

# **Defining and Strengthening Sector Specific Sources of Competitiveness in the Western Balkans**

## **RECOMMENDATION FOR A REGIONAL INVESTMENT STRATEGY**

**Advance Copy**



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The Investment Compact member countries are: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, The former Yugoslav Republic of Macedonia, Moldova, Montenegro, Romania and Serbia. Kosovo under UNSCR 1244 participates as an observer. Each country participates in the work of the programme through a Country Economic Team headed by a senior level governmental official.

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The RCC is intended to sustain focused regional cooperation in South Eastern Europe through a regionally owned and led framework that also supports European and Euro-Atlantic integration. It will be turned to developmental projects and creation of a political climate susceptible to implementing projects of a wider, regional character, to the benefit of each individual country.

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## FOREWORD

The competitiveness of the economies of the Western Balkans represents a strategic European interest. Well-functioning market economies resistant to global competitive pressures will further contribute to the political stabilisation of the Western Balkan region, but also to achieving the EU's main policy objective for the years to come: growth and jobs for Europe.

Enhancing competitiveness and preparing the region for future EU accession will entail attracting investments and promoting private sector development. It is crucial that these objectives be pursued at a regional level. Further regional economic integration will better prepare the economies of the Western Balkans for the EU Single Market as well as increase their appeal as destinations for much needed investment.

In view of the global competition to attract investment, dedicated investment and private sector development policies are needed to enable countries to gain a comparative advantage. It is therefore important for governments to identify what such sources of competitive advantage might be, and to remove sector-specific policy barriers in order to achieve them.

The objective of the project “Defining and Strengthening Sector Specific Sources of Competitiveness”, co-financed by the European Commission and implemented by the OECD in co-operation with the Regional Cooperation Council and the World Bank, is to support the Western Balkans in defining and implementing a targeted investment promotion agenda. This report provides policy makers and the private sector with proposals for actions based on a robust analysis of investor demand problems and sector-specific policy barriers that currently prevent local firms from growing their operations in four key sectors. The report’s recommendations to move up the value chain by improving human capital and channelling innovation efforts constitute an important message for policy makers.

This report is the result of a collaborative effort with policy makers in each economy of the Western Balkans, as well as representatives of the private sector. It will serve as a basis for the future definition and implementation of a roadmap to strengthen and sustain regional competitiveness.

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Key data on the four sectors that are the focus of this report – apparel manufacturing, automotive components, and business process and information technology outsourcing – have been provided by national offices of statistics in the Western Balkans. These are: the Institute of Statistics of Albania, the Agency of Statistics of Bosnia and Herzegovina, the Federal Office of Statistics of the Federation of Bosnia and Herzegovina, the Institute of Statistics of the Republika Srpska, the Central Bureau of Statistics of the Republic of Croatia, the Statistical Office of Kosovo under UNSCR 1244, the State Statistical Office of The former Yugoslav Republic of Macedonia, the Statistical Office of Montenegro, and the Statistical Office of the Republic of Serbia. In addition, statistics on foreign direct investment flows and stocks have been contributed by national central banks: the Bank of Albania, the Central Bank of Bosnia and Herzegovina, the Croatian National Bank, the National Bank of The former Yugoslav Republic of Macedonia, the Central Bank of Montenegro and the National Bank of Serbia.

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## ABBREVIATIONS

ACCA	Association of Chartered Certified Accountants
ACEA	European Automobile Manufacturers' Association
ALTG	Aluminum Association's Auto & Light Truck Group
API	Application programming interface
B2B	Business to business
BAIT	Bosnia-Herzegovina Association for Information Technologies
BEEPS	Business Environment and Enterprise Performance Survey (World Bank and EBRD)
BiH	Bosnia and Herzegovina
BPM	Business performance management
BPO	Business process outsourcing (or offshoring)
BPTO	Business process and technology outsourcing (or offshoring)
CAD	Computer aided design
CAE	Computer aided engineering
CAGR	Compound annual growth rate
CARDS	Community Assistance for Reconstruction, Development and Stabilisation (EU)
CATIA	Computer aided three dimensional interactive application
CBT	Computer-based training
CBUs	Completely built-up units
CDMA	Code division multiple access
CE	Consumer electronics
CeBIT	Center of Office and Information Technology (computer trade fair, Hanover, Germany)
CEE	Central and Eastern Europe
CEMS	Community of European Management Schools
CET	Country Economic Team
CeVIP	Centre for Virtual Manufacturing
CIO	Chief Information Officer
CKD	Completely knocked down production

CM	Cut-and-make
CMMI	Capability Maturity Model Integration
CMT	Cut-make-trim
CoCKEAS	Coordinating Competencies and Knowledge in the European Automobile System (EU)
CPA	Certified public accountant
CPFR	Collaborative planning, forecasting and replenishment
CRM	Customer relationship management
CSM	Cell signal modulation
DFM	Design for manufacturability
DSL	Digital subscriber line, or domain-specific language
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EDI	Electronic data interchange
EITO	European Information Technology Observatory
EPM	Entreprise performance management
ERP	Entreprise resource planning
ETF	European Training Foundation (EU)
Eurostat	Statistical Office of the European Communities
F&A	Finance and accounting
FBiH	Federation of Bosnia and Herzegovina
FDI	Foreign direct investment
FEZ	Free economic zone
FIAS	Foreign Investment Advisory Service (World Bank)
FIPA	Foreign Investment Promotion Agency
FMEA	Failure modes and effects analysis
FS	Financial services
FTA	Free trade agreement
FYR	Former Yugoslav Republic
GMAC	General Motors Acceptance Corporation
GTZ	German Organisation for Technical Co-operation
HCTAR	Harvard Center for Textile and Apparel Research
HD	High definition
HR	Human resources
HRIS	Human resource information services

HSDPA	High speed downlink packet access
IAS	International Accounting Standards
IATF	International Automotive Task Force
ICT	Information and Communication Technology
IEEE	Institute of Electrical and Electronics Engineers
IFRS	International financial reporting standards
IIWB	Invest in the Western Balkans (OECD)
ILO	International Labour Organization (or Office)
IMF	International Monetary Fund
INSEE	Institut National de la Statistique et des Études Économiques (National Institute for Statistics and Economic Studies) (France)
IPA	Investment Promotion Agency
IRI	Investment Compact Investment Reform Index (OECD)
ISCED	International Standard Classification of Education
ISIC	International Standard Industrial Classification of all Economic Activities
ISO	International Organization for Standardization
ISO 9001	Standard for quality management
ISO 14001	Standard for environmental management
ISO/TS16949	Standard for quality management of automotive-related products
IT	Information technology
ITO	Information technology outsourcing (or offshoring)
ITU	International Telecommunication Union
JAMA	Japan Automobile Manufacturers Association
KFOR	Kosovo Force
KPO	Knowledge process outsourcing
LABORSTA	Labour statistics database (ILO)
LAN	Local area network
LBO	Leveraged buyout
MIGA	Multilateral Investment Guarantee Agency
MIS	Management information system
MPS	Modular production system
NACE	Nomenclature générale des activités économiques dans les communautés européennes (Classification of Economic Activities in the European Community)
NASSCOM	National Association of Software and Services Companies (India)

NCEA	National Classification of Economic Activities
NPD	New product development
OBM	Original brand manufacturer (or manufacturing)
OECD-IC	OECD Investment Compact
OECD PSD	OECD Private Sector Development Division
OEM	Original equipment manufacturer (or manufacturing)
OESA	Original Equipment Manufacturers Association
PBS	Progressive bundle system
PM	Project manager
POS	Point of sale
PwC	PricewaterhouseCoopers
QR	Quick response
R&D	Research and development
RCA	Revealed competitive advantage
RCC	Regional Co-operation Council (South Eastern Europe)
RCS	Regional Capability Survey (OECD)
RFID	Radio frequency identification
SAI	Social Accountability International
SAM	Standard allowed minute
SEC	Securities and Exchange Commission (US)
SEE	South East Europe
SEE IC	Investment Compact South East Europe Investment Committee (OECD)
SIEPA	Serbian Investment and Export Promotion Agency
SITC	Standard International Trade Classification
SKD	Semi-knocked down production
SKU	Stock keeping unit
SME	Small and medium-sized enterprise
SOA	Service-oriented architecture
SPF	Sector Prioritisation Framework (OECD)
SSSC	Sector Specific Sources of Competitiveness
TCV	Total contract value
TIME	Top Industrial Managers for Europe
TOEFL	Test of English as a Foreign Language
UA	User assistance

UI	User interface
UMTS	Universal Mobile Telecommunications System
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organisation
UNMIK	United Nations Interim Administration Mission in Kosovo
UNSCR	United Nations Security Council Resolution
UNSD	United Nations Statistics Division
UPC	Universal Product Code (or bar code)
UPS	Unit production system
USAID	United States Agency for International Development
US GAAP	United States Generally Accepted Accounting Principles
VAT	Value added tax
VET	Vocational education and training
VMI	Vendor managed inventory
VMnet	Virtual Manufacturing Network
Wi-fi	Wireless technology
wiiw	Vienna Institute for International Economic Studies
WiLAN	Wireless local area network
WiMAX	Worldwide Interoperability for Microwave Access
WPIIS	Working Group on Information Society Indicators (OECD)
WRAP	Worldwide Responsible Apparel Production





## INTRODUCTION

In view of the European Union's wider strategy to promote growth and stability in the Western Balkans on the road to EU accession, attracting a growing share of foreign direct investment (FDI) is a key priority for the region. FDI inflows help to sustain economic growth. They generate employment in the formal sector, promote exports, rebalance growing trade deficits and maintain the process of economic reconstruction. By global standards, FDI in the Western Balkans has been limited. In addition, it has focused more on privatisation deals than on much needed greenfield investment.

For the Western Balkans to develop its full economic potential by attracting more investment and increasing trade, a complementary regional sector specific approach is needed. Such an approach will address sector specific investor requirements and policy barriers. The CARDS/2006/131-329 project "Defining and Strengthening Sector Specific Sources of Competitiveness" (SSSC)<sup>1</sup> was initiated by the European Commission, the OECD and the World Bank to tackle this challenge and complement existing initiatives at the national level. The project provides the Western Balkans with targeted policy making assistance specific to key sectors that have significant regional employment potential. Based on the OECD Sector Prioritisation Framework and approach, the following sectors have been identified: traditional sectors (apparel manufacturing and automotive components) that represent a higher proportion of investments and employment that can be further leveraged; and more niche sectors (business process and technology outsourcing) that can be grown further.

The project was designed to consist of two key phases: Phase 1, Developing a regional investment strategy; and Phase 2, Targeted implementation of the regional investment strategy. This report is the output of Phase 1. It outlines the project's key findings with respect to enhancing investments in the region at the sector level. The report also includes key recommendations for policy makers in the region.

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1 . This project is co-financed by the European Commission and the OECD.



## EXECUTIVE SUMMARY

### Key findings concerning a regional investment strategy

The Western Balkans is cost competitive and has EU proximity advantages.

In terms of cost, labour costs in services (*e.g.* business process and technology outsourcing) are up to five times lower than in Eastern Europe. Manufacturing companies' cost structures (*e.g.* in the apparel manufacturing and automotive components sectors) are up to four times lower than in Central and Eastern European countries.

The region also has clear EU proximity advantages. In the apparel manufacturing sector, transport times to the EU can be less than 24 hours; they are similar in the automotive component sector. Moreover, there are attractive opportunities for nearshoring in the business and technology outsourcing sectors. And investors are looking for the language and software development skills available in some of the Western Balkan economies.

However, cost competitiveness as a source of differentiation is not sustainable. Cost levels are increasing gradually in some sectors, negatively impacting margins and potentially eroding market share. Limited access to finance and a lack of strategies for reinvesting in technology and human capital represent a risk for the future.

To sustain competitiveness, the Western Balkans needs to move up the value chain: first, by differentiating through value-added services and innovation; and second, by further leveraging the region's proximity to the EU market. In moving up the value chain, major challenges should be addressed in three areas: sector specific policies, human capital, and innovation.

To support growth, sector specific policy barriers need to be removed. In the apparel manufacturing sector, investing in technology to upgrade offering capabilities is key to responding to investor requirements: for example, investing in electronic data interchange (EDI) to reduce lead times, or in equipment to move from cut-make-trim (CMT) manufacturing and become original equipment manufacturers (OEMs) able to provide finished goods. However, access to and the cost of finance are a significant constraint on investment. On average, companies in the sector need collateral of 177%, with an interest rate of 11%. There is a need to improve awareness of the type of financing available and the requirements for obtaining it. In the automotive components sector, there is a need to enhance collaboration efforts with international companies to upgrade capabilities. More than 50% of companies are experiencing a skills gap in regard to design, supply chain and logistics capabilities. There is a need to improve both sector linkages between original equipment manufacturers (OEMs) and suppliers, but also to improve awareness of local capabilities that could be exploited much further through, for example, regional supplier databases.

Human capital issues are a major challenge across all sectors if these sectors are to move up the value chain. Skills gaps in labour intensive and high-growth sectors like business process and technology outsourcing reach 60%. This is especially the case in new and in demand computer

languages and software support skills. Due to the mismatch between skills demanded and skills supply, the Western Balkans faces a serious challenge in supporting growth in most sectors. For example, 44% of automotive component companies identify availability of skills as a top challenge they face in expanding operations. Lack of skills has a negative impact on competitiveness – increasing operating costs, lowering output quality and contributing to a loss of business. Mechanisms for institutionalisation and dialogue between ministries of economy/industry and education are limited. This reduces the possibilities to match supply with demand at the structural level. Moreover, many nationally sponsored reform initiatives fail to include all relevant stakeholders in the reform process, limiting the political support needed to see reforms through.

Finally, there is a need to channel value-added services and innovation efforts. This could be done by further linking research bodies and businesses through, for example, competitive clusters, especially in the sectors included in this study. Governments in the region need to leverage and institutionalise existing networks of local and international firms, as well as academic research and civil society networks, to ensure that competitiveness is not only maintained but enhanced. Attempts have been made to develop partnerships between universities and business associations in some Western Balkan economies, but efforts to institutionalise competitive clusters at the regional level to compete with other European markets remain limited.

### **Summary of recommendations and implications**

To compete effectively, the Western Balkans needs to leverage both short-term cost advantages and the region's proximity to EU markets. At the same time, there is a need to invest continuously in value-added services and innovation to respond to customer demand and sustain competitiveness in the longer term. However, strategies and specific policy barriers differ from one sector to another, and especially between manufacturing and services. This report highlights the sector specific strategies and policy barriers to be addressed at the national and regional level.

To increase the attractiveness of the sectors analysed in this study, policy makers should act on the following:

*Apparel manufacturing:* Raise awareness about all opportunities to move up the value chain and improve access to finance by enhancing demand capabilities (*i.e.* improving the accounting standards and marketing capabilities of apparel manufacturing companies) and supply capabilities (*i.e.* raising awareness of all types of financing available both internationally and locally). This will be particularly important for economies like Albania, Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia and Serbia that have a strong export potential. The involvement of both banking and apparel manufacturing associations and of clusters, as well as regulators, will be essential to drive reforms and change;

*Automotive components:* Develop regional suppliers by developing collaborative capabilities through linkage programmes and addressing information gaps. This will be key for economies like Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia and Serbia, but also for those like Croatia that are focusing on more high-end products. Here, the involvement of Investment Promotion Agencies and automotive associations will be essential;

*Business process and technology outsourcing:* Address human capital gaps by enhancing the private sector's engagement and contribution to skills development. Specific actions should target tertiary education as well as on-the-job education. A large panel of policy levers are recommended, depending on which of the Western Balkan economies is being considered. These levers include the involvement of the private sector through course sponsorship, internships and specialised private

education, as well as linkage programmes and tax relief re-invested in training. The BPTO sector should be grown further in all of the Western Balkan economies, particularly those with significant cost advantages like Albania and Kosovo under UNSCR 1244, but also in Croatia, which has higher labour costs but strong opportunities to offer high-level value-added services. Sector associations and clusters, ministries of education and labour, and private universities would be key stakeholders.

During the second phase of the project, action plans will be implemented in co-operation with the beneficiary Western Balkan economies concerning how to tackle specific recommendations spelled out in the regional investment strategy.

In the medium to longer term – that is, beyond the lifetime and scope of this project – the findings of the analysis show that making competitiveness sustainable at both the national and regional level is critical. This means the future focus of support needs to be on developing dedicated stable institutions, mechanisms and processes, through which the region will be empowered to move the process of increasing regional competitiveness forward. Sustainability in the longer term is based on three self-reinforcing pillars:

*Proposed key pillars to support sustainable competitiveness in the Western Balkans*



Sector specific policy reforms are required in order to develop a systematic approach to removing policy barriers to investment and trade in key sectors. The expected outcome is the enabling of targeted sectors to compete more effectively at the regional, European and global levels in the longer term.

Human capital development is essential to establish the mechanisms required to match the supply of skills with market demand and to enhance overall skills in the region. Specific objectives include reducing skills gaps, allowing more flexible hiring by firms, and ensuring the sustainability of human capital policy through well-defined consultation and institutionalisation mechanisms.

Finally, regional competitive clusters are needed in order to develop a systematic regional approach that will generate innovative projects through partnerships between local and international firms, universities and civil society. Specific objectives would include improving the level of innovation by focusing research and development efforts; enhancing valued-added skills through knowledge transfer; and developing policies to organise and deliver government services more efficiently. Clusters provide an organisational framework for delivering government services that are better tailored to industry demand.

A final recommendation of this report to governments in the Western Balkan region is to consider the joint development of a Regional Competitiveness Initiative based on these three pillars.



## PART 1

### APPROACH AND METHODOLOGY

#### Sector identification: the Sector Prioritisation Framework (SPF)

The identification of the sectors covered by the project “Defining and Strengthening Sector Specific Sources of Competitiveness” (the SSSC project) was carried out based on the Sector Prioritisation Framework (SPF) methodology. This approach is based on a three-step process involving stakeholder consultation; data collection and quantitative analysis; and validation of results with key stakeholders (Figure 1).

Figure 1. Sector Prioritisation Framework



Source: OECD

#### ***Phase 1: Stakeholder consultation***

Investment Promotion Agencies were asked to provide a list of sectors that they actively promote in their countries. The list of sectors collected was then cross-checked against investment strategies and information available in government reports and on websites. Using the list of priority sectors throughout the Western Balkans, an initial short list of sectors to consider for the analysis was created.

Suggestions and comments concerning the selection of sectors and the methodology were elicited from other organisations, including the World Bank/FIAS Invest in the Western Balkans programme (IIWB), the European Bank for Reconstruction and Development (EBRD) and the Vienna Institute for International Economic Studies (wiiw).

#### ***Phase 2: Data collection and quantitative analysis***

After consultation with government representatives, international organisations and regional and industry experts, the OECD performed a quantitative analysis of the current situation and growth potential of several sectors in the Western Balkans. This evaluation allows sectors to be positioned relative to each other in two main dimensions: market attractiveness (which incorporates the competitive advantage and potential growth of a sector in a country) and country benefits.

These two dimensions are broken down into a number of variables:

1. *Market attractiveness*: market growth of the sector; share of the sector's value-added in total value-added; compound annual growth rate (CAGR) of value-added over a number of years; share of the sector's exports in total exports; trade balance of the sector; share of the number of firms active in the sector in the total number of firms present in the country; CAGR of the number of firms active in the sector over a number of years;
2. *Country benefits*: share of the sector's FDI stock in total FDI stock; CAGR of FDI stock in the sector over a number of years; share of employment in the sector in total employment; CAGR of employment in the sector in total employment; innovation.

The SPF covers 23 sectors.<sup>1</sup> To facilitate data collection, the SPF sectors correspond to the NACE classification of economic activities.<sup>2</sup>

Data was collected from the following sources: national offices of statistics (value-added, number of firms, employment); UNIDO (exports and trade balance); National Central Banks and the Vienna Institute for International Economics (FDI flows and stocks); and the EU Innovation Scoreboard (innovation).

Both dimensions were scored on a scale of 0 (low benefits or attractiveness) to 100 (high benefits or attractiveness). To determine the score, each variable within the dimension was allocated a weight, based on a correlation with FDI inflows at industry level, and validated through a comprehensive literature review. The outcome of the analysis and the resulting weights can be found in Annex 1.

The framework is based on the principle that the sectors in each of four quadrants require different investment promotion strategies (Figure 2):

Sustaining competitiveness is required if both country benefits and market attractiveness are high (*e.g.* in the automotive components, business process outsourcing, and information and communication technology sectors in most of the Western Balkan economies). To sustain their competitiveness, it is essential for these sectors to move up the value chain, as highlighted in the analysis:

“Defending” is required if country benefits are high but relative market attractiveness is low (*e.g.* in the case of historical manufacturing sectors in some of the region's economies). For sectors in this quadrant, the objective is to maintain market share;

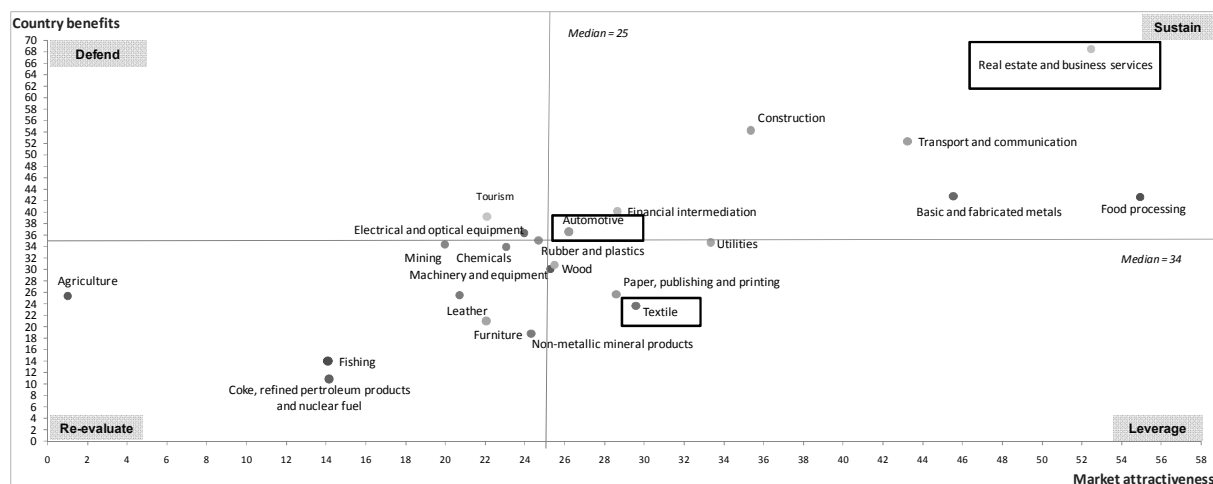
“Leveraging” of existing market attractiveness is required in order to improve country benefits (*e.g.* in the textile sector in most of the region's economies);

“Re-evaluating” a sector is required if both dimensions are low.

The purpose of the SPF is less to prioritise sectors than to adapt strategies relevant to each sector's situation. Based on that approach, sector specific investment promotion strategies were developed. These strategies are outlined in this report.



**Figure 2. SPF quantitative analysis output for the Western Balkans region**



Source: OECD

### ***Phase 3: Validation of results with stakeholders***

Combining the short list of priority sectors identified by Investment Promotion Agencies and regional and industry experts with the results of data collection and quantitative analysis, four sectors were identified for potential focus:

1. Apparel manufacturing;
2. Automotive components manufacturing;
3. Business process outsourcing (BPO);
4. Information and communication technology (ICT).

Given the close links between BPO and ICT sector drivers, in this report the results of the analysis for those two sectors have been merged into one chapter on business process and technology outsourcing (BPTO).

The choice of sectors was presented to the Investment Compact South East Europe Investment Committee (SEE IC) in November 2007, together with the Country Economic Team Leaders and representatives of donor countries and the European Commission, the Stability Pact, the IIWB and the Business Advisory Committee (BAC). Further validation of the appropriateness of the choice of sectors was given by IPA representatives at the OECD Investment Compact Investment Promotion Working Group which met in April 2008.

### **Primary research**

The analysis of the competitiveness of these four sectors in the Western Balkans was conducted through three main activities: (i) a survey of investors and local suppliers in these sectors in the Western Balkans; (ii) a series of country missions to verify the results of the survey and discuss in more detail the particular barriers faced by those firms; and (iii) validation of the survey and country mission results with IPA representatives and other stakeholders.

### ***The Regional Capability Survey (RCS)***

The OECD Regional Capability Survey (RCS) focuses on sector specific business and policy constraints experienced in the Western Balkans. It includes both a quantitative and qualitative methodology. The RCS specifically aims at capturing data that:

1. Examines companies' general operational activities;
2. Determines perceptions of obstacles to business growth;
3. Allows calculating productivity;
4. Analyses sector specific issues;
5. Establishes firms' perceptions of key success factors.

The qualitative survey includes two types of data collection methodologies: focus groups, and in-depth interviews during company visits. The qualitative survey was carried out by the OECD using a sample of five to six companies per sector per economy.

The quantitative survey questionnaire was elaborated by the OECD and implemented in the region by Prism Research ([www.prismresearch.ba](http://www.prismresearch.ba)). To secure maximum participation in the survey and ensure data quality, the data has been kept confidential.

The sectors surveyed were apparel manufacturing; automotive components; and business process outsourcing (BPO) and information and communication technology (ICT) (specifically, firms engaged in back office functions, call centre activities and software development).

The survey was carried out in Albania, Bosnia and Herzegovina, Croatia, Kosovo under UNSCR 1244, The former Yugoslav Republic of Macedonia, Montenegro and Serbia. The survey was typically completed by firms' directors, accountants and human resource managers.

#### *Structure of the survey*

The RCS questionnaire was organised into five parts.

1. *Part I: General information* asks firms general questions about their business activities, size, ownership and exports.
2. *Part II: Business environment* examines firms' perceptions of the business constraints affecting growth in their sector. The first set of questions is based on similar questions found in the EBRD-World Bank Enterprise Surveys to enable benchmarking.<sup>3</sup> The second set of questions asks the Western Balkan economies to rank policy dimensions according to the OECD Investment Reform Index methodology.<sup>4</sup>
3. *Part III: Company operations and skills gap analysis* is different for manufacturing industries (apparel manufacturing, automotive components) and services industries (BPO and ICT):
  - a) For *manufacturing industries*, Part III asks a series of questions to gather more in-depth data on sales, labour costs, etc. for the purpose of calculating productivity and providing

information for a financial scenario for apparel and automotive component firms, in order to determine the impact of various policy levers on profitability;

- b) For *services industries*, Part III establishes the extent of skills gaps in BPO and ICT through a series of questions on the mismatch between the types of skills demanded and the availability of those skills in the current workforce.
- 4. *Part IV: Competitiveness* examines issues that are sector specific, including the implementation of technology relevant to the sector and methods of marketing.
- 5. *Part V: Customer requirements and key challenges* looks at companies' perceptions of their clients' demands (e.g. for expertise in BPO) and the key success factors for surviving in their respective sectors (e.g. the introduction of demand forecasting software in textile and apparel manufacturing firms).

The survey consisted of between 29 and 38 questions, depending on the sector (Table 1).

**Table 1. Number of questions per survey questionnaire**

Sector		Number of questions
Apparel manufacturing		34
Automotive components		38
BPTO	Back office functions	29
	Call centers	33
	Software development	32

Source: OECD

### *Timeline*

The survey was conducted in three phases:

- Phase I:* Prism Research compiled a list of companies in the four sectors, using available company registers and existing databases in the region;
- Phase II:* This phase included a pilot sampling of three to seven firms in each sector. The purpose of the pilot was to test the feasibility of the questions and the way they were asked. After the pilot study was completed, the results obtained and feedback from firms were used to finalise the questionnaires;
- Phase III:* This phase involved a full launch of the survey that had been finalised using the results of the pilot survey.

Throughout the implementation period of the survey, the OECD project team conducted focus groups and individual company visits in all of the Western Balkan economies. This exercise was performed to validate the survey results. Focus groups were organised within Chambers of Economy, business clusters and sectoral trade associations for all four sectors in each Western Balkan economy. With the aim of obtaining additional first-hand information, the OECD team visited five to ten

companies per sector per economy and conducted interviews with company owners, directors, financial officers, plant managers and plant supervisors.

The combination of quantitative data collection and analysis, focus groups and individual company interviews allowed the OECD to build up a solid understanding of the key success factors, challenges and policy barriers faced by firms in the four sectors covered by the study, at the regional level and at the level of individual Western Balkan economies.

### *Sampling*

The RCS covers a sector specific sampling of firms in the region. It actually consists of four separate surveys, and the sample includes large, medium and small companies. Where only a limited number of companies were surveyed in one of the Western Balkan economies, this reflects the lack of development of that sector in that economy (*e.g.* automotive components in Albania) (Table 2).

### *Country missions*

After the survey results were collected and analysed by the OECD, a series of country missions were conducted with the dual aims of (i) validating and augmenting the information obtained through the survey; and (ii) carrying out consultations with the public and private sectors on the results of sectoral research. All seven of the Western Balkan economies were visited. Firms in each of the four sectors were interviewed, and governments and industry associations were consulted (including Chambers of Economy, trade associations and business clusters).

The general conclusions from the country missions and consultations with representatives of the private sector were that the results of the survey were on target. Interviews with firms and industry associations fleshed out in more detail the barriers and key success factors faced by their sectors.

### *Validation of results*

Preliminary findings were presented to the governments of the Western Balkan economies during the country missions. In addition, key insights from the survey and country missions and a draft investment promotion strategy were presented to the OECD Investment Compact Investment Promotion Working Group in April 2008. The study results were also presented to the Country Economic Team Leaders, regional IPA representatives, and representatives of international organisations and the donor community at the third meeting of the South East Europe Investment Committee, held in Paris on 22-23 May 2008. The final results were validated by IPA representatives at the launch of the Regional Investment Strategy in Sarajevo in July 2008.

Finally, the OECD Investment Compact has carried out numerous missions to promote work within the SSSC project to external actors and to obtain valuable feedback and suggestions. In particular, members of the Investment Compact team have had the opportunity to examine the results of the study with groups of foreign investors by participating in investment promotion events organised by the IIWB in Paris and Milan, among other events.

**Table 2. Number of companies surveyed**

	<b>Apparel manufacturing</b>	<b>Automotive components</b>	<b>BPTO</b>	<b>Total</b>
Albania	30	0	0	30
Bosnia and Herzegovina	31	20	40	91
Croatia	26	7	31	64
Kosovo under UNSCR 1244	34	2	0	36
The former Yugoslav Republic of Macedonia	30	21	20	71
Montenegro	0	0	20	20
Serbia	31	23	41	95
Total	182	73	152	407

Source: OECD RCS (2008)

## Secondary research

To identify the market dynamics behind each sector covered by the study, the OECD conducted extensive desk research on the global position and growth of each sector. Sector specific supply and demand factors were analysed, including sector size and growth, customer trends, sector economics and the international competitive environment. The following sources are among those consulted: OECD, EU, World Bank, IMF and UN reports and working papers; market research studies; specialised journals; and press reviews. Workshops were held with industry experts in all of the sectors analysed. In addition, statistics for each sector on output and employment were collected from the national accounts and enterprise surveys of the national offices of statistics of the economies covered in the report. FDI data was gathered from balances of payments compiled by national central banks.

## The Policy Impact Model (PIM)

The Policy Impact Model (PIM) elaborated by the OECD has two objectives:

1. To evaluate the financial impact of various policy levers on firms;
2. To benchmark the competitiveness of firms against relevant countries.

The model provides the following deliverables:

- Evaluation of a representative firm's return on investment based on changes in key policies, including human capital, taxation, the regulatory burden, infrastructure, financing, macroeconomic instability and trade policy;
- Identification of the specific competitive advantages that the Western Balkan economies and regions have in the selected sectors;
- Classification of policy and business barriers that hamper growth and investment in business;
- Creation of a practical policy tool that governments and investment promotion agencies can use to contribute to the identification of policy and business barriers in numerous manufacturing sectors.

The Policy Impact Model has been used to create a financial statement, based on various assumptions about operations in a hypothetical apparel manufacturing firm (see Chapter 1, Box 7).

## NOTES

1. Agriculture; fishing; mining; food processing; textile; leather; wood; paper, publishing and printing; coke, petroleum, fuel; chemicals; rubber and plastics; other mineral products; basic and fabricated metals; machinery and equipment; electrical and optical equipment; automotive; furniture; utilities; construction; tourism; transport and communication; financial intermediation; real estate and business services.
2. Sectors were identified at the NACE (Classification of Economic Activities in the European Community) one-digit level. However, as the manufacturing sector is too broad to allow a detailed enough analysis, manufacturing industries were identified at the NACE two-digit level.
3. The EBRD-World Bank Business Environment and Enterprise Performance Survey (BEEPS) was a survey of managers and owners of more than 20 000 firms across 26 countries of Central and Eastern Europe, the former Soviet Union, and Turkey. It was carried out in three rounds: 1999, 2002 and 2005. Furthermore, to set a benchmark for the transition countries, a survey of comparator countries was conducted in 2004-05 in two rounds. For more information, see <http://go.worldbank.org/RQQXYJ6210>.
4. The Investment Reform Index (IRI) is a practical tool developed by the OECD Investment Compact to measure and communicate on progress made by South East European countries in improving their investment climate. Structured around the OECD Policy Framework for Investment, which incorporates good practices from OECD countries, the IRI measures progress in eight policy fields: investment policy; investment promotion and facilitation; tax policy; anti-corruption and business integrity; competition policy; trade policy; regulatory reform and human capital. For more information, see [www.investmentcompact.org](http://www.investmentcompact.org).

## **PART II**

### **SECTOR ANALYSIS AND POLICY RECOMMENDATIONS**





## *Chapter 1*

### **APPAREL MANUFACTURING**

#### **1.1 Summary**

The apparel industry has experienced profound transformation over the past few decades. On the demand side, consumers are looking for greater range of clothing products more customised to their individual tastes and sizes at the lowest prices. At the same time, consumers are spending a smaller portion of their income on apparel, opting instead for consumer electronics, entertainment, etc. On the supply side, apparel retail outlets are faced with increasing competition, not only from the emergence of mass retailers, but also from increased internationalisation of the most successful apparel retail chains.

This industry transformation is forcing apparel retail outlets to become more lean and efficient by cutting costs, reducing inventory and reducing fashion cycle times. For the apparel manufacturing sector, such changes have serious implications. Above all, they require apparel manufacturers to improve time to market by shortening the time between an order being placed by the retailer and its arrival in the store ready for display. The international competitive climate further requires apparel manufacturers to provide more services to retailers and other buyers, moving from being assembly operators to being suppliers of “full-package” services, including material input sourcing and the provision of floor-ready merchandise. Manufacturers are also creating their own domestic and international brands, and even contracting out the assembly of some apparel products. By providing full-package services and creating their own unique brands, apparel manufacturers can capture a larger share of the value chain but they must also share a larger portion of the risk.

The Western Balkans has demonstrated that it can be competitive in the traditional apparel manufacturing sector. Apparel products are one of the largest manufacturing export categories in the region, representing over 7% of total exports in 2006. The region combines cost competitiveness with relatively high productivity and is increasingly seen as a key supplier of Western European markets and an effective way to diversify risk by spreading suppliers across many different geographic areas. The region has also responded well to the opportunities presented by the changes in the apparel sector and the implications these changes have for apparel manufacturers. It has gone a long way towards implementing more efficient systems to ensure apparel products can be shipped in the shortest amount of time. Many regional manufacturers have facilitated data communication with their buyers by implementing electronic data interchange, especially in Croatia and Serbia, and some have bought and implemented advanced automated technology, particularly in The former Yugoslav Republic of Macedonia.

However, the Western Balkans still must undertake a number of changes to ensure its long term sustainability in the new apparel manufacturing industry. On the operational side, firms need to reduce the time it takes many regional manufacturers to complete an order, and they should improve inventory control systems especially by better forecasting order demand. Furthermore, apparel manufacturers in the region have been slow to move up the value chain from providing full-packaged

services to designing and marketing their own brands. Of the firms surveyed by the OECD Regional Capability Survey (RCS) 42% still provided only basic assembly services.

Western Balkan governments can also improve policy and increase the competitiveness of the apparel manufacturing sector. The main policy barrier to overcome that was identified in the study is access to finance. Firms need better and cheaper financing to help them make the necessary capital investments that will help them deliver orders more quickly and move up the value chain. In Kosovo under UNSCR 1244, for example, 91% of firms surveyed by the RCS considered accessing finance to be a major to minor obstacle to the growth of their business. The approximate value of the collateral required as a percentage of the loan value for manufacturing firms in the Western Balkans was 177% compared with 133% in a sampling of OECD countries (BEEPS, 2005). Furthermore, the average interest paid throughout the region by a manufacturing firm was 11%, significantly higher than the 6% paid on average by manufacturing firms in higher income OECD countries.

Other policy barriers to investment in apparel manufacturing include slow VAT reimbursements, infrastructure and skills gaps. Slow and bureaucratic systems of value-added tax reimbursement, which reduce companies' cash flow, are particularly important in a sector with narrow profit margins. In Albania and Kosovo under UNSCR 1244, the biggest problem is the electricity infrastructure which causes daily power outages. Skills are also an issue. For example, 63% of firms in The former Yugoslav republic of Macedonia identified skills as a major to minor barrier limiting the operation and growth of their businesses. In Croatia, management capability was identified as the most serious shortage.

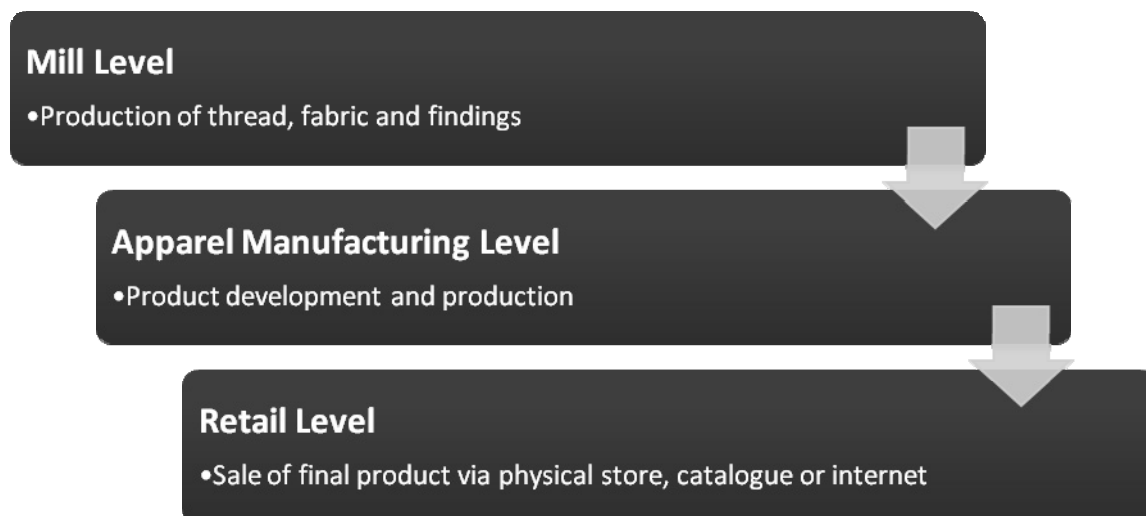
To address these policy barriers, the OECD recommends focusing first on making firms aware of all existing sources of finance both locally and internationally. Training should also be developed for apparel firm managers both in applying for financing and in managing more efficient production systems. Particularly in The former Yugoslav Republic of Macedonia and Croatia, staff training in new technology should be introduced. Finally, Albania, Kosovo under UNSCR 1244 and The former Yugoslav Republic of Macedonia should actively promote the apparel sector as a target for foreign and local investment.

## **1.2 Sector definition and segmentation**

### ***Sector definition***

The apparel industry involves many different activities. From spinning raw material into thread and weaving it into fabric to assembling clothing and selling it to the final consumer, many steps and actors are involved. However, the industry's structure can largely be defined by breaking it down into three distinct levels: (i) mill; (ii) apparel manufacturing; and (iii) retail (Figure 3).

Figure 3. Apparel sector breakdown



Source: Based on Glock and Kunz (2005)

1. The *mill level* includes manufacturers of thread, fabric and findings.<sup>1</sup> This is generally the most capital intensive part of the entire value chain. It is not unusual for hundreds of thousands of euros in capital investment to be made for each worker, and almost all of the tasks that can be automated have been. This area of the apparel industry has seen the greatest productivity gains in the past hundred years, mainly owing to technological advances;
2. The *apparel manufacturing level* encompasses two types of activity: product development and production. Firms participating in product development are responsible for marketing and merchandising products. Essentially, they design and develop each apparel product. Firms active in the production of apparel provide sewing and other services to product developers;
3. At the *retail level* the finished goods produced at the apparel manufacturing level are sold to the final consumer. There are many different types of retailers, ranging from mail order catalogues and their modern internet equivalents to specialty retailers to department stores and mass retailers (e.g. hypermarkets).

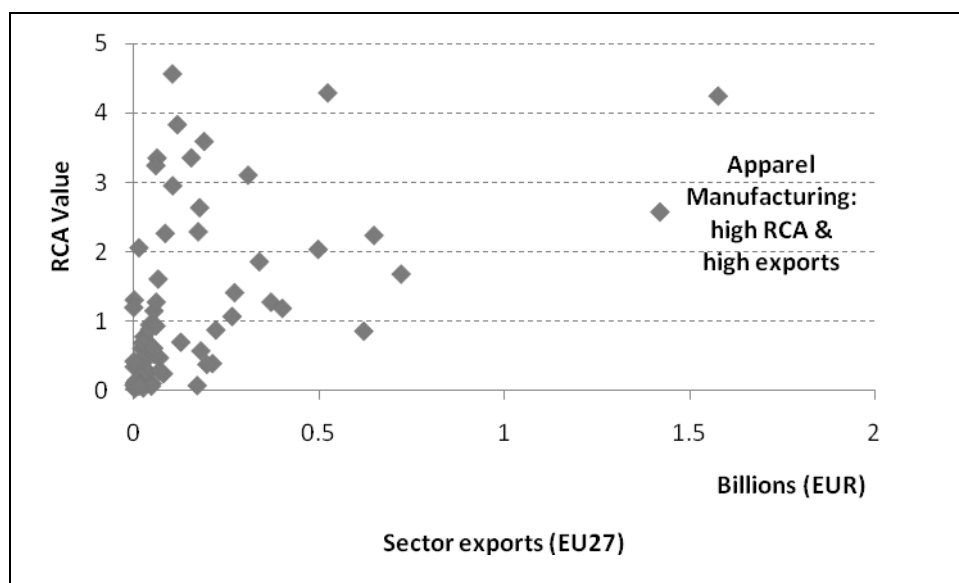
Throughout the three levels there are clear instances of forward and backward integration. Many large retail chains such as H&M carry out their own product development. Many product developers, such as Levi's, provide some or all of their own apparel production capabilities. Not only do mills produce their own fabric, but they may also develop and manufacture products and sell them in their own retail outlets like the Italian clothing giant Calzedonia.

### **Segmentation**

This sectoral analysis focuses on the manufacturing level of the apparel industry in the Western Balkans. As mentioned above, apparel manufacturing refers to product development and production. It can involve a number of different actors, including contractors, developers and third-party brokers, or wholesalers. For simplicity, the term "apparel manufacturing" is used in this report to refer to all apparel assembly activities.

