceutical products Office and computing machinery Telecommunications, photographic apparatus, optical instruments
<b>Medium technology industries</b>	Motor vehicles, cycles, railroad and transport equipment not elsewhere specified (n.e.s) Power generating machinery and equipment n.e.s Chemicals (excl. pharmaceutical), perfumery Ship and boat construction
<b>Low technology manufactures</b>	Leather, textile and textile products, footwear Pottery, cutlery, tools, gold, silverware, jewellery Toys and other articles of plastic
<b>Resource-based manufactures</b>	Meat, fish (dried, salted, smoked) Cereals, maize, wheat (prepared), sugar and chocolate Paper, lime, cement, iron and steel Base metal ores, petroleum production, mineral manufactures n.e.s
<b>Primary products</b>	Meat, fish (fresh, chilled, frozen) Cereals, maize, wheat, fruit and nuts Coffee, cocoa and tobacco Silk, cotton, furskins and wood Aluminium, zinc, stone and crude petroleum

Source: Taxonomy based on Lall (2000).

### Product classification by factor intensity

<b>Research intensive</b>	Chemicals Medicinal and pharmaceutical products
<b>Capital-intensive goods</b>	Beverages and tobacco Electrical Iron and steel Road vehicles
<b>Labour intensive goods</b>	Basic manufactures Textiles fibres (not manufactures into yarn) Miscellaneous manufactured articles
<b>Raw material intensified goods</b>	Food and live animals Crude materials excluding fuels Mineral fuels

Source: Taxonomy based on Yilmaz (2003).

### Product classification by educational intensity

<b>High</b>	Medicinal and pharmaceutical products Office- and computing machinery Mineral fuels (petroleum, electric current, natural- and manufactured gas) Ship and boat construction
<b>Intermediate</b>	Motor vehicles, cycles, railroad and transport equipment not elsewhere specified (n.e.s) Rubber, plastics in non-primary forms, paper and articles thereof Heating equipment, pumps, non-electronical machinery tools (n.e.s)
<b>Low</b>	Meat or fish (prepared, preserved salted, dried or smoked) Cereals (milled), milk, cheese, sugar and chocolate, alcoholic beverages Hides, skins (excl. raw furskins), pottery, glass Crude materials (except fuels) such as metalliferous ores, metal scrap and crude fertilizers
<b>Very low</b>	Meat or fish (fresh, chilled, frozen) Cereals, rice, barley, vegetables, fruits (unmilled, fresh or simply preserved) Textile manufacturing (not knitted) Floor coverings, raw furskins, crude materials (except fuels) such as cork and wood

Source: Taxonomy based on Peneder (2007).

ISSN 1607-1484



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