As described in more detail in the previous section, it is clear that the apparel manufacturing sector in the Western Balkans is very competitive. Apparel products are one of the region's largest manufacturing export categories, representing over 7% of total merchandise exports in 2006. It was the largest merchandise export category in 2005 and in 2006 it was second only to trade in iron and steel.<sup>2</sup> The revealed comparative advantage (RCA) is relatively high at 2.6, indicating that apparel manufacturing exports from this region already have a strong presence on the EU market relative to other world competitors (Figure 4).<sup>3</sup>

**Figure 4. Western Balkan RCA values (2007)**



Source: OECD analysis based on data from Eurostat

In contrast, production at the mill level has largely stagnated. Western Balkan textile exports only represented 1% of total exports in 2006. The Western Balkans has a negative and growing deficit in the trade in textiles: in 2006 this was EUR -1 billion, 12% higher than the previous year.<sup>4</sup> Furthermore, the RCA for textiles compared with the EU is only 0.7,<sup>5</sup> meaning the region has a small competitive disadvantage. It is possible that in the future this competitive disadvantage could be turned into an advantage. Foreign direct investment (FDI) in the textile industry has increased in the past few years, fuelled by some large Italian investors looking to locate closer to that country's competitive apparel manufacturing industry. Between 2004 and 2006 the annual average growth rate of textile FDI inflows into Croatia, The former Yugoslav Republic of Macedonia and Serbia was 55%. Total inflows into those countries in the textile industry were EUR 35.5 million in 2006.<sup>6</sup>

The findings segment tells a similar story. Exports of findings from the Western Balkans only totalled about EUR 2.5 million in 2006 and the trade deficit was EUR -38 million.<sup>7</sup> The RCA was only 0.7, indicating a competitive disadvantage.<sup>8</sup> However, anecdotal evidence collected through OECD interviews with apparel manufacturers in the Western Balkans points to a relatively vibrant small findings industry in the region, although it is largely oriented towards domestic consumption.

The presence of both findings and textile segments is good news for apparel manufactures in the region, as these segments can therefore be fast and efficient suppliers. But it is clear that these segments are currently much less competitive than apparel manufacturing with respect to exports. Furthermore, given that the findings and textile segments involve vastly different technologies,

investments, skilled labour and inputs than apparel manufacturing, they would require very different types of analysis – which is beyond the scope of this report. For that reason, the current study excludes these segments from the analysis.

The apparel retailing segment in the region is also competitive and growing. The Western Balkans' regional consumer market is estimated at 21 million people.<sup>9</sup> GDP per capita was EUR 4 400 in 2007, but it has been growing by 11% per year on average since 2000.<sup>10</sup> FDI continues to be strong throughout the region, with inflows in 2006 totalling EUR 151 million.<sup>11</sup> Both foreign and regional retailers have expanded in the region, including chains such as the Slovenian Mercator and the Serbian Delta. However, the apparel retail industry by definition is focused on the domestic market and is beyond the scope of this report.

In conclusion, apparel manufacturing is clearly the most competitive export segment within the apparel industry in the Western Balkans. The sectoral analysis focuses on this segment. However, domestic and foreign investors should not ignore the regional market potential of the apparel retailing segment. Moreover, the mill level can only be expected to increase production, possibly one day becoming a net exporter. Three factors support this: the increasing competitiveness of the apparel manufacturing industry and the competitive advantage of its proximity to European markets; the winding down of privatisations of formerly state-owned enterprises; and increasing plant productivity and efficiency.

### **1.3 Sector trends**

Global changes occurring in the entire apparel industry, especially within the retail segment, have had profound implications for Western Balkan apparel manufacturing firms. The general retail landscape was traditionally defined by national borders and SMEs. The retail clothing segment started to change in the 1970s and that change accelerated throughout the 1990s. In the US between 1992 and 1997, employment per establishment increased by 12% while establishments per capita fell by 18%. Sales per establishment jumped by 31%. This trend continued in the period 1997-2002: employment per establishment increased by an additional 16%, establishments per capita fell by 10% and sales per establishment grew by 29%.<sup>12</sup> Retail outlets are no longer dominated by SMEs but are becoming larger, with higher sales, more employment and fewer stores. The story is the same throughout much of Western Europe. Employment per retail clothing establishment in the UK increased by 17%, the number of establishments fell by 9% and sales per establishment grew by 58% between 1998 and 2006.<sup>13</sup>

#### ***Increasing competition***

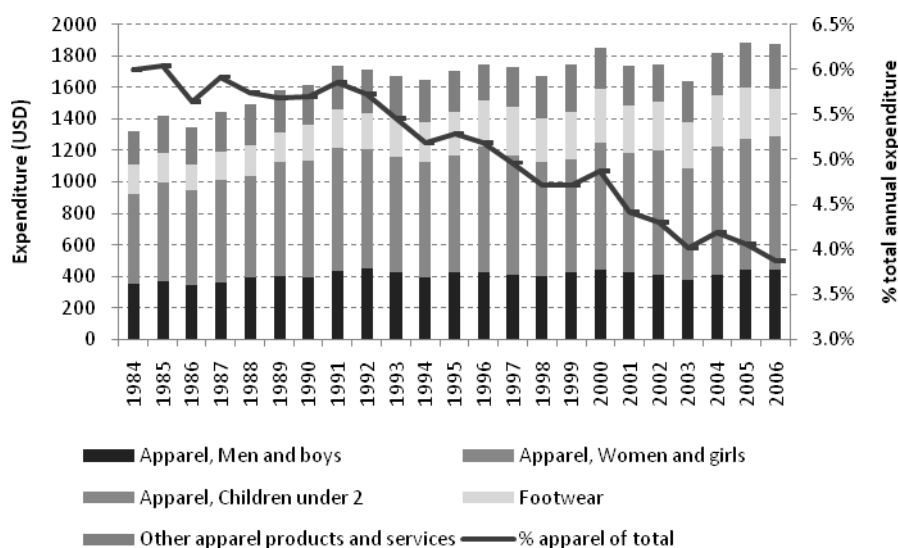
The evolution of the retailing environment from SMEs to larger, more productive stores can be attributed to two key trends: (i) increasing competition among clothing retailers due to the emergence of more efficient hypermarkets and superstores and to the internationalisation of retail outlets; and (ii) increasing competition from retailers of other consumer goods.

Hypermarket and superstore operators have emerged over the past few decades. These retail outlets cover large floor spaces to provide a low-cost, “one-stop-shop” experience: in one location shoppers can purchase both food and non-food products, including clothing. Over the past decade, hypermarkets and superstore operators have increased their market share in almost all G8 countries. Between 1999 and 2003 alone, the market share of hypermarket and superstore operators rose by 2% in Italy and France, 3% in Canada and 13% in Russia (Ahlert et al., 2006).

Furthermore, the internationalisation of many apparel retail stores really took off in the 1990s. The annual growth rate of FDI into retail trade in the US was over 9% between 1980-2007; in 2007 FDI into the clothing retail trade sub-sector alone was USD 4.1 billion (EUR 3 billion).<sup>14</sup> In Germany between 1996 and 2005 FDI into retail trade grew at an annual average of 10%, and in the UK it grew on average by 11% between 2002 and 2006.<sup>15</sup> The Spanish retailer Zara opened its first store outside that country in 1989, quickly expanding into European, American, Asian and Middle Eastern markets (Inditex, 2007). H&M, which began in Sweden, was largely confined to the Northern European market until the 1990s but is now present throughout Europe and North America (H&M, 2007). North American firms such as Gap have experienced the same trend. Gap first moved into the UK in 1989. By 2008 it had 283 stores in the UK, France, Ireland and Japan and another 68 franchise stores in 17 countries throughout Europe, the Middle East and Asia (Gap, Inc., 2007).

At the same time, clothing retailers are facing increasing competition from retailers of other consumer goods. Consumers are increasingly devoting a greater share of their expenditure to non-apparel goods and activities. In 1984, US household expenditure on apparel constituted 6% of total expenditure. By 2006, that figure had fallen to 3.9% (Figure 5).<sup>16</sup> In the EU-15 in 1996, households spent 6.9% of total expenditure on clothing and footwear. By 2006 that had fallen to 5.8%.<sup>17</sup> This means that consumers are devoting a greater share of their disposable income to items besides clothing. In fact, consumer expenditure on entertainment goods and services such as audio and visual equipment have particularly increased – in the US the yearly average growth rate between 1996 and 2006 was almost 5%.<sup>18</sup>

Figure 5. US household expenditure on apparel



Source: US Bureau of Labour Statistics Consumer Expenditure Survey.

The emergence of hypermarket and superstore operators, increasing internationalisation and more competition from other consumer goods have huge implications for clothing retailers. They now must compete for customers not only with very successful international clothing retailers and low-cost retailers, but also with retailers of other consumer goods. This places clothing retailers in an unprecedented competitive environment. Hence the recent emergence of larger and fewer establishments in the UK and the US, as well as in many other European countries. Indeed, stores are becoming more efficient and productivity is increasing: in the US between 1997 and 2002 sales per

employee jumped by 10.5%.<sup>19</sup> In France between 1996 and 2005 sales per employee rose by 20%. Clothing retail stores in France increased their gross margin as a percentage of sales by almost 1.9% between 1996 and 2005;<sup>20</sup> in the US these stores' gross margin as a percentage of sales increased by 6.3% in the same period.<sup>21</sup>

In simplified terms, increasing competition in the clothing retail sector is forcing firms to respond better to customer demand. In general, the ways firms are responding can be filtered down to two key tendencies: (i) product proliferation and (ii) lower prices.

### ***Product proliferation***

The number and range of clothing products on the market has been soaring. This trend actually began in the food retailing industry. Between 1964 and 1990, the number of items per store in grocery stores increased from 6 900 to over 30 000, an increase of over 330% (Messinger and Narasimhan, 1995). This trend in the grocery industry continued to the clothing retailing industry. According to a survey conducted by the Harvard Center for Textile and Apparel Research (HCTAR), apparel manufacturers increased their average number of individual products, or stock keeping units (SKUs),<sup>22</sup> by 63% between 1988 and 1992 (Abernathy et al., 1999). It is not uncommon to have up to 2 million SKUs in a flagship department store.

Increasing product proliferation is driven by both shorter fashion cycles and products more specific to customer tastes. Retail marketing and merchandising directors, in the face of increasing competition, must convince their customer base to return to their store instead of another clothing store or, say, a consumer electronics store. This means higher product turnaround and development cycles for retailers. Only a few decades ago, product cycle time was six to nine months and most clothing retailers had two to four clothing "seasons" per year. Now many clothing retailers have up to 20 seasons per year, meaning new product ranges can be introduced as often as every three to four weeks. For Zara the time from concept development to production and placement on the shop floor can be as little as 22-30 days.

#### **Box 1. Zara: reducing product cycle time**

Zara, which is the largest apparel retailing chain of the global giant Inditex, demonstrates the move towards demand driven production. It has put in place a retailing concept that provides customers with a constantly rotating choice of fashions. To achieve this, it has dramatically reduced the time between the initial design concept and placement on the shop floor.

The entire fashion cycle time has been reduced to as little as 22-30 days (Harle, Pich and Van der Heyden, 2002). One day is required to finalise style, idea, price and quantity and select the appropriate fabric from stock. Three days are then needed to formulate the design, and one more day for management approval. After management approval, three days are needed to create a sample and have it approved, after which ten days are needed to produce the clothing article in the amount needed. Finally, the product is shipped, arriving five days later on the shop floor ready for display and sale. The total time required is therefore 23 days.

To achieve such rapid production cycle turnaround times, Zara sources over 80% of its production within Europe, mostly from Spain and Portugal. As emphasised by the company, "time is the main factor to be considered, above and beyond production costs" (Inditex, 2005). It therefore chooses to produce apparel in continental Europe with higher costs than other, lower-wage locations to reduce production times as much as possible.

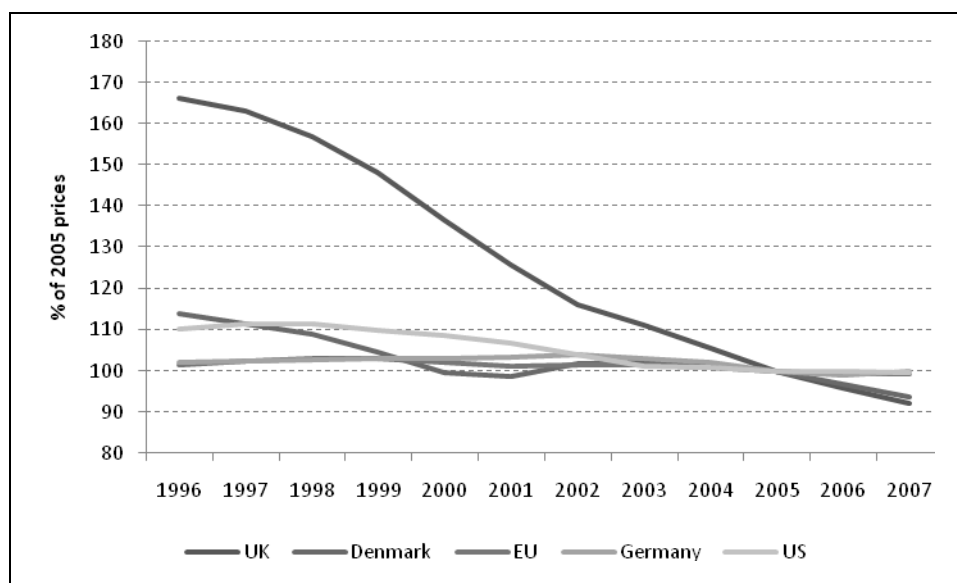
*Source:* Dawson, Larke and Mukoyama (2006), Harle, Pich and Van der Heyden (2002), Inditex (2005)

At the same time, styles, sizes, colour options, etc. have been increasing substantially to ensure that more customised products are available to consumers. Whereas a simple men’s dress shirt previously might have involved one collar style and only basic colour options and limited sizes, shirts have become more customised to respond to consumer tastes. The range of colours available, and the options of different patterns and various fabric blends and cuts, have increased tremendously. To use the example of Zara again, according to the company’s 1998 annual report over 11 000 designs were produced in one year, based on 40 000 design ideas (Dawson, Larke and Mukoyama, 2006).

### Lower prices

Another way clothing retailers are keeping abreast of increasing competition from international retailers and hypermarket and superstore operators is by dropping prices. Between 1996 and 2007, apparel prices in the US declined by 13% (Figure 6).<sup>23</sup> Prices in the EU fell by 2% in the same period; in many EU countries apparel prices declined by much more – in the UK apparel prices fell by over 74% between 1996 and 2007.<sup>24</sup> It is clear that there has been substantial downward price pressure in the clothing industry. In essence, certain clothing and consumer goods retailers have improved productivity and efficiency throughout their supply chains, from capitalising on economies of scale and sourcing goods from lower-wage countries to using information technology to better predict demand and reduce inventory.

**Figure 6. Clothing prices in the EU and US (1996-2006)**



Base period: 2005 (=100). EU data for EU-15 until 2004, EU-25 until 2006 and EU-27 in 2007.  
 Source: OECD analysis based on data from US Department of Labor Consumer Price Index; Eurostat Harmonised Index of Consumer Prices

The resulting cost reductions have largely been passed on to consumers in the form of lower prices. Faced with a competitor offering similar or even identical products at lower prices, all other retailers must imitate the same productivity and efficiency innovations to reduce costs and thus lower prices if they are to remain competitive (McKinsey Global Institute, 2001). To quote an article in the *Washington Post*, “Wal-Mart’s mania for selling goods at rock-bottom prices has trained consumers to expect deep discounts everywhere they shop, forcing competing retailers to follow suit or fall behind” (Schneider and El Boghdady, 2003).



## 1.4 Sector implications and key success factors

The changes occurring in the retail clothing sector have serious implications for upstream suppliers of the goods they place on their shelves. First, these changes require apparel manufacturers to improve time to market by shortening the time between an order being placed by the retailer and its arrival in the store ready for display. The international competitive climate requires apparel manufacturers to provide more services to their retailers and other buyers, which are increasingly only interested in the design and marketing end of the fashion industry and have little interest in manufacturing. This means apparel manufacturers are now expected to provide more value-added services for their clients. Finally, apparel manufacturing firms are encouraged to promote all excess capacity, products and expertise via internet tools like e-sourcing, as well as by attending fairs.

### *Accelerated time to market*

One large implication of product proliferation, increased competition and the drive to reduce prices is the disruption it has caused in the supply chain. In the traditional supply chain, apparel manufacturers received orders many months in advance, which allowed them to carefully plan production cycles and shipments. Now, with retailers filling shop space with only the latest styles, the vast increase in the number of SKUs sold, and the attempt to cut all excess costs, the supply chain has been radically changed. Instead of designing a product and selling it six months later, retailers want the finished goods in their shops in weeks or even days. To deal with the enormous increase in the number of apparel products they sell, they refuse to maintain a high inventory, instead expecting delivery of the order to correspond with the date they plan to place the goods on sale in their stores. To reduce the costs of having to mark down over-ordered products, or the indirect costs of losing sales to a competitor because not enough of a particular product was ordered, retailers insist on determining what products they will offer tomorrow based on sales data from today.

### **Box 2. Inventory policy decision-making**

In the traditional supply chain, apparel manufacturers received orders many months in advance, allowing them to carefully plan production cycles and shipments. The onus of holding inventory was on the buyer or retailer. Now, as retailers try to reduce costs associated with markdowns or stockouts and insist on just-in-time delivery of products, the inventory burden has shifted to the apparel manufacturer. This has two big implications for the manufacturer: it can either improve the efficiency of the production facility to decrease lead times, or hold higher levels of inventory itself.

The second option is only a short-term solution. To illustrate this, consider a supplier producing men's shirts in only one SKU for a retailer that requires rapid replenishment (*i.e.* it reorders shirts every week). The longer it takes the manufacturer to produce the shirt, the more inventory it must hold to ensure that it can respond to 95-98% of the retailer's orders, a typical order fulfilling rate required by most retailers. When the hundreds and sometimes thousands of SKUs produced by many apparel manufacturers are added to the equation, as well as a high level of demand variation, the amount of inventory the apparel manufacturer must hold to respond to retailers' orders quickly spirals out of control.

A much more competitive firm (one that has improved the efficiency of its production facility and thus reduced lead times) will not have to hold nearly so much inventory. Instead, it will be able to respond to retailers' orders as they are made. Naturally, a small level of inventory will still be required, but the large costs of spoilage, warehouse space, discounts on overstocked items and security costs associated with holding inventory will be reduced.

The result is a highly condensed supply chain compared with only a decade ago. Apparel manufacturers must now respond in real time to retailers' orders. Many of them are therefore reducing their lead times by introducing internal process changes that are more conducive to quick delivery. Quick response (QR) systems, for example, can ensure that they provide apparel goods in the shortest time possible.<sup>25</sup>

Implementing QR systems is not particularly easy. It requires a degree of organisation both within the firm and with the firm's clients that was not necessary in the case of traditional supply chains. There is a vast amount of literature on how firms should best put QR systems into place (e.g. Lawson, King and Hunter, 1999). For the apparel manufacturing sector, however, there are four key elements which should be addressed, usually simultaneously, to ensure that lead times are at a minimum (Abernathy et al., 1999): (i) reduction of plant throughput time; (ii) implementation of electronic data interchange (EDI); (iii) improvements to inventory control systems; and (iv) ensuring minimum transport times.

### Box 3. Methods of apparel assembly

There are generally three methods of assembling apparel: (i) the progressive bundle system (PBS); (ii) the modular production system (MPS); and (iii) the unit production system (UPS):

- The *progressive bundle system* is the most common method. It breaks assembly steps down into a series of discrete operations; each sewing operator is trained in the correct approach to a specific task. The advantage of this system is that it maximises the productivity of both specialised machines and individual workers. However, the PBS system can easily result in bottlenecks due to absenteeism or differing productivity between workers. Furthermore, for the system to flow efficiently, a large amount of work in progress must be kept at each work station so that sewing operators are never idle. This results in higher costs associated with keeping inventory and longer throughput times. For example, even though a typical men's dress shirt requires only 12 minutes of actual sewing time to complete, it may actually take 20 days because the shirt spends a significant amount of time as work in progress;
- Many apparel manufacturers use the *modular production system*. Tasks are grouped and a team of sewing operators assemble either the entire garment or a part of it (e.g. the collar). PBS generally compensates employees on a piece rate basis, whereas MPS compensation is determined by the entire team's output. The advantages of MPS are increased flexibility and shorter throughput times, as it allows much lower levels of work in progress than PBS. However, MPS requires higher training costs (sewing operators must be trained in all tasks associated with their group) and overall plant production levels are lower than for PBS;
- The *unit production system* uses an overhead transporter system to move garment components from one sewing operator to the next. Compared with PBS, UPS has a shorter throughput time and lower levels of work in progress. It also results in direct and indirect labour cost savings and can keep reliable data on each sewing operator's productivity and daily pay. However, the initial investment for installing UPS can be significant, and once it is installed the layout of the plant is fixed.

Most apparel assembly plants use PBS, but an increasing number are beginning to implement MPS and UPS or a combination of all three systems to improve throughput times.

Source: Abernathy et al. (1999), Dunlap and Weil (1996)

### *Reduced plant throughput time*

One of the first steps in improving plant lead times is to improve plant throughput time.<sup>26</sup> This should be achieved through a combination of implementing modular production systems (MPS) and automating certain production activities. MPS is an apparel assembly method that combines a team of sewing operators to assemble apparel, rather than relying on an assembly line approach as in more traditional methods (Box 3). MPS can reduce throughput time by reducing work in progress. The average throughput time for a plant using MPS is 1.7 days, compared with 9.2 days for the progressive bundle system (Abernathy et al., 1999). It has also been shown that implementing MPS for 36% of production, in conjunction with other IT investments, can reduce lead times by up to 25 days (Dunlap and Weil, 1996). That study showed that, beyond simply improving lead times, implementation of MPS increased customer response time and reduced work in progress.

Implementing automated technology such as marker making and spreading can also substantially reduce lead times. To take the example of marker making, once a design is finalised, patterns are determined and the fabric is in hand, a cutting guide (marker) needs to be made to guide the cutting knife through the many layers of fabric in order to cut out the individual pattern pieces. Experienced marker makers used to trace the pattern pieces on the marker by hand, but computer programmes now exist that can do this, with the added benefit of drastically reducing the time required to make the marker (as well as minimising the amount of fabric wasted) by efficiently laying out the different sizes of the garment and ensuring that the weave of the cloth will match up once the pieces are cut and sewn.

### *Implementation of electronic data interchange*

Another important method for reducing lead time is to streamline the processing of payments and contractual agreements between the supplier and retailer. This means the apparel manufacturer must implement electronic data interchange (EDI). EDI can automate many processes, including orders, payments, contracts, etc. Using EDI, the time it takes to handle these processes can be reduced to hours or even minutes. Before the advent of such technology, production requests by the retailer were negotiated by phone, contracts were faxed or even mailed, and payment requests were sent days or perhaps weeks later. Automating the process reduces costs in human resources and results in fewer errors, often due to human mistakes. This is especially important for retailers and suppliers of different nationalities, where language is often a barrier and orders can be easily misinterpreted. Moreover, numerous studies have shown that implementing EDI can reduce shipment times and improve lead times (Srinivasan, Kekre and Mukhopadhyay, 1994). Beyond simply improving delivery times, other studies have shown that EDI can reduce transaction costs (Clemons and Kimbrough, 1986).

### *Improvement of inventory control systems*

A third method of reducing lead times is to maintain an organised and efficient inventory control system. One problem faced by apparel manufacturers is excessive amounts of inventory arising from product proliferation: there are many more styles, colours and fits of the same product, resulting in higher demand variability for each individual product. To reduce inventory levels to a manageable level and still dispatch orders to retailers in a timely fashion with a high order fulfilment rate,<sup>27</sup> apparel manufacturers increasingly need to respond quickly to and even anticipate retailers' demands. Especially in the case of suppliers of replenishable and fashion clothing products, at a very rudimentary level apparel manufacturers should analyse historical demand at the SKU level. More advanced apparel manufacturers should incorporate point of sale (POS) data from retailers to determine their optimal inventory levels.

### *Reduced transport time*

Implementation of technology and production processes to reduce lead times will be ineffective if poor transport organisation or simply bad roads prolong shipment times. While many transport delays are beyond the control of apparel manufacturers and can include poor roads, bad weather and delays at customs, a firm should undertake actions to ensure that shipments to retailers' distribution centres (or, in some cases, directly to their stores) arrive in the minimum amount of time possible.

One important first step is to employ a transport company with a good record of on-time deliveries. Even if this means paying extra, it can ensure good order fulfilment rates and therefore repeat orders, making the extra investment worthwhile. Apparel manufacturing firms should also have systems in place to deal with customs procedures adequately. Often these procedures are time and process intensive. In addition, ensuring that shipping containers and cartons are appropriately labelled according to agreed standards can help retailers handle the orders they receive, especially in large distribution centres where orders from hundreds of different suppliers can arrive at the same time.

### *Gradual introduction of value-added services*

The profit margins for apparel manufacturers are very slim. The OECD compiled data on firms and created a financial statement for a hypothetical apparel manufacturing firm that only engages in apparel assembly operations (*i.e.* sewing pieces into a finished apparel product). According to the model, such a firm starting operations in year 0 cannot expect to become profitable until four years later. Even after ten years, profits will only be about 1.1% of total annual sales (Box 7).

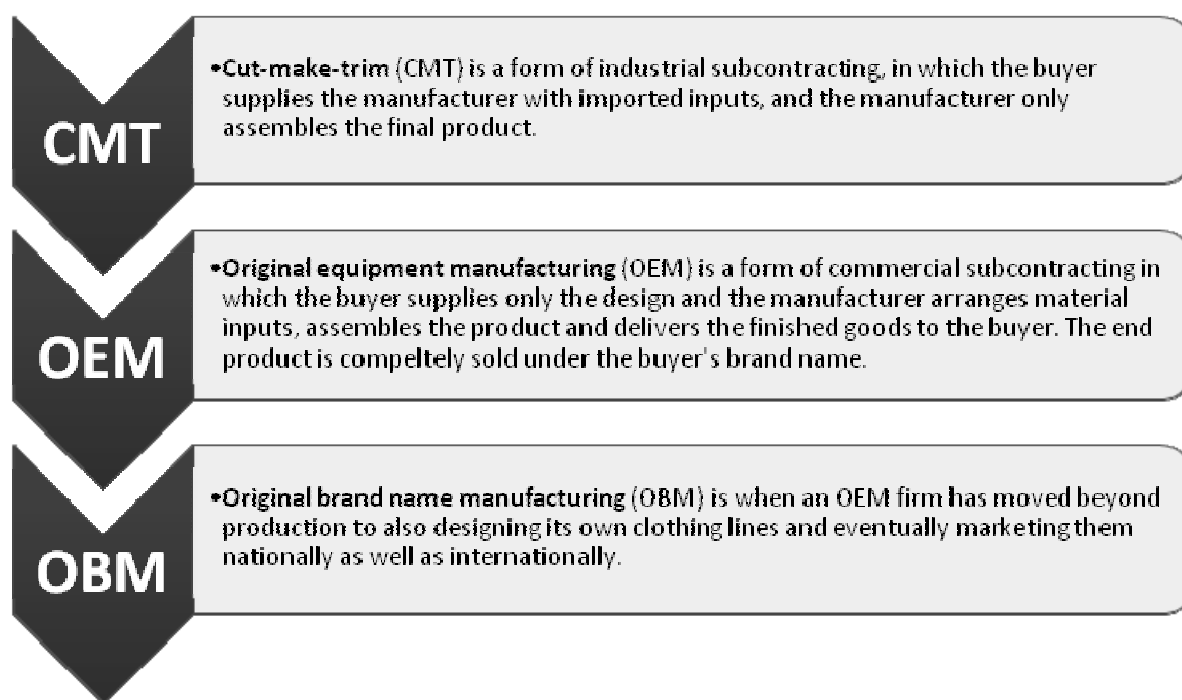
The limited profitability offered to apparel manufacturing firms that only engage in assembly operations – cut-make-trim (CMT) operators – derives from the fact that they are generally “price takers” on the international market. Global competition in CMT services is resulting in lower and lower prices and thinner profit margins. CMT firms have very little leeway to determine their own prices. Therefore, as wages and other operating costs rise they are largely required to swallow the price increases or risk losing clients to less expensive firms in lower-wage countries. However, apparel manufacturers can actually begin providing more value-added services, allowing themselves more freedom to set higher prices and gain a larger share of the total revenue along the apparel industry value chain. This means moving first into providing more value-added services as an original equipment manufacturer (OEM), and then engaging in further industrial upgrading by moving into original brand manufacturing (OBM).

### *OEM production*

OEMs develop patterns, source materials, and produce and ship samples for approval, in addition to cutting and assembling the clothing articles. OEM production can be considered a form of upgrading because it expands a producer's customer base beyond clients that have traditionally favoured only assembly activities to include retailers and other clients that prefer the apparel manufacturer to provide more services. Many retailers have little interest or little experience in manufacturing apparel, or are interested in devolving some of the risk associated with increased demand volatility and product proliferation in the apparel industry. Thus, they are looking specifically for apparel manufacturers that can assume the responsibility and risk of the entire assembly process, from sourcing material to overseeing logistics. Many fashion oriented firms such as Gap and The Limited entirely outsource the manufacturing of their apparel and only have control over design and marketing.

By moving into OEM activities, apparel manufacturers gain more autonomy and flexibility in setting their prices. Because they take over many of the activities that other agents previously managed, they assume a much greater financial responsibility for the end product than CMT firms, but they also profit from a greater share of total revenue. Furthermore, a country or region can benefit from the backward linkages created by local apparel manufacturers sourcing textiles and findings from local component suppliers. This has the potential to fully imbed the clothing industry and facilitate technology and knowledge transfer throughout the region. CMT activities can be important drivers of foreign technology and knowledge transfer to developing and transition countries, as well as important generators of employment, but their lack of local linkage does not encourage wider economic growth within the region: “One of the main criticisms levelled at [CMT activities] is that they are islands of assembly production and are essentially unconnected to the domestic economies of the countries that host them” (Bair and Gereffi, 2003).

**Figure 7. Types of apparel manufacturers: CMT, OEM, OBM**



Source: Gereffi and Memedovic (2003).

#### Box 4. Labour regulations in the apparel industry

Another aspect which is increasingly important for retailers and buyers of apparel products is to ensure proper labour standards are respected by the apparel manufacturers which supply them. This is because their clothing brands represent the public image of their firm, and they have invested a lot of money into advertising and marketing those brands. The threat of having their brands devalued by bad publicity can be very expensive, resulting in sometimes substantial lost sales. For example, the clothing retailer Gap's reputation suffered substantially in 2003 when it was sued by workers in Saipan for poor working conditions.

Many retailers insist that their suppliers apply international labour standards. Worldwide Responsible Apparel Production (WRAP) inspects and certifies that apparel manufacturers operate under human conditions and do not exploit labour. Social Accountability International (SAI) applies the SA8000 to companies which have implemented appropriate labour standards.

It is very important that apparel manufacturing firms apply international labour standards, and is a minimum requirement for most larger retailers. If possible, they should also try to obtain certification in these standards. For example, companies certified by WRAP must insure that they implement the following principles:

- **Compliance with laws and workplace regulations:** employers must comply with the laws and regulations in all locations where business is conducted.
- **Prohibition of forced labour:** involuntary labour is strictly prohibited.
- **Prohibition of child labour:** workers under 14, below the age of compulsory schooling or the minimum age as establish by law, whichever is greater, is prohibited.
- **Prohibition of harassment or abuse:** employers must create a work environment free of harassment, abuse or corporal punishment in any form.
- **Compensation and benefits:** employers must pay at least the minimum total compensation as required by local law, including all mandated wages, allowances and benefits.
- **Hours of work:** hours worked each day and week must be within the legal limitations of the countries in all locations where business is conducted, and employees may work more than six days a week only in exceptional circumstances.
- **Prohibition of discrimination:** employees may be hired, paid, promoted and terminated based solely on their ability to complete the job and not on the basis of personal characteristics or beliefs.
- **Health and safety:** employers must ensure the work environment is safe and healthy.
- **Freedom of association and collective bargaining:** employers must respect the right of free association and collective bargaining from their employees.
- **Environment:** employers must comply with all environmental rules, regulations and standards applicable to their operations and observe environmentally conscious practices in all locations where they operate.
- **Customs compliance:** employers must comply with applicable customs law and, in particular, establish and maintain programmes to comply with customs laws regarding illegal trans-shipment of apparel products.
- **Security:** employers must maintain facility security procedures to guard against the introduction of non-manifested cargo into outbound shipments (e.g. drugs, explosives, biohazards, and/or other contraband).

Source: [www.wrapapparel.org](http://www.wrapapparel.org), [www.sa-intl.org](http://www.sa-intl.org), [www.cleanclothes.org/legal/04-01-08.htm](http://www.cleanclothes.org/legal/04-01-08.htm)

### *OBM production*

The apparel manufacturers that engage in OEM activities gain knowledge of pricing, quality and delivery standards of foreign buyers. Local backward linkages between apparel, textile and findings manufacturers are also stimulated, encouraging the development of reliable local suppliers (Gereffi and Memedovic, 2003). With this development, apparel manufacturing firms can be expected to slowly move up the value chain to provide original brand manufacturing (OBM), including designing and marketing their own brands and developing sophisticated regional supply chains based on triangle manufacturing.

#### **Box 5. Examples of moving up the value chain**

Many countries began operations in the apparel industry by participating in apparel assembly operations. Mexico began widespread assembly in the 1960s through its *maquiladora* programme of export-processing zones. In the *maquiladoras*, operations centred solely on assembly and export to US markets until the early 1980s, when rising costs and changes in the international fashion landscape encouraged the introduction of more value-added and full package services. Many plants moved away from low-wage, labour-intensive assembly operations and started engaging in more areas of the value chain. Productivity increased, and skilled labour was in more demand. Today Mexico hosts many apparel manufacturing plants that have morphed into full-package suppliers to US and other international retailers and buyers. This trend is also driven by the entry of mass and specialist retailers like Wal-Mart.

Hong Kong has taken this move one step further and shifted from OEM production to OBM production. Many apparel manufacturers in Hong Kong take advantage of lower wages in other areas of China and South East Asia and engage in triangle manufacturing. Furthermore, many firms have developed successful domestic and international brands. For example, one popular local retail chain, Episode, is owned by Fang Brothers Group, a long-established apparel manufacturer that supplies international clothing retailers such as Marks and Spencer.

*Source:* Gereffi and Memedovic (2003), Galhardi (1997)

Stepping into OBM production for international markets is most likely currently unattainable for all but the most competitive apparel manufacturing firms already actively engaged in providing OEM production. Especially as design and marketing, key components of the OBM supplier, are the most profitable phases of the value chain, they will be the most difficult to wrest from competitive international brands. However, it is very possible for many firms, even those now engaged in mainly CMT production, to begin small ventures into technical design or employ local designers and produce mostly for the domestic market. With the rapid improvement of technology, many types of designs have become largely technical in nature. Computer aided design programmes such as Snap Fashion contain large libraries of apparel components and the option of creating new libraries which can be combined in myriad ways to develop clothing lines. Training is required in the software, but little skill in drawing is needed. With some investment, a firm can quickly create its own line of clothing marketed towards the domestic or regional market.

Another component of the OBM producer is triangle manufacturing (Gereffi, 1995). Often, in many regions, different firms and different countries are at differing stages of sophistication in their production processes. Many have begun or are fully engaged in OEM production. Others concentrate largely on CMT production. Much of this can be explained by the differing stages of firm and country development, resulting in wide wage and productivity disparities. This presents, however, a unique competitive advantage for the most advanced firms – as buyers place their orders, these more

advanced firms can in turn shift some or all of the requested production to facilities in other lower-wage countries within the region. This allows the creation of a regionally integrated apparel manufacturing industry, with value-added intensive production steps undertaken by a firm in one country and assembly outsourced to a lower-wage country.

### *Wider promotion of capabilities*

Finally, one relatively easy way for apparel manufacturing firms to gain a competitive advantage in the increasingly competitive apparel industry is to promote their excess capacity, products and expertise internationally. By promoting themselves, firms can gain access to new international clients and markets, providing them with exposure to different business processes and value chains as well as ensuring that they are able to maximise the production and productivity of their plants. Moreover, as firms move into OBM production, such self-promotion can aid in marketing their own designs and products, facilitating entry into the competitive design field. Before the technology boom, such marketing and advertising was expensive and beyond the reach of many smaller apparel manufacturing firms, which had to rely on a narrow spectrum of clients. However, with the advent of the internet and in the age of cheaper international air travel, firms can take advantage of three key self-promotion tools: (i) improving their internet presence; (ii) attending fairs; and (iii) expanding their network.

#### *Internet presence*

In order to gain broader exposure to international clients, at the very basic level apparel manufacturing firms should improve their internet presence. This can be as simple as setting up a free business web page with basic information on the manufacturer, the products and skills/services offered, human resources available, production capacity and equipment. Perhaps surprisingly, when looking for a contractor in a particular country or region, many retailers and sourcing agents actually first search the internet (Glock and Kunz, 2005). By setting up a website, apparel manufacturers can inexpensively and easily gain exposure. Especially with the numerous free web hosting sites and ready-made web templates, for little or no cost beyond time, a contractor can create a professional web page with the essential information retailers and sourcing agents are looking for.<sup>28</sup> More ambitious firms could even place minimum amounts of web advertising on search engines and promote products and capacity on business-to-business and e-sourcing websites such as Alibaba ([www.alibaba.com](http://www.alibaba.com)) and WorldSOURCE ([www.worldwideretailexchange.org](http://www.worldwideretailexchange.org)). Other options include placing advertisements on websites frequently visited by potential customers, e.g. regional or international apparel association websites. For example, the Moroccan Textile and Clothing Industry Association (AMITH) provides a list of all its members with relevant contact information on its website ([www.textile.ma](http://www.textile.ma)).

#### *Fairs*

Besides improving their internet presence, apparel manufacturing firms should actively participate in international sourcing fairs. Many sourcing managers in retailer firms look for potential partnerships at these fairs, especially when they are unfamiliar with a particular country (Glock and Kunz, 2005). Fairs for apparel products and designs are held worldwide throughout the year. For example, the annual India International Apparel Fair is in its 42<sup>nd</sup> year and Madrid holds an annual International Fashion Fair. While attending some of the larger fairs might be too expensive for many apparel manufacturing firms, many smaller, regional fairs are held throughout the world.



## Networking

Successful apparel manufacturers from other emerging markets like Turkey or India have either proactively set up international offices (collaborative marketing) or actively developed a network of agents in key demand areas like Italy or Germany. Many apparel manufacturers could also collaborate with the economic and commercial sections of their embassies to facilitate such networks.

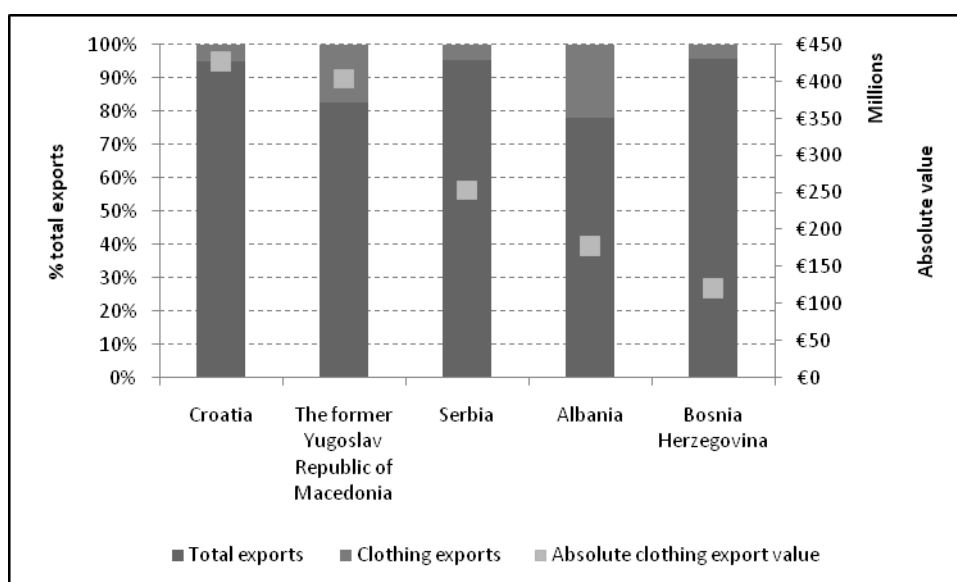
### 1.5 Sector attractiveness in the Western Balkans

As mentioned in section 1.2, the apparel manufacturing sector is undeniably attractive in the Western Balkans. This region is increasingly becoming a key location for the production of fast fashion and replenishable<sup>29</sup> products for European markets and is of interest retailers and buyers looking to spread their sourcing activities across several geographic areas to reduce political and economic risk. For these reasons, the region can be expected to have a strong industry for quite a few years into the future. An advantage for this sector in the Western Balkans is its strong regional presence, including high export values, respectable levels of FDI and a large percentage of output, as well as competitive labour costs and close proximity to EU markets.

#### *Strong regional presence*

When one looks at international trade statistics, the apparel manufacturing sector in the Western Balkans is very large. Exports of apparel manufacturing products were EUR 1.4 billion in 2006; this was the second largest manufacturing export category in the region in 2006 and the largest in 2005. In 2006 it represented over 7% of total exports. The trade balance in the apparel manufacturing sector is positive at EUR 480 million in 2006, and it was the SITC two-digit sector with the largest regional trade surplus. Since the regional trade deficit in 2006 was over EUR 20 billion and there was a surplus in only nine sectors, it is clear that the apparel manufacturing sector in this region is a strong export industry.<sup>30</sup>

**Figure 8. Western Balkan clothing exports: total (%) and absolute value (2006)(right)**



Source: Comtrade. Data converted from USD to EUS using US Federal Reserve official annual exchange rate for 2006.

The top ten destinations of apparel products from the Western Balkans are almost all in the EU and are also largely Western European countries. Italy and Germany are by far the largest importers of apparel products: in 2006 they each imported about EUR 500 million in apparel goods from the Western Balkans, or 70% of total Western Balkan apparel trade. Greece, in third place, imported EUR 110 million.<sup>31</sup> In 2007 total Western Balkan apparel trade with the EU-27 was EUR 1.4 billion, 97% of which was with the EU-15 countries. Apparel products have been the largest import to EU-15 countries since 1995, representing roughly 20% of total Western Balkan trade during that period.<sup>32</sup>

**Table 3. Top destinations for Western Balkan apparel exports, 2000-06 (EUR million)**

	2000	2001	2002	2003	2004	2005	2006	CAGR
Italy	213	271	323	363	395	458	515	15.9%
Germany	428	438	382	396	385	436	490	2.3%
Greece	57	70	85	101	121	118	111	11.7%
Netherlands	48	56	53	44	40	48	45	-0.8%
Slovenia	15	15	14	16	17	24	29	11.8%
Austria	15	14	17	22	18	23	26	9.0%
United Kingdom	29	29	32	28	28	28	25	-2.1%
Bosnia Herzegovina	7	7	7	9	9	27	22	22.3%
France	24	19	16	18	15	21	22	-1.4%
Croatia	1	1	2	6	7	13	15	65.1%

*Source:* Comtrade. Data converted from USD to EUS using US Federal Reserve official annual exchange rate for 2000-06.

The EU is the Western Balkans' most important trading partner for apparel products. The RCA between the EU-27 and the Western Balkans is 2.6, indicating that the region has a strong presence on the Western European apparel market. Between the EU-15 countries and the Western Balkans, the RCA increases to 3.4, indicating an even stronger presence: this is the fifth highest RCA calculation in 74 SITC two-digit traded goods categories. It also appears that the Western Balkans is improving its comparative advantage relative to the EU market: in the past three years the RCA has gradually increased, indicating that apparel manufacturing firms in the Western Balkans are taking increasing advantage of their geographic location relative to European markets.<sup>33</sup>

**Table 4. RCA values between the Western Balkans and the EU-15 in the apparel manufacturing industry**

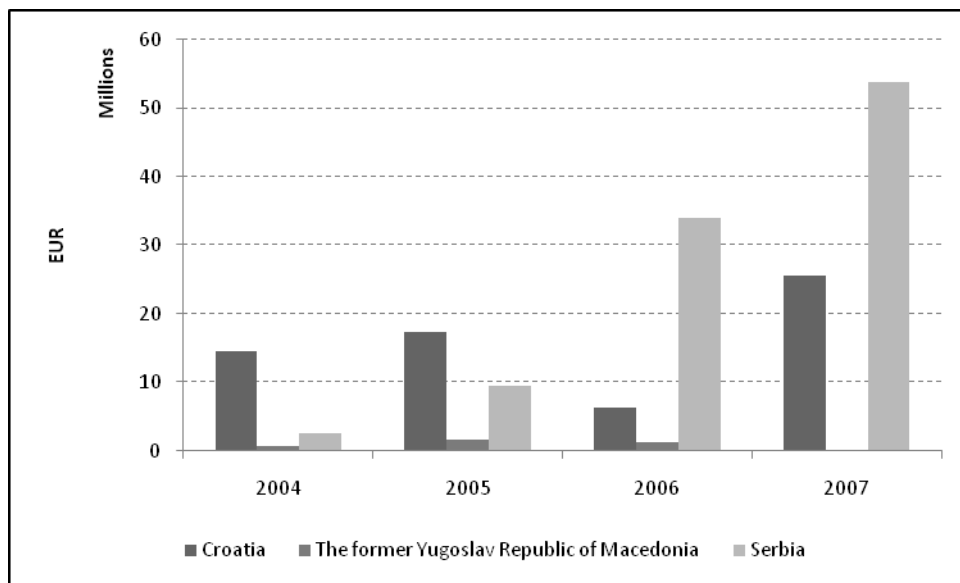
	2005	2006	2007
Albania	5.63	5.66	6.05
Bosnia and Herzegovina	2.63	2.36	2.33
Croatia	2.84	2.38	2.61
Kosovo under UNSCR 1244	6.64	6.96	6.95
The former Yugoslav Republic of Macedonia	0.06	0.01	0.04
Serbia	2.01	2.17	2.48

*Source:* OECD analysis based on data from Eurostat.

Despite the size of the apparel manufacturing industry, as shown by exports, it does not appear to attract very much FDI: FDI stocks in the region are relatively small. In 2004 total FDI stocks in Albania, Croatia and The former Yugoslav Republic of Macedonia in the textile and textile products category only amounted to about EUR 60 million, or 1.78% of total manufacturing FDI (and only 0.66% of total FDI). Compared with investments in other manufacturing industries, *e.g.* chemical production, which represented 21% of total manufacturing FDI, this figure seems quite low.<sup>34</sup> However, in an international context FDI stocks in textile and textile products are roughly in line with those in other countries. Investments in textiles and wearing apparel in the CEE countries in 2005 represented only 1.4% of total manufacturing investment and only 0.5% of total FDI.<sup>35</sup> It also appears that FDI stocks are growing in the Western Balkans. Between 2001 and 2004 the annual average growth rate was 36%, indicating increasing investment into the industry.<sup>36</sup>

Inflows of FDI into the region were almost EUR 42 million in 2006, and the yearly average growth rate between 2004 and 2006 was over 53%. FDI inflows into the textile and apparel sector were only 0.6% of total FDI inflows in 2006,<sup>37</sup> but that figure is significant in comparison with CEE countries where FDI into the textile and wearing apparel industries was actually negative in 2006.<sup>38</sup> Relatively low levels of FDI into the apparel manufacturing industry can largely be attributed to the fact that most textile manufacturing firms are domestically owned, and that they service international companies through contracts and licensing arrangements.

**Figure 9. FDI inflows into the textile and wearing apparel industry**



2007 data not available for The former Yugoslav Republic of Macedonia.  
 Source: UNIDO, Croatian National Bank, National, National Bank of Serbia

Value-added statistics (obtained by subtracting intermediate consumption from gross output) allow a good estimate of net sectoral output. In 2005 total value-added was EUR 541 million, 6.25% of total value-added in the region.<sup>39</sup> This is slightly above the national accounts data for the CEE countries and much higher than the percentage of total value-added represented by the textile and apparel manufacturing industry in Western Europe.<sup>40</sup> It is clear that the textile and apparel manufacturing sectors represent a much bigger share of the economy in the Western Balkans than they do in the CEE and especially in Western Europe.

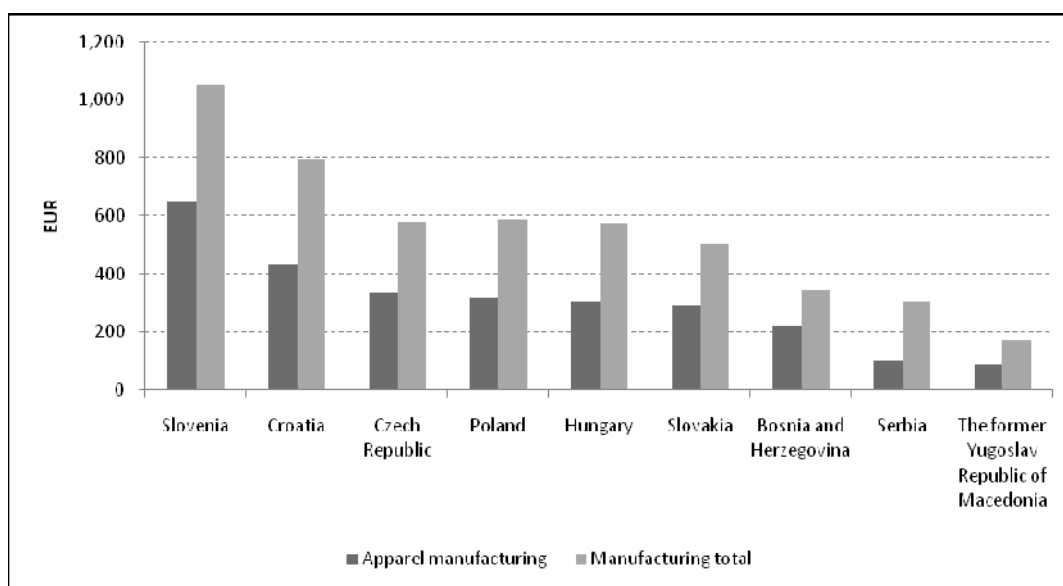
In conclusion, with high levels of exports, a clear revealed comparative advantage, and value-added and FDI figures in line with or above those in the apparel manufacturing industry in other countries, it is apparent that this industry is indeed competitive in the Western Balkans. The region has been able to capitalise on its advantages to supply the European and world apparel market. Specifically, its key advantages are cost competitiveness and proximity to EU markets.

### *Cost competitiveness and productivity*

As mentioned earlier, increasing competition, largely within the retail sector, is pushing apparel manufacturers to reduce their costs. One way retailers have looked to reduce costs is by searching for lower-cost suppliers, especially internationally. In the retail clothing industry, international sourcing of apparel products from lower-wage economies has become the norm. Employment in the apparel manufacturing industry has been decreasing substantially. Between 1997 and 2007 in the US, employment in this industry fell by 66%<sup>41</sup> while imports of apparel items increased by over 50%.<sup>42</sup>

In this respect, the Western Balkans is well-placed to compete with other apparel manufacturing locations. Wages in manufacturing in 2006 were on average EUR 380, and wages specifically in the apparel manufacturing industry were much lower at EUR 210. As a comparison with two CEE countries: average wages in Slovakia in 2005 were EUR 500 per month in manufacturing and almost EUR 300 in apparel manufacturing; in Poland, wages were even higher at EUR 590 per month in manufacturing and EUR 320 in textile and textile products manufacturing (Figure 10).<sup>43</sup>

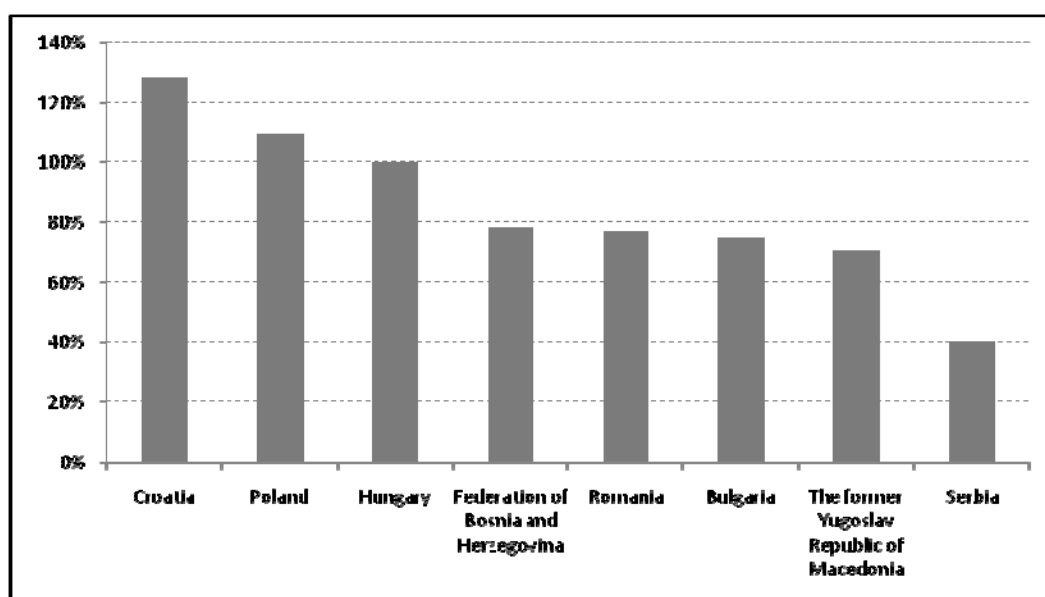
**Figure 10. Average monthly wages (2006)**



Source: LABORSTA (ILO)

Furthermore, productivity in the Western Balkans appears to be relatively robust. Average labour and general costs per standard allowable minute (SAM)<sup>44</sup> were EUR 0.15 per minute.<sup>45</sup> This makes the Western Balkans a cheaper place to assemble clothing than most Western European countries, and is in line with many of the new EU Member States including Bulgaria, Latvia and Poland. According to Kurt Salmon Associates (KSA) calculations, productivity is in line with that in many other competitive apparel manufacturing countries, including Egypt and Morocco. Also, according to OECD calculations, apparent productivity in the textile and textile products industry is about 79% of the productivity found in Hungary (Figure 11).<sup>46</sup>

**Figure 11. Apparent productivity in the textile and apparel industry (2006)**



Source: OECD analysis based on data from Eurostat, Federation of Bosnia and Herzegovina Federal Office of Statistics, Republic of Croatia Central Bureau of Statistics, Republic of Macedonia State Statistical Office, Statistical Office of the Republic of Serbia

### *Proximity to EU markets*

One of the biggest competitive advantages that the Western Balkan apparel manufacturing industry possesses is its close proximity to Western Europe, a large end-consumer market. The Western Balkans is perfectly placed to quickly supply the Western European clothing market. Distances from the various capitals to Rome are on average 1 700 km, and under optimal transport conditions travel time is only 22 hours. Distances to Frankfurt, Germany, are on average 1 800 km and travel time can be as little as 20 hours.<sup>47</sup> Apparel manufacturing exporters in the Western Balkans have taken advantage of efficient road networks and shipping ports in the region. Apparel goods exported to the EU are mostly shipped using road transport: – in 2007, 91% were sent by truck and the remainder was sent by sea.<sup>48</sup>

Concerning costs related to shipping apparel products to the EU, in many cases it is probably much less expensive to produce clothing in the Western Balkans than in more remote countries with lower labour costs. OECD analysis included a time factor of 0.5% per day (Hummels, 2000),<sup>49</sup> freight cost and the applied customs duties determined by the prevailing preferential trade agreements in place (OECD, 2004). Table 5 shows the cost advantage of the Western Balkan economies relative to China. The Western Balkans can produce goods for the EU market 22.3% cheaper on average than Chinese firms when these costs are taken into consideration. For example, the total costs for a supplier from Tirana to ship apparel products to Rome amounts to 1.43% of the shipment's import value. If the same clothing articles were instead sourced from China for final delivery to Rome, the total cost of a shipment would be 23.8% of the import value. This means that Albanian apparel manufacturing firms enjoy a cost advantage of 22.37% over similar articles originating from China. This significant price difference is mostly attributable to Albania's preferential access to the EU market. Shorter transit periods and reduced freight costs are other factors. Therefore, Western Balkan apparel manufacturers can be price competitive in comparison to China, despite higher labour costs, especially in the case of time sensitive goods where the time factor per day is expected to be even higher than the 0.5% estimated in the above model.

**Table 5. EU clothing imports: transit, freight and duty costs**

	Inbound for Rome (hrs) <sup>1</sup>	Time factor 0.5%/day	Freight cost	Customs duty	Total cost	Relative to China
Tirana <sup>2</sup>	40	0.83%	0.60%	0.00%	1.43%	22.37%
Sarajevo	46	0.96%	0.60%	0.00%	1.56%	22.24%
Zagreb	45	0.94%	0.60%	0.00%	1.54%	22.26%
Skopje	45	0.94%	0.60%	0.00%	1.54%	22.26%
Podgorica	48	1.00%	0.60%	0.00%	1.60%	22.20%
Belgrade	34	0.71%	0.60%	0.00%	1.31%	22.49%
Pristina	39	0.82%	0.60%	0.00%	1.42%	22.38%
China	288	6.00%	5.80%	12%	23.80%	-

1. Outbound periods were calculated according to total kilometres from Rome to the capital city, divided by an average driving speed of 90 km/hour, including consideration of the number of borders crossed (after entry into the Schengen region, no more borders are counted) and the average wait at each border as outlined in World Bank (2004).

2. Time from Tirana to Rome is calculated based on a seaborne vessel from Durrës to Bari and road transport from Bari to Rome.

Source: OECD calculation of freight costs based on data from Eurostat. Hummels (2000) for the time factor per day. exporthelp.europa.eu for customs duties. Original methodology developed in OECD (2004).

## 1.6 Recommendations

With the Western Balkan region's low wages, knowledgeable local work force, close proximity to EU markets and relatively high levels of productivity, it is clear why retailers and apparel buyers are increasingly sourcing apparel products from the region's manufacturers. However, there are both operational improvements and policy barriers which need to be addressed in order to ensure that the region remains competitive in the longer term.

### *Operational improvements*

There are activities that Western Balkan apparel manufacturing firms can carry out or, in many cases, have already carried out to improve the products and services they offer to retailers and other buyers. First and foremost, distance to market is not the only determinant of how quickly an apparel manufacturing firm can supply a retailer. Often more important are the internal processes and systems of a firm: how quickly a firm is able to receive an order, manufacture it and clear regulatory hurdles for it to be shipped. Second, Western Balkan firms should engage in industrial upgrading to improve the value-added services they offer and carry more responsibility in the overall production of apparel. Finally, they should actively seek potential clients in Western European markets, and showcase the quality and services they are able to provide.

#### *Improve further time to market*

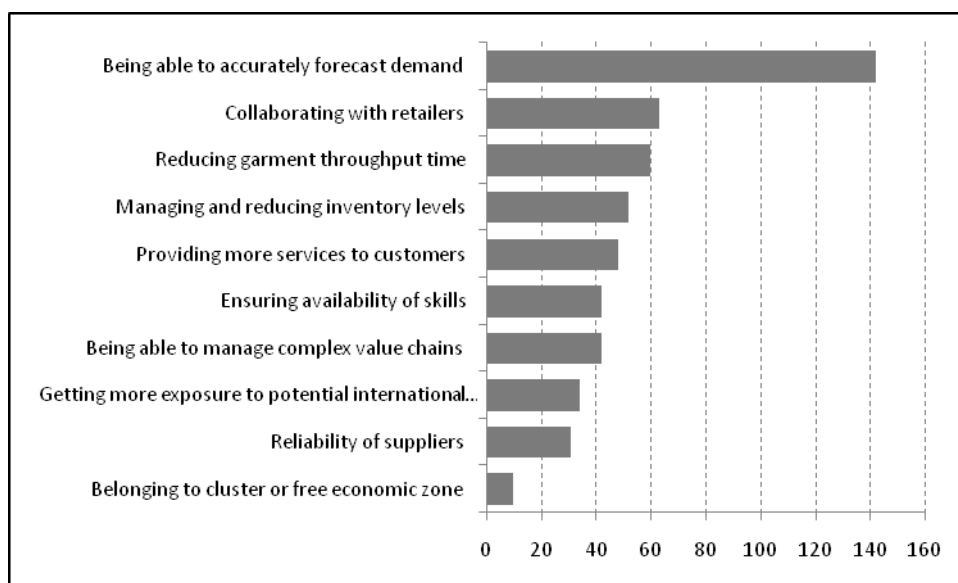
As described in section 1.5, it is clear that for time sensitive goods the Western Balkans is a competitive location to source apparel products. But many firms in other apparel exporting locations are reducing their lead times by introducing internal process changes that are more conducive to quick delivery. If the Western Balkans wants to retain its geographic advantage with respect to Western European markets, firms in the region need to implement QR systems to ensure that they provide apparel goods in the shortest time, *i.e.* they will have to: (i) reduce plant throughput time; (ii)

implement electronic data interchange; (iii) improve inventory control systems; and (iv) ensure minimum transport times.

### Reduce plant throughput time

One of the first steps in improving plant lead times is to improve plant throughput time. As described in section 1.4, this should be achieved through a combination of implementing modular production systems (MPS) and automating certain production activities. No data was specifically collected during the Regional Capability Survey on the implementation of MPS; however, 33% of firms surveyed considered reducing apparel throughput times and lead times to be one of the three most important success factors for their business (Figure 12). It appears from OECD site visits of apparel manufacturing firms in the Western Balkans that the PBS method of apparel assembly is the one primarily used. None of the firms visited by the OECD had yet implemented MPS or UPS assembly methods. Modest implementation of MPS in the Western Balkans, despite the apparent benefits, is probably due to the initial investment such systems require. Workers must be trained in more than one activity, and implementation often requires reorganisation of the production floor. Furthermore, as members of a team are paid based on the output of the entire team and not the individual output of a sewing operator, as under the PBS system, some employees, especially the most productive ones, may be reluctant to participate in MPS as pay, particularly initially, may be reduced.

**Figure 12. Most important key success factors**



Note: Firms were asked to select their three most important success factors. The figure reflects aggregated responses.

Source: OECD RCS (2008).

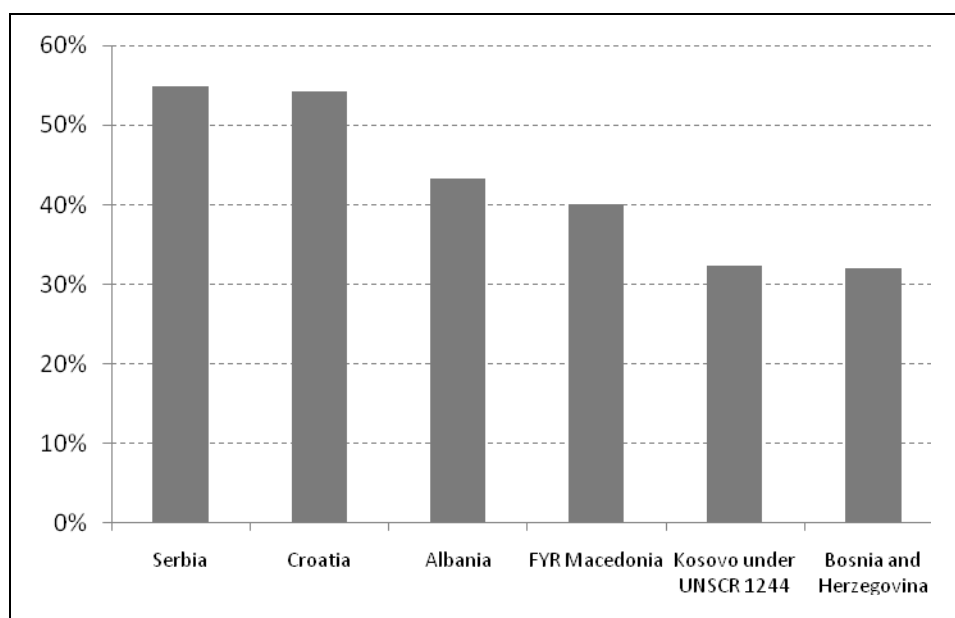
Despite little implementation of MPS, it appears that many firms have begun implementing automated technology. Many of those interviewed by the OECD either had their own computer aided design (CAD) software to aid in marker making or outsourced this activity to a third party with the equipment.<sup>50</sup> Firms have also implemented other types of automated technology, including spreading. In a survey conducted by the Institute of Economics of Skopje, 27% of Macedonian apparel manufacturing firms had implemented automated technology (Insitute of Economics of Skopje, 2007). Nonetheless, Western Balkan apparel manufacturing firms should do more to improve their automated technology. According to the RCS, 38% of firms considered lack of investment in technology to be

one of the three most important business challenges they faced in expanding their operations. Again, modest implementation of automated technology seems to stem from inadequate access to finance, as highlighted by the Croatian Textile Association (“There has been some investment in automated technology in the last ten years, but not enough largely because costs are still too high for most firms”) (Loborec, 2007).

#### Implement electronic data interchange

Another method important for reducing lead time is streamlining the processing of payments and contractual agreements between the supplier and retailer by implementing EDI. EDI was used by 43% of the firms surveyed by the RCS (Figure 13). According to follow-up interviews by the OECD, the majority of firms which had undertaken implementation of EDI had done so at the request of the retailers and firms they supplied. Many key retailers require all their suppliers to adopt EDI standards.

**Figure 13. Firms Implementing EDI (%)**



Source: OECD RCS (2008)

As highlighted in many interviews, when an apparel manufacturer supplies many different retailers it is often required to implement different forms of EDI, increasing the firm’s administrative burden. Therefore, EDI can be very expensive for smaller firms to implement in terms of both personnel training and equipment resources. According to the RCS, only 33% of firms with fewer than 50 employees had implemented RCS, compared to 60% of those with more than 150 employees. Many firms continued to rely on more traditional modes of communication: 42% of those which did not use EDI used email as their primary mode of communicating production orders, etc. The remainder continued to rely on telephone and fax.

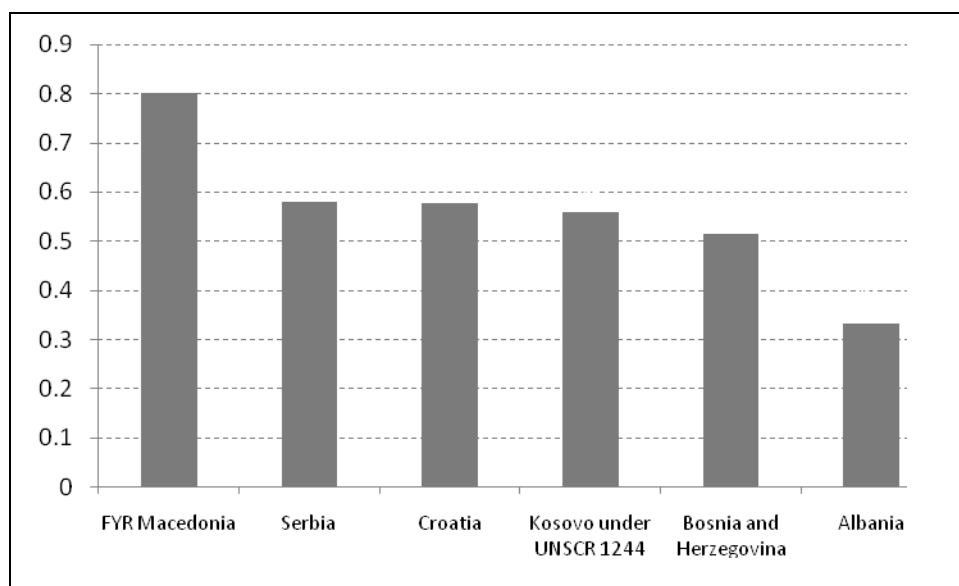
#### Improve inventory control systems

A third method of reducing lead time is to maintain an organised and efficient inventory control system. As mentioned in section 1.4, the first step to an efficient inventory control system is keeping track of and maintaining individual stocking policies using stock keeping units (SKUs). The uniform



product code (UPC) has begun to be applied at the SKU level in the Western Balkans; 56% of apparel manufacturing firms in the region identify products at the SKU level (Figure 14). During OECD interviews, many Western Balkan apparel manufacturers indicated that while they had initially begun to use the UPC at the request of the retailers they supplied, they were personally benefiting by being able to keep better track of inventory and dispatch it more quickly when an order was placed. However, it again seems that UPC adoption is much higher in larger firms: over 70% of firms with more than 100 employees had implemented UPC symbols, compared to only 52% of those with fewer employees.

**Figure 14. Firms Implementing UPC symbol standards (%)**



Source: OECD RCS (2008)

It also appears that many firms are beginning to incorporate basic forecasting methods to determine their inventory stocking levels. While OECD interviews indicated that few firms had incorporated sophisticated modelling based on point of sale (POS) data, many (especially the larger firms) had created individual stocking policies at the SKU level instead of relying on the same inventory policy for all products.<sup>51</sup> Basic planning tools were often in place to determine stocking policies based on demand variation, production costs, inventory carrying costs, throughput times, etc. Firms identified “accurately forecasting demand” as the most important factor in responding quickly to retailers’ orders; 68% considered it among the three most important success factors for their business, and 64% considered it the most important.

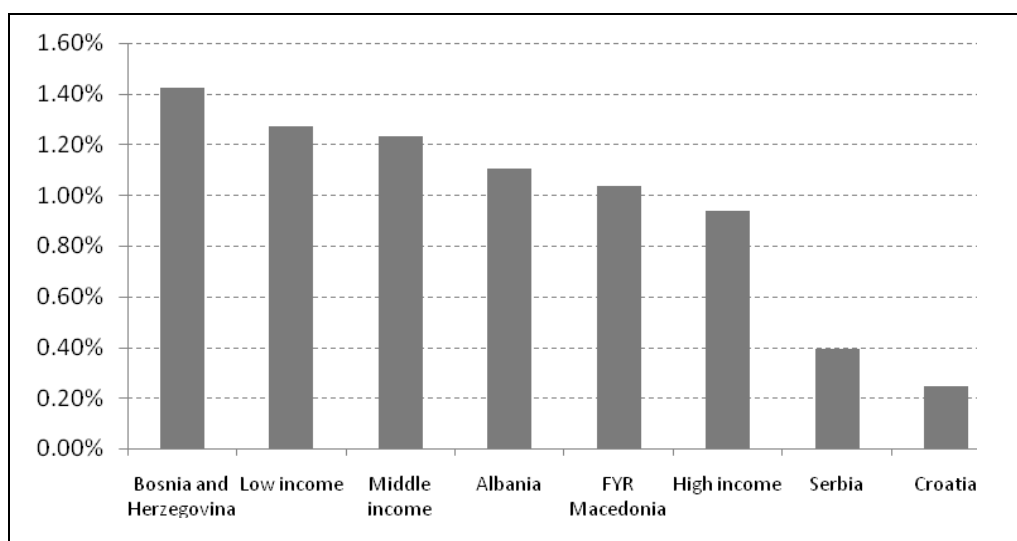
One reason for only partial implementation of the use of UPC symbols and demand forecasting techniques in firms is most likely the limited management capacity to do so. As highlighted in OECD interviews, in cases where retailers did not require UPC symbols many managers have not realised the added value to their businesses of implementing them. They have often accepted the increased inventory carrying costs and reduced order fulfilment rates due to insufficient stock, with potential harmful effects on business and quality.

Ensure minimum transport time and protection of goods

Implementing the technology and production processes needed to reduce lead times (mentioned in the previous sections) will be useless if shipment times are increased by poor transport organisation

or simply bad roads. One important first step is therefore to employ a reputable transport company with a good record in respect to time delivery. Almost all the firms interviewed indicated that they were satisfied with the companies they had been using to ship goods to retailers. According to the BEEPS survey, spoilage of goods in transport for the entire manufacturing industry in the Western Balkans is relatively low when compared internationally; 0.8% of total consignment value was lost in transit due to breakage, theft or spoilage, compared to 1% for manufacturing firms across 40 countries throughout the world (Figure 15). That figure is even lower for apparel manufacturing firms surveyed by the RCA: 0.68% of their cargo consignments had been lost in transit due to breakage, theft or spoilage.

**Figure 15. Value of average cargo consignment lost in transit (2005)**



**Notes:**

1. High income countries: Germany, Greece, Ireland, Korea, Portugal, Slovenia, Spain.
2. Middle income countries: Albania, Armenia, Bulgaria, Bosnia and Herzegovina, Belarus, Brazil, China, Algeria, Ecuador, Egypt, Guatemala, Guyana, Honduras, Indonesia, Kazakhstan, Sri Lanka, Morocco, The former Yugoslav Republic of Macedonia, Peru, Philippines, Romania, Russia, Slovakia, Syria, Thailand, Turkey, Ukraine, Serbia, South Africa, Chile, Costa Rica, Czech Republic, Estonia, Croatia, Honduras, Lithuania, Latvia, Mauritius, Oman, Poland, El Salvador, Turkey.
3. Low income countries: Azerbaijan, Benin, Bangladesh, Eritrea, Ethiopia, Georgia, India, Kenya, Kyrgyzstan, Cambodia, Moldova, Madagascar, Mali, Malawi, Nicaragua, Pakistan, Senegal, Tajikistan, Tanzania, Uganda, Uzbekistan, Vietnam, Zambia.

Source: BEEPS (2005)

Furthermore, apparel manufacturing firms in the Western Balkans should have systems in place to deal adequately with customs procedures. Often these procedures are time and process intensive. It appears that clearing customs in the Western Balkans requires less time for apparel manufacturers than in many other countries. According to the RCS, it takes an apparel manufacturing firm 2.5 days on average for its imports to clear customs and about 2.1 days for its exports to clear. This is in sharp contrast to apparel manufacturing firms in the rest of the world, where the average time to clear customs is five and four days, respectively, for imports and exports. Three-quarters of the firms interviewed employed either in-house customs experts or external customs brokers to help them deal efficiently and quickly with customs procedures.<sup>52</sup>

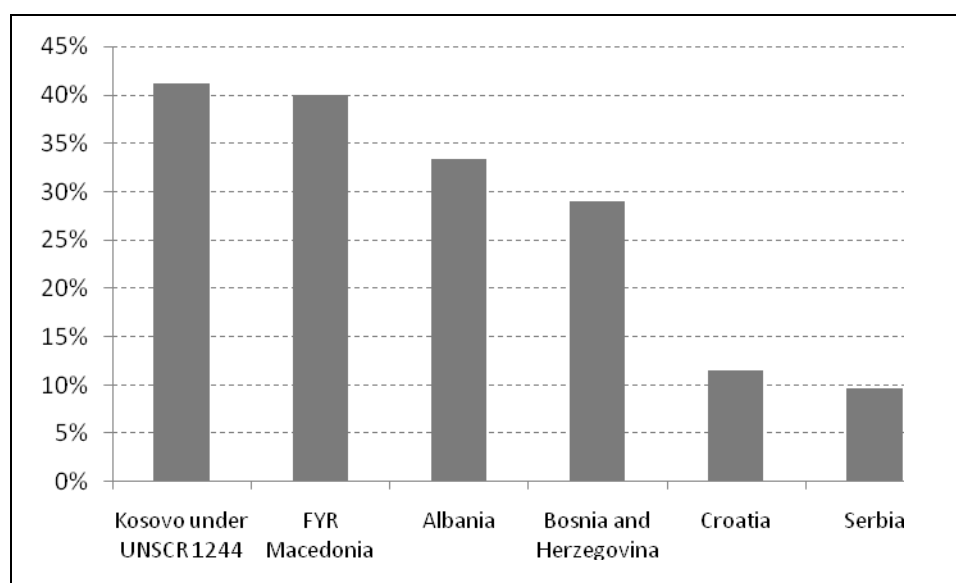
**Table 6. Time to clear customs for imports and exports**

	<b>Imports</b>	<b>Exports</b>
Albania	4.12	4.12
Bosnia and Herzegovina	2.17	2.42
Croatia	1.88	2.24
Kosovo under UNSCR 1244	2.79	0.47
The former Yugoslav Republic of Macedonia	1.15	0.93
Serbia	2.30	2.96
31 countries <sup>1</sup>	4.97	3.99

1. Average time to clear import and export customs for the 31 countries responding to the World Bank Enterprise Survey  
Source: BEEPS (2005) and OECD RCS (2008).

Finally, ensuring that shipping containers and cartons are appropriately labelled according to agreed standards can aid retailers to handle received orders, especially in large distribution centres where orders from hundreds of different suppliers can arrive at the same time. Again, such labelling requirements are normally met by apparel manufacturers at the request of the retailers they supply (as in the case of UPC symbols). Only 28% of apparel manufacturing firms in the Western Balkans ship orders in cartons or containers marked with bar codes.

**Figure 16. Firms marking shipments with bar codes (%)**



Source: OECD RCS (2008)

Firms have made progress in reducing as much as possible the actual transport time for delivery of manufactured items. However, more efforts could be made to label shipping containers with bar codes, which would make processing easier once they arrive. As with other actions needed to improve time to market, limited financing options are available to many apparel manufacturing firms for implementing these often quite expensive investments.

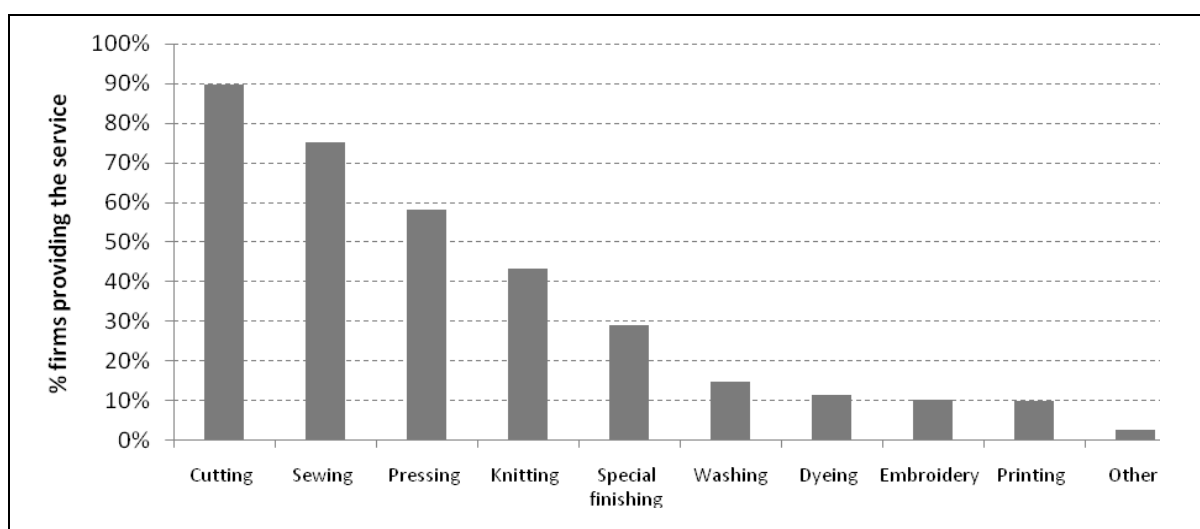
### *Introduce value-added services*

As mentioned in section 1.4, the profit margins of apparel manufacturing firms are very slim. An important way to improve profitability and have more control over price setting is to introduce more value-added services. Furthermore, with many retailers and other buyers increasingly concentrating on the design and marketing phase of the fashion industry, they are not interested in the manufacturing of the products and increasingly rely on fully contracting these services out. To address both of these factors, Western Balkan firms are encouraged to become OEM producers and gradually move into OBM production.

### *Move to OEM production*

According to the RCS, apparel manufacturing firms in the Western Balkans appear to be starting to provide more OEM services to their clients. While 42% continued to provide only cutting, sewing and pressing services, the rest provided other services beyond CMT activities; 43% provided knitting, and quite a few also provided specific services including special finishing, embroidery and printing; 16% provided six or more services to their clients.

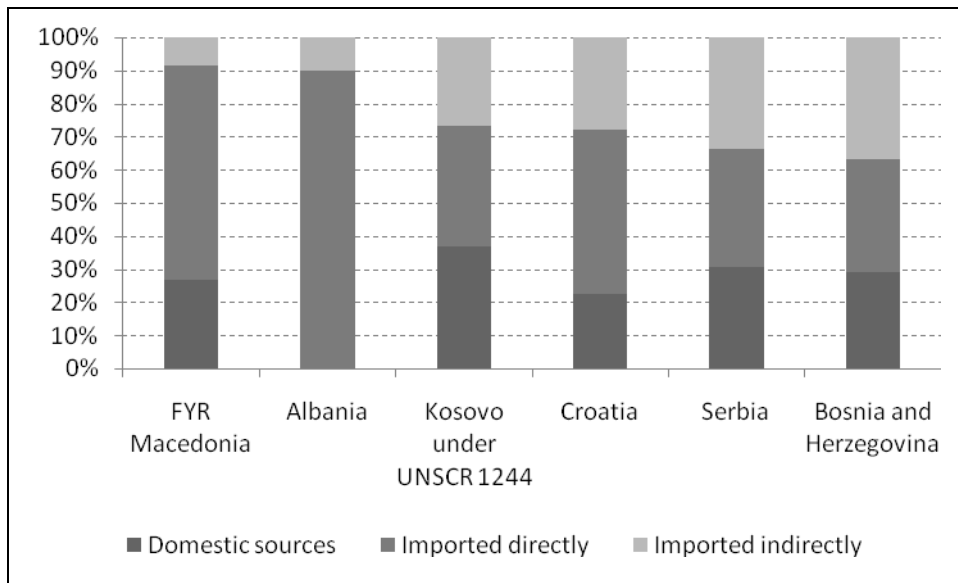
**Figure 17. Main services provided by Western Balkan apparel manufacturing firms**



Source: OECD RCS (2008)

Western Balkan apparel manufacturing firms are also sourcing their own material inputs and supplies. Only 8% of firms had their establishment's materials supplied from a third party; 68% imported directly either a portion or the entirety of their material inputs and supplies; and 59% purchased some or all of their materials from domestic sources. When considering the value of the material inputs and supplies, 22% was imported by a third party, 51% was imported directly by the surveyed apparel manufacturer and 26% was purchased from domestic sources.

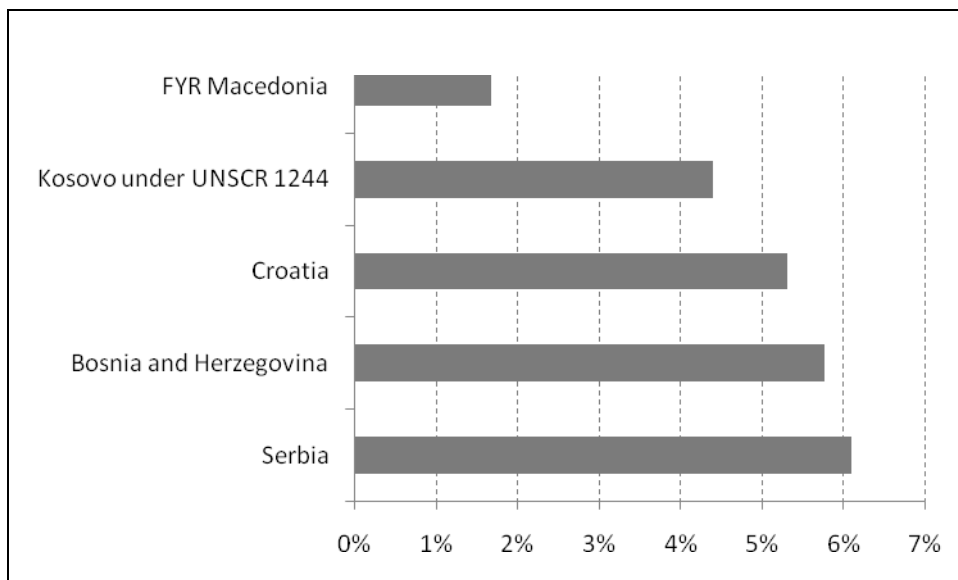
**Figure 18. Sources of material inputs and supplies**



Source: OECD RCS (2008)

It also appears that Western Balkan apparel manufacturing firms can rely on a relatively stable set of suppliers. Only 3.3% of sales were lost in 2007 due to delays in deliveries from suppliers. Firms that imported 100% of their material inputs only lost 1% in sales, and those that only sourced material inputs locally lost only 0.2% of total sales due to delivery delays from suppliers. Highlighting the relative reliability of suppliers, only 17% of firms considered the reliability of suppliers an issue when asked about key success factors (Figure 12).

**Figure 19. Sales lost due to delivery delays from suppliers (%)**

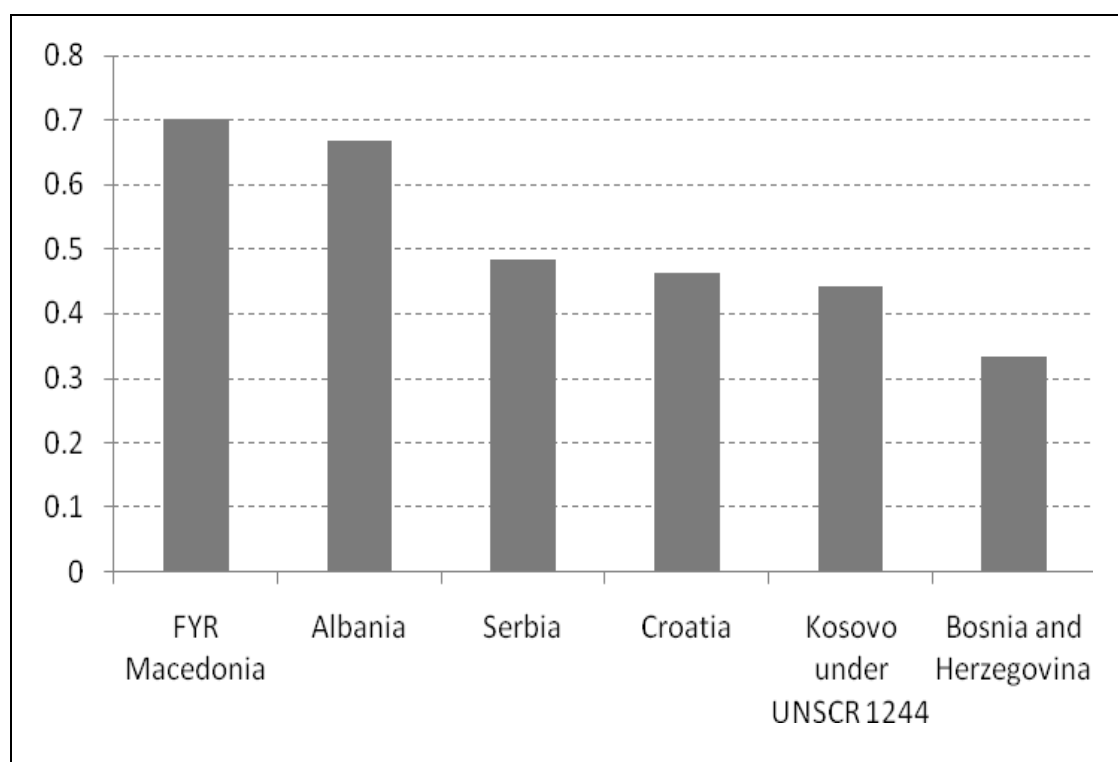


Source: OECD RCS (2008)

## Move to OBM production

Apparel manufacturing firms in the Western Balkans appear to have recognised the need to slowly move into the design and marketing of their own brands: 21% indicated that design was one of the main services they provided to their clients. Among all firms, including those that did not consider design one of their main services, 48% had developed a major new product line or service and 44% had upgraded an existing product line since 2004.

**Figure 20. Major new product line development**



Source: OECD RCS (2008)

OECD interviews with firms indicated that the majority of in-house design undertaken by firms consists, for example, of noting the latest trends in fashion magazines and imitating them using excess capacity and fabric. However, a couple of firms have taken advantage of the regional design talent fostered through the well-regarded design schools that exist in almost all of the Western Balkan economies. Three of the firms interviewed had introduced clothing lines aimed at the domestic market using those designers.

Regional intra-industry trade within the textile, apparel and findings industries indicates that the Western Balkans is beginning to create a regionally integrated apparel manufacturing industry and is increasingly engaging in triangle manufacturing. The Grubel-Lloyd index (Grubel and Lloyd, 1975) was also calculated to measure regional intra-industry trade for each of the Western Balkan economies in the textile, apparel manufacturing and findings industries (Box 6). The average of the index in all countries for 2006 was 0.62, indicating significant intra-industry trade within the sector.<sup>53</sup> Intra-industry trade within the sector appears to be growing: between 2000 and 2006 the year-on-year growth rate was 3.6%.

To the extent that intra-industry trade is characterised by vertical specialisation, one would expect imports and exports to be correlated (OECD, 2002). The correlation in the apparel manufacturing sector in the region was close to 0 in 2000-06. However, changes in intra-regional imports and exports in this sector appear to have become more aligned in almost all the Western Balkan economies, indicating increased vertical specialisation. Over the past two years in particular, intra-regional imports and exports of textile and apparel products have been moving together.

#### Box 6. Intra-industry trade

Intra-industry trade is defined as the two-way exchange of goods within the same industry. According to traditional trade theory, countries engage in inter-industry trade specialisation. However, countries increasingly engage in intra-industry trade, whereby they both export and import products from the same industry. For example, in 2007 the EU exported EUR 7.5 billion and imported EUR 6.5 billion in automobiles.<sup>54</sup>

The intra-industry trade phenomenon can be attributed to trade in three different types of products:

- *Horizontal products*: Trade in products of similar price and quality, e.g. Germany imports Toyotas and exports Volkswagens. Horizontal intra-industry trade allows countries with similar factor endowments to exploit economies of scale by specialising in niche products;
- *Vertically differentiated products*: Trade in products that differ by price and quality, e.g. Germany imports Toyotas and exports Mercedes Benzes. Vertically differentiated intra-industry trade can be a sign of differing factor endowments, such as workforce skills.
- *Vertically specialised products*: Trade in products at different stages of production, e.g. Germany imports car parts and exports cars. Vertically specialised intra-industry trade is usually triggered by comparative advantage, e.g. low labour costs.

The most widely used method of measuring intra-industry trade is the Grubel-Lloyd index. Using disaggregated trade data, the extent of intra-industry trade in product class  $i$  in country  $j$  can be expressed as:

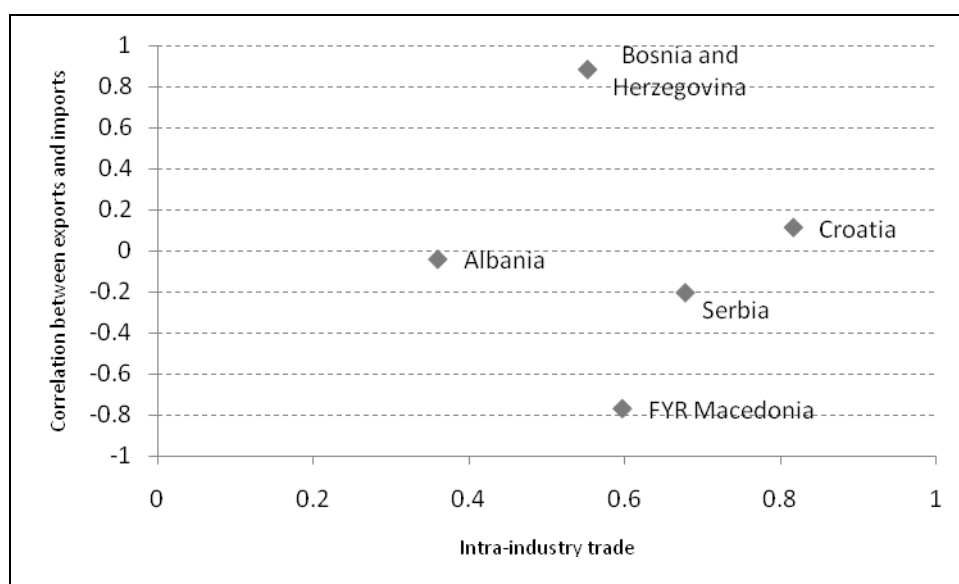
$$GL_i = 1 - \frac{|X_{ij} - M_{ij}|}{X_{ij} + M_{ij}}$$

where  $X_{ij}$  represents exports of product class  $i$  by country  $j$  and  $M_{ij}$  represents imports of product class  $i$  by country  $j$ . The GL index is zero when trade is entirely inter-industry (i.e. either imports or exports of a product equal zero) and is 1 when trade is entirely intra-industry (i.e. imports and exports of a product are equal to each other).

Source: Adapted from OECD (2002) and Grubel et al. (1975)

Some Western Balkan economies appear to be taking advantage of intra-regional vertical specialisation. There is a positive correlation between textile and apparel intra-regional trade and intra-industry trade in Bosnia and Herzegovina and Croatia (Figure 21), indicating that they are more vertically specialised than, in particular, Albania, where there seems to be little intra-regional intra-industry trade and almost no correlation between exports and imports in the textile and apparel sector.

**Figure 21. Relationship between intra-industry trade and the correlation of export/import movements**



Notes:

1. The horizontal axis measures the average GL index in SITC 65, 84 and 89.983 between 2000 and 2006, The vertical axis measures the correlation coefficient between annual changes in export and import volumes of intra-regional trade in apparel and textile products between 2000 and 2006.
2. For Bosnia and Herzegovina data was only available for 2003 to 2006; for Serbia it was not available for 2003. Data for Serbia reflects Serbia and Montenegro up until 2005.

Source: OECD analysis based on methodology adopted from OECD (2002) and data from Comtrade

*Promote your business!*

As highlighted in section 1.4, apparel manufacturing firms in the Western Balkans would benefit from promoting themselves to international clients in order to obtain needed exposure and reduce excess capacity. Owing to the recent technology revolution, as well as cheaper international travel, this can be done relatively inexpensively by improving internet presence and attending fairs.

Improve internet presence

Despite the many benefits provided by establishing an internet presence and the limited cost it implies (as outlined in section 1.4), few firms appear to have taken advantage of this opportunity. Only 14% of firms surveyed by the RCS had an internet website associated with their businesses. Furthermore, those companies that had a website provided only minimal information on the types of products they produced. No detailed information was given on human resources, equipment and production capacity, etc. (information that is valuable to retailers and buyers). Based on the OECD interviews, active web advertising appears to be practically non-existent. An examination of the most popular business-to-business websites for the apparel industry showed very few firms from the Western Balkans.

One reason for the weak internet presence of most apparel manufacturing firms appears to be the limited capacity of management. As highlighted in the OECD interviews, many managers did not fully appreciate the potential benefits such small steps as having a website or promoting excess capacity on business-to-business websites could bring, despite the relatively small investment in time and resources required.



## Attend fairs

Despite the benefits of regularly attending international fashion and trade fairs, most of the firms interviewed participated in these events only sporadically. Reasons for not participating were largely related to the high cost of setting up a booth at a fair and the costs associated with travelling. In addition, it can often be very cumbersome for managers to obtain appropriate travel visas.

Only 10% of firms participated in apparel specific industry associations or clusters. Such associations represent the interests of their members at international meetings and export fairs or markets; they can also promote the activities of their members by organising missions abroad. Apparel specific industry associations or clusters existed in all the Western Balkan economies, although their focus and capacity differed considerably.

## ***Policy barriers***

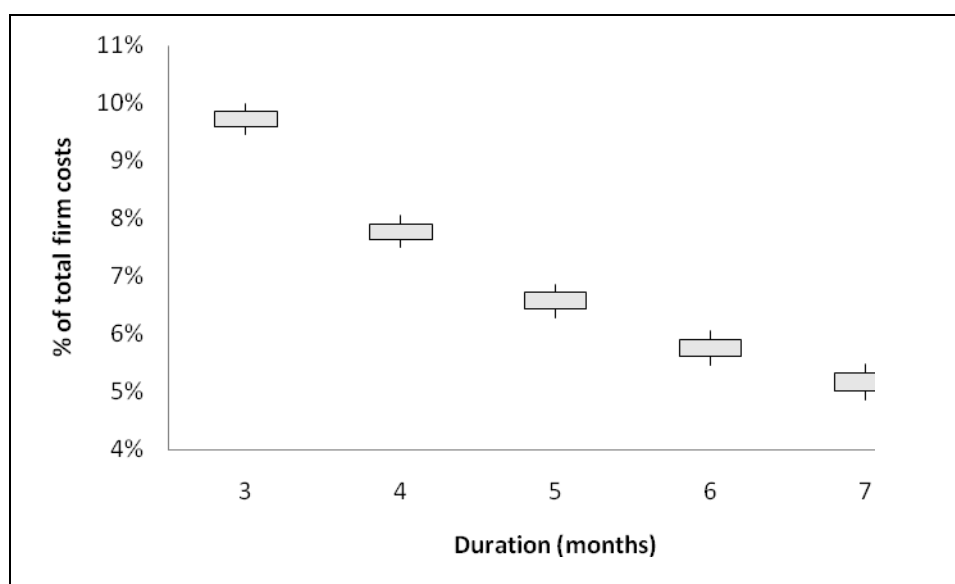
In addition to operational improvements by apparel manufacturing firms, governments can further increase competition in a sector through targeted policy measures which address key policy barriers. A detailed description of country specific policy barriers can be found in section 1.7. However, the section below describes barriers that were identified across the region: (i) access to and cost of finance; (ii) VAT reimbursement delays; (iii) high import duties; (iv) energy infrastructure; and (v) underdeveloped logistical channels.

### ***Improve access to and the cost of finance***

As demonstrated in the sections above, manufacturers appear to have difficulty obtaining affordable financing for investments in their businesses. Industrial upgrading, in terms of implementing more value-added services and improving time to market, requires significant investment by firms. Firms were asked in the RCS to assess the degree to which 18 policy barriers limit operation and growth. After taxes, availability of skills and electricity, the cost of financing was considered the most important barrier. It was considered a major barrier by 37% of firms and a minor to major one by 71%. These percentages were similar when firms were asked about access to financing: 34% considered it a major barrier and 66% a minor to major barrier.

The two big factors standing in the way of firms financing upgrades to their equipment and processes are the amount of collateral required to obtain a loan and the rate of interest required to finance the loans. The average interest rate paid by manufacturing firms throughout the region was 11%, significantly higher than the average 6% interest rate paid by firms in higher income OECD countries.<sup>55</sup> Furthermore, the duration of those loans was much shorter than in the OECD countries. In the Western Balkans, loans to manufacturing firms were on average for only 37 months, compared to 53 months in OECD countries. In an industry where costs are large and profits are slim, this can represent a large percentage of the total costs incurred by a firm. As shown in Figure 22, the PIM shows that a firm that has a loan amount of 36% of an initial investment will pay annual loan repayments and interest charges representing almost 10% of total costs when the duration is only three years and the interest rate is 11%. For that same loan spread over seven years, and with a more manageable interest rate payment of 7%, it represents only about 5% of total costs.

**Figure 22. Total loan costs in 2008 (principal and interest payments)**



Source: PIM (2008)

#### **Box 7. Policy Impact Model (PIM)**

The OECD Investment Compact created the PIM as a tool to evaluate the financial impact of various policy levers on firms and benchmark the competitiveness of firms against relevant countries. The PIM combines data on an apparel manufacturing firm engaged in make-trim operations to create a financial statement providing a monetary evaluation of a representative firm's return on investment dependent upon changes in key policies.

Currently, the PIM is capable of evaluating the impact that labour, energy, transport and loan costs have on the financial stability of a representative firm. Specifically, the four thematic areas are evaluated according to the following criteria:

- *Labour costs*: this thematic area evaluates the impact of social contributions, the ratio of managers to operators, wages per hour and the productivity level on the representative firm's profitability;
- *Energy costs*: this thematic area models the impact that energy policy has the profitability of the representative firm and includes estimations for electricity cost, the number of hours without electricity per day and the price of fuel;
- *Transport costs*: this thematic area evaluates costs involved in shipping the apparel products to the final market and includes models and variables for distance and time to market, the cost of the lorry driver and the cost of fuel and insurance;
- *Loan costs*: the final thematic area deals with the costs and burden of procuring a loan for new investment using data on the annual interest rate, the average percentage of collateral required and the expected loan duration.

The PIM is based on several assumptions, including details on ownership structure, place of operations, annual production, etc. For a more detailed description of the assumptions made, please go to the Investment Compact website: [www.investmentcompact.org](http://www.investmentcompact.org).

The approximate collateral required as a percentage of the loan value from manufacturing firms in the Western Balkans was 177%, compared to 133% in a sampling of OECD countries. Considering that the only assets that many apparel manufacturing firms have access to are the land the factory stands on and the buildings that house it, these are often insufficient to obtain the appropriate amounts of loan capital.

**Table 7. Sources of financing new investment: the Western Balkans and OECD countries**

	New investment	
	Western Balkans	OECD
Internal funds or retained earnings	64.97%	56.98%
Local commercial banks (loan, overdraft)	16.92%	20.21%
Foreign owned commercial banks	8.79%	0.89%
Leasing arrangement	1.07%	9.50%
Investment funds, special development financing or other state services	0.61%	0.54%
Trade credit (supplier or customer credit)	1.99%	3.40%
Credit cards	0.00%	0.52%
Equity, sale of stock	2.70%	5.78%
Family, friends	1.04%	1.04%
Informal sources (e.g. money lender)	0.37%	0.10%
Other	1.55%	1.06%

Source: BEEPS 2005; OECD: Germany, Greece, Ireland, Korea, Portugal, Spain.

The financial systems in place in the Western Balkans do not appear fully able to handle the financing needs of firms in the region. For new investments, firms rely much more heavily on internal funds or retained earnings than do firms in a selection of OECD countries (Table 7). They also do not use loans or overdrafts from local commercial banks, leasing arrangements or equity as much as do firms in many OECD countries, relying more on foreign owned commercial banks.

#### **Box 8. Improving access to and the cost of financing in the short term**

The SSSC project also encompasses a more practical phase to help reduce identified policy barriers. This phase, which will begin end-2008 and continue until December 2009, will focus on improving access to and cost of financing in the short term, which appears to be a significant barrier to apparel manufacturing business growth throughout the Western Balkans.

The 14-month project will include a comprehensive review of the types of barriers firms face when acquiring financing. This research will be supplemented by a comprehensive company survey to identify the barriers as well as detailed firm interviews and secondary research reviews.

To determine the international instruments available to SMEs and apparel manufacturing firms in particular, a review of best practices throughout OECD and non-OECD countries will be conducted. A survey will also be distributed to relevant policy makers to determine current programmes already available in Western Balkan countries to assist firms in obtaining financing.

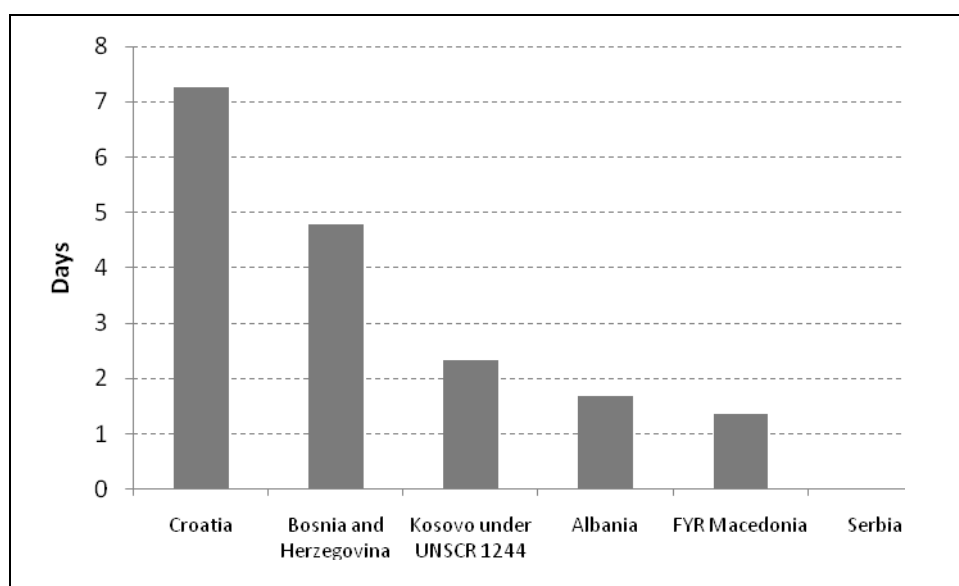
The end result will be a policy reform agenda tailored to specific country needs and levels of development as well as educational and promotion materials for apparel manufacturers providing step-by-step guidance on the mechanisms currently available for accessing finance.

### ***Reduce delays in VAT reimbursement***

All the Western Balkan economies have a VAT system based on the destination principle: VAT revenue accrues in the market where the good is consumed. All goods exported from the Western Balkans for final consumption elsewhere are charged a zero rate of VAT. In addition, VAT is recoverable on purchases of inputs that were used to produce the exported goods. In most OECD countries, the VAT that is recoverable is reimbursed shortly after the exporting firm submits the required documentation to the tax administration. However, in many transition economies (including those in the Western Balkans) tax authorities can often take months and sometimes more than a year to process reimbursement claims. In an export oriented sector like apparel manufacturing, such delays can sometimes seriously impact competitiveness (Harrison and Krelove, 2005).

While all the Western Balkan economies have laws explicitly stating that the VAT is to be reimbursed to non-exporters within a maximum of 60 days (and more rapidly for exporters), in practice this sometimes does not occur. As highlighted by the RCS, VAT reimbursement was on average only delayed by three days throughout the Western Balkans for exporters. However, anecdotal evidence from apparel manufacturing firms in the Western Balkans indicates that it can sometimes take many months to receive a refund (Figure 23).

**Figure 23. VAT reimbursement delays**



Source: OECD RCS (2008)

The VAT reimbursement to which apparel manufacturing firms are entitled in all Western Balkan economies often represents a large portion of the working capital available to the firm. Therefore, delayed reimbursements can significantly strain company finances. As highlighted by the PIM, a seven-month delay in VAT reimbursement means that after four years of operation only about 75% of VAT paid has been reimbursed. The outstanding amount of VAT to be paid back to the apparel manufacturer represented 10% of annual sales.

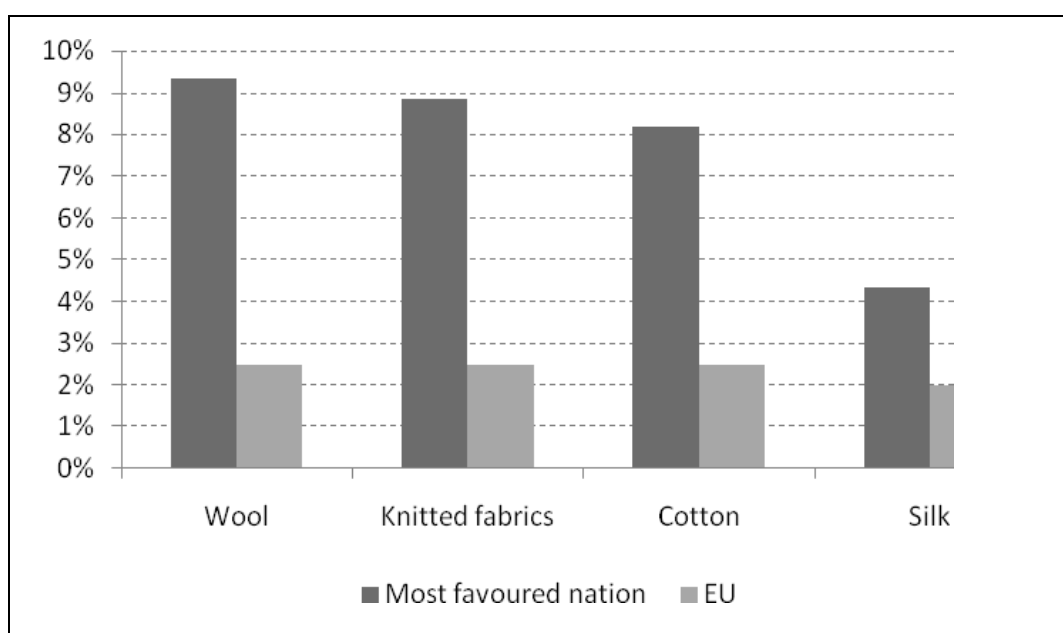
### Reduce import duties

The Western Balkans has only a small textile and findings industry, and almost no raw material production to speak of. Although both these industries appear to be growing, they struggle to fully supply the very large domestic apparel manufacturing industry. In those economies where gross value-added statistics were broken down into textile production and manufacture of wearing apparel, domestic textile production represented only a fraction of the amount of apparel manufacturing. In Serbia textile production was about 86% of apparel, and in Croatia it was about 43%.

Largely for this reason, the Western Balkans imports the majority of its textiles and findings for input into the apparel manufacturing industry. Imports of textiles and findings in 2006 totalled USD 1.6 billion. The top ten exporting countries are almost entirely in Europe, representing 80% of total imports. China was the only non-European country to break into the top ten textile and findings exporters to the Western Balkans: total Chinese textile and findings imports in 2006 were almost USD 60 million.<sup>56</sup> The reason most of the exporting countries are in Europe is the largely zero or close to zero tariffs on imports of textiles and findings from the EU.

The Western Balkans has the potential to import many textile and findings products from countries outside the EU. Imports of textiles and findings from countries outside the European Economic Area (EEA) were over 10% of total textile and findings imports, and they have been rising substantially since 2000.<sup>57</sup> One of the main reasons imports are not even higher from countries outside the EEA is that tariffs on these imports can often be quite high.

Figure 24. Import tariffs (2008)



Silk: HS 5007; wool: HS 5111, 5112 and 5113; cotton: HS 5208, 5209, 5210, 5211 and 5212; knitted fabrics: HS 6001 and 6002.

Most favoured nation: the tariffs received by all members of the World Trade Organisation.

Source: Market Access Database

Potentially, the domestic apparel manufacturing industry could be aided by a reduction in import tariffs on textiles and findings. Fabric costs represent the biggest cost to a firm. According to the PIM,

input costs represent over 60% of total costs incurred by an average apparel manufacturing firm. Despite the fact that many materials might be substantially cheaper from countries such as Pakistan and China, with high import tariffs – averaging 8% for cotton but running as high as 20% for denim imports into The former Yugoslav Republic of Macedonia – the majority of fabrics and findings are only affordable when they come from European countries with tariffs averaging only 2% for cotton fabrics.

Understandably, the purpose of many import tariffs in the Western Balkans is to protect and foster domestic textile and findings industries. Policy makers are therefore undoubtedly reluctant to reduce these tariffs. However, high tariffs could potentially be making the domestic apparel manufacturing industry less competitive than it otherwise might be by increasing apparel manufacturers' input costs.

### ***Improve energy infrastructure***

For most of the Western Balkan economies there no longer appears to be a problem with energy infrastructure. There are two notable exceptions: Albania and Kosovo under UNSCR 1244. According to the 2005 BEEPS, 54% of Albanian manufacturing firms considered problems with electricity supply to be a major obstacle for the operation and growth of their business. This was confirmed by the RCS, in which 40% of Albanian apparel manufacturing firms considered electricity to pose a major barrier to the operation and growth of their business. According to both the BEEPS and RCS, this was the issue that posed the biggest problem for enterprises.

According to the BEEPS, on average Albanian manufacturing firms experience power interruptions on 125 days per year. The average duration of each outage is almost five hours, and the estimated lost value due to these outages is 10% of total sales. This results in an added extra cost for almost all apparel manufacturing firms in Albania and in Kosovo under UNSCR 2214. To remain in operation, they must purchase a generator which, for a plant employing 200-250 people, would cost between EUR 35 000 and 55 000. On top of that, the rising cost of fuel for these generators is increasing their operating costs. According to the PIM, fuelling a generator due to power cuts can represent over 55% of a firm's total energy cost.

It is clear that for Albania and for Kosovo under UNSCR 2214, the energy situation is of the greatest importance. This is true not only for the apparel manufacturing industry, but for all business activities in both of these economies

### ***Improve logistical channels***

Although many apparel manufacturers in the Western Balkans have partially or fully implemented QR systems, such improvements will not have a significant impact on time to market unless coupled with an efficient logistical network. As highlighted in a recent World Bank report, "In this highly competitive world, the quality of logistics can have a major bearing on a firm's decisions about which country to locate in, which suppliers to buy from and which consumer markets to enter" (World Bank, 2007).

Throughout the Western Balkans there is scope to improve transport infrastructure and logistical channels. According to the RCS, 62% and 64% of apparel manufacturing firms considered that transport infrastructure and customs and trade, respectively, were a barrier to the efficient operations of their business. In the World Bank Logistics Performance Index (LPI) the Western Balkans ranks on average 89<sup>th</sup> among 150 countries in terms of logistics performance. The average for the Western Balkan economies scored in the top third of countries in only one category in the LPI: domestic

logistics costs. In every other category this average ranked in the bottom two-thirds, and in tracking and tracing it was in the bottom third.

According to the policy simulation model, delays in the delivery of goods to the final market due to poor transport infrastructure result in transport costs increasing by almost a third. Poor transport infrastructure is also likely to cause an increase in spoilage. On average, the Western Balkan economies experienced a spoilage rate of about 1% of all goods shipped to final market, but this figure is higher in Albania and Bosnia and Herzegovina (BEEPS 2005).

## 1.7 Country specific recommendations

### *Albania*

**Table 8. The apparel manufacturing industry in Albania**

Value-added (2005)	USD 33 million
FDI inflows	
FDI inward stocks (2004)	EUR 112 million
Exports	
Employment (2005)	10,480
Number of firms (2005)	451

*Source:* INSTAT Annual Structural Survey (2005); Central Bank of Albania; data is for the entire textile and wearing apparel industry.

#### *Sector overview*

Clothing and apparel accessories represent Albania's largest export category. In 2006 they represented over 28% of total exports, totalling USD 450 million. The sector has been growing substantially: between 2000 and 2006 the CAGR was over 15%. It is also one of the few categories in which Albania has had a trade surplus: USD 105 million in 2006.

Albania exports almost exclusively to EU countries. In 2006 the top destinations were almost entirely European, and the majority of Albanian apparel exports go to Western European countries (the top three destinations in 2006 were Italy, Greece and Germany at 78%, 16% and 6%, respectively). Altogether, they represent 99.7% of total Albanian apparel exports. Many Italian retailers and clothing designers and brokers have taken advantage of the geographic proximity and low labour costs of the Albanian apparel manufacturing industry, as well as the fact that many Albanians are fluent in Italian.<sup>58</sup>

The revealed comparative advantage (RCA) of Albania's apparel manufacturing industry in 2007 was 6.8, indicating that the country has a distinct advantage in apparel exports to the EU relative to other countries. The apparel manufacturing sector has the third largest RCA calculation for 2007 at the SITC two-digit level, right after exports of footwear and leather, skins and furs. Albania appears to be improving its comparative advantage relative to the EU market: over the past three years the RCA has gradually increased, indicating that apparel manufacturing firms are taking greater advantage of their geographic proximity to European markets.

FDI stocks in the apparel manufacturing industry in 2004 amounted to EUR 112 million, representing about 11% of total FDI stock in manufacturing.<sup>59</sup> This industry was the third largest

recipient of FDI in the manufacturing sector at NACE two-digit level in 2004, and the second largest sector in 2003. Investment in the industry is increasing: the CAGR between 2001 and 2004 was 11%.

According to the annual enterprise survey by the Albanian Office of Statistics, value-added was about USD 33 million in 2005 or about 2% of the industry total. This is significantly above that in most of the other Western Balkan economies, indicating the strong presence of the apparel manufacturing industry.

Albania is one of the least expensive countries in Europe for labour intensive activities. Wages in manufacturing in 2005 were only USD 184 per month, and those in the textile and apparel industries were USD 178 per month. After Kosovo under UNSCR 2214, it has the lowest wages in the Western Balkans. However, wages have risen relatively rapidly. The CAGR between 1997 and 2005 was 15%.

Labour and general costs per standard allowed minute (SAM) were EUR 0.11. Despite Albania's low labour costs, they are higher per SAM than those in countries such as The former Yugoslav Republic of Macedonia, largely due to lower productivity. According to KSA calculations, productivity was only 42% of that in the United Kingdom, making Albania one of the least productive Western Balkan economies per SAM.

#### *Challenges and policy barriers*

According to the RCS, 60% of firms considered that reducing apparel throughput times and lead times was one of the three most important success factors for their business, the highest percentage in the region. However, as with all the other firms interviewed, MPS had not yet been implemented. Implementation of automated technology is also in its infancy; according to the RCS, only 27% of firms considered their lack of investment in technology to be one of the three most important business challenges they face in expanding their operations. Low investment coupled with little interest in investment indicates that Albanian firms are still in the CMT mentality and have yet to realise the potential benefits of improving their equipment and processes.

According to the RCS, 43% of firms had begun to implement EDI, placing Albania in the middle range of Western Balkan economies. Most firms appear to continue to rely on more traditional modes of communication: 29% of firms that did not use EDI used email as their primary mode of communicating production orders, etc. The remainder continued to rely on telephone and fax.

Only one-third of apparel manufacturing firms in Albania identify products at the SKU level with UPC symbols, the lowest percentage in the Western Balkans. As in the other Western Balkan economies, implementation of forecasting techniques to determine inventory stocking levels was relatively rudimentary; however, 80% of apparel manufacturing firms surveyed by the RCS considered this among the three most important success factors for their business and two-thirds considered it the most important.

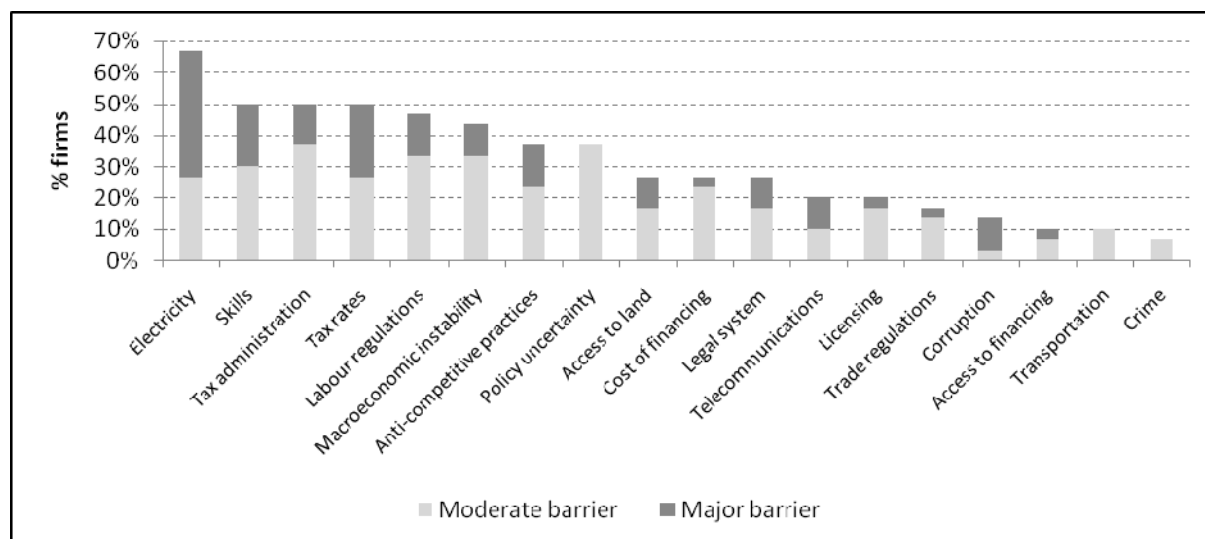
According to the BEEPS, spoilage of goods in transport for the entire Albanian manufacturing industry is lower than the average of low and middle income countries: 1.10% of total consignment value is lost in transit due to breakage, theft or spoilage. However, Albania has the highest percentage of lost value regionally after Bosnia and Herzegovina. Concerning customs procedures, according to the RCS in an Albanian apparel manufacturing firm it takes four days on average for imports to clear customs and four days for exports to clear. Although Albania is competitive internationally in this area, it lags behind other Western Balkan economies, where it takes only half this time to clear customs. Only one-third of apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards.



The policy barrier most often cited as a major obstacle to the operation and growth of Albanian firms is problems with the reliability of electricity supply. According to the 2005 BEEPS, 54% of Albanian manufacturing firms considered electricity supply problems a major obstacle for the operation and growth of their businesses. This was confirmed by the RCS, in which 40% of Albanian apparel manufacturing firms considered electricity supply problems to represent a major barrier to the operation and growth of their businesses. In both the BEEPS and RCS, this was the issue that posed the biggest problem for enterprises.

According to the BEEPS, Albanian manufacturing firms experience power interruptions on 125 days per year on average. The average duration of each power outage is almost five hours, and the estimated lost value due to these outages is 10% of total sales. This results in an added extra cost for almost all apparel manufacturing firms. To remain in operation, they must purchase a generator which, for a plant employing 200-250 people, would cost EUR 35 000-55 000. Moreover, the rising cost of fuel for these generators increases the expense of operating them. According to the PIM, fuelling a generator due to power cuts can represent over 55% of total energy cost.

**Figure 25. Policy areas representing moderate to major business barriers in Albania**



Source: OECD RCS (2008).

Tax rates were the policy barrier to business cited second most often and tax administration was the fourth. Anecdotal evidence collected from site visits, as well as meetings with relevant representatives from business associations, indicates that the VAT reimbursement system is poor. While VAT reimbursements are being made more regularly, and survey data indicates that the average delay is only about two days more than the legally mandated maximum, there is still considerable variation. According to one firm interviewed, it once took 1.5 years for a VAT payment to be reimbursed.

Labour regulations were another problem highlighted by the RCS, as echoed by the 2005 BEEPS (in which about 51% of firms identified this as a major to minor barrier). According to the World Bank Doing Business indicators, it appears that Albania's hiring and firing regulations are relatively liberal. However, firing costs are quite high. The notice period for redundancy dismissal after 20 years of continuous employment is 13 weeks; severance pay for that same employee would be 42.9 weeks of salary. Among the 178 countries covered by the *Doing Business Report*, Albania is among the third

most restrictive countries in terms of firing costs, well behind the average for Eastern Europe and Central Asia and the OECD average.

Access to and the cost of financing continues to be a problem for most firms, according to the BEEPS. Access to financing was identified by 60% of Albanian firms as a major barrier, and by 78% as a major to minor one. Loans for working capital or new investments largely came from internal funds or retained earnings (84% for working capital and 77% for new investments), much higher than the OECD average and even the average in the Western Balkans (Table 9).

**Table 9. Access to financing in Albania**

	<b>Working capital</b>	<b>New investments</b>
Internal funds	84.37%	77.32%
Local banks	2.54%	4.46%
Foreign owned banks	3.33%	7.20%
Leasing arrangement	0.08%	0.03%
Investment funds, special development financing or other state services	0.10%	0.66%
Trade credit	3.03%	2.37%
Credit cards	0.11%	0.00%
Equity	0.19%	0.15%
Family and friends	2.79%	3.76%
Informal sources	0.85%	0.46%
Other	0.78%	1.61%

*Source:* BEEPS (2005)

For all Albanian firms the collateral needed to obtain a loan is relatively high, at 152% of the loan value, and the rate of interest is 11%. Interviews with apparel manufacturing firms indicate that they expect to pay between 12% and 13% interest.

#### *Key policy recommendations*

1. Actively promote the apparel sector as a target for foreign and local investment;
2. Improve electricity infrastructure to minimise disruptions to firm activity;
3. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
4. Develop training for apparel firm managers to leverage opportunities to increase the competitiveness of Albanian firms.

## *Bosnia and Herzegovina*

**Table 10. The apparel manufacturing industry in Bosnia and Herzegovina**

<b>Value-added (2006)</b>	<b>USD 53 million</b>
FDI inflows	
FDI inward stocks	
Exports (2007)	USD 176 million
Employment (2006)	6971
Number of firms (2008)	86

*Source:* Data is only for the Federation of Bosnia and Herzegovina (FBiH). Chamber of Economy for the Federation of Bosnia and Herzegovina; Federation of Bosnia and Herzegovina Federal Office of Statistics; exports, employment and number of firms only for the apparel manufacturing industry; value-added for entire textile and apparel manufacturing industry.

### *Sector overview*

Bosnia and Herzegovina is not a particularly large exporter of clothing and apparel accessories compared with the other Western Balkan economies. In 2007 this was the ninth largest exporting sector at SITC two-digit level, representing only 4.3% of total exports, and totalled only USD 176 million. Bosnia and Herzegovina currently has a trade deficit in the clothing sector of almost USD 12 million. The CAGR indicates that the industry is picking up. Between 2000 and 2007 the CAGR was 28%, one of the highest in the region.

Bosnia and Herzegovina exports almost exclusively to the EU and to other Western Balkan economies. In 2006 the top ten export destinations for Bosnian apparel manufacturing products were in Europe (the top three destinations were Germany, Italy and Croatia at 50.08%, 18.72% and 8.53%, respectively). Altogether, they represent 77% of total Bosnian apparel exports.

The revealed comparative advantage (RCA) of the apparel manufacturing industry in Bosnia and Herzegovina in 2007 was 2.4, indicating that the country has a comparative advantage in apparel exports to the EU relative to other countries. The apparel manufacturing sector is one of the top ten most competitive sectors, according to the RCA calculation for 2007 at the SITC two-digit level. Bosnia has maintained a steady RCA over the past seven years.

The value-added of the apparel manufacturing industry in Bosnia and Herzegovina<sup>60</sup> in 2006 was approximately USD 53 million, or about 1% of the industry total. This figure is in line with most other countries. The size of the apparel manufacturing industry in Bosnia and Herzegovina appears to be consistent with the situation in many other transition countries.

Wages in the manufacturing industry in 2006 were USD 432 per month, although wages in the apparel manufacturing industries were 34% lower at USD 283 per month in the same year. As in many other countries, wages have risen relatively rapidly. The CAGR between 1997 and 2005 was 7% for wages across all activities.<sup>61</sup>

Labour and general costs per SAM were EUR 0.11 per minute. This measurement takes into account the labour required to produce one minute of sewing, weighted by productivity. Bosnia and Herzegovina is therefore a cheaper place to assemble clothing than about half of all other countries surveyed by KSA and all of the countries in Europe except Albania, The former Yugoslav Republic of Macedonia, Romania and Ukraine. According to KSA, productivity in Bosnia and Herzegovina was only about 52% of that in Germany. Its productivity levels are similar to those in Egypt, Myanmar and

India. However, productivity appears to be increasing: according to OECD calculations of productivity in the textile and textile apparel industry, productivity between 2003 and 2006 had a year-on-year average growth rate of 11%,<sup>62</sup> the highest in the region where data was available.

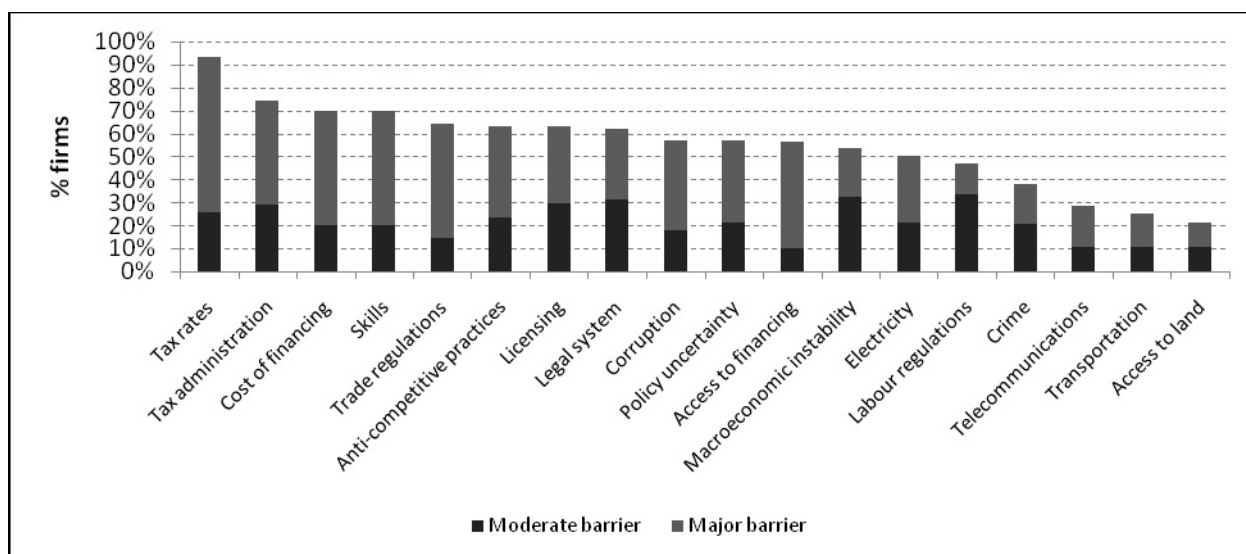
### *Challenges and policy barriers*

Of the Bosnian apparel manufacturing firms surveyed by the RCS, 29% considered that reducing throughput times and lead times was one of the three most important success factors for their business. Two of the four apparel manufacturing firms visited by the OECD had implemented MPS in a portion of their plants; one had tried but then discarded it. The implementation of automated technology was also relatively strong: one of the firms visited had automated spreading technology and two were using CAD systems to improve marker making. Lack of investment in technology was considered by 42% of firms to be among the top three most important business challenges they face in expanding their operations.

Of the Bosnian firms surveyed by the RCS, 26% had begun to implement EDI, the lowest percentage of any Western Balkan economy. It appears that most firms continue to rely on more traditional modes of communication: 61% of firms that did not use EDI used email as their primary mode of communicating production orders, etc. The remainder continued to rely on telephone and fax.

Only 52% of apparel manufacturing firms in Bosnia and Herzegovina identified products at the SKU level with UPC symbols, the second lowest percentage in the Western Balkans. As in the other Western Balkan economies, forecasting techniques were used to determine inventory stocking levels only by the most advanced firms. Only 58% of Bosnian apparel manufacturing firms surveyed by the RCS considered this to be among the top three success factors for their business, the lowest percentage in the region.

**Figure 26. Policy areas representing moderate to major business barriers in Bosnia and Herzegovina**



Source: OECD RCS (2008)

According to the BEEPS survey, spoilage of goods in transport in the entire Bosnian manufacturing industry was the highest in the Western Balkans: 1.42% of total consignment value was

lost in transit due to breakage, theft or spoilage. Concerning customs procedures, according to the RCS it takes a Bosnian apparel manufacturing firm 2.2 days on average for imports to clear customs and 2.4 days for exports to clear on average, about the same as the Western Balkan averages. Only 29% of apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards.

Tax rates are the main policy barrier for apparel manufacturing firms operating in Bosnia and Herzegovina. While, to some extent, these firms tend to be dissatisfied with their country's tax regime, it appears from interviews that one of the main problems lies in the discrepancies between the tax systems of the Federation of Bosnia and Herzegovina and those of the Republika Srpska and the Brčko District. The latter have separate taxation systems in place, with their own tax administrations. During OECD site visits and interviews, many firms complained that the complexity of the political situation often meant that it was unclear which tax jurisdiction they fell under, and that regulations were in many cases ambiguous.

After tax rates, the most important policy barrier appears to be the cost of financing. This was identified by the 2005 BEEPS as the most important barrier impeding the growth of all Bosnian firms. Of the apparel manufacturing firms responding to the RCS, 80% indicated that the cost of financing was a major to minor barrier to general operations. This was echoed by the BEEPS, where 83% of all Bosnian firms indicated that the cost of financing was a major to minor obstacle to the operation and growth of their businesses.

**Table 11. Access to financing in Bosnia and Herzegovina**

	Working capital	New investments
Internal funds	63.03%	63.99%
Local banks	12.90%	12.85%
Foreign owned banks	3.04%	4.17%
Leasing arrangement	1.06%	1.67%
Investment funds, special development financing or other state services	1.27%	0.30%
Trade credit	4.94%	2.85%
Credit cards	0.29%	0.22%
Equity	1.47%	0.48%
Family and friends	4.89%	6.05%
Informal sources	0.34%	0.31%
Other	4.37%	3.57%

Source: BEEPS (2005)

Internal funds or retained earnings were used 63% and 64% of the time, respectively, to fund loans for working capital and for new investments (Table 11). These percentages are much higher than the OECD average. Bosnian firms did not use local commercial banks as firms in OECD countries. The reliance of Bosnian firms on friends and family as source of financing was particularly high. For new investments, 6% of financing came from this source in Bosnia and Herzegovina, compared with 1% in OECD countries.

Based on an interview with one firm, it appears that the finance situation has been improving. It was not unusual to obtain a loan with an interest rate of between 10-11%, although after the war interest rates could reach 15-20%. The collateral required was still high: 171% of the value of the loan, according to the BEEPS (2005).

#### *Key policy recommendations*

1. Harmonise the tax systems in Bosnia and Herzegovina between the two entities and the Brčko District;
2. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
3. Develop training for apparel firm managers to leverage opportunities to increase the competitiveness of Bosnian firms.

### **Croatia**

**Table 12. The apparel manufacturing industry in Croatia**

<b>Value-added (2004)</b>	<b>USD 346 million</b>
FDI inflows (2007)	EUR 12 million
FDI inward stocks (2006)	EUR 198 million
Exports (2006)	USD 538 million
Employment (2006)	21,937
Number of firms (2006)	212

*Source:* Republic of Croatia Central Bureau of Statistics; Croatian National Bank

#### *Sector overview*

Despite the generally held idea that Croatia's apparel manufacturing sector is not competitive due to its relatively high wages, this industry represents one of the largest export categories in Croatia. In 2006 apparel manufacturing was the fourth largest export category among SITC two-digit classifications, totalling USD 538 million or about 5% of total exports. The sector has not grown as much as in some of the other Western Balkan economies: between 2000 and 2006 the CAGR was only 2%. But this most likely reflects the relative maturity of the apparel manufacturing industry in Croatia compared to the situation in many other Western Balkan economies. This sector also continues to maintain a trade surplus (of almost USD 20 million), one of only 15 SITC two-digit categories of which this is true.

Croatia exports entirely to the EU and to other Western Balkan economies. In 2006 the top ten destinations for apparel manufacturing products were in Europe. The majority of Croatian apparel exports go to Western European countries. The top three destinations in 2006 were Italy, Germany and Austria (53.14%, 31.76% and 2.95% of total Croatian apparel exports, respectively). Altogether, they represent 88% of total Croatian apparel exports.

The revealed comparative advantage of Croatia's apparel manufacturing industry in 2007 was 2.9, indicating that the country has an advantage in apparel exports to the EU compared with other Western Balkan economies. However, the RCA calculation has declined steadily since 2007, indicating that other industries are becoming bigger trading partners with the EU.

FDI stocks in the apparel manufacturing industry in 2006 totalled EUR 198 million, representing about 4% of total FDI stocks in manufacturing.<sup>63</sup> Croatia had the largest FDI stocks in this sector in the Western Balkans. FDI inflows into the apparel manufacturing industry in 2007 were almost EUR 12 million, representing about 5% of total FDI inflows. It appears that FDI into this industry is increasing: the CAGR between 2000 and 2006 was 3% for stocks; for FDI inflows, the CAGR between 2000 and 2007 was almost 26%.

The value-added of the apparel manufacturing industry in 2004 was approximately USD 346 million, or about 2% of the industry total. This is significantly above the level in most of the other Western Balkan economies, indicating this industry's strong presence.

Croatia is one of the most expensive countries for labour intensive activities in South East Europe. Wages in manufacturing in 2006 were USD 1 029 per month, although those in the apparel manufacturing industry were about half that amount at USD 554 per month. Wages have arisen relatively rapidly. The year-on-year- growth rate of manufacturing wages between 1997 and 2005 was 6%.

In Croatia labour and general costs per SAM were EUR 0.18 per minute. These costs, which make it cheaper to assemble clothing in Croatia than in most Western European countries, are in line with costs in the majority of new EU Member States. Croatia is the most expensive country for apparel manufacturing in the Western Balkans, but it is also the most productive location. According to KSA, its productivity level is about 68% of Germany's. This level is similar to that in the Czech Republic, Latvia and Romania. Croatia has the highest productivity level in the Western Balkans: according to OECD calculations, productivity in the textile and textile apparel industry is about twice as high as the average for the Federation of Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia and Serbia, the only economies for which appropriate data was available. Productivity appears to be increasing considerably: between 2002 and 2004 there was a year-on-year average productivity growth rate of 5%.

### *Challenges and policy barriers*

Reducing throughput times and lead times was considered by 39% of the Croatian apparel manufacturing firms surveyed by the RCS to be one of the three most important success factors for their business. Of the four apparel manufacturing firms visited by the OECD, two had implemented MPS in a portion of their plants. The implementation of automated technology was also advanced, especially when compared with the situation regionally: two of the firms visited used CAD systems to improve marker making and one had recently invested in sophisticated automated spreading technology. Lack of investment in technology was considered by 35% of firms to be one of the three most important business challenges they face in expanding their operations.

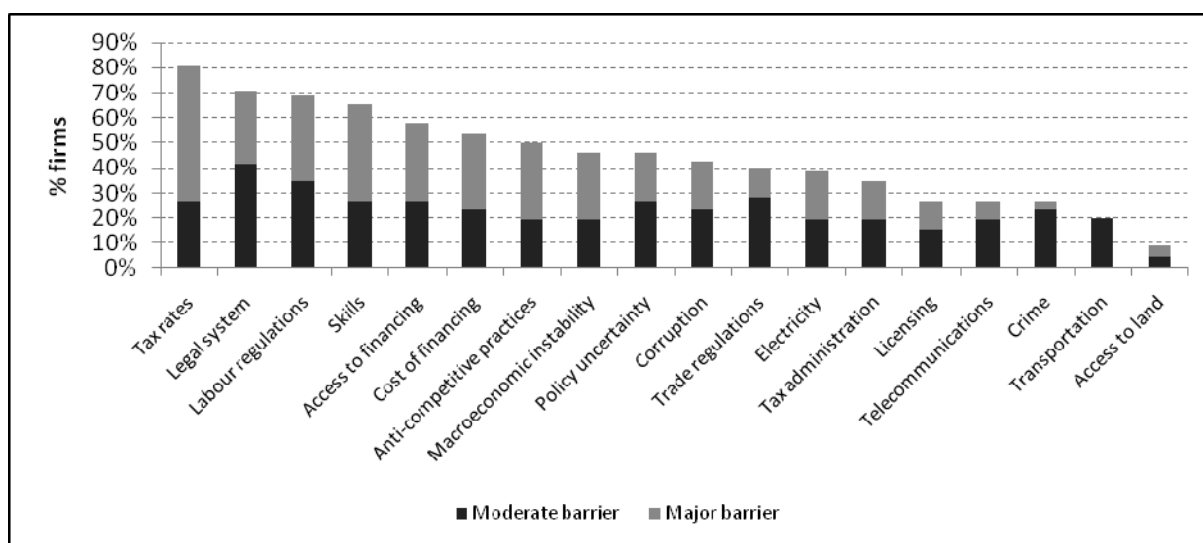
Half the Croatian firms surveyed by the RCS had begun to implement EDI. Croatia is the Western Balkan economy with the highest rate of EDI implementation after Serbia. Of the firms that did not implement EDI, 62% used email as their primary mode of communicating production orders, etc. The remainder continued to rely on telephone and fax.

Products were identified at the SKU level with UPC symbols by 58% of firms. As in the other Western Balkan economies, the use of forecasting techniques to determine inventory stocking levels was relatively rudimentary, except in the most successful firms. However, 85% of firms surveyed by the RCS considered this to be one of the three most important success factors for their business, and almost 60% considered it the most important factor.

According to the BEEPS survey, spoilage of goods in transport for the entire Croatian manufacturing industry is significantly lower than the average for low, middle and even high income countries: 0.25% of total consignment value was lost in transit due to breakage, theft or spoilage. This was the lowest percentage of lost value in the region. According to the RCA, for a Croatian apparel manufacturing firm it takes 1.9 days on average for imports to clear customs and 2.2 days for exports to clear, which is in line with the Western Balkan average. Finally, surprisingly, only 12% of Croatian apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards, the second lowest percentage in the Western Balkans.

*Policy barriers and recommendations*

**Figure 27. Policy areas representing moderate to major business barriers in Croatia**



Source: OECD RCS (2008)

Tax rates were the most significant policy barrier identified by the RCS in Croatia. Based on further discussion with apparel manufacturing firms, the greatest burden appears to be labour and wage taxation. According to the World Bank Doing Business indicators, in Croatia labour tax and contributions as a percentage of total profit was 19.4%. While this was in line with the OECD average of 22.8%, and below the average in all the other Western Balkan economies except Bosnia and Herzegovina, it remains a problem for apparel manufacturing firms, especially since labour taxes are lower in most of the other countries that are considered competitive in this industry.

The second most important barrier was considered to be the skills and education of available workers. According to the RCS, this was identified by 85% of apparel manufacturers as a minor to major barrier for the operation and growth of their business. Most Croatian apparel manufacturers are moving up the value chain, requiring new skills and competencies in technology. However, beyond the gap in technological knowledge, interviews with Croatian firms and textile and apparel associations identified a lack of management skills. As one firm owner reported: “There is a serious generation gap with many managers in the industry.” These managers are used to the industry of 20 to 30 years ago and are unable to adapt to changing conditions. Problems include not being able to recognise that outsourcing certain activities, such as marker cutting, would be more cost-effective in many instances than investing in the equipment and know-how themselves.



Another barrier identified concerns the strict labour regulations faced by the apparel manufacturing industry, and indeed by all firms in Croatia. According to the World Bank Doing Business indicators, Croatia had the highest rigidity of employment index in the Western Balkans, ranking 33<sup>rd</sup> among all countries covered by the indicators. Of particular interest are the restrictions on temporary employment and fixed-term contracts, as well as the rules and regulations for making a worker redundant.

**Table 13. Access to financing in Croatia**

	<b>Working capital</b>	<b>New investments</b>
Internal funds	57.36%	51.07%
Local banks	12.42%	16.87%
Foreign owned banks	4.21%	6.12%
Leasing arrangement	2.38%	5.98%
Investment funds, special development financing or other state services	1.04%	1.66%
Trade credit	6.32%	2.39%
Credit cards	0.76%	0.20%
Equity	6.02%	4.78%
Family and friends	2.37%	1.44%
Informal sources	0.72%	0.62%
Other	4.15%	4.24%

Source: BEEPS (2005)

The fourth most important policy barrier for apparel manufacturing firms in Croatia is the cost of financing (Table 13). The percentage of firms using local banks to access credit is largely in line with that in the EU for both working capital loans and new investment loans. However, the collateral required for a loan is 150% of the value of the loan. Interest rates average about 9%, not too far above the rates in many OECD countries.

#### *Policy recommendations*

1. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
2. Develop training for apparel firm managers to leverage opportunities to increase the competitiveness of Croatian firms.

#### ***Kosovo under UNSCR 1244***

##### *Sector overview*

In Kosovo under UNSCR 1244, textiles and textile articles are not a large export category. Total exports of textile and textile articles in 2007 amounted to only EUR 1.2 million, or 0.7% of total exports. Compared with the increase in exports in other SITC categories, the year-on-year growth rate was relatively low at 14.4% between 2002 and 2007. Exports in this sector are increasing much less

than imports: the year-on-year growth rate for imports of textile and textile products in the same period was 26.4%.

As pointed out by the Statistical Office of Kosovo under UNSCR 2214, the trade statistics are not of perfect quality. Perhaps a better indication of actual trade volumes would be recorded imports to the EU of Kosovar articles of apparel and accessories. According to this data, imports into the EU-27 totalled EUR 65 068. While that was only 0.14% of total apparel and accessory imports to the EU, this category shows an impressive year-on-year growth rate; between 2005 and 2007, the compound annual growth rate was 44.7%.

The revealed comparative advantage of the apparel manufacturing industry in 2007 was only 0.04, indicating that Kosovo under UNSCR 1244 has practically no comparative advantage in apparel exports to the EU compared with other countries. Comparative advantages relative to the EU market do not appear to be improving. In the past few years the RCA has gradually decreased. Year-on-year growth between 2005 and 2007 was -0.19.

### *Challenges and policy barriers*

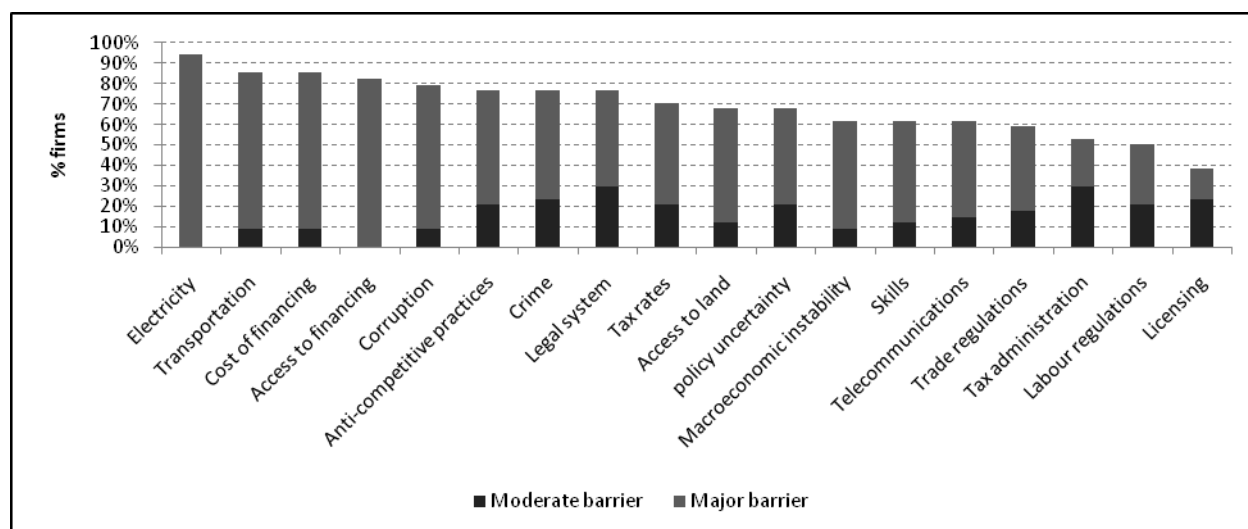
According to the RCS, only 12% of Kosovar apparel manufacturing firms considered that reducing apparel throughput times and lead times constituted one of the three most important success factors for their business. However, 47% of firms considered lack of investment in technology to be one of the three most important business challenges they face in expanding operations. Reducing plant throughput time, although not the most important success factor for Kosovar firms, appears to be a priority.

Only 32% of Kosovar apparel manufacturing firms had begun to implement EDI, the lowest percentage in the Western Balkans after Bosnia and Herzegovina. Of the firms that had not yet implemented EDI, only 23% communicated instead by email.

Products at the SKU level were identified with UPC symbols by 56% of apparel manufacturing firms. As in most of the other Western Balkan economies, the use of forecasting techniques to determine inventory stocking levels was relatively rudimentary. Nonetheless, 79% of firms considered this to be the most important key success factor for their business.

According to the RCS, for a Kosovar apparel manufacturing firm it took 2.8 days on average for imports to clear customs and half a day for exports to clear. This means that Kosovo under UNSCR 1244 has the lowest customs clearance time in the Western Balkans. Finally, 41% of Kosovar apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards, the highest percentage in the region.

**Figure 28. Policy areas representing moderate to major business barriers in Kosovo under UNSCR 1244**



Source: OECD RCS (2008)

The policy barrier most often cited as a major obstacle to the operation and growth of businesses was the reliability of electricity supply. According to the RCS, 94% of apparel manufacturing firms in Kosovo under UNSCR 1244 considered unreliable electricity supply a major barrier to the operation and growth of their business.

The second most often cited policy area was access to and the cost of financing. Access to financing was considered by 91% of the firms surveyed to be a major to minor problem, and the cost of financing was considered by 85% to be a major to minor problem.

#### *Key policy recommendations*

1. Actively promote the apparel sector as a target for foreign and local investment;
2. Improve the electricity infrastructure to minimise disruptions to firm activity;
3. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
4. Develop training for apparel firm managers to leverage opportunities to increase the competitiveness of Kosovar firms.

### ***The former Yugoslav Republic of Macedonia***

#### *Sector overview*

In 2006 the apparel manufacturing sector was the largest export category in The former Yugoslav Republic of Macedonia. It was also the largest export category prior to 2005. Total apparel exports reached USD 509 million in 2006, or 21% of total exports. This sector has been growing (the CAGR between 2000 and 2006 was 8%) and has the biggest trade surplus among SITC two-digit categories at USD 446 million.

**Table 14. The former Yugoslav Republic of Macedonia**

<b>Value-added (2005)</b>	<b>USD 137 million</b>
FDI inflows (2006)	EUR 3.7 million
FDI inward stocks (2006)	EUR 14 million
Exports (2006)	USD 509 million
Employment (2006)	40 384
Number of firms	

*Source:* The former Yugoslav Republic of Macedonia State Statistical Office; National Bank of The former Yugoslav Republic of Macedonia; data on value-added and exports is only for the apparel manufacturing industry; data on FDI inflows, stocks and employment is for the total textile and apparel manufacturing industry.

The former Yugoslav Republic of Macedonia exports almost exclusively to EU countries: in 2006 the top ten destinations for apparel exports were almost exclusively in Europe. The majority of Macedonian apparel exports go to Western European countries; the top three destinations in 2006 were Germany, Greece and the Netherlands (54.92%, 19.22% and 6.81% of total exports, respectively). Altogether, they represent 81% of total Macedonian apparel exports.

The revealed comparative advantage of the Macedonian apparel manufacturing industry in 2007 was 7.3, indicating that the country has a definite advantage in apparel exports to the EU compared with the other Western Balkan economies. The 2007 RCA calculation for The former Yugoslav Republic of Macedonia was the highest in the Western Balkans. The only SITC two-digit level sector in the country with a higher RCA calculation in 2007 was iron and steel. The country appears to have maintained a steady RCA level over the past seven years.

FDI stocks in the entire textile and apparel industry in 2006 totalled EUR 14 million, representing about 8% of total FDI stock in manufacturing. The sector was the fifth largest recipient of FDI in the manufacturing sector at the NACE two-digit level in 2006, and the second largest in 2003 after the food industry. FDI inflows amounted to EUR 3.7 million in 2006, or about 1% of total FDI inflows and almost 4% of those into manufacturing. Investment in the industry appears to be increasing: the CAGR between 1997 and 2006 was 9% for stocks. Between 2003 and 2006, FDI inflows into the textile and apparel industry had a year-on-year growth rate of over 8%.

Value-added in the Macedonian apparel manufacturing industry in 2005 was USD 137 million, representing about 2.4% of total value-added. The apparel manufacturing industry represents a larger share of total output than in any other Western Balkan country.

The former Yugoslav Republic of Macedonia is one of the least expensive countries for labour intensive activities in Europe. Wages in manufacturing in 2006 were only higher than those in Albania, at USD 218 per month. Moreover, the country actually had lower wages in the apparel manufacturing industry than any other Western Balkan economy. They were almost 40% lower than those in Albania, at USD 109 per month. Wage growth has been relatively moderate: the CAGR between 2001 and 2006 was only 2%.

Macedonian labour and general costs per SAM were EUR 0.09, the lowest in the region. This makes the country the third cheapest location for producing apparel in Europe after Romania and Ukraine. Productivity is the second highest in the Western Balkans, after Croatia. According to KSA, the productivity level is about 63% of that in Germany. It is similar to the level in Brazil and Romania.

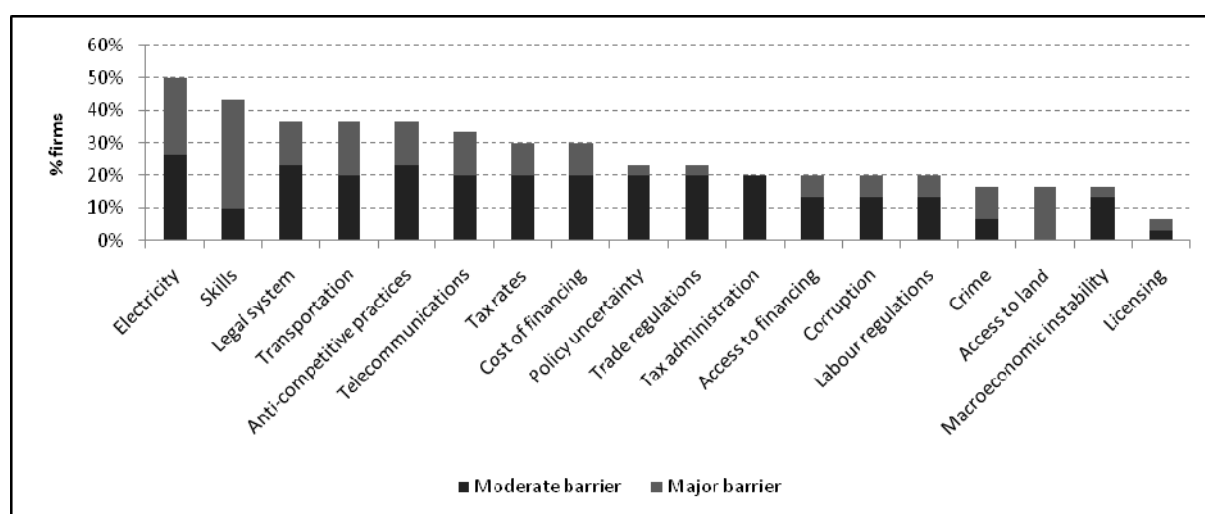
### Challenges and policy barriers

Of the Macedonian apparel manufacturing firms surveyed by the RCS, 43% considered that reducing throughput times and lead times was one of the three most important success factors for their business, the second highest percentage in the region. Firms have begun to implement automated technology: in a survey conducted by the Institute of Economics of Skopje, it had been implemented by 27% of Macedonian apparel manufacturing firms (Institute of Economics, Skopje, 2007). The same survey showed that 21% of Macedonian companies had acquired computer equipment valued at up to EUR 5 000, 10% had such equipment worth up to EUR 50 000 and 5% had purchased such equipment in excess of that amount, indicating the beginnings of implementing CAD systems and other technology. Lack of investment in technology was considered by 45% of Macedonian firms to be one of the three most important business challenges they face in expanding their operations, the highest percentage in the region after Kosovo under UNSCR 1244. However, none of the three firms visited by the OECD had yet implemented CAD systems, despite a USAID programme to increase CAD usage among apparel manufacturers, in conjunction with a local university and the Macedonian Textile Trade Association.

EDI had begun to be implemented by 40% of the Macedonian firms surveyed by the RCS, putting the country in the middle range of Western Balkan economies. Most firms continued to rely on more traditional modes of communication: 22% of firms which did not use EDI used email as their primary mode of communicating production orders, etc. The remainder continued to rely on telephone and fax.

A higher percentage of Macedonian apparel manufacturing firms used UPC symbols to identify products than in any other Western Balkan economy: 80% marked all or some of their goods with UPC symbols. As in other Western Balkan economies, the use of forecasting techniques to determine inventory stocking levels was relatively rudimentary for all but the most advanced firms. However, 90% of Macedonian apparel manufacturing firms surveyed by the RCS considered this to be one of the three most important success factors for their business and 77% considered it the most important.

**Figure 29. Policy areas representing moderate to major business barriers in The former Yugoslav Republic of Macedonia**



Source: OECD RCS (2008)

According to the BEEPS survey, spoilage of goods in transport for the entire Macedonian manufacturing industry was lower than the average for low and middle income countries: 1.04% of total consignment value is lost in transit due to breakage, theft or spoilage. This places the country roughly in line with the Western Balkan average. According to the RCS, for Macedonian apparel manufacturing firms it takes 1.15 days on average for imports to clear customs and 0.9 day for exports to clear. These are some of the fastest customs clearance times in the Western Balkans. Finally, 40% of apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards, one of the highest percentages in the region.

The most important policy barrier for Macedonian firms was lack of skills. According to the RCS, 63% of firms identified this as a minor to major barrier limiting the operation and growth of their business. As in Croatia, most Macedonian apparel manufacturers are moving up the value chain, which requires new skills and competencies in technology. Moreover, as in Croatia, management capability was identified as contributing to the skills shortage by the firms interviewed as well as by relevant representatives of the textile and apparel manufacturing associations. Some steps have been taken to improve the skills of workers in the apparel manufacturing industry: the Faculty of Technology and Metallurgy at the University Sveti Kiril I Metodij provides training in CAD/CAM systems, although a recent survey revealed that this service was not being used by many apparel manufacturers (Insitute of Economics of Skopje, 2007). The same study emphasised that there is a significant shortage of workers with a relevant university degree, as well as relevant secondary education. This research showed that there is a need for up to 800 semi-qualified workers in the whole textile and apparel manufacturing industry (Insitute of Economics of Skopje, 2007).

High tax rates are another obstacle for the Macedonian apparel manufacturing industry. They were identified by 67% of firms as a minor to major barrier for the operation of their firms. When firms were interviewed, social security and other payroll taxes were identified as particularly burdensome. According to the World Bank Doing Business indicators, labour tax and other contributions as a percentage of profit amounted to 33.2%, the highest rate in the Western Balkans and much higher than the OECD average of 22.8%.

**Table 15. Access to financing in The former Yugoslav Republic of Macedonia**

	<b>Working capital</b>	<b>New investments</b>
Internal funds	64.36%	67.04%
Local banks	3.62%	8.51%
Foreign owned banks	0.60%	1.35%
Leasing arrangement	0.64%	0.65%
Investment funds, special development financing or other state services	0.00%	0.43%
Trade credit	4.06%	1.46%
Credit cards	0.94%	0.87%
Equity	5.78%	4.84%
Family and friends	11.62%	7.11%
Informal sources	1.40%	1.15%
Other	4.52%	6.29%

Source: BEEPS (2005).

As in most of the other Western Balkan economies, the cost of financing was considered a significant burden with respect to the growth and operation of most apparel manufacturing firms: 63% considered it a minor to major obstacle. As can be seen in Table 15, internal funds or retained earnings were used 64% and 67% of the time, respectively, to fund loans for working capital and new investments. This is much higher than the OECD average. Macedonian firms did not use local commercial banks as much as did firms in OECD countries. There is particularly high reliance by Macedonian firms on friends and family as a source of financing: for new investments 12% of financing comes from this source, compared with only 1% in OECD countries. This is most likely due to the fact that interest rates continue to hover around 11% for all Macedonian firms, according to the BEEPS (2005).

#### *Key policy recommendations*

1. Actively promote the apparel sector as a target for foreign and local investment;
2. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
3. Develop training for apparel firm managers to leverage opportunities to increase competitiveness of Macedonian firms.

#### ***Serbia***

**Table 16. The apparel manufacturing industry in Serbia**

Value-added (2004)	USD 145 million
FDI inflows (2007)	EUR 4.8 million
FDI inward stocks	
Exports (2007)	USD 445 million
Employment (2006)	24 047
Number of firms	

*Source:* Republic Statistical Office of Serbia; National Bank of Serbia; data is for the apparel manufacturing industry

#### *Sector overview*

Clothing and apparel accessories in Serbia are the fourth largest SITC two-digit category, representing 5% of total exports in 2007 and reaching USD 445 million. Growth in this industry is increasing rapidly: between 2000 and 2007 the CAGR was over 19%, the second highest year-on-year growth rate in the Western Balkans. The country had a trade surplus in clothing and apparel accessories of almost USD 94 million in 2007.

Serbia's exports are almost exclusively to European countries. In 2007 the top destinations were in Europe and most were EU Member States. In 2007 the top destinations for Serbian apparel exports were Italy, Germany and Montenegro (46.83%, 23.33% and 4.78% of total apparel exports, respectively). Altogether, these three countries represented 75% of total Croatian apparel exports.

The revealed comparative advantage of the apparel manufacturing industry in Serbia in 2007 was 2.6, indicating that the country has an advantage in apparel exports to the EU compared with the other Western Balkan economies. Serbia also appears to be improving its comparative advantage relative to

the EU market: in the past few years the RCA has gradually increased, indicating that apparel manufacturing firms are taking advantage of their advantages to supply European markets.

FDI inflows into the apparel industry in 2007 were EUR 4.8 million, or about 3% of total FDI inflows into Serbia, down from a peak of almost EUR 8 million in 2006. The year-on-year growth rate indicates that FDI inflows into the apparel manufacturing industry are increasing: the CAGR between 2004 and 2007 was 53%.

The value-added of the Serbian apparel manufacturing industry in 2004 was approximately USD 145 million, or about 1% of the industry total. This figure is in line with most other countries. The size of the apparel manufacturing industry in Serbia is consistent with that in many other transition countries.

Serbia is a relatively inexpensive country for labour intensive activities in Europe. Wages in manufacturing in 2006 were only USD 385 per month, and wages in the apparel manufacturing industry were only a third of that at USD 127 per month

However, wages are rising more rapidly in Serbia than in the other Western Balkan economies. The CAGR between 1997 and 2005 was 54%.

Labour and general costs per SAM are EUR 0.18, in line with Croatia. This makes Serbia a cheaper place to assemble clothing than most Western European countries, and in line with the majority of new EU Member States. However, Serbia does not necessarily have the productivity levels to justify higher prices. Its productivity level was only 42% of Germany's, according to KSA. This can largely be attributed to political instability and its effects on plant operations. OECD calculations of apparent productivity showed productivity levels in 2005 to be only slightly below those in the Federation of Bosnia and Herzegovina and The former Yugoslav Republic of Macedonia. The industry has also been shedding a considerable amount of labour and undergoing restructuring, including many privatisations. Employment fell by 26% between 2004 and 2006. Assuming that output remains the same, Serbia can expect brisk productivity increases in the future in the textile and apparel industries.

### *Challenges and policy barriers*

Only 19% of Serbian apparel manufacturing firms surveyed by the RCS considered that reducing apparel throughput times and lead times was one of the three most important success factors for their business. Only 29% of firms considered lack of investment in technology as one of the top three most important business challenges they face in expanding their operations. Reducing plant throughput time appears not to be a high priority for Serbian firms.<sup>64</sup>

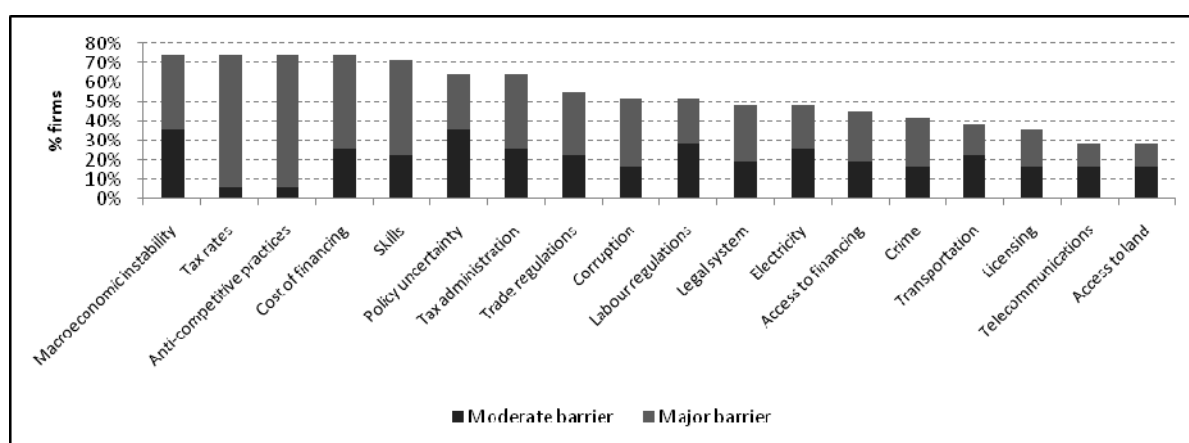
EDI had begun to be implemented by 55% of Serbian firms surveyed by the RCS, the highest percentage in the Western Balkans. Many (71%) of the firms that had not yet implemented EDI used email as their primary mode of communicating; only a small remainder continued to rely on telephone and fax.

Products were identified by UPC symbols at the SKU level by 58% of apparel manufacturing firms, one of the highest percentages in the Western Balkans. As in most of the other Western Balkan economies, the use of forecasting techniques to determine inventory stocking levels was relatively rudimentary, although 77% of Serbian apparel manufacturing firms surveyed by the RCS considered this to be one of the three most important success factors for their business and 65% considered it the most important.



According to the BEEPS survey, spoilage of goods in transport in the Serbian manufacturing industry overall is lower than the average in low, middle and even high income countries: 0.39% of total consignment value is lost in transit due to breakage, theft or spoilage. This was the second lowest percentage in the Western Balkans after Croatia. According to the RCA, for Serbian apparel manufacturing firms it takes 2.3 days on average for imports to clear customs and three days for exports to clear. Although Serbia is competitive internationally in this area, it still lags behind other Western Balkan economies, which take about one-fifth less time to clear customs. Only 10% of Serbian apparel manufacturing firms ensure that shipping containers and cartons are appropriately labelled according to agreed standards – the lowest percentage in the region.

**Figure 30. Policy areas representing moderate to major business barriers in Serbia**



Source: OECD RCS (2008)

One important problem identified by the RCS and echoed by most of the firms interviewed in Serbia was the negative impact that macroeconomic instability was having on the apparel manufacturing sector. This was identified by 97% of the firms surveyed as a major to minor obstacle to the operation and growth of their business. The Serbian dinar is one of the currencies in the region not pegged to the euro. Although there are numerous economic benefits for having a floating currency, this can also make monetary policy relatively unstable for many Serbian apparel manufacturers. In the case of firms that have moved beyond technical design into fashion design, as well as more traditional manufacturing firms, orders are still placed in the first quarter of the year in euros but payment is not made until the orders are delivered (as late as the third quarter). Even if exchange rates drop steeply between those two time periods, local firms must swallow this decrease and usually have little or no room to negotiate a higher price.

Another major policy barrier was the availability of skills. According to the RCS, 81% of firms identified this as a minor to major barrier limiting the operation and growth of their business. As in Croatia and The former Yugoslav Republic of Macedonia, this is largely due to many Serbian apparel manufacturers moving up the value chain, which requires new skills and competencies in technology.

As in all the other Western Balkan economies, access to and the cost of financing are a significant problem for many apparel manufacturers. According to OECD interviews with Serbian apparel manufacturers, the loan amount is essentially determined by the book value of firms' land, buildings and equipment. As many firms must take out working capital loans to purchase raw materials, this means production is limited by the requirement for this amount of collateral. According to the BEEPS

(2005), the average interest rate paid by firms in Serbia was an astounding 16% and the average collateral required to obtain a loan was 167%.

**Table 17. Access to financing in Serbia**

	<b>Working capital</b>	<b>New investments</b>
Internal funds	77.32%	81.88%
Local banks	6.39%	6.26%
Foreign owned banks	0.55%	1.04%
Leasing arrangement	0.54%	0.86%
Investment funds, special development financing or other state services	0.58%	0.49%
Trade credit	5.61%	2.08%
Credit cards	0.07%	0.00%
Equity	0.96%	1.39%
Family and friends	3.99%	2.89%
Informal sources	0.49%	0.36%
Other	1.59%	1.09%

Source: BEEPS (2005)

As in the other Western Balkan economies, internal funds or retained earnings are used 77% and 85% of the time, respectively, to fund loans for working capital and new investments. This is significantly higher than the OECD average. Serbian firms do not use local commercial banks as much as firms in OECD countries (Table 17).

#### *Policy barriers*

1. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
2. Develop training for apparel firm managers to leverage opportunities to increase competitiveness of Serbian firms.

## NOTES

1. Findings are small items such as zippers and buttons.
2. Comtrade. Data refers to Standard International Trade Classification Revision 3 (SITC Rev. 3) two-digit categories. Data on the clothing manufacturing industry is classified under SITC Rev. 3 84: clothing and accessories and data on the iron and steel industry is classified under SITC Rev. 3 67.
3. Eurostat. The RCA measures the relative export performance of an industry within a country. For a full description of the RCA methodology used, see Chapter 2 on the automotive components industry. The RCA is calculated on 2007 trade data between the EU-27 and Albania, Bosnia and Herzegovina, Croatia, Kosovo under UNSCR 1244, The former Yugoslav Republic of Macedonia and Serbia.
4. Comtrade. Data on the textile industry is classified under SITC Rev. 3 65: textile, yarn and fabric; data is for Albania, Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia and Serbia. Data converted from USD into EUR using US Federal Reserve annual foreign exchange rate official release.
5. See note 3.
6. Data provided by the Croatian National Bank, the National Bank of Serbia, and the United Nations Industrial Development Organization (UNIDO) in the case of The former Yugoslav Republic of Macedonia.
7. Comtrade. Data on the findings industry is classified under SITC Rev. 3 899.83: press-fasteners, snap-fasteners and press-studs, and parts thereof, buttons; 899.84: button moulds and other parts of buttons, button blanks; 899.85: slide fasteners; and 899.86: parts of slide fasteners. Data converted from USD into EUR using US Federal Reserve annual foreign exchange rate official release.
8. See note 3.
9. World Bank World Development Indicators (WDI). Total population data for 2007 in Albania, Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia, Montenegro and Serbia.
10. WDI. GDP at current USD in 2000 and 2007 for Albania, Bosnia and Herzegovina, Croatia, Montenegro, The former Yugoslav Republic of Macedonia and Serbia. Data converted from USD into EUR using US Federal Reserve annual foreign exchange rate official release.
11. Data provided by the Central Bank of Bosnia and Herzegovina, the Croatian National Bank, the National Bank of Serbia, and UNIDO in the case of The former Yugoslav Republic of Macedonia.
12. US Census Bureau: Economic Census 1992, 1997 and 2002 for apparel and accessory stores. WDI for population estimates.
13. UK Statistics Authority: Annual Business Inquiry 1998-2006 for retail sales of clothing.
14. US Bureau of Economic Analysis: foreign direct investment position on a historical cost basis in the US, 1980-2007. Data converted from USD into EUR using US Federal Reserve annual foreign exchange rate official release.

15. OECD Foreign Direct Investment Statistics: FDI positions by industry 1996-2006 for the retail trade sector.
16. US Bureau of Labor Statistics: Consumer Expenditure Survey 1984-2006 for apparel and services and total average annual expenditures.
17. Eurostat: Consumption expenditure of private households 1996-2006 for clothing and footwear.
18. US Bureau of Labor Statistics: Consumer Expenditure Survey 1996-2006 for audio and visual equipment and services.
19. US Census Bureau: Economic Census 1997, 2002 for clothing and clothing accessories stores.
20. National Institute for Statistics and Economic Studies (INSEE) (France): Annual Enterprise Survey 1996-2005 for retail sales of clothing.
21. US Census Bureau Annual Retail Trade Survey 1996-2005 for clothing stores.
22. SKUs indicate the exact specification of a particular item. For example, two shirts of the same style in different sizes would be classified under different SKUs.
23. US Department of Labor: Consumer Price Index 1996-2007 for apparel. Base period: three-year average of 1982-1984.
24. Eurostat Harmonised Index of Consumer Prices 1996-2007 for clothing. Base period: 2005; EU data for EU-15 until 2004, EU-25 until 2006 and EU-27 in 2007.
25. There are many different forms of and names for QR systems, including “just-in-time” and “lean” manufacturing, but they broadly incorporate the same systems outlined in this chapter. More specific programmes, such as collaborative planning, forecasting and replenishment systems (CPFR), go much further in detailing the standards, software and processes required to share information between retailers and suppliers and minimise inventory and production time. They combine retailer and supplier information (including production statistics and point-of-sale or POS information) to forecast demand, coordinate shipments and production, and improve supply chain performance.
26. Throughput time is the time required to physically assemble an apparel order and place it in a finished goods inventory or ship it to the client.
27. An order fulfilment rate is the percentage of time an apparel manufacturer can promptly and accurately deliver an order to the retailer. It is common for retailers to now require their apparel manufacturers to have a very high order fulfilment rate, often 95% or above.
28. There is little academic research on the impact simple website creation could have on SMEs’ profits or trading activity, but considering the low costs of setting one up it is considered an effective marketing tool for many exporters (see Hornby, Goulding and Poon, 2002).
29. Replenishable products are those that generally contain basic fashion elements and are ordered on a continual basis to reduce stocking levels.
30. Comtrade. Data for Albania, Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia and Serbia is for 2006. Data converted from USD into EUR using US Federal Reserve annual foreign exchange rate official release.
31. Comtrade. Data represents German, Italian and Greek imports of apparel products from Albania, Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia and Serbia. Converted to USD into EUR using US Federal Reserve annual foreign exchange rate official release.

32. Eurostat. Data for Albania, Bosnia and Herzegovina, Croatia, Kosovo under UNSCR 1244, The former Yugoslav Republic of Macedonia, Montenegro and Serbia. Average of apparel products in total Western Balkan imports to the EU-15 is a simple average of the period 1995-2007.
33. Eurostat. Data for Albania, Bosnia and Herzegovina, Croatia, Kosovo under UNSCR 1244, The former Yugoslav Republic of Macedonia, Montenegro and Serbia for 2007. Ranking of RCA 84 between the Western Balkans and the EU-15 is actually sixth, but “confidential trade of group 39 and/or estimations” has been excluded.
34. UNIDO. Data on inward stocks for 2004 in the textiles and textile products category and chemicals, chemical products and man-made fibres categories.
35. Eurostat. Direct investment positions data for the Czech Republic, Hungary, Poland, Slovakia and Slovenia for 2005 in the textile and wearing apparel sector.
36. UNIDO. Data on inward stocks for 2001-04 for Albania, Croatia and The former Yugoslav Republic of Macedonia in the textile and textile products category.
37. UNIDO, Croatian National Bank and National Bank of Serbia. FDI inward flows for Croatia, The former Yugoslav Republic of Macedonia and Serbia for 2004-06.
38. Eurostat. Data on direct investment flows for the Czech Republic, Hungary, Poland and Slovakia for 2005 in the textile and wearing apparel sector.
39. Institute of Statistics of the Republic of Albania, Federation of Bosnia and Herzegovina Federal Office of Statistics, Republic of Croatia Central Bureau of Statistics, Republic of Macedonia State Statistical Office, Statistical Office of Montenegro, Statistical Office of the Republic of Serbia. Data for Albania, the Federation of Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia, Montenegro and Serbia. All data for 2005 except for Croatia and Montenegro (2004 data). Converted from local currency using WDI average annual exchange rate at current prices and into EUR using US Federal Reserve annual foreign exchange rate official release.
40. Eurostat. Gross value added at basic prices in 2005 for the manufacture of textiles and textile products in EU-15, the Czech Republic, Hungary, Slovakia and Slovenia.
41. US Bureau of Labor Statistics. Data for the apparel manufacturing industry in 1998-2007.
42. Comtrade. Data for apparel product imports in 1998-2007.
43. Laborsta. Monthly wage data for men and women for Albania, the Federation of Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia, Poland, Serbia and Slovakia. Western Balkan average of apparel manufacturing wages excludes Albania. Converted from local currency using WDI average annual exchange rate at current prices and into EUR using US Federal Reserve annual foreign exchange rate official release.
44. The standard allowed minute (SAM) measures the amount of time required to produce a particular apparel item, taking into account hand movements, handling of equipment and average sewing cycles. For example, a particular style of blouse may take 25 SAMs to produce.
45. KSA. Data for Albania, Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia and Serbia for 2005. Average weighted by WDI population data for 2005.
46. Eurostat, Federation of Bosnia and Herzegovina Federal Office of Statistics, Republic of Croatia Central Bureau of Statistics, Republic of Macedonia State Statistical Office, Statistical Office of the Republic of Serbia. Apparent labour productivity is a simple indicator of productivity calculated as

- value-added, divided by persons employed. Converted to USD using WDI PPP exchange rates and then indexed according to Hungary's productivity level.
47. Google maps.
  48. Eurostat. 2007 data for Albania, Bosnia and Herzegovina, Croatia, Kosovo under UNSCR 1244, The former Yugoslav Republic of Macedonia and Serbia. 9.12% is sent by sea. A remaining 0.14% and 0.02% are sent by air and unknown means, respectively.
  49. The time factor of 0.5% per day is based on general spoilage and lost sales, resulting in increased time to market.
  50. The OECD interviewed 16 representative apparel manufacturers.
  51. It has been shown that such a stocking policy results in a much lower order fulfilment rate, especially for products with high demand variability (see Diehl, Abernathy and Hammond, 1996)
  52. Of the 16 firms interviewed, 12 indicated that they had an in-house or external customs expert.
  53. SITC codes 65, 84 and 89.983 were aggregated for these calculations. The average was weighted by GDP at purchasing power parity.
  54. Eurostat.
  55. BEEPS 2005 data, average weighted by GDP. Bosnia and Herzegovina not included. High income OECD countries include Germany, Greece, Ireland, Korea, Portugal and Spain.
  56. Represents SITC codes 652-657 and 89.983.
  57. Represents SITC codes 652-657 and 89.983.
  58. Many Albanians speak Italian due to Italy's geographic proximity to Albania.
  59. UNIDO, data for NACE 18.
  60. Value-added statistics disaggregated to this level were only available for the Federation of Bosnia and Herzegovina (FBiH).
  61. ILO and Federation of Bosnia and Herzegovina. Data for apparel manufacturing industry only for FBiH.
  62. Office of Statistics, ILO Statistical Yearbooks, WDI. Apparent productivity calculated at PPP, KSA 2007
  63. Central Bank
  64. Only firms that operated with a more traditional time scale and with a longer cycle were visited by the OECD in Serbia. Reliable information on implementation of MPS and automated technology in this country is therefore lacking.

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## Chapter 2

### AUTOMOTIVE COMPONENTS

#### 2.1 Summary

In recent years the global automotive industry has experienced sweeping changes. On the demand side, consumer requirements are evolving from better performance and reliability to a wider range of features at low prices. Styling and environmental awareness, in particular, have emerged as important drivers of consumer demand. On the supply side, rising material costs, falling car prices and ever stricter environmental regulations have increased pressure on carmakers to reduce costs in order to remain competitive. Focusing on cost reduction has led to important changes in the industry, in particular consolidation and increasing competition between major car brands. Stagnant worldwide sales, consolidation and product proliferation have contributed to excess capacity throughout the industry. In addition, increased competition has forced carmakers to shift their main focus from vehicle manufacturing to design, brand management and customer relationships. Carmakers are also shortening product lifecycles to compete for customer loyalty.

These shifts in demand and supply have two major implications for automotive component suppliers: modularisation and outsourcing an increasing part of the vehicle to suppliers. As carmakers expect their suppliers to take on significant responsibility for the design, development and manufacture of entire module and systems, the ability to increase sales and profitability of component manufacturers depends on the following key success factors: quality levels, innovation, product design and production engineering capabilities, management of their own supply chain, and the ability to deliver on time.

Within this evolving market, the Western Balkans can still compete effectively due to cost competitiveness, geographical proximity to markets and a historical legacy of manufacturing automotive components. The Western Balkans is clearly cost competitive. Operational costs can be up to 60% lower than in Hungary and Poland (including labour, property and utility costs). In addition, suppliers in the Western Balkans are able to respond to shorter launch cycle requirements by sending products within two days to key markets like Germany and Italy, including the new automotive hub in Central and Eastern Europe. Historically, the automotive industry has had a strong presence in the Western Balkans. Vehicle assembly in Bosnia and Herzegovina and Serbia encouraged the emergence of a supply base for automotive components, with metalworking, mechanical and electrical engineering skills available across the whole of former Yugoslavia.

The main challenge for the region is to move out of the “cost trap” and respond to the requirements of OEMs and global system integrators with respect to design and the development of components. Cost competitiveness is likely to be eroded based on wage increases following EU integration, as happened in Central and Eastern European countries after the 2004 and 2007 enlargements.

Strong and sustainable collaboration with customers (OEMs and first tier suppliers/global systems integrators) can only be achieved if suppliers are able to show that they can meet specific requirements in terms of quality standards, innovation, design and development capabilities and supply chain management. To meet these requirements, Western Balkans suppliers will need to focus in particular on three elements:

*Improve information on the advantages for OEMs to collaborate with Western Balkans suppliers:* In spite of the existence of some investment promotion material dedicated to the automotive components sector, there is a lack of awareness of local suppliers' strengths and capabilities among international customers and investors. This is mainly due to a general lack of sector specific investment promotion tools, such as targeted interactive databases or sector specific linkage programmes.

*Further develop skills:* A majority of automotive component companies in the Western Balkans suffer skill gaps in areas where it is necessary to build and maintain strong and long-term collaborations with customers, especially design, supply chain management and quality assurance. In addition, 51% of the companies surveyed in the region feel that they are experiencing some degree of skills gap in engineering.

*Enhance collaborative innovation efforts:* There is a need to channel innovation by enhancing stronger collaboration between foreign and local companies as well as research centres and academia.

To address these challenges, the OECD recommends both short- and medium-term actions.

The first action of Western Balkans economies in the short term should be to improve the quality of information available on their automotive component suppliers. This involves assessing the tools and modalities used by OEMs and first tier suppliers/system integrators to find potential suppliers and purchase their components and modules. It also entails assessing the extent to which automotive component suppliers in the Western Balkans have the necessary informative material in place (e.g. an interactive database, access to e-auctions) to raise awareness of their capabilities and the extent to which they are included in instruments used by international customers to purchase components.

To further develop skills in the automotive component sector, training programmes involving the private sector should be implemented. A network of local and foreign companies to develop regional training programmes could be set up.

In addition, collaborative innovation efforts can be developed through the launch of one or two pilot linkage programmes to facilitate technology transfers and involving exchanges of professionals.

In the long term, there is a need to integrate the three components of the actions (marketing, skills development and collaborative innovation) at both national and regional level through networks or competitive clusters. As a follow up to the project *Defining and Strengthening Sector Specific Sources of Competitiveness*, a "Regional Competitiveness Initiative" could help achieve these objectives. Networks or clusters could be built around the relative strengths of individual Western Balkans economies.

## 2.2 Sector definition and segmentation

### *Sector definition*

The global automotive industry is characterised by the presence of a limited number of large international vehicle manufacturers and integrators of systems and modules, as well as several suppliers of components and raw materials. The industry value chain is characterised by a structure in “tiers”. Original equipment manufacturers (OEMs), which are responsible for the assembling of the final product, sell the vehicles under their brand names. Along the value chain, suppliers are ranked in terms of the complexity of the products they manufacture.

The definition of the automotive industry used in this report includes the production of light vehicles (mainly passenger cars) and heavy ones (truck and buses). In statistical terms, NACE code 3430 (“Manufacture of parts and accessories for motor vehicles and their engines”) covers the production of most traditional car components. However, as vehicles become more technologically complex products, the share of components which are not covered by traditional automotive component statistical classification has been increasing. NACE code 3430 does not include engine and tyre manufacturing, most electrical and electronic components, glass, plastics, certain castings and other metal parts. Therefore, limiting the analysis to the narrow coverage of code 3430 would exclude important parts of the sector. The analysis will be as wide in coverage as possible, and NACE code 3430 will be used as a proxy for the entire sector only in cases of statistical constraints. The structure and main players in the automotive industry supply chain are described in Box 9.

### *Original equipment manufacturers (OEMs)*

The creation of a new car starts with consumer research and trends review and then design of the model. In the past, this process was very much driven by the manufacturers themselves, and consumer preferences had relatively little influence on the design of new vehicles. However, carmakers are nowadays paying much more attention to the features that consumers desire. Therefore, new vehicles have to be tailored to suit buyers’ preferences and the design phase always follows an accurate market research analysis. This shift towards the development and production of more customised vehicles received an additional push by the introduction of the Japanese lean production and just-in-time model. While in the past the process of designing new models could take up to five years, today computed aided design (CAD) techniques make it possible to develop a prototype (the so called “concept car”) in one year or less (Duke University, 2007).

Once the vehicle model has been designed, the actual manufacturing of the parts start with the procurement of raw materials, which include steel, rubber, glass, plastic and aluminium. In the automotive industry raw materials are typically supplied by players positioned at the third or fourth tier of the value chain.

Steel is the predominant material in car manufacturing. However, OEMs have been looking into the possibility of increasing the percentage of other materials such as aluminium and magnesium, as they are increasingly under pressure to manufacture lighter vehicles that optimise fuel consumption. Accordingly, aluminium weight per light vehicle in Europe, Japan and the United States has increased from ranging between 51 and 75 kilograms in 1990 to between 114 and 144 kilograms in 2004 (ALTG, 2006).

### First and second tier suppliers

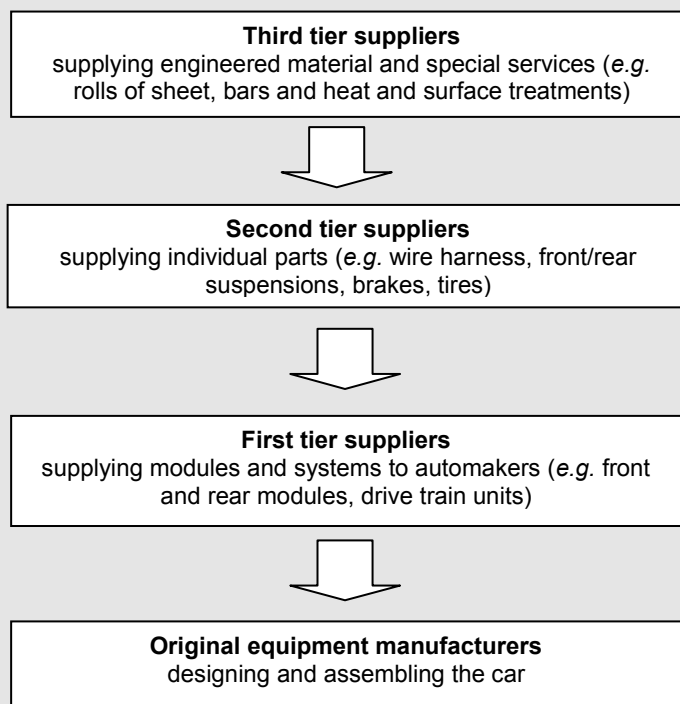
The production of the components is undertaken by second tier suppliers (mostly parts with lower manufacturing complexity) and by first tier suppliers. The latter typically supply OEMs directly, and not only individual parts but also entire modules and sub-systems of the vehicle.

Individual components and modules are then delivered to the OEM, which takes care of the final assembly. The car manufacturing process consists of four key steps: stamping, body shop, paint shop, trim and final assembly.

#### Box 9. Automotive industry value chain

The following industry-specific definitions are used in this report:

- *An original equipment manufacturer (OEM)* is a company that manufactures and/or assembles the final product. A vehicle is made of many different components, which have been produced by various companies specialised in the production of those components e.g. glass, tires, electronics, telematics. Suppliers then deliver the components to the OEM. The OEM is responsible for final assembly and sells the final vehicle under its brand name;
- *A first tier supplier* is a component manufacturer delivering directly to final vehicle assemblers. First tier suppliers work hand-in-hand with automobile manufacturers to design, manufacture and deliver complex automobile systems and modules, such as significant interior, exterior or drive train units. First tier suppliers in turn purchase from second tier and third tier suppliers;
- *A second tier supplier* produces value adding parts in the minor sub-assembly phase. Second tier suppliers buy from third tier and deliver to first tier;
- *A third tier supplier* supplies engineered materials and special services, such as rolls of sheet steel, bars and heat and surface treatments. Third tier suppliers rank below second tier and first tier suppliers in terms of the complexity of the products that they provide.



Source: OECD analysis based on Plunkett Industrial Almanac, cited in Heneric, Licht and Sofka (2005)

### *Marketing, dealership and customer relationship management*

Marketing and advertising is an integral and very important step in the value chain. As the car is becoming more of a service than a product, OEMs increasingly focus their attention on brand management and customer relationship (Veloso and Kumar, 2002).

Finally, after the assembly process is terminated, vehicles are distributed to dealers. Car dealership has become a thriving business on its own, where players compete fiercely to attract the attention of the customers by investing in advertising and offering special incentives. Vehicle distribution and repair is also a relatively highly regulated sector, especially in the European Union in the framework of competition law.

### **Segmentation**

This sectoral analysis focuses on the manufacturing of automotive components in the Western Balkans. Automotive components manufacturing refers to the development, design and manufacturing of parts, systems and technical units for final assembly and all other aspects related to the first, second and third tiers of the automotive value chain.

The world market for automotive components is growing. A study by the Original Equipment Manufacturers Association (OESA) and strategy consultants Roland Berger forecasts that the market for auto part will grow at a compound annual growth rate (CAGR) of 3.4%, soaring from USD 876 billion in 2003 to USD 1.1 trillion in 2010 (OESA and Roland Berger, 2004). Growth in the size of the world market represents a tremendous opportunity for component manufacturers, especially in countries where competitive advantage is accompanied by excess capacity.

As the analysis below shows, the Western Balkan economies are well-positioned to take advantage of the growth in the global market for automotive components. They have a strong historical advantage with a significant legacy of skills and infrastructure; they are cost competitive; and they are geographically close to the important markets of Western and Central and Eastern Europe.

With regard to the OEM presence, vehicle assembly is limited to Zastava in Serbia and a Volkswagen plant in Bosnia and Herzegovina. Assembly activities are slowly recovering after the disruptions caused by the war, as shown by the recent deal between the Serbian government and Fiat for the privatisation of Zastava and a recent announcement that Volkswagen plans to move an assembly line from Slovakia to Bosnia and Herzegovina. Nonetheless, OEM activities are still too limited to justify a full sectoral analysis.

Finally, evidence suggests that the car dealership business is also growing in the countries of the Western Balkans. Calculations based on figures from the OECD International Transport Forum show that aggregate sales of new cars in Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia and Serbia grew by 5% per year in the period 2003-06. However, the car dealership business is very focused on the domestic market. An analysis of this segment would go beyond the scope of this report.

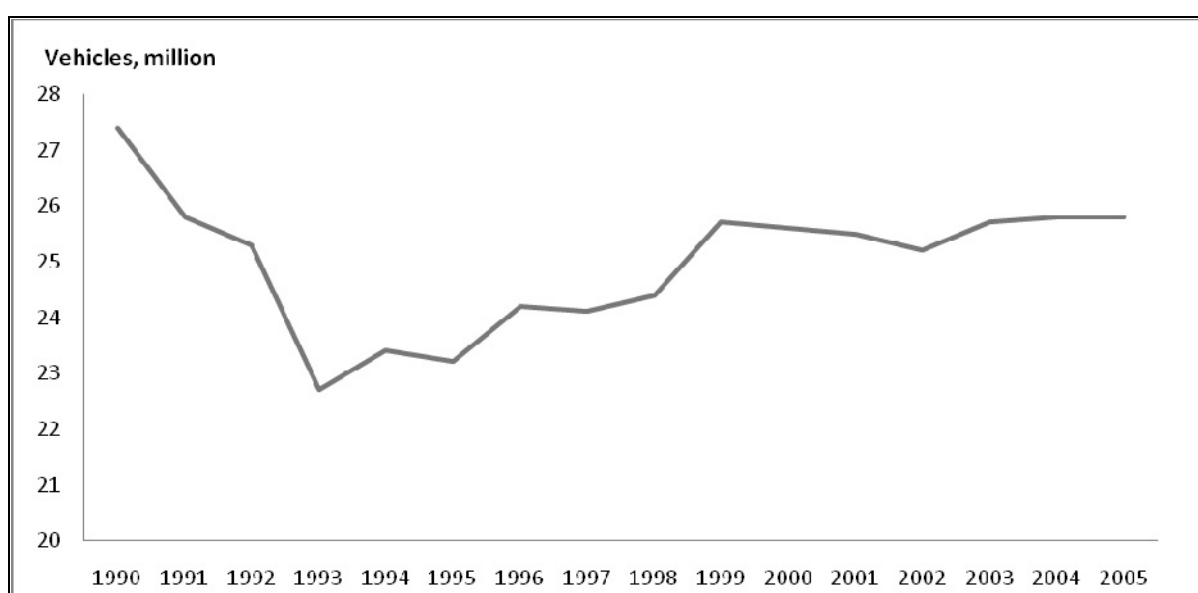
In conclusion, given current competitiveness and future growth prospects, this analysis focuses on first, second and third tier suppliers of components to OEMs and systems integrators. The following sections will focus on market trends in the global automotive industry and the implications for component suppliers in the Western Balkans.

## 2.3 Sector trends

Empirical studies suggest that the automotive industry moves in parallel with the overall economy.<sup>1</sup> Motor vehicles are the largest durable consumer goods in terms of total household expenditure (next to housing). This means demand for them is highly correlated with the general business cycle. Periods of lower GDP growth in OECD countries are therefore accompanied by a fall in automotive production. An analysis of worldwide new registrations of passenger cars shows that the automotive industry is mature and has been characterised by slow growth in recent years. After a deep plunge in the early 1990s, new car sales in Europe, the US and Japan have recovered and have remained virtually flat since 2000 (Figure 31).

Both demand and supply shifts have led to sweeping changes in the global automotive industry.

**Figure 31. New car sales in the EU, US and Japan, 1990-2005**



Source: ACEA, US Bureau of Transportation Statistics, JAMA

### ***On the demand side: major changes in consumer requirements***

*Styling and environmental awareness are increasingly shifting consumers' attention away from basic safety requirements.* Today they almost take it for granted that the cars they purchase include basic safety and security features. Therefore, the ability to respond to these expectations is no longer the most important differentiator, but rather an essential requirement to be a credible player in the market.

Newly produced cars increasingly display ever higher levels of safety and reliability. A report by the US National Highway Traffic Safety Administration (2006) showed that a large majority of 2006 passenger car models included the most advanced safety features.<sup>2</sup> In addition, an analysis of road accident fatalities in OECD countries over ten years showed that despite an increase in vehicles in circulation, road fatalities had been constantly decreasing (OECD, 2007a).

Styling is emerging as an important driver of consumer demand in the global automotive market. Econometric analysis has contributed to the identification of the main drivers of motor vehicle



purchases and shows that consumers are increasingly seeing their cars as a status symbol (European Commission, 2004). Consumers also want high-technology features such as stereo systems and navigational aids at ever lower prices.<sup>3</sup>

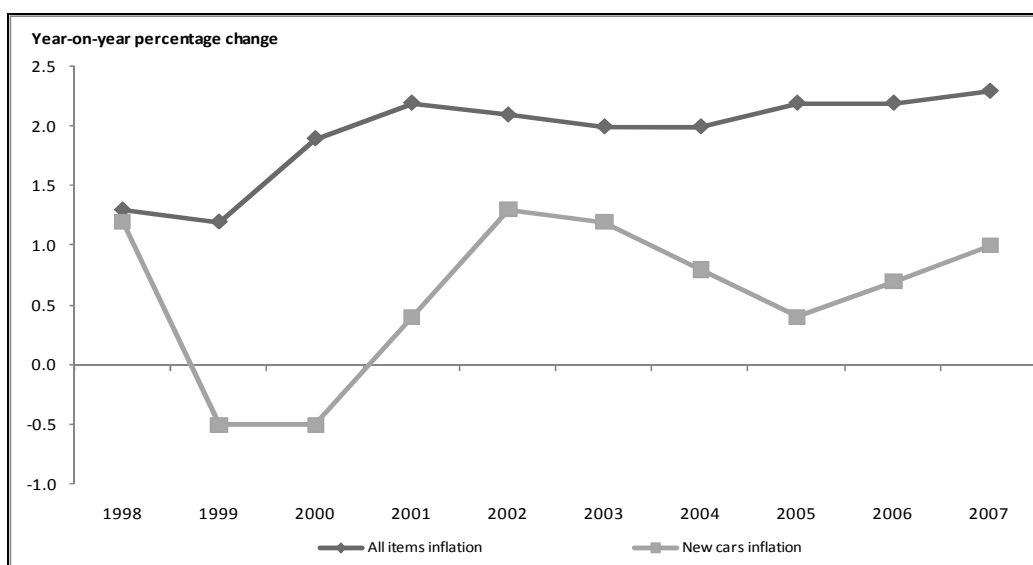
Finally, car users are becoming increasingly aware of the environmental impact of road transport, mainly in relation to CO<sub>2</sub> emissions and their contribution to climate change.<sup>4</sup> Although the perception of the environmental impact of car usage is likely to vary from one country to another,<sup>5</sup> public opinion in most countries acknowledges the importance of climate change and the need to introduce stricter regulations limiting carbon emissions.

***On the supply side: cost pressure***

*Cost pressure has emerged as one of the most pressing challenges that carmakers face in order to remain competitive, forcing them to explore every opportunity to cut costs.* An analysis of the latest available annual reports of the world’s ten largest car manufacturers reveals that cost-effectiveness, cost reduction and cost performance are among the top strategic objectives for all major players in the industry in the coming years. This also means carmakers are passing cost pressure on to suppliers: the McKinsey Global Institute (2004) estimates that carmakers will need to reduce their component costs by 30% over the next decade to remain competitive.

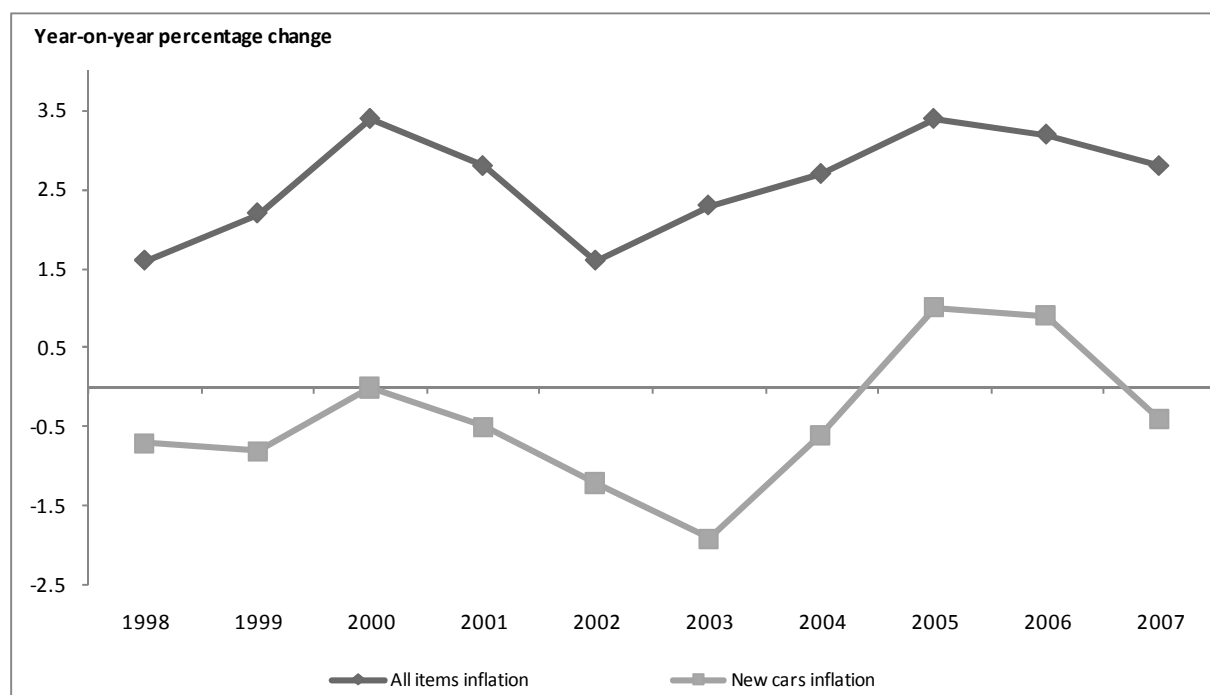
Rising material costs, falling car prices and ever stricter environmental regulations can be singled out as the factors with the most weight in the cost equation. The automobile industry relies heavily on raw materials, whose costs have been rising steadily. Strong competition and product proliferation have placed increasing pressure on car prices; over the next years the price of a base model car is likely to remain flat, while consumer demand for high-quality products at low cost and tougher environmental regulations are forcing competing car manufacturers to add expensive new features. An analysis of historical trends in consumer prices shows that the prices of new cars have failed to keep pace with inflation (Figures 32 and 33).

**Figure 32. Inflation in the EU: all items and new cars**



Source: Eurostat (2008)

**Figure 33. Inflation in the US: all items and new cars**



Source: US Bureau of Labour Statistics (2008)

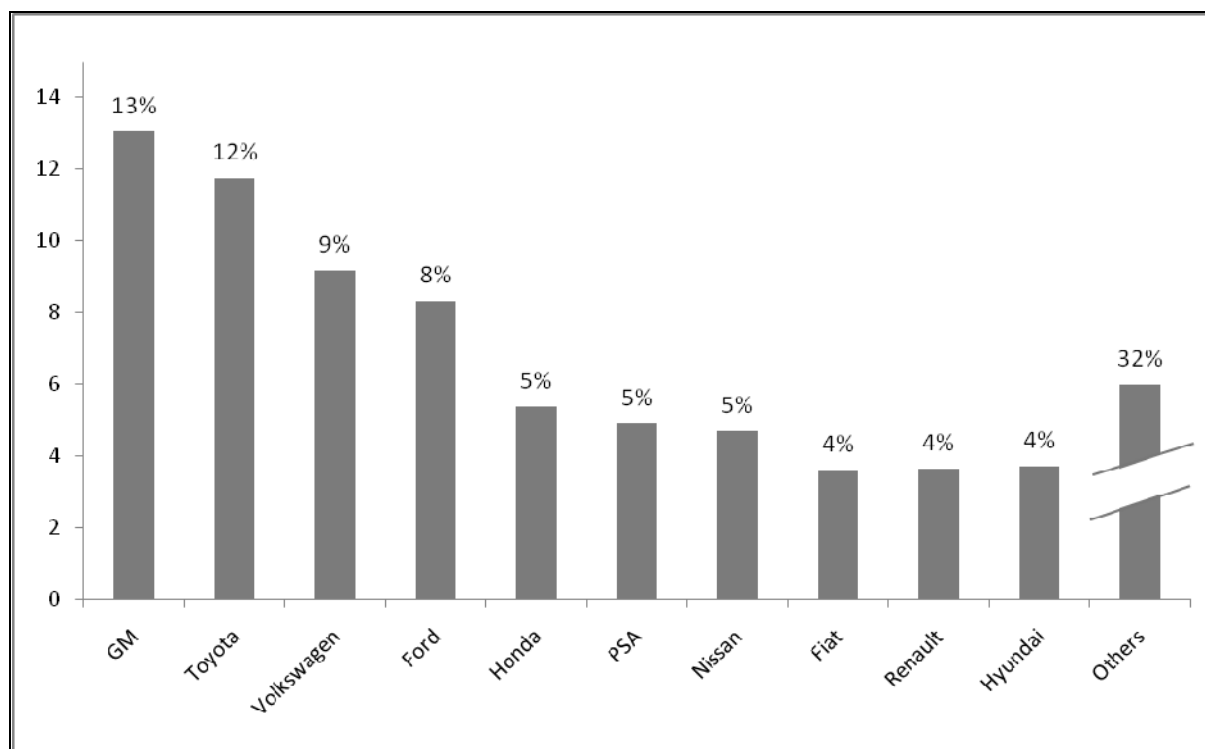
Finally, stricter carbon emission regulations in Europe and in the United States are increasing the cost burden for carmakers. The European Automobile Manufacturers' Association estimates that the target proposed by the European Commission of cutting average emissions to 130 grams CO<sub>2</sub> per km by 2012 will lead to a price increase per car of up to EUR 3 000 on average (ACEA, 2007). Similarly in the US, the Congressional Budget Office (2003) estimated that increasing corporate average fuel economy (CAFE) standards to 31.3 miles per gallon for cars and 24.5 miles per gallon for light trucks would impose costs on producers and consumers of new vehicles of approximately USD 3.6 billion.<sup>6</sup>

Focusing on cost reduction has led to important changes in the global automotive industry, in particular consolidation and increased competition.

#### *Consolidation and increasing competition between major car brands*

Looking at the supply side of the global automotive industry since the 1950s, one of the most consistent trends has been a dramatic wave of consolidation. The industry is increasingly concentrated around a limited number of major OEMs. In 2007 the top ten motor vehicle manufacturers represented 68% of total world production (Figure 34).

**Figure 34. Concentration of world motor vehicle production (2007)**



Source: OECD analysis based on OICA (2007).

While the industry is becoming increasingly consolidated, product proliferation is occurring as carmakers launch more models or variations on existing ones. This phenomenon, coupled with slow growth in sales of new cars, is leading to a situation in which the more mature markets are showing signs of saturation.<sup>7</sup>

*The consequences of increased competition: excess capacity, a focus on brand management and shorter product cycles*

Stagnant worldwide sales, consolidation and product proliferation have contributed to a situation of excess capacity throughout the industry. In addition, increased competition has forced carmakers to shift their main focus of activities from vehicle manufacturing to design, brand management and customer relationships. As they compete fiercely through aggressive advertising and improved brand management to win customer loyalty, carmakers are also shortening product lifecycles.

#### Excess capacity

An analysis of capacity utilisation levels across regions clearly shows that the global automotive industry is under considerable strain. While it is generally recognised that a capacity utilisation rate of 85% is the minimum threshold for carmakers to be profitable, North America is the only region which attained an 84% rate of capacity utilisation in 2007.<sup>8</sup> Although excess capacity has a non-permanent component caused by the cyclical variation in demand for cars, it is often seen as a distinctive feature of the global automotive industry. However, the picture of excessive capacity varies in different world regions. In Central and Eastern European countries the increase in capacity utilisation has been caused by massive investments in car manufacturing: between 1991 and 2006 western carmakers invested

about USD 20 billion in the region (PricewaterhouseCoopers, 2007). This wave of investments was driven by cost considerations (especially cheap labour) and by the prospects of penetrating an untapped and growing market. Today, 13% of total EU automotive production is located in Central and Eastern Europe and this share is growing (ACEA, 2008).

#### Focus on brand management

Carmakers increasingly need to give attention to brand related aspects of their businesses in order to differentiate their offer from that of their competitors. Evidence of this comes from the growing focus on brand management and advertising. Accenture (2005) calculated that expenditure on sales and marketing by major US carmakers increased from 7% of the manufacturer's suggested retail price (MSRP) in 1985 to 15% in 2003. US carmakers spend far more on advertising and incentives than on global product development.

#### Shortened product cycles and time to market

Evidence suggests that the product life cycle has significantly shortened and that time to market has become a key aspect in the car industry. Advances in computer aided design and engineering, coupled with increased flexibility in manufacturing, enable carmakers to bring new models to market much more quickly (Griffiths, 2007). Accenture (2005) estimated average showroom age<sup>9</sup> in the US market at 2.2 years, against 4.3 years in 1990. In addition, an ever larger share of carmakers' turnover comes from sales of recently launched vehicles.<sup>10</sup>

## 2.4 Sector implications

The shifts in demand and supply described above have two major implications for the automotive sector: modularisation, and outsourcing of an increasing amount of the value of the vehicle to suppliers. Vehicle characteristics are becoming increasingly homogenous among the different models produced by the same carmaker, but also among vehicles designed and manufactured by competing ones. This trend has led OEMs to design vehicles so that they can share individual components, modules and systems. Therefore, several models are normally built around the same "platform". As they move towards modularisation and shift the core of their activities from manufacturing to brand management and customer relationship, OEMs outsource more and more of the value of a vehicle to suppliers.

The new industry configuration has had an impact on the traditional tier-based value chain. It has seen the emergence of a new category of players, the "tier 0.5" suppliers or systems integrators, assuming design, development and supply chain management responsibilities that previously belonged to OEMs and supplying complete modules and systems to carmakers for final assembly (Veloso and Kumar, 2002; US International Trade Administration, 2004).<sup>11</sup>

### *Modularisation*

Automotive industry analyst group CSM Worldwide (2004) estimated that 33% of the world's light vehicles would be based on global platforms exceeding 1 million units per year by 2008, against 28% in 2002. By using common platform sharing modules and sub-systems, OEMs can ensure that all models in their portfolio meet the same basic comfort, safety and reliability requirements. At the same time, carmakers can rapidly adapt each model to the specific needs and tastes of different consumer target groups and regional markets, hence being in a better position to cope with the phenomenon of product proliferation. This also allows them to leverage design and development efforts and to exploit economies of scale.

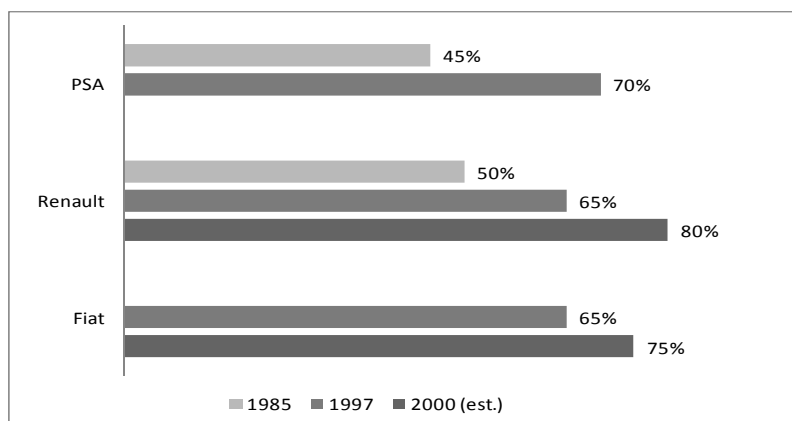
Sturgeon and Florida (2000) define “modularisation” as the process whereby automakers “[...] ask both outside suppliers and in-house part facilities to do more design and sub-assembly work... The aim of modularisation is to take labour out of the final assembly process.” For example, part suppliers can deliver bumpers, trim, radiators, fans and lights as complete front and rear end modules. Fifteen modules represent roughly 75% of the value of an average vehicle.

The next step in the modularisation process is the assembly of models by component manufacturers into sub-systems that can be supplied to OEMs for final assembly in the vehicle. For example, the seat, interior trim and cockpit module can be delivered as a complete interior system. The trend of modularisation has gone so far that automakers are no longer capable of developing some modules and systems themselves (Autobusiness, 2004, cited in Frignant, 2007).

### **Outsourcing**

Figure 35 shows the evolution in the percentage of car value outsourced by three major carmakers to their suppliers from 1985 to 2000.

**Figure 35. Car value outsourced (%)**



Source: Economist Intelligence Unit, cited in Veloso and Krumar (2002)

OEMs not only ask their suppliers to manufacture large portions of the value of the vehicles. They also pass the responsibility for designing and developing important sections of the car on to their suppliers. In the past, OEMs’ engineers designed and developed all the characteristics of the components whose production was outsourced to suppliers. They would invite potential suppliers to bid at an auction and then give the contract to those that could produce the components for the lowest price. This process did not contemplate building up long-term relationships: contracts typically stipulated that part manufacturers would supply an agreed quantity of the components at a fixed price and over a relatively short timeframe (normally one year). Price was the major driver of this process, and the main requirement suppliers were expected to fulfil was to manufacture at the lowest cost with a reasonable profit. Other criteria used by OEMs to evaluate suppliers’ capabilities included capacity, reliability and product quality, although some defects were tolerated (US International Trade Administration, 2004).

### **2.5 Key success factors for automotive component suppliers**

The relationship between OEMs and suppliers has undergone a fundamental change since the 1980s. As carmakers expect their suppliers to take on significant responsibility for the design,

development and manufacture of entire modules and systems, the ability to increase the sales and profitability of component manufacturers crucially depends on the following key success factors: quality levels, innovation, product design and production engineering capabilities, management of their own supply chain, and the ability to deliver on time.

### ***Higher quality levels***

With the increasing importance of just-in-time production and delivery systems, assemblers have embraced the principle of “quality at source”. They therefore impose strict quality requirements on their suppliers (Humphrey and Memedovic, 2003). Besides carrying out firm-specific audits, carmakers expect their suppliers (especially first and second tier suppliers) to be certified for at least the general ISO 9001 standard, and increasingly the industry specific ISO/TS 16949 standard.<sup>12</sup> In addition, the increasingly more stringent environmental regulations being imposed on the automotive industry foster the importance of ISO 14001, the environmental management system (EMS) standard. Implementing the latter also allows component suppliers (especially SMEs) to reap substantial benefits in terms of cost reduction, stemming from savings in consumption of energy and materials and lower distribution costs, among others (Baxter, 2004).

### ***Upgraded innovation and design and development capabilities***

Early involvement of the suppliers in new product design is the current predominant model for OEM-supplier relations in terms of product development and vehicle innovation. This model originated in the Japanese automotive industry and was then widely adopted by US and European carmakers. It allows reducing stocks and achieving more on-time deliveries (CoCKEAS, 2001). OEMs and first tier suppliers carry out detailed enquiries to assess the design and development capabilities of their potential suppliers, including: number and qualifications of employees involved in design and development; number of CAD stations at the supplier’s premises; use of testing, calibration and prototyping tools, such as FMEA technology;<sup>13</sup> adoption and knowledge of design software specific to the automotive industry, such as CATIA. Another criterion on which part suppliers are evaluated by potential customers is their collaboration with organisations active in research and innovation, such as universities and research institutes. Often the number of designs and patents registered is also taken into account (Veloso, 2000).

### ***More robust supply chain management and ability to deliver on time***

The traditional customer-supplier relationship was based on a division of tasks, whereby the OEM would fully develop the product and then ask suppliers identified through an auction to manufacture a certain number of components at a negotiated price. Suppliers’ involvement in the development of components has fundamentally changed this relationship, which has evolved from being based on purely commercial terms to a potential long-term partnership involving the exchange of projects and designs, demand planning and forecasting, on-line cataloging and data integration (CoCKEAS, 2001; Morell and Swiecki, 2002). This results in the following additional requirements for suppliers:

1. *Implementation of electronic data interchange (EDI) systems (e.g. Odette, the standard most widely used in the automotive industry);*<sup>14</sup>
2. *Adoption of enterprise resource planning (ERP) systems, which results in shortened cycle times through the optimisation of joint production planning and delivery processes;*

3. *Increased participation in on-line procurement initiatives through specialised B2B portals:* E-business activities include requests for bids/proposals, reverse auctions, sending/receiving of interoperable CAD files, joint product design, and maintenance of a common database.

## 2.6 Sector attractiveness in the Western Balkans

The automotive component sector in the Western Balkans is attractive overall in terms of market growth, FDI and employment.

Table 18 presents some key data on the regional automotive components industry. Growth in the market of automotive components averaged 13% in 2004-05 across the region. Total regional exports of automotive components were EUR 209 million in 2007, up by 17% from 2004. Automotive component suppliers in the Western Balkans perform relatively well, even when compared with individual Central and Eastern European countries. As shown in Figure 36, between 2004 and 2005 Croatian and Serbian automotive suppliers displayed sales growth value in line with the average in the region.<sup>15</sup> Both countries showed higher growth rates than Slovenia or Slovakia. On the other hand, the market growth value for The former Yugoslav Republic of Macedonia was by far the lowest in the region, partly reflecting the near absence of significant FDI inflows into this sector until recently.

Cumulative FDI inflows were EUR 116 million between 2004 and 2006. Official statistics confirm that FDI inflows into the automotive sector have been relatively low in the Western Balkans, accounting for only 2% of total inflows in 2007.<sup>16</sup> This seems to be a consequence of investment in the sector having been driven in recent years mainly by the privatisation of SMEs. But several automotive companies in the region remain state or socially owned, offering opportunities to increase foreign investment through further privatisation. For example, in Serbia about 20 automotive suppliers are still in the process of privatisation, according to the most recent information from the Serbian Investment and Export Promotion Agency (SIEPA, 2008). The importance of greenfield automotive investment appears to be increasing in the region, as shown by the estimated EUR 100 million which will be invested in the construction of new plants in The former Yugoslav Republic of Macedonia. The recent privatisation deal and the estimated investment of EUR 700 million by Fiat in the joint venture with the Serbian carmaker Zastava bodes well for the future pace of the privatisation of existing suppliers and for potential new investment across the region.

In spite of relatively low levels compared to other sectors, the Western Balkans has experienced robust growth in both FDI inflows and FDI inward stocks with respect to the automotive industry (Figure 37). FDI inflows grew at an annual rate of 74% between 2004 and 2007.

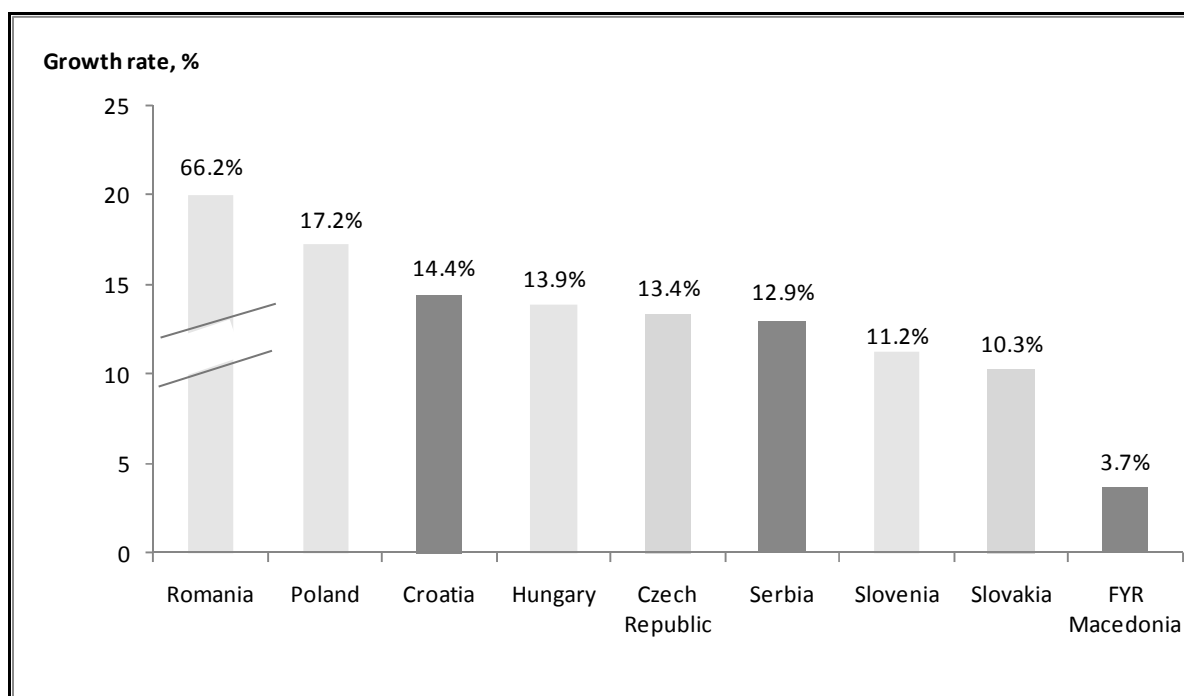
In addition, it should be noted that these figures underestimate the real impact on other sectors (such as manufacturing of basic metals and fabricated metal products) that have strong backward linkages with the automotive components industry. It is estimated that inputs into the automotive industry account for twice the value-added in the industry itself (Heneric, Licht and Sofka, 2005). In addition, the automotive industry has the potential to generate significant levels of employment in other sectors of the economy. A recent study on the employment contributions of motor vehicle suppliers to the US economy estimated that it created 4.7 additional jobs for every job in a parts making company (Center for Automotive Research, 2007). A simple model, used to estimate the size of backward linkages created by the regional automotive industry in the Western Balkans, is described in Box 10.<sup>17</sup>

**Table 18. The regional automotive components industry, key data**

Value-added <sup>1</sup>	EUR 169.9 million
Market growth <sup>2</sup>	13%
Cumulative FDI inflows <sup>3</sup>	EUR 116 million
FDI inward stock <sup>4</sup>	EUR 63.5 million
Exports <sup>5</sup>	EUR 209 million
Employment <sup>6</sup>	33 785 persons employed
Number of firms <sup>7</sup>	230

1. 2005: Includes gross value-added in the manufacturing of transport equipment in Bosnia and Herzegovina and The former Yugoslav Republic of Macedonia and of motor vehicles, trailers and semi-trailers in Croatia and in Serbia
  2. 2004-05: The table refers to average growth in automotive component suppliers' sales in Croatia, The former Yugoslav Republic of Macedonia and Serbia, weighted by each country's value-added in the manufacturing of automotive components
  3. 2003-07: The table at the time of publication does not include 2007 data for Bosnia and Herzegovina (not reported for confidentiality reasons)
  4. 2006: The table does not include data for Serbia (due to ongoing collection at the time of publication by the National Bank of FDI stock time series)
  5. 2007: The table includes exports from Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia and Serbia
  6. 2006: The table includes employment in Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia, Montenegro and Serbia
  7. Estimate based on figures from local Business Registers, Chambers of Economy and Investment Promotion Agencies; does not include the Republika Srpska.
- Source: Roland Berger, Vienna Institute for International Economic Studies, national offices of statistics, National Central Banks, UN Comtrade

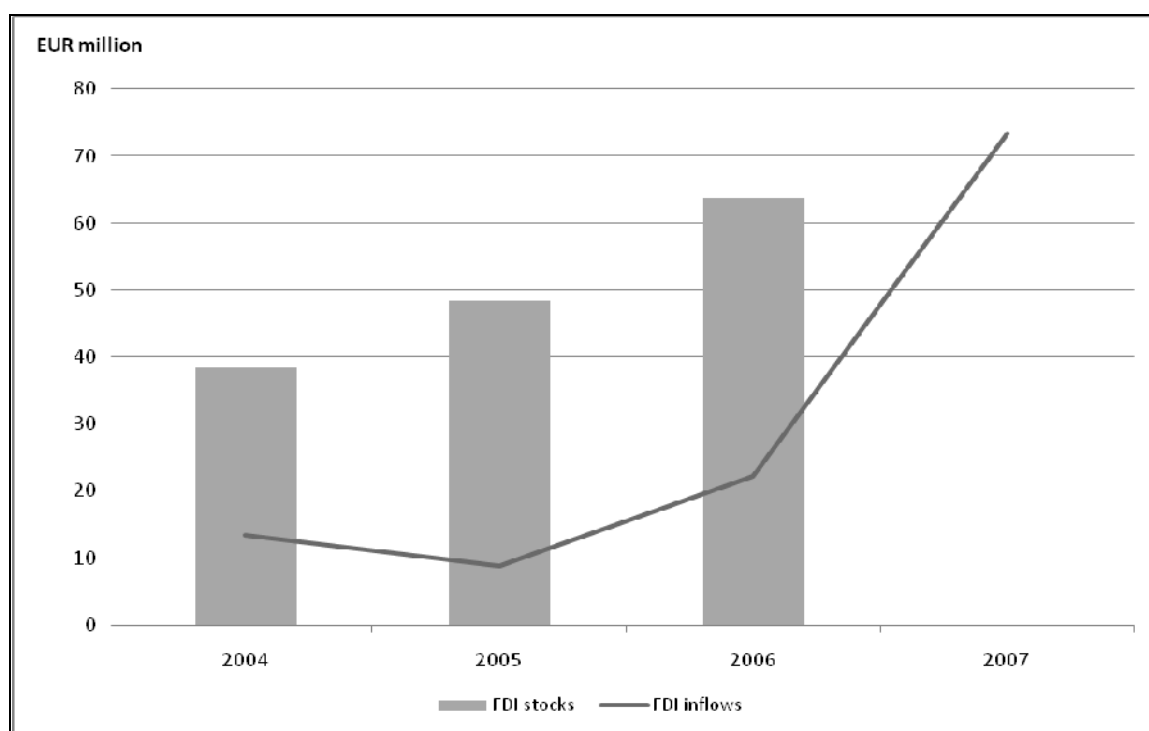
**Figure 36. Growth in sales by automotive suppliers per country (2004-05)**



Source: Roland Berger (2007)



**Figure 37. FDI inflows and inward stocks in the automotive sector in the Western Balkans**



Source: OECD analysis based on data from National Office of Statistics

#### **Box 10. Backward linkages of the automotive components industry in the Western Balkans**

An analysis of backward linkages allows capturing the real weight of an industry by looking at its effects on other sector of the economy, mainly the ones that contribute to the final output as suppliers. Not only are backward linkages important in terms of investment and employment, but also because of broader spillover effects and export growth. An input-output analysis would result in more accurate estimates of backward linkages. However, given the absence of input-output tables for all the economies of the region, a good indicator that can be used to account for the importance of backward linkages is represented by the ratio of value-added in an industry to its total production. In 2005, this indicator was 44% across the region, showing a strong contribution of inputs from other sectors in the total output of the automotive components sector. From this figure it appears that the magnitude of backward linkages in the Western Balkans is on par with EU-15, US and Japan levels.

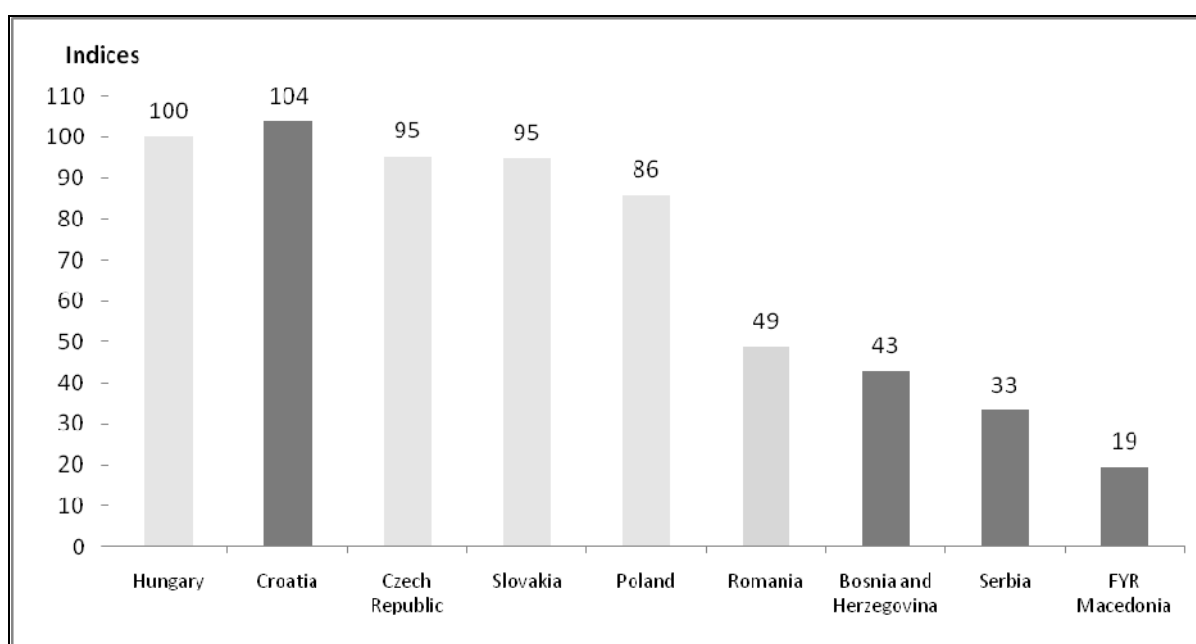
It should be noted that these linkages are not only domestic. Given the international nature of the value chain in the automotive industry, it may well be that a large part of the inputs used to produce automotive components are imported. An analysis of intermediate consumption – defined as value of the goods and services consumed as inputs by a process of production – of the Croatian automotive industry based on the 2005 Enterprise Survey of the Croatian Central Bureau of Statistics shows that over nearly 40% of the inputs were actually imported. Therefore, there is a potential for further linking the economies of the Western Balkans and the countries of the EU along the automotive value chain.

The Western Balkan economies benefit from several competitive advantages in the automotive component sector, in particular cost competitiveness, proximity to both the traditional Western European market and the new automotive hub in Central and Eastern Europe and a historical legacy of manufacturing automotive components.

### Cost competitiveness and labour productivity

The Western Balkans is clearly still cost competitive. Figure 38 compares sector specific wages for the manufacture of motor vehicles and vehicle parts in Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia and Serbia with those in selected countries in Central and Eastern Europe.<sup>18</sup> The Western Balkan countries, with the notable exception of Croatia, have very competitive labour costs compared with neighbouring manufacturing locations. These results are in line with the findings of the OECD Regional Capability Survey and past studies in the region.<sup>19</sup>

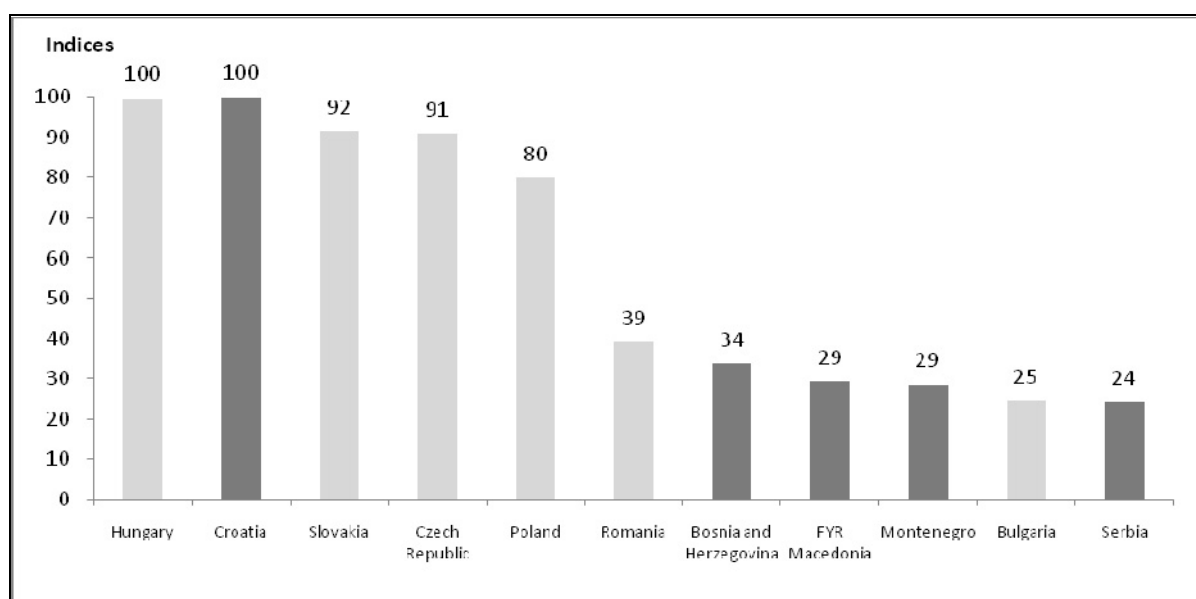
**Figure 38. Average wages in the automotive industry, 2006 (indexed on Hungary's wage levels)**



Source: OECD analysis based on ILO Bureau of Statistics

While the Western Balkans competes well on cost, labour productivity could be further improved. Labour productivity, measured as gross value-added per person employed, is another crucial determinant that should be factored into the price competitiveness equation. If a country has high labour costs, this apparent competitive disadvantage could be offset by high productivity levels, and vice versa. Apparent labour productivity in the manufacturing sector was calculated for the Western Balkan economies and selected EU Member States in Central and Eastern Europe where significant automotive manufacturing activities are located.<sup>20</sup> As shown in Figure 39, cost competitiveness in the Western Balkans is eroded by lower productivity levels in the manufacturing sector compared with those in some of the new EU Member States. Croatia's labour productivity level is higher than that in most CEE countries. The low levels of labour productivity in the other Western Balkan economies can be explained by the low level of FDI and technology transfers in the sector to date, as well as the large number of persons employed, especially in state and socially owned enterprises.

**Figure 39. Labour productivity in the manufacturing industry, 2004 (indexed on Hungary's productivity level)**



Source: OECD analysis based on Eurostat, national offices of statistics.

### *The proximity advantage*

Proximity to the important markets of Western, Central and Eastern Europe is an advantage for the Western Balkan economies. A recent study predicts that labour cost differentials will increasingly be reduced due to rising transport costs, making it cheaper for Western Europe to source goods from other European countries than from the Far East. This seems true, in particular, for heavier or bulkier goods, goods with a relatively lower labour content, and goods that require a fast turn-around (Jen and Bindelli, 2008).<sup>21</sup>

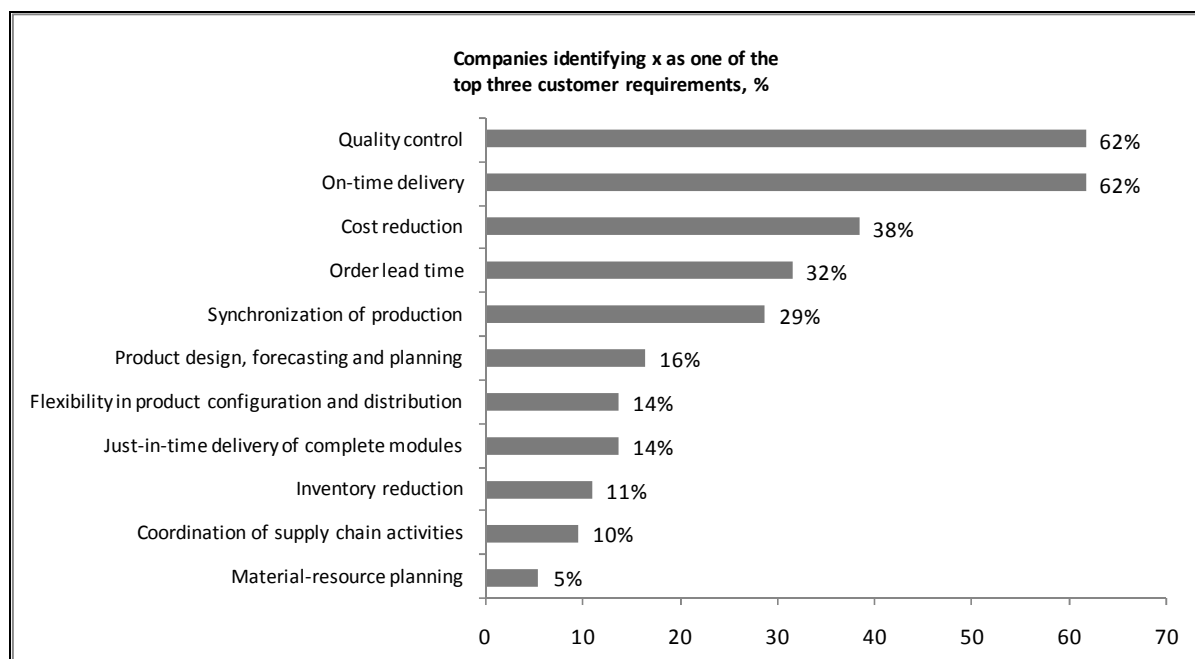
Geographical proximity is one factor enabling firms in the region to ensure just-in-time delivery. OEMs' lean manufacturing process management requires suppliers of components to improve the supply chain and reduce inventories. Expectations for on-time delivery are between 98.5% and 100%. The OECD Regional Capability Survey (RCS) shows that a majority of surveyed companies list order lead time and on-time delivery among the top customer requirements in the automotive industry (Figure 40).

Part suppliers in the Western Balkans deliver to EU-based customers principally through:

*Direct delivery to customer plant*, mainly in the case of delivery to the German market. It takes from 12 to 24 hours for suppliers in the Western Balkans to deliver to Germany and 24 hours to deliver to Sweden;

*Warehouse near customer plant*, mainly for delivery to the French market. Suppliers are required to hold a ten-day buffer stock in the warehouse.

**Figure 40. Key customer requirements for automotive component suppliers in the Western Balkans**



Source: OECD RCS (2008)

The RCS showed that order lead times vary widely among automotive component suppliers in the Western Balkans, depending on where the customer is located. The average lead time for supplying locally is two days. Lead times increase to about one week for supply of EU markets.<sup>22</sup>

Over 70% of companies surveyed by the RCS supplied locally based customers. Western Europe is also a relatively important market (for up to 16% of respondents), whereas only 4% of the companies surveyed had customers based in Central and Eastern Europe. This is quite surprising given the increase in automotive production in some of the new EU Member States. These findings suggest that geographical proximity could allow suppliers in the Western Balkans to tap into the growing automotive markets in neighbouring Central and Eastern Europe.

The RCS results also shed some light on the position of the customers of suppliers in the Western Balkans along the automotive value chain. OEMs and final assemblers have been the main customers by far, as they have been directly supplied by just over 70% of the companies surveyed. In addition, over one-third of respondents have first tier suppliers as customers. This suggests that parts manufacturers in the Western Balkans already have the basic capabilities to supply players at the higher end of the value chain. In addition, one-quarter of companies surveyed could be characterised as third tier suppliers. This shows that the Western Balkans has a good supply base in terms of the production of basic metals and other raw materials.

### ***A strong historical legacy***

Historically, the automotive industry has had a strong presence in the Western Balkans. Vehicle assembly in Bosnia and Herzegovina and in Serbia encouraged the emergence of a supply base for automotive components, with metalworking, mechanical and electrical engineering skills available across virtually the whole of the former Yugoslavia. Broadly, the structure of the industrial value chain reflected the comparative advantages and strengths of each of the former Yugoslav republics. As

car manufacturing activities have slowed but are steadily recovering in Bosnia and Herzegovina and in Serbia, the Western Balkans offers a strong and attractive supply base for OEMs and first tier suppliers in the region and beyond.

Serbia was a centre of motor vehicle production in the Socialist Federal Republic of Yugoslavia. Before the wars during the breakup of the former Yugoslavia and the imposition of economic sanctions, the automotive industry was dominated by the Zastava factory. Zastava produced motor vehicles for the domestic market under licence from Fiat. During the 1970s and 1980s, it exported cars to Western Europe and to North and South America under the well-known Yugo brand. By the end of the 1980s Zastava boasted an annual production capacity of 220 000 vehicles, with 26 777 vehicles exported. Table 19 shows that car manufacturing in Yugoslavia grew by 12% per year in the period 1960-90. By the beginning of the 1990s, and in spite of starting from a lower or comparable basis, motor vehicle production in the former Yugoslavia had surpassed levels in all the neighbouring socialist countries, with the exception of the USSR.

**Table 19. Passenger car production in the CEE, 1950-90**

	Yugoslavia	Poland	GDR	Romania	USSR	Czecho-slovakia	Total CEE
1950	<b>0</b>	0	7 165	0	64 600	24 463	96 228
1955	<b>760</b>	4 015	22 247	0	108 000	12 530	147 552
1960	<b>10 461</b>	12 683	64 071	1 200	139 000	56 211	283 806
1965	<b>35 880</b>	24 800	102 877	3 653	201 000	77 705	445 915
1970	<b>110 709</b>	64 200	126 611	23 604	344 000	142 856	811 980
1975	<b>183 000</b>	164 000	159 147	68 013	1 201 000	175 411	1 950 571
1980	<b>255 000</b>	351 000	176 761	88 232	1 327 000	183 745	2 397 139
1985	<b>228 000</b>	283 000	210 370	134 000	1 332 000	183 701	2 386 071
1990	<b>291 724</b>	266 000	145 000	100 000	1 259 000	191 233	2 267 598
CAGR 1960 – 1990	<b>12%</b>	<b>11%</b>	<b>3%</b>	<b>16%</b>	<b>8%</b>	<b>4%</b>	<b>7%</b>

Source: OECD analysis based on Pavlinek (2008)

During the war period, production continued but was minimal compared with previous years. A Zastava factory was heavily bombed by NATO in 1999. Production has grown slowly but steadily since 2000.

Bosnia and Herzegovina has been a centre for vehicle manufacturing since the days of the former Yugoslavia. Before 1992, Volkswagen produced passenger cars and light vehicles for the entire Yugoslavian market at its plant near Sarajevo. Kosmos and Soko manufactured buses in Banja Luka and Mostar, respectively.

The presence of motor vehicle manufacturing in Serbia and Bosnia and Herzegovina stimulated the creation of a network of around 240 component suppliers throughout Yugoslavia (Palairat, 1992). The structure and development of the value chain was based on the so-called “Yugoslav policy” whereby each of Yugoslavia’s republics and provinces would have a supply base to serve Zastava and thus share the benefits of the motor vehicle manufacturing industry in terms of income and employment creation. However, this sourcing policy translated into high costs and low profitability for Zastava, and in virtually no incentives for component suppliers to improve their equipment and quality standards.

One of the main legacies of the automotive components industry in the former Yugoslavia is a high level of automotive specific training and a strong skills base, including in skills that have backward linkages with the manufacture of vehicle parts, e.g. metalworking, welding, plastics, electrical and mechanical engineering, production of high-precision components. Foreign investors already present in the region and interviewed by the OECD reported that the existence of a good automotive related skill set, in comparison with the situation in other emerging markets, was crucial to their decision to locate in the Western Balkans.

## 2.7 Recommendations

### *Operational recommendations*

Section 2.5 showed that automotive component suppliers need to meet specific requirements in terms of quality standards, design and development capabilities, and supply chain management. Both the RCS results and direct OECD interviews with foreign investors and local companies have shown that this is the main challenge for companies in the Western Balkans, based on the following aspects:

- *Quality standards:* Local suppliers consider quality management and quality control to be among the top customer requirements in their industry. OEMs and first tier suppliers need their own suppliers to satisfy at least the basic requirements of ISO 9001. Although the majority of part suppliers in the Western Balkans appear to have ISO 9001 certification, over one-quarter of companies surveyed by the OECD have not been certified (mainly in Bosnia and Herzegovina and in Kosovo under UNSCR 1244). This finding implies that those companies do not stand a chance of being considered as partners by international customers. Besides ISO certification, carmakers and global systems integrators are increasingly requesting that their suppliers have, or at least meet the requirements for, the automotive industry specific quality certificate ISO/TS 16949. The ISO 2006 survey reports that very few automotive companies in the Western Balkans have obtained this industry specific quality certification. Using raw data weighted by population, the figures can be compared. Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia and Serbia have only one TS 16949 certificate per million population, against 17 certificates per million in the EU-27 (OECD analysis based on ISO, 2007). This was confirmed by the RCS: at regional level only 12% of the companies surveyed had the industry specific certification. Direct interviews with local suppliers showed that some companies were also certified for the environmental management system (EMS) standard, ISO 14001.
- *Innovation:* Only 34% of companies surveyed had developed a new product, design or service since 2004. Croatia and Serbia are the frontrunners in this area, whereas in Bosnia and Herzegovina and The former Yugoslav Republic of Macedonia only a minority of companies reported undertaking any significant activity linked to innovation. At regional level, only ten patents were registered among the companies surveyed in the same period.
- *Design and development capabilities:* Companies in the Western Balkans should be able to show that they are competitive in areas such as number and qualifications of workers involved in development, characteristics of testing and prototyping facilities, and knowledge of design methods and tools. The RCS results clearly show that there is much room for improvement. For example, the majority of respondents did not have computer aided design (CAD) stations at their facilities and were not using the software suites most commonly used in automotive engineering. Again, the situation varies widely from country to country: unlike the other economies in the region, the majority of respondents in Serbia had CAD stations at their facilities.

- *On-line procurement initiatives:* Business-to-business procurement web portals have become a common and widely used instrument for OEMs and first tier suppliers to source components in the required quantities, and with the required specifications and delivery terms. Only 16% of part suppliers surveyed in the Western Balkans as a whole participated in on-line procurement initiatives, with percentages as low as 5% in The former Yugoslav Republic of Macedonia.

### ***Policy recommendations***

The experience of CEE countries suggests that once the initial wave of privatisation related investment is over, the importance of market size and low labour costs as FDI determinants diminishes and gives way to other factors, such as institutional development, infrastructure and the quality of the business environment (Demekas, Horváth, Ribakova and Wu, 2005). In this respect, the RCS and face to face interviews with foreign investors and local suppliers show that there are several barriers that need to be overcome to unleash the region's potential and improve business conditions for automobile component suppliers.

Given existing on-going initiatives, and after consultation with government representatives and the private sector in the region, the OECD recommends focusing on the promotion of FDI-SME linkages to facilitate technology transfers.

#### *Focus first on investment promotion and human capital*

Strong and sustainable collaboration with customers (both OEMs and first tier suppliers/global systems integrators) and productivity gains can only be achieved if suppliers are able to show that they can meet specific requirements in terms of quality standards, design and development capabilities. This seems to be the main challenge for companies in the Western Balkans, with ways to meet the challenge based on the following types of activities:

*Improve information on the advantages for OEMs to collaborate with Western Balkans suppliers:* In spite of the existence of some investment promotion material dedicated to the automotive components sector, there is a lack of awareness of local suppliers' strengths and capabilities among international customers and investors (Table 20). This is mainly due to a general lack of sector specific investment promotion tools, such as targeted interactive databases or sector specific linkage programmes.

*Further develop skills:* A majority of automotive component companies in the Western Balkans suffer skill gaps in areas where it is necessary to build and maintain strong and long-term collaborations with customers, especially design, supply chain management and quality assurance (Figure 41). In addition, 51% of the companies surveyed in the region feel that they are experiencing some degree of skills gap in engineering.

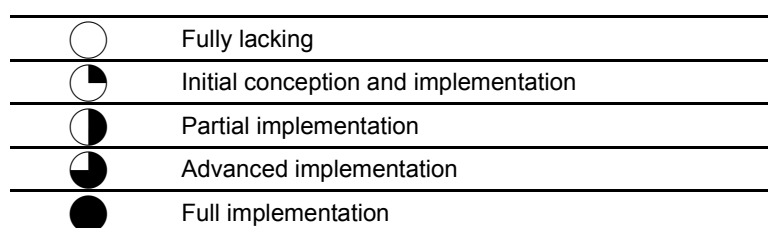
*Enhance collaborative innovation efforts:* There is a need to channel innovation by developing stronger collaboration between foreign and local companies as well as research centres and academia.

**Table 20. Automotive components supply and demand: information gaps**

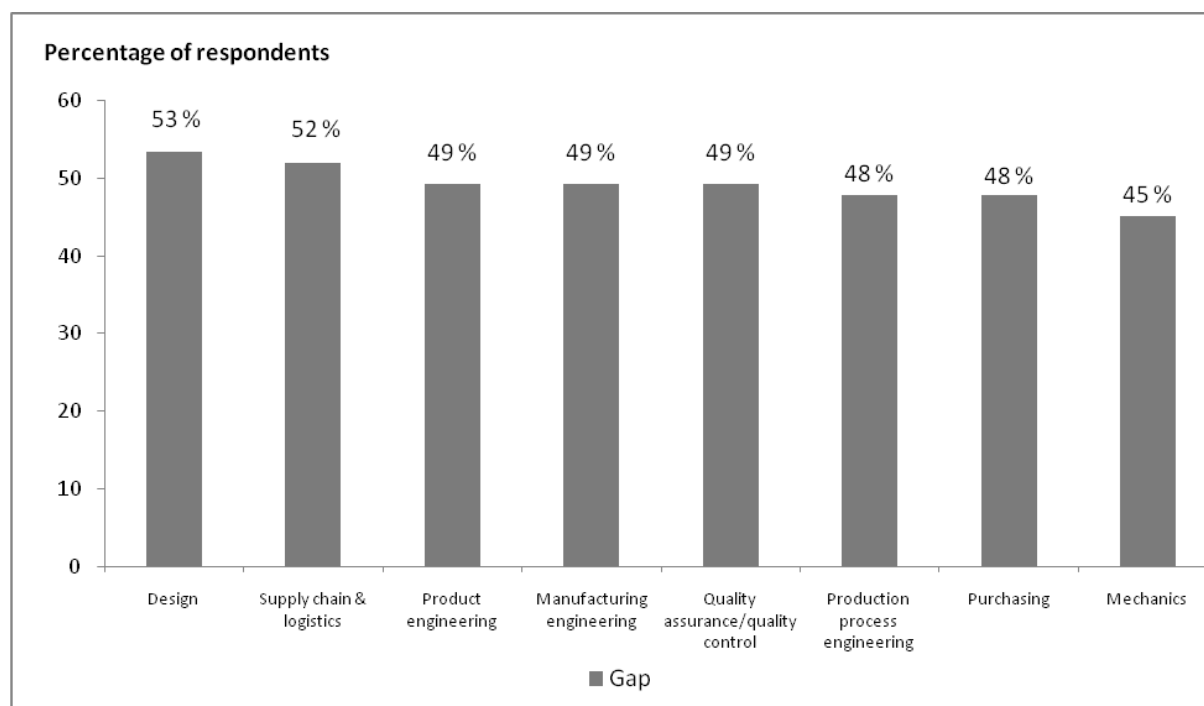
	Sector specific investment promotion activities	Sector specific linkage programmes	Interactive database to find relevant local and foreign companies
Bosnia and Herzegovina	◐	◑	◑
Croatia	◐	◑	◐
Kosovo under UNSCR 2144	◑	○	○
The former Yugoslav Republic of Macedonia	●	◑	◐
Montenegro	◑	○	○
Serbia	●	◑	◑

Source: Company interviews, Investment Promotion Agencies

Key:



**Figure 41. Skills gaps in the automotive sector in the Western Balkans**



Source: OECD RCS (2008)



To address these challenges, the OECD recommends both short- and medium-term actions.

The first action of Western Balkans economies in the short term should be to improve the quality of information available on their automotive component suppliers. This involves assessing the tools and modalities used by OEMs and first tier suppliers/system integrators to find potential suppliers and purchase their components and modules. It also entails assessing the extent to which automotive component suppliers in the Western Balkans have the necessary informative material in place (*e.g.* an interactive database, access to e-auctions) to raise awareness of their capabilities and the extent to which they are included in instruments used by international customers to purchase components.

To further develop skills in the automotive component sector, training programmes involving the private sector should be implemented. A network of local and foreign companies to develop regional training programmes could be set up.

In addition, collaborative innovation efforts can be developed through the launch of one or two pilot linkage programmes to facilitate technology transfers and involving exchanges of professionals.

Some other policy barriers that have emerged from the analysis of the data gathered through RCS, private sector focus groups and interviews with automotive suppliers are described below. Most of these barriers are already being tackled by ongoing initiatives at the regional or national level, *e.g.* in the framework of EU accession or stabilisation and association processes.

#### *Improve customs and trade regulations*

Time to market and the ability to ensure just-in-time delivery are fundamental requirements with respect to the automotive supply chain. Evidence suggests that customs procedures, including a large number of documents required for imports and exports as well as unnecessary inspections, can hamper the ability of suppliers in the Western Balkans to meet these requirements.<sup>23</sup> Barriers associated with customs and trade regulations were reported by 58% of the companies surveyed. Anecdotal evidence suggests that administrative procedures and time to clear customs are especially problematic in The former Yugoslav Republic of Macedonia and in Serbia.

Another trade issue for automotive component manufacturers concerns the import regime for capital goods.<sup>24</sup> Import duties on them range from 0 to 20% in the Western Balkan economies. Duty free access is normally allowed in two cases: (i) for capital goods coming into a country with which there is a free trade agreement (FTA); (ii) for capital goods that are part of an initial capital investment or foreign direct investment (*e.g.* in Bosnia and Herzegovina, Montenegro and Serbia). In Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia, Montenegro and Serbia capital goods are exempt from duty when imported into a free trade zone (OECD Investment Compact, 2006). Local companies interviewed by the OECD feel that these special regimes create discrimination among companies and, in particular, put local suppliers at a disadvantage compared with foreign invested companies.

#### *Enhance transport infrastructure*

To ensure just-in-time delivery, an extended network of good quality transport infrastructure is a key element, especially in export markets. The advantage of proximity to EU markets enjoyed by suppliers in the Western Balkans could be negatively offset by poor road and rail infrastructure conditions. In addition, transport infrastructure is one of the fundamental factors assessed by potential investors, as confirmed by the OECD interviews with foreign automotive companies that had decided to invest in the Western Balkans. For example, a global automotive supplier that has set up a

manufacturing facility in one of the Western Balkan economies lists the prospective completion of Pan-European Corridor X in 2012 as one of the major drivers behind its location decision.<sup>25</sup>

About half the companies that responded to the RCS indicated that the quality and availability of transport infrastructure should be improved. In particular, several local suppliers interviewed by the OECD pointed to the need to improve local roads connecting with highways to Austria, Hungary and Slovakia. Along with investment in new road infrastructure, investment in maintenance should be stepped up to improve capacity and safety.

#### *Address labour regulations*

Labour market rigidities need to be improved across the region. Given the requirements of just-in-time delivery, employers need to be able to count on a stable and reliable presence of skilled and unskilled workers. A recent OECD study suggests that economies in transition should adopt less stringent employment protection legislation than that in OECD countries, *e.g.* on employee dismissals (OECD, 2008).

The RCS results show that over half of automotive companies in the Western Balkans consider labour regulations a barrier to the growth of their business. For example, a fairly high labour tax wedge hampers job creation in the Federation of Bosnia and Herzegovina (in the Republika Srpska the tax wedge has been decreased).<sup>26</sup>

#### *Improve cost and access to financing*

The investment required for automotive component manufacturing is mostly split between the car body and the internal engine. Models are continuously being redesigned, and both body and engine require regular and substantial modifications. While the same engine can be utilised for several different models, frequent changes in ever stricter emissions legislation result in shorter life cycles. Hence, as well as being high during the start-up phase investment needs to be sustained at very high levels (European Commission, 2004).

Given the high degree of investment required, credit constraints can represent a significant barrier to the growth and sustainability of businesses operating in this sector. This seems to be a major obstacle for firms in the Western Balkans. Around 75% of respondents believe that difficult access to and the cost of financing limit the operations of their businesses. In particular, this seems to be the case in Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia and Serbia. Anecdotal evidence suggests that the cost of financing is the major problem, as weighted average annual lending rates ranged from 8% to 12% across the Western Balkans (European Commission, 2007). The privatisation and liberalisation of financial institutions have contributed to a reduction of interest rates in the region. However, more effort should be put into stimulating competition in the banking sector, which would help reduce the cost of financing.

#### *Reduce the regulatory burden*

Small and medium-sized part suppliers in the Western Balkans list cumbersome administrative and regulatory procedures as one of the main obstacles to their operations. These procedures include company registration, access to land, business licensing and operating permits. In particular, several companies report that regulations are often not clear or transparent, and that regulations are subject to differing interpretations depending on the inspector or agency in charge.

To improve the business environment, most of the Western Balkan economies analysed in this report have embarked on a process of legislative and administrative simplification, sometimes referred to as the “regulatory guillotine”.<sup>27</sup> Despite the positive results obtained so far, as reported in recent European Commission Progress Reports, efforts in this policy area should be improved. For example, the procedure for obtaining building permits remains very cumbersome in Croatia and licensing procedures hamper business operations in Bosnia and Herzegovina.

### ***Possible regional strategy***

Manufacturers in the Western Balkans are in a privileged position to tap into the fast-growing market created by the recent boom in investment in vehicle assembly in the CEE countries. While it is unlikely that potential investors will consider setting up new vehicle assembly facilities in the Western Balkans, the region can present itself as a cost competitive and geographically closer alternative for sourcing labour-intensive to highly technological components.

This gives the Western Balkans the possibility to develop further business opportunities with several of the OEMs and first tier suppliers that have relocated to Central and Eastern Europe. Potential growth is shown by the RCS results: Central and Eastern Europe was the main customer base of only 4% of companies. Overcapacity further enhances this potential. The RCS results show an average capacity utilisation rate of 60% in the region. Once again, figures differ widely between countries: the average capacity utilisation rate of respondents in Croatia was around 75%, while in Kosovo under UNSCR 1244 this was 28%

In particular, for the majority of part suppliers located in the Western Balkans there is an opportunity to focus on the second tier of the supply chain. This typically involves producing components with high unskilled labour content and low technological sophistication. However, as first tier suppliers have increasingly taken on the new role of global systems integrators, second tier suppliers should specialise in the production of niche components and upgrade their ability to develop and manufacture more sophisticated products. Again, this requires the ability to demonstrate that they can meet standards for quality, design and development, and supply chain management (Humphrey and Memedovic, 2003).

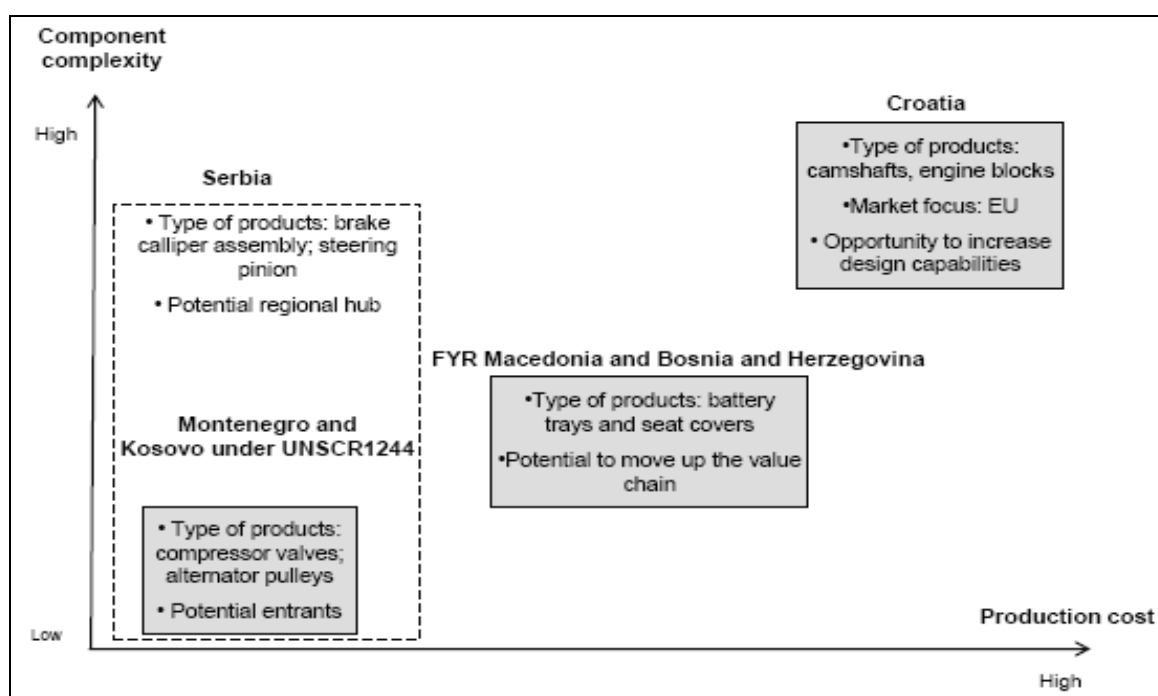
The main challenge for the region is to escape the “cost trap” by increasing productivity and being able to respond to the requirements of OEMs and global systems integrators in terms of the design and development of components. Cost competitiveness is likely to erode, based on wage increases following EU integration, as happened in the Central and Eastern European countries after the enlargements of 2004 and 2007.<sup>28</sup>

The Western Balkan economies could further benefit from their individual strengths and implement an integrated investment promotion strategy through, for example, a cross-border clustering approach. Like other emerging markets with complementary offerings, each country could target specific categories of potential investors and customers, based on their position along the automotive value chain. Croatia would be well positioned to supply technologically sophisticated parts with low labour content, given its relatively high labour costs and the proven capability of its manufacturing firms to produce zero-defect-tolerant components. Serbia could become the regional hub for both first and second tier supply of components (technologically sophisticated component with high labour content requirements), given its very low labour costs. Bosnia and Herzegovina and The former Yugoslav Republic of Macedonia have strong potential for the supply of components whose cost is driven equally by labour, materials and capital. Kosovo under UNSCR 1244 and Montenegro should capitalise on their cost competitive operational environment and specialise in the production of

components whose costs are driven predominantly by labour, such as compressor valves and alternator pulleys.

Figure 42 summarises the potential competitive positioning of the automotive components sector in the Western Balkans.

**Figure 42. Potential competitive positioning in the automotive components sector in the Western Balkans**



Source: OECD analysis, based on data from McKinsey Global Institute (2004)

## 2.8 Country specific recommendations

This section provides country specific overviews of the current status and future prospects for the automotive components sector in the Western Balkan economies.

*Albania is not included in this section.* Desk research and direct interviews conducted in the region appear to show that Albania does not have significant potential to attract FDI and grow a competitive industry for the manufacture of automotive components.

### ***Bosnia and Herzegovina***

#### *Sector overview*

Some key factors about the automotive components sector in Bosnia and Herzegovina are summarised in Table 21.

Industrial production rose by 483% in 2004-06, outperforming by several percentage points any other manufacturing sector.<sup>29</sup> Exports in 2007 were EUR 32.9 million, having increased by an annual rate of 26% since 2003.

**Table 21. The automotive components sector in Bosnia and Herzegovina, key figures**

<b>Value-added<sup>1</sup></b>	EUR 19.4 million
<b>Cumulative FDI inflows<sup>2</sup></b>	EUR 35.8 million
<b>FDI inward stocks<sup>3</sup></b>	EUR 71.6 million
<b>Exports<sup>3</sup></b>	EUR 32.9 million
<b>Employment<sup>1</sup></b>	2 226 employees
<b>Number of firms<sup>1</sup></b>	24

1. 2006; does not include the Republika Srpska

2. 2004-06

3. 2007

Source: Agency of Statistics of Bosnia and Herzegovina, Central Bank of Bosnia and Herzegovina, Business Register

Historically, Bosnia and Herzegovina has been a producer of automotive components, mainly for final assembly in Serbia but also for export to other markets. Before 1992, Volkswagen produced passenger cars near Sarajevo and Kosmos and Soko manufactured buses in Banja Luka and Mostar. As a consequence of the presence of final vehicle assembly, suppliers of automotive components emerged with metalworking, mechanical and electrical engineering skills. The industry was disrupted and damaged by the conflict in the Balkans, but in 1996 ASA Auto signed an agreement with Volkswagen to distribute its products in the region with a view to starting automotive production. Bosnia and Herzegovina is also exporting textile and leather seat covers and accessories to major global automotive players.

Currently, Volkswagen Sarajevo has semi-knocked down (SKD) production of various Skoda, Audi and VW car models.<sup>30</sup> Although before the war it produced cars for the entire Yugoslavian market, Volkswagen Sarajevo now assembles only about 4 000 vehicles for the domestic market. However, it was recently announced that the company plans to move an assembly line from Slovakia to Bosnia and Herzegovina employing some 600 to 700 additional people (Reuters, 2008).

Since 2004, automotive component suppliers in the country have been organised in an automotive cluster funded with the support of the German development agency GTZ (Box 11).

#### **Box 11. The Automotive Cluster Bosnia and Herzegovina**

The Automotive Cluster Bosnia i Hercegovina (AC Bosnia and Herzegovina) was founded in 2004 with the support of GTZ. Its aim is to promote the reconstruction and expansion of the automotive industry in Bosnia and Herzegovina. There are currently 19 members: 12 manufacturing firms, 4 mechanical engineering faculties, 2 software suppliers and a certification agency. The AC Bosnia and Herzegovina supports its members by providing advice on optimization of processes, introduction of quality management systems (ISO 9001, TQS, TS 16949) and adaptation to international standards in the fields of logistics, IT, supply chain management and marketing. In addition, at the end of 2006 the AC Bosnia and Herzegovina opened a representative office in Germany. Through that office, international suppliers and manufacturers can obtain first-hand information on suppliers in Bosnia and Herzegovina. The cluster also supports the participation of member companies in international fairs and exhibitions and the organisation of bilateral meetings with potential foreign partners.

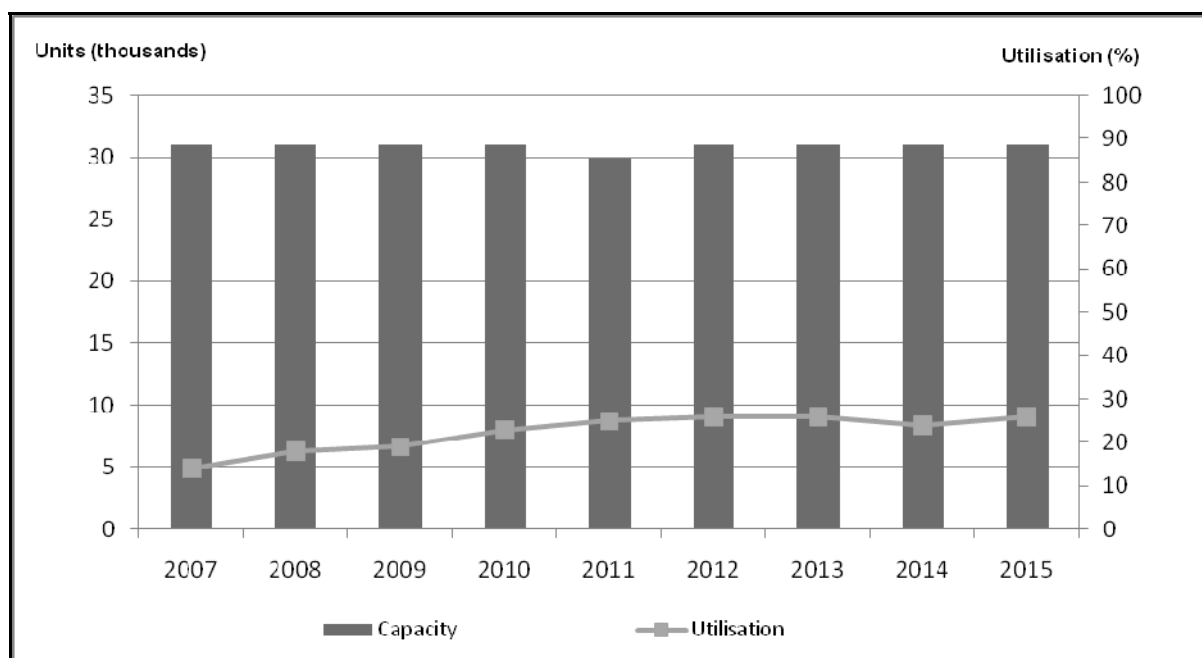
The cluster is currently involved in a project financed by the Austrian government in co-operation with the Automotive Cluster Styria and three automotive component companies in Romania. This project started in October 2007 and will last 18 months. The AC Bosnia and Herzegovina is hoping to be able to join other projects financed by the European Commission through the Seventh Framework Programme. It is also participating in the GTZ-sponsored project "Open the regional funds", in co-operation with the Automotive Clusters of Serbia and The former Yugoslav Republic of The former Yugoslav Republic of Macedonia.

Source: Automotive Cluster Bosnia and Herzegovina

According to most of the automotive companies and stakeholders consulted by the OECD in Bosnia and Herzegovina, the country's main strength is its long tradition of manufacturing components for the automotive industry. The automotive components sector has many of the required skills, especially in regard to the manufacture of basic metal and metal products. The metal processing industry is very important to the economy of Bosnia and Herzegovina, and the automobile industry is an important consumer of its production. In 2004 manufacturing of basic metals represented more than 18% of total manufacturing production, second only to the food processing industry (OECD, 2007b).

The presence of local vehicle assembly can also stimulate the growth of the components industry, owing to potential backward linkages along the supply chain. Although capacities in Bosnia and Herzegovina amount to only around 30 000 vehicles per year, they are significant in relation to the size of the automotive components sector. In addition, current and projected utilisation rates are very low (Figure 43).

**Figure 43. Capacity and capacity utilisation of automotive production in Bosnia and Herzegovina**



Source: PricewaterhouseCoopers (2008)

Although Volkswagen currently assembles around 4 000 vehicles per year at its plant near Sarajevo, none of the components are sourced within Bosnia and Herzegovina. It is unlikely that the company will resume full-scale production in the near future, as this would only be justified for volumes above 18 000 to 20 000 vehicles per year.

#### *Challenges and policy barriers*

Automotive firms surveyed by the OECD in Bosnia and Herzegovina place strong collaboration with customers at the top of the list of factors that contribute to sustaining and expanding a successful business. At the same time, they have indicated that maintaining such collaboration is the main challenge they face. Based on several parameters, it appears that many automotive firms in Bosnia and Herzegovina are not in a good position to meet the standards required by international customers.

The RCS responses and interviews with foreign investors and local companies show that general quality levels are not adequate. A majority of firms surveyed were not ISO 9001 certified. In 2006 only two companies were certified for the industry specific standard TS 16949 (ISO, 2007). One foreign investor maintained that quality is an essential requirement if a supplier is to be considered by international customers, but that currently many suppliers in Bosnia and Herzegovina did not meet minimum quality requirements. Of the local companies surveyed, 60% felt that there is a skills gap in the area of quality assurance and quality control. Therefore, supporting companies in obtaining international quality certification and training people in business functions related to quality should be the top priority. The Automotive Cluster Bosnia and Herzegovina is already supporting its members in introducing quality management standards and upgrading skills in IT, logistics, supply chain management and marketing. However, cluster membership remains low, as shown by the RCS responses (85% of companies surveyed did not participate in any cluster initiative).

Stronger collaboration with customers is hindered by lack of design, development and innovation capacities. Only a minority of companies surveyed indicated that they had upgraded an existing product line or created a new product or service in the previous three years. A majority of companies were unable to offer any design services and did not have CAD stations at their facilities. Anecdotal evidence from interviews with foreign investors suggests that suppliers in Bosnia and Herzegovina should focus more on the development portion of the new product development (NDP) process.

In addition, a majority of respondents did not use a website in interactions with clients and a very small minority (15%) took part in on-line procurement initiatives. However, joint procurement and purchasing is at the top of the list of areas where local suppliers collaborate with customers. Of all the companies interviewed directly, only those with foreign investment interacted with customers through a B2B internet portal. Unlike the other Western Balkan economies, Bosnia and Herzegovina did not have a sector specific database with exhaustive and detailed information on the capabilities of its automotive supplier base. This should be an essential step in a targeted investment promotion strategy aimed at closing the information gap with international customers and foreign investors.

Finally, automotive suppliers interviewed by the OECD point to two other major barriers:

- *High labour taxes:* As stated in the latest European Commission Progress Report (European Commission, 2007) and confirmed by OECD interviews with local automotive component suppliers, a fairly high labour tax wedge has hampered job creation in the Federation of Bosnia and Herzegovina, while in the Republika Srpska the tax wedge has been decreased. Total contributions amounted to 69.47% of the net wage in the Federation and ranged between 42% and 57% in the Republika Srpska;
- *Burdensome licensing procedures:* According to local suppliers interviewed by the OECD, burdensome administrative procedures continue to make it difficult to do business in Bosnia and Herzegovina. This is confirmed by the World Bank *Doing Business Report 2009*, which shows that Bosnia and Herzegovina is one of the worst performers among the Western Balkan economies in terms of days required to start a business. This duration (60 days) is also significantly higher than the average OECD figure (13.4 days). Moreover, companies complain that regulations are often subject to very arbitrary and non-transparent interpretations at different levels of government.

#### *Key policy recommendations*

1. Support companies in obtaining international quality certifications and training people in business functions related to quality assurance and quality control;

2. Create a sector specific database with detailed information on the existing supplier base (types of companies);
3. Expand and develop existing clusters by refining the value proposition;
4. Reduce the labour tax wedge to help maintain the competitiveness of Bosnia and Herzegovina;
5. Simplify procedures for obtaining licenses and streamline administrative procedures.

## **Croatia**

### *Sector overview*

Some key figures on the automotive components sector in Croatia are summarised in Table 22.

Table 22. The automotive components sector in Croatia, key figures

Value-added <sup>1</sup>	EUR 65.5 million
Cumulative FDI inflows <sup>2</sup>	EUR 43.2 million
FDI inward stocks <sup>3</sup>	EUR 50.7 million
Exports <sup>3</sup>	EUR 112.7 million
Employment <sup>1</sup>	3 064
Number of firms <sup>4</sup>	21

1 2006

2 2003-07

3 2007

4 The number of companies reported by official statistics does not include firms included in other categories of manufacturing activities (e.g. manufacture of metals and metal products, and of rubber and plastic products) whose main activities are nevertheless related to the automotive components sector. OECD interviews with companies in the country allow an estimate of the presence of some 60 to 70 companies manufacturing parts for motor vehicles in Croatia

Source: Central Bureau of Statistics, Croatian National Bank, Vienna Institute for International Economic Studies, UN Comtrade.

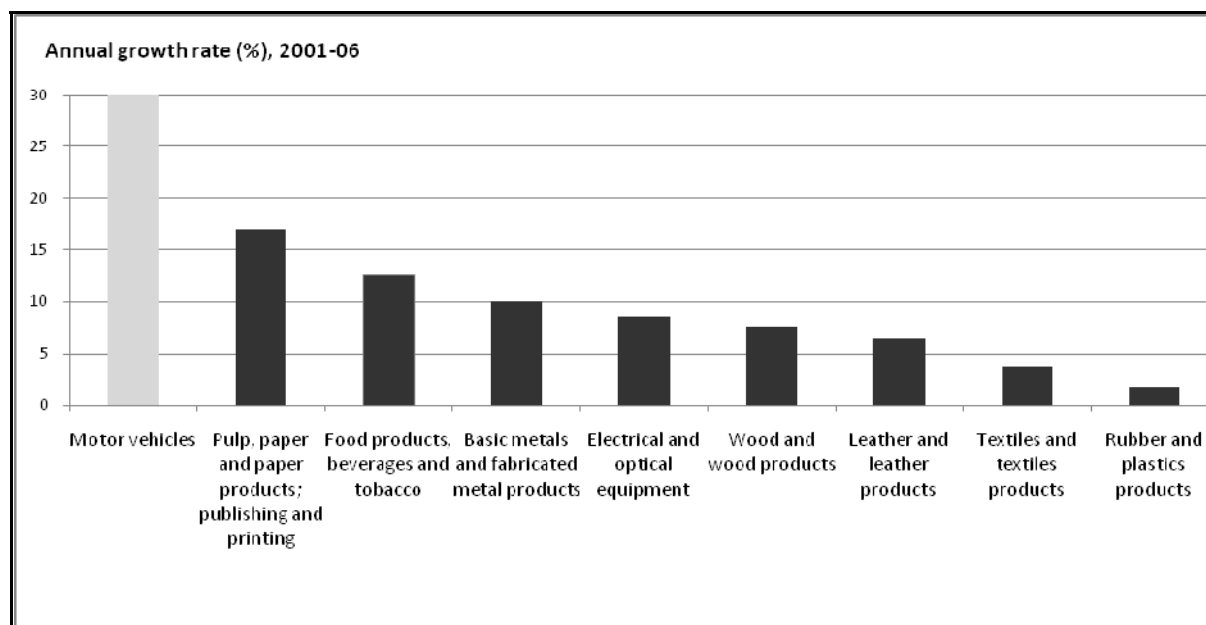
The production of automotive components in Croatia has been generating increasing value-added. It grew by an annual rate of 30% from 2001 to 2006 and has outperformed growth in any other manufacturing sector by several percentage points (Figure 44). The sector is also significantly export oriented: 62% of income from sales in 2006 was generated through exports. From 2002 to 2007, exports of automotive components increased at a 16% annual growth rate.

As in other Western Balkan economies, a Croatian Automotive Cluster was established in 2006. It currently has 24 members (mainly second and third tier suppliers) and co-operates with other companies on specific projects. As a member of the Pro Inno Europe Cluster Network, it benefits from co-operation with other European partners.<sup>31</sup> Besides the Croatian Automotive Cluster, established within the Chamber of Economy, five first tier suppliers specialising in aluminium parts have founded another cluster, A.C.H. GIU.

Croatia does not have a long-standing tradition of manufacturing of automotive components, mainly reflecting the absence of domestic car manufacturing. Yet the country possesses many of the engineering and technical skills required in this industry, such as metalworking and plastics and machinery manufacture.



**Figure 44. Annual value-added growth in the manufacturing sector, 2001-06**



Source: OECD analysis based on data from the Central Bureau of Statistics of the Republic of Croatia (2007).

An advantage for an automotive components industry in Croatia is the high level of quality standards. A majority of the companies surveyed or directly interviewed had acquired at least one international quality certification, in particular ISO 9001. Five companies held the industry specific certification TS 16949 as of the end of 2006, and other suppliers were in the process of obtaining it. Anecdotal evidence gathered through interviews with foreign investors suggests that the quality levels of Croatian automotive suppliers are comparable to those of equivalent firms in the EU.

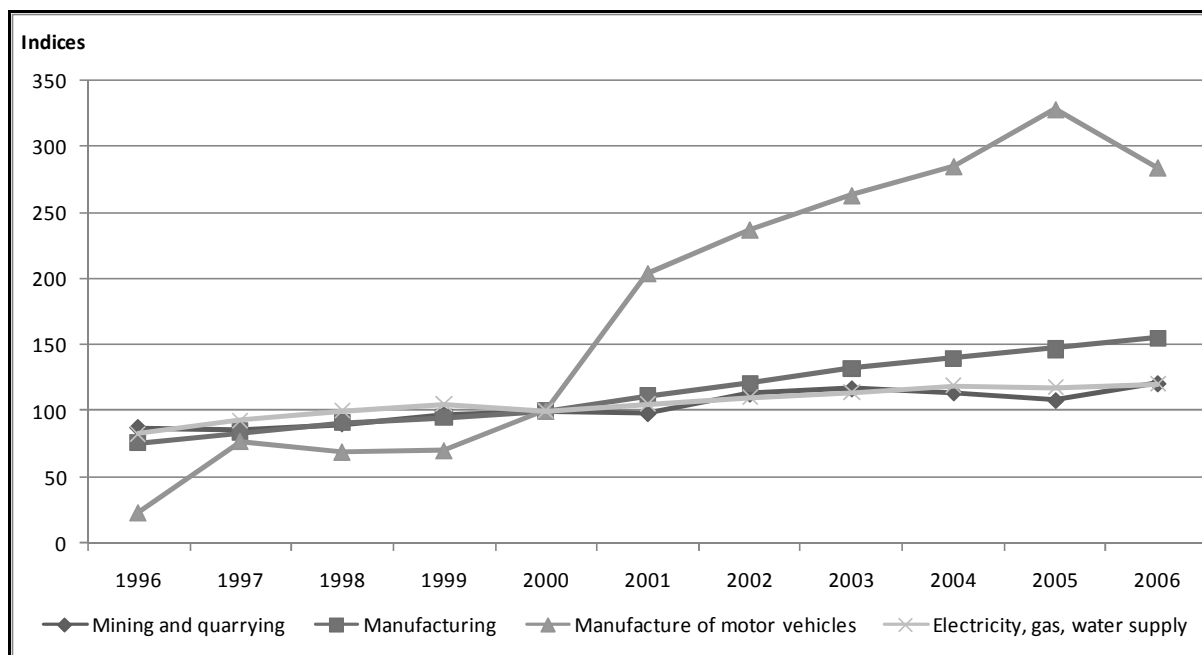
In addition, Croatian component suppliers seem well positioned to respond to the challenge of strengthening collaboration with their customers. Many have successfully developed a new product line or service, or upgraded existing ones in the past three years. The use of AutoCAD and other software for the design and development of components is relatively widespread compared with the situation in other Western Balkan economies. Based on the results of the RCS and company interviews, many Croatian part suppliers already collaborate with their customers in areas that require a deep, stable and medium- to long-term business relation, such as product development, product design and production planning. They do so at a level which remains virtually unmatched elsewhere in the region. Unlike in other Western Balkan economies, most of the firms surveyed use websites to interact with their customers and regularly participate in on-line procurement initiatives. All these elements point to the existence of relatively deep and strong relationships between local suppliers and international customers.

#### *Challenges and policy barriers*

Croatia's relatively high labour costs in the automotive components industry could place the country at a competitive disadvantage in relation to the other Western Balkan economies. However, labour costs represent only one factor in the price competitiveness equation, which will also depend to a large extent on productivity. Croatia's labour productivity in manufacturing outperforms several EU members in Central and Eastern Europe, some of which actually benefit from lower labour costs.

Figure 45 shows the evolution of labour productivity in three industries at NACE one-digit level (mining and quarrying, total manufacturing and electricity, gas, and water supply) and in the automotive industry in Croatia in the period 1996-2006. A comparative analysis of trends in annual industrial labour productivity shows that labour productivity grew at a much higher rate than in any other sector in the period under examination.

**Figure 45. Labour productivity trends for selected sectors in Croatia, 1996-2006, indices (2000 = 100)**



Source: OECD analysis, based on Central Bureau of Statistics of the Republic of Croatia

In spite of this relatively strong performance in terms of productivity, high labour costs translate into Croatia not being an attractive location for manufacturing of components whose production requires labour intensive processes. However, the automotive components sector can further capitalise on the country's know-how and strong tradition in high precision and zero defect tolerance in manufacturing. In particular, Croatian part suppliers should continue to focus on niche segments, where they can ensure high levels of quality and satisfy customer needs that cannot be met by firms located in other Western Balkan economies. A clear example of this strategy is represented by a Croatian firm producing glass for the automotive industry. As it cannot compete in high volumes, the company has targeted niche sub-segments of the automotive industry and supplied high-end customers such as Bentley, Aston Martin, Ferrari, Mercedes, Alfa Romeo, McLaren and Lamborghini.

Evidence from both the RCS and direct interviews with Croatian suppliers points to the need to further upgrade skills if the country is to maintain and expand its competitiveness in the production of parts with high technological sophistication. In particular, suppliers point to the existence of some degree of skills gap in the areas of design and product engineering. Croatia lacks a programme to create R&D centres (within public universities or private bodies) for the automotive components industry. Anecdotal evidence suggests that although Croatian universities produce graduates in mechanical and electronic engineering with a very good level of preparation, there are not enough of them to meet the needs of the automotive components industry.

Automotive suppliers interviewed by the OECD point to two other major barriers:

- *Excessive length of judicial proceedings.* This issue was also highlighted by the European Commission in its latest Progress Report (European Commission, 2007). The backlog remains very high and judges make limited use of the instruments they have to control the length of procedures. As anecdotal evidence, one automotive component supplier interviewed by the OECD reports that a dispute involving land ownership has lasted for 15 years;
- *Cumbersome procedures for obtaining building permits.* In spite of the progress made with regulatory simplification through the “guillotine” process, many companies report that procedures for obtaining building permits and licenses remain very cumbersome. According to the World Bank *Doing Business Report 2009*, Croatia requires the highest number of documents in order to build a warehouse of any Western Balkan economy and a much higher number than in OECD countries.

#### *Key policy recommendations*

1. Facilitate the improvement of skills in design and product engineering by promoting linkages with foreign companies through supplier collaborative initiatives;
2. Support the creation of R&D centres specific to the automotive components industry;
3. Propose clustering co-funding with the private sector and enhance collaboration among different clustering initiatives;
4. Reduce the length of judicial proceedings;
5. Simplify procedures for obtaining building permits.

#### ***Kosovo under UNSCR 1244***

##### *Sector overview*

The automotive components industry in Kosovo under UNSCR 1244 dates to the 1960s, when several subcontractors to Zastava were established in this then autonomous region. The most prominent included Ramiz Sadiku in Peć or Peja (manufacturing 169 different parts, such as differentials, seats, silencers, axles and lorry chassis), Trepča in Kosovska Mitrovica (manufacturing accumulators) and the Priština Shock Absorber Factory (producer of shock absorbers, as suggested by the name of the firm). Ramiz Sadiku supplied Zastava through a fixed supply arrangement and, by the end of the 1970s, was the biggest state-owned enterprise in the autonomous region of Kosovo (European Stability Initiative, 2002).

The establishment of these factories in the autonomous region of Kosovo mostly responded to the needs of the so-called “Yugoslav policy” of developing and maintaining an automotive components industry in each of the republics and provinces of the Federation, rather than in response to efficiency reasons. Kosovar suppliers were reported to be particularly unreliable both in terms of the volumes required to fulfil their delivery commitments and the quality of their products. In the case of Ramiz Sadiku, the main cause for its inadequate performance seems to have been the lack of skilled personnel. Palairret (1992) reports that in 1972 the company had only one graduate mechanical engineer out of 1 043 employees. In addition, Kosovar automotive component suppliers suffered heavily from the lack of maintenance of equipment and machinery and serious financial mismanagement. Reportedly, one of the main factors underlying Zastava’s own poor performance was the unreliability of its suppliers across the federation (Palairret, 1992).

In June 1999 Ramiz Sadiku was occupied by KFOR forces. In April 2006 the company was sold to New York-based United Steel of Albania through a privatisation programme led by the Kosovo Trust Agency. The company has been renamed Kosova Steel and currently produces vehicle chassis, frame beams, seat skeletons, exhaust systems, car mouldings and trim and other steel products.

The automotive component supplier base of Kosovo under UNSCR 1244 displays strengths that make the country a good location for manufacturing of components with high labour content and a low level of technological sophistication.

Labour costs are low and therefore represent a significant competitive advantage. In the absence of official statistics on industry-specific labour costs, the OECD Investment Compact gathered data from automotive suppliers in Kosovo under UNSCR 1244 through the RCS and calculated total labour costs based on that data. Total labour costs for a skilled worker in the automotive components industry amount to an average of EUR 300. This is very competitive relative to other manufacturing locations in the Western Balkans and in the rest of South East Europe.

The main customer bases for part suppliers from Kosovo under UNSCR 1244 are South East Europe and Central and Eastern Europe. All companies directly supply OEMs and final assemblers. The RCS results show that local suppliers are aware of the importance of building strong collaboration with customers. Local firms declare that they are already collaborating with customers in the area of product development. One company has AutoCAD facilities at its premises.

Kosovar part suppliers also list order lead time and on-time delivery as the most important customer requirements. Other key customer requirements identified by part suppliers in Kosovo under UNSCR 1244 are product design, forecasting and planning, and quality control.

Finally, there is an opportunity to tap into capacities that are currently under-utilised. The RCS results show that the average capacity utilisation by local suppliers from Kosovo under UNSCR 1244 is currently very low, at around 30%.

### *Challenges and policy barriers*

Improving quality levels and upgrading skills emerge as the most compelling challenges that need to be tackled by automotive component suppliers in Kosovo under UNSCR 1244. The RCS results show that local suppliers do not hold any international quality certificates (not even ISO 9001, let alone the industry specific standard TS 16949). Most international customers in the automotive industry consider that low production costs are not sufficient if they are not coupled with high enough levels of quality. The ability to offer quality products and processes is what differentiates suppliers in the Western Balkans from locations that have cost advantages.

In addition to quality levels, availability of skills is one of the main challenges identified by local suppliers. All companies surveyed through the RCS believe that there is a significant gap between the skills that employees currently have and those needed to meet business objectives. Reportedly, a major skills gap exists in the following areas: purchasing, manufacturing engineering and quality assurance and control. Other areas where the lack of skills is less severe are supply chain and logistics, design, mechanics, product engineering, and production process engineering. In addition, companies report that they are experiencing skills gaps across occupations, with a lack of skills being more acute for engineers and designers.

Improving investment policy and investment promotion could be an effective first step towards tackling the challenges represented by the level of quality and the availability of skills. Those two

policy areas are identified by local automotive suppliers as the ones that have the most impact on their operations. In particular, local suppliers acknowledge that protection of intellectual property rights (IPR) should be further enhanced. IPR protection encourages investment in research and development, innovation and technology transfers. In line with the OECD findings, the latest European Commission Progress report points out that massive IPR infringement are taking place in Kosovo under UNSCR 1244, and there is not yet sufficient administrative capacity to enforce IPR. In addition, lack of an effective investment promotion and facilitation strategy is seen as issues that should be acted upon to stimulate new investment in the Kosovar automotive components sector.

#### *Key policy recommendations*

1. Implement programmes to support companies in obtaining international quality certification;
2. Design and implement a sector specific investment promotion and facilitation strategy;
3. Support local suppliers' participation in international fairs (such as the Automechanika Fair in Frankfurt);
4. Enhance the legal framework and the administrative capacity for IPR protection.

### ***The former Yugoslav Republic of Macedonia***

#### *Sector overview*

Some key figures for the automotive components sector in The former Yugoslav Republic of Macedonia are summarised in Table 23.

**Table 23. Automotive components sector in The former Yugoslav Republic of Macedonia, key figures**

Value-added <sup>1</sup>	EUR 15.8 million
Cumulative FDI inflows <sup>2</sup>	EUR 1.9 million
FDI inward stocks <sup>1</sup>	EUR 12.8 million
Exports <sup>3</sup>	EUR 20 million
Employment <sup>1</sup>	1 510
Number of firms <sup>4</sup>	35

1. 2005; includes all transport equipment.

2. 2004-06; official statistics do not yet include investment from Johnson Controls and Johnson Matthey.

3. 2007 figure.

4. 2008.

Source: State Statistical Office of The former Yugoslav Republic of Macedonia, National Bank of The former Yugoslav Republic of Macedonia, UN Comtrade, InvestMacedonia.

In the period 2001-07, exports grew at an annual rate of 7%. They currently represent more than 90% of total sales. The principal export markets are Russia, Serbia and the EU (mainly Germany and Greece).

In the period 2003-06, investment in equipment grew at 8.5% and R&D expenditure grew at 7%, according to data provided by the Group of Automotive Industry of The former Yugoslav Republic of Macedonia. EUR 3.35 million was invested in equipment, new technologies and certification, and there are plans to invest an additional EUR 2.82 million in the period 2006-09.

Investment by major global players is significantly changing the landscape of the country's automotive industry. As a consequence of the establishment of two such global players in the

Bunardzik free economic zone, it can be expected that other major world players and suppliers in the second and third tier of the supply chain will follow their example and locate in the same area. This could lead to the geographical concentration of manufacturing activities and services related to the automotive industry, as has occurred in the past in other regions.<sup>32</sup>

The US company Johnson Controls has invested USD 30 million in the construction of a facility in the Bunardzik free economic zone. The 6 000 m<sup>3</sup> workspace will be used for the assembly of printed circuit boards. The new operation will start by employing 150 workers, with the objective of generating around 500 new jobs. Pilot production began in December 2007, and six assembly lines will be fully operational by the end of 2009 (Wilson, 2008).

In addition, in November 2006 UK catalyst manufacturer Johnson Matthey announced a EUR 50 million investment in a manufacturing facility, also to be constructed in the Bunardzik free economic zone. The plant is expected to begin operating by May 2009.

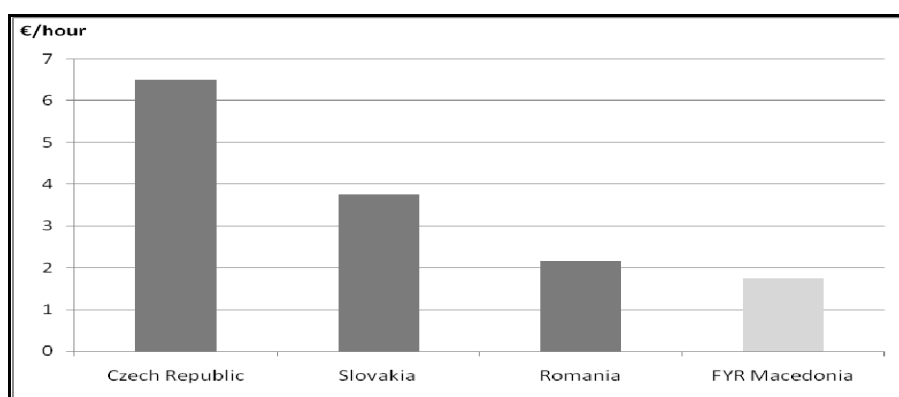
The local manufacturing base is setting up a partnership and collaboration structure. In May 2007, a Group for Automotive Industry of The former Yugoslav Republic of Macedonia was established. It represents 22 automotive suppliers and acts within the Macedonian Metal Association in the Economic Chamber of The former Yugoslav Republic of Macedonia. The group's medium-term goal is to develop a cluster with the support of the government, and by establishing links with other relevant stakeholders such as academia and research institutes. Recently, the group has started to participate in a project financed through the Open Regional Funds of the German Federal Ministry for Economic Co-operation and Development. The project also includes the automotive clusters of Bosnia and Herzegovina, Serbia and Slovenia. It aims at strengthening co-operation among regional automotive suppliers and supporting their promotion and foreign trade, both within the region and with respect to the EU. The following are examples of some potential concrete deliverables:

1. Creation of an internal portal to facilitate research on potential business partners in the region;
2. Support for investment promotion activities;
3. Support for trade promotion through encouraging participation in international fairs and exhibitions.

Companies in The former Yugoslav Republic of Macedonia supplied automotive components to Zastava from the 1960s. The privatisation process led to some foreign acquisitions of part suppliers. The local automotive industry is likely to benefit from recent greenfield investment by the first tier suppliers Johnson Controls and Johnson Matthey. The presence of these two major players in the global automotive industry is likely to have at least two beneficial effects: (i) it could have positive spillover effects on local suppliers, in terms of new business opportunities, the creation of new skills and the improvement of existing ones; and (ii) these early moves could stimulate a "herding" effect whereby other suppliers decide to locate in The former Yugoslav Republic of Macedonia.

Among the main success factors in the country's automotive components industry, cost competitiveness is one of the most important. This has been recognised by international investors as one the key drivers in their investment location decisions. It is also fully acknowledged by local suppliers, which place cost reduction at the top of the challenges they face in expanding their operations and businesses. From this perspective, The former Yugoslav Republic of Macedonia's automotive suppliers seem to be well positioned to maintain a competitive edge, thanks to low labour costs (Figure 46).

**Figure 46. Hourly labour costs in the automotive industry, 2004**



Source: ILO Bureau of Statistics

According to international investors, the availability of skills is another recognised asset of the country's automotive components industry. According to figures published by the State Statistical Office of The former Yugoslav Republic of Macedonia, the number of graduates in engineering and other technical fields related to the automotive industry was 702 in 2006, an increase of 22% since 2003.<sup>33</sup> However, direct interviews with local suppliers reveal general agreement on the need to further upgrade the skills of engineers and technical workers. This is considered a necessary step if the country's automotive components suppliers are to shift their focus from parts with high labour content to components that have a higher degree of technological sophistication. A good example of how the private sector can be involved in a skill development programme is the course sponsored by Johnson Control within the Department of Mechanical Engineering of the University of Skopje.

#### *Challenges and policy barriers*

Availability of skills is a key success factor for the future development of the Macedonian automotive industry. The theoretical background of mechanical and electrical engineers and technical workers is generally considered to be good. However, both foreign investors and local suppliers confirm the need to upgrade applied skills if the country is to expand beyond the production of components with high labour content and develop capabilities in regard to the design and development of more technologically advanced components.

Local Macedonian firms also need to significantly step up efforts to improve their quality levels. Although a majority have been ISO certified, as few as three companies held the automotive specific certification TS 16949 at the end of 2006 (ISO, 2007). This represents a significant impediment to local suppliers' prospects of moving up the value chain and producing components with higher technological sophistication. Among the main objectives of the recently created automotive cluster is the organisation of courses and training that would equip companies with the knowledge required to succeed in the difficult process of obtaining international certification. However, membership in the cluster is still limited.

Macedonian component suppliers recognise the importance of an effective investment policy and investment promotion strategy. The RCS shows that these are perceived as being the policy dimensions with the biggest impact on the operations of the country's automotive firms. A proactive investment promotion strategy specific to the automotive industry has recently been implemented by the government. This strategy originated from the acknowledgment that poor performance in attracting FDI since independence is likely to have been a result of international investors' scarce knowledge of

the country. (The Economist Intelligence Unit, 2007). Information on existing suppliers is already available in a database, but this database should include more details on the strengths and capabilities of each player in the supply chain.

Simultaneously, The former Yugoslav Republic of Macedonia should focus less on promoting investment incentives with a territorial dimension, such as those linked to free industrial zones. For instance, the government has solved problems concerning land ownership within the free economic zones. However, both foreign investors and local suppliers report that the system of acquiring land and protecting ownership still represents a major hurdle to investment (as reported by The Economist Intelligence Unit and confirmed by OECD direct interviews). Moreover, incentives linked to a free industrial zone can be a good tool to stimulate investment in the short term, but a long-term investment promotion strategy requires more structural reforms. On the other hand, an investment promotion strategy should further highlight the wider benefits deriving from the “regulatory guillotine” programme.

Finally, one of the main findings of OECD interviews is that customs administration represents a serious barrier for local automotive component suppliers. Anecdotal evidence suggests that customs clearance can take up to three or four days. In addition, customs duties on imports of capital goods are among the highest among the Western Balkan economies, ranging from 0 to 21% (OECD Investment Compact, 2006).

#### *Key policy recommendations*

1. Continue to support the implementation of a sector specific investment promotion strategy, including the creation of an interactive database of automotive suppliers;
2. Promote the improvement of quality levels and applied skills in mechanical and electrical fields through the adoption and implementation of sector specific linkage programmes and clustering;
3. Streamline customs administrations and reduce import duties on capital goods.

### **Montenegro**

#### *Sector overview*

In spite of the fact that Montenegro does not have a strong tradition in the manufacturing of automotive components, it managed to attract a significant investment project in the sector. In 2002 the Japanese company Daido Metal acquired the Kotor Baring Plant with an initial investment of EUR 1 million. Kotor Baring was established in 1956 as a state-owned company. Daido owns 96.61% of the company and currently employs around 122 workers. Before privatisation, production peaked at 7 million pieces per year in 1991. This figure has almost doubled since, with production reaching 13 million pieces in 2007. In the past five years the company has supplied important OEMs such as Honda, Ford, Volvo and Daimler.

The manufacture of roller bearings soared at a 70% annual growth rate in the period 2001-06. It is significant that this surge in production took place in the run-up to Daido’s investment in Kotor Baring. However, employment in the manufacture of machinery and equipment, including the production of bearings, fell by 5% in the period 2004-06, reflecting the fact that Daido Metal’s workforce in Kotor has been reduced by more than half since the acquisition. In addition, employment in the manufacture of motor vehicles fell by 43% between 2004 and 2006. Therefore, employment in the sector represents a very small share of total employment in manufacturing.<sup>34</sup>



Going forward, it could be envisaged that the presence of Daido will generate positive spillovers in the automotive industry beyond Montenegro through backward linkages in the regional supplier base. This development is currently hindered by the fact that around 90% of production material is sourced from Japan and not from regional suppliers.

Daido Metal's investment in the Kotor plant is the only example of foreign investment in the automotive components sector in Montenegro. It is nonetheless a significant one, as it refutes the common belief that Japanese firms are not inclined to invest in the Western Balkans. Montenegro is well positioned to meet several key requirements for being competitive in the automotive industry, mainly in terms of quality and infrastructure.

Quality is cited as the most important success factor and differentiator for investment decisions in the automotive sector. Reportedly, Montenegro's firms have quality levels on a par with those of neighbouring countries in the Western Balkans and superior to those in other countries in South East Europe, such as Bulgaria and Romania.

Infrastructure is reported by foreign investors to be another important driver of investment location. From this perspective, Montenegro is well positioned to supply the Zastava assembly plant in Serbia, where production is expected to be revived after the conclusion of the privatisation process. Beyond that, the improvement of the railway network presents further opportunities to supply other plants recently located in other neighbouring countries such as Hungary and Romania (Ministry for Foreign Economic Relations and European Integration of Montenegro, 2006).

#### *Challenges and policy barriers*

The main challenge faced by Montenegro's automotive components sector is the cost structure. Foreign investors report that the operational environment is less cost competitive than in neighbouring countries. However, this perception is somewhat disproved by average labour costs in the manufacture of machinery and equipment.<sup>35</sup> Average wages (including taxes and social security contributions) amounted to EUR 137 in 2006 (MONSTAT, 2007). This is lower than the average wages in manufacturing (EUR 354) and in line with the most competitive countries in South East Europe. Therefore, labour costs in this specific segment of the automotive components industry justify the focus on manufacturing of parts with high labour content.

Montenegro has yet to demonstrate the ability to attract further significant investment in the automotive components industry. Unlike its neighbours in the Western Balkans, Montenegro does not have a strong tradition in this sector. Therefore, to attract further foreign investment it should implement a sector specific investment promotion strategy focused on sectors that have backward linkages with the automotive industry. For instance, the steel and aluminium castings sectors have shown robust growth in recent years, with production increasing by 20% and 9% per year, respectively, between 2003 and 2006 (OECD analysis based on MONSTAT, 2007).

#### *Key policy recommendations*

1. Implement an investment promotion strategy focused on sectors that have strong backward linkages with the automotive components industry;
2. Define an investment promotion strategy to attract greenfield investment from automotive components manufacturers (second and third tier suppliers).

## Serbia

### Sector overview

Some key figures for the automotive components sector in Serbia are summarised in Table 24.

**Table 24. Automotive components sector in Serbia, key figures**

Value-added <sup>1</sup>	EUR 71 million
Cumulative FDI inflows <sup>2</sup>	EUR 35.2 million
FDI inward stocks <sup>3</sup>	N.A.
Exports <sup>4</sup>	EUR 93.8 million
Employment <sup>5</sup>	26 726
Number of firms <sup>4</sup>	100

1. 2005

2. 2003-07

3. The National Bank of Serbia is currently collecting data in order to develop time series for FDI stocks by sector of activity

4. 2007

5. 2006

Source: Statistical Office of the Republic of Serbia, National Bank of Serbia, UN Comtrade, Serbian Investment and Export Promotion Agency.

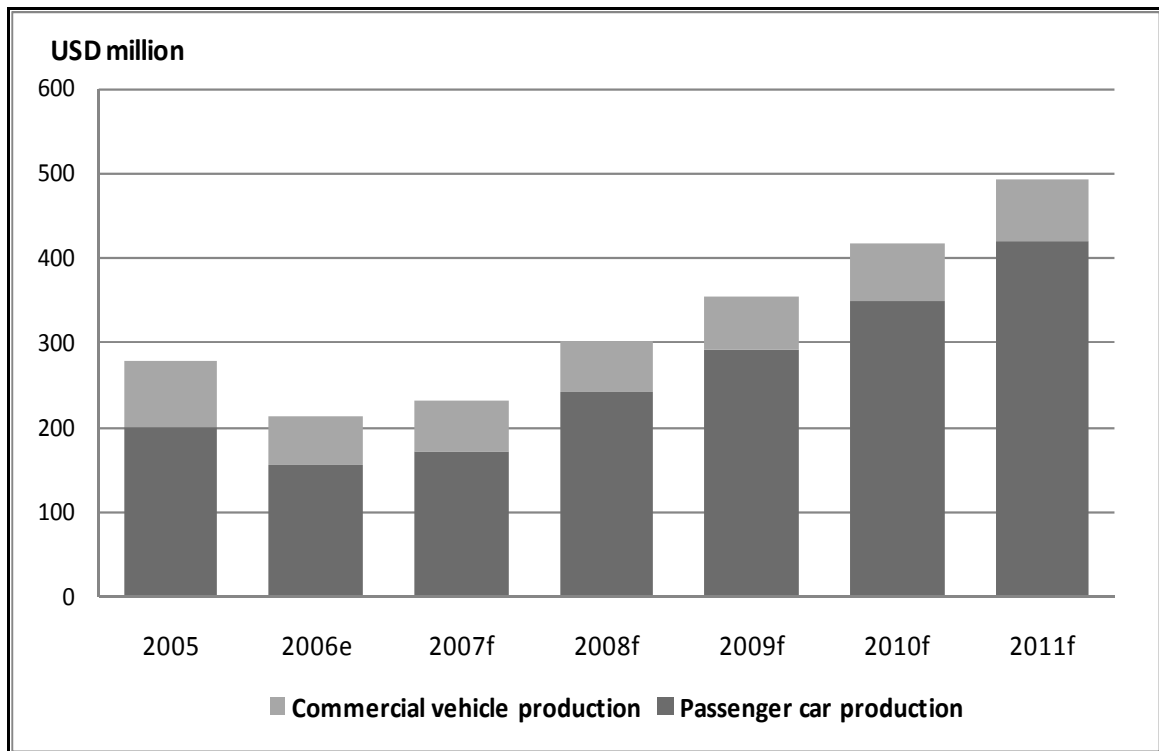
The automotive components sector in Serbia is growing. Value-added increased by 7% per year from 2002 to 2005. Employment in the sector grew by a 7% annual rate in the period 2004-06, while total employment in manufacturing actually shrank in the same timeframe. Employment fell in all manufacturing sectors but the automotive sector.<sup>36</sup> Exports in automotive components increased by 11% per year between 2002 and 2007.

Serbia has been a historical centre for automotive vehicle production thanks to the presence of the carmaker Zastava. The long-standing presence of car assembly activities in the country has resulted in a strong tradition of production of auto parts, with many firms already having first tier supplier status and selling directly to major vehicle or component manufacturing brands. The combination of mid to high levels of technical skills and very low labour costs makes Serbia a location for the manufacture of parts whose production requires low labour costs and high technological know-how.

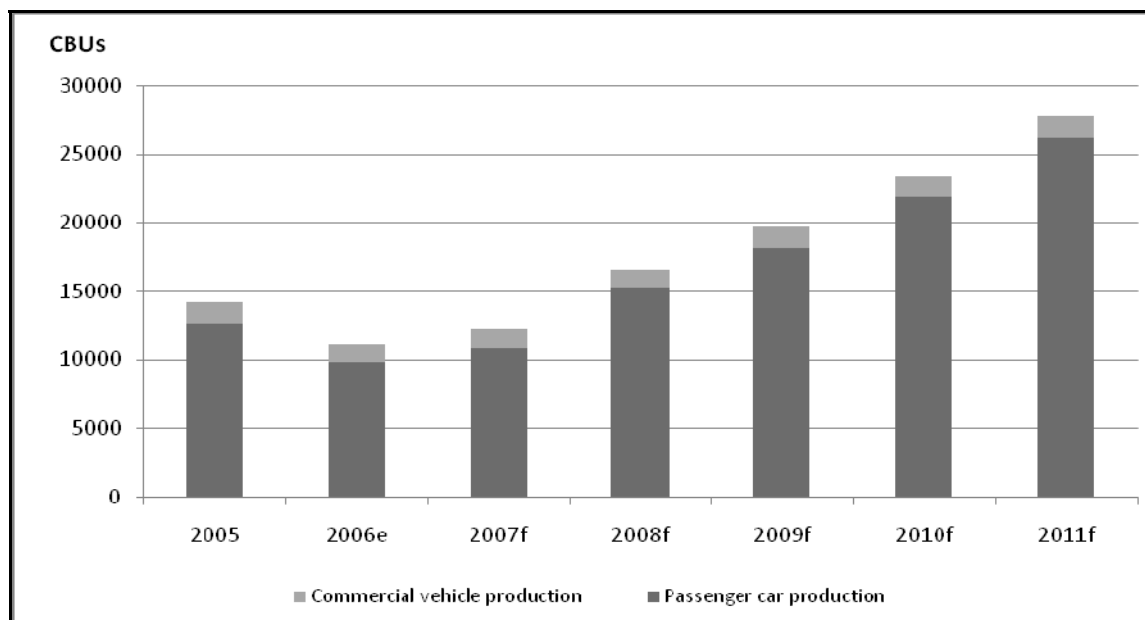
A scenario of Serbian automotive production based on historical data and forecasts shows a projected annual growth rate of 18% in value and 20% in physical output between 2006 and 2011 (Figures 47 and 48). The increase in car production could open new growth opportunities for automotive component manufacturers based not only in Serbia but also in other countries of the Western Balkans. These forecasts underestimate the boost in vehicle manufacturing volumes that will result from the privatisation of Zastava.

Currently, Zastava assembles only completely knocked-down kits imported from Italy for Fiat. However, the memorandum of understanding on the privatisation of Zastava signed by Fiat and the Serbian government foresees a 70% majority holding for the Italian carmaker, while the Serbian government is to retain the remaining 30%. Fiat will be investing around EUR 700 million, and the Serbian government will invest around EUR 300 million in infrastructure over the next four years. According to the agreement, Fiat would be increasing car production at Zastava to about 150 000 vehicles per year and 95% of its output would be for export (B92, 2008a, b). This means that Zastava would be in a position to source components from manufacturers in the region (Devic, 2007).

**Figure 47. Automotive production in Serbia, in value**



**Figure 48. Automotive production in Serbia, complete build-up units (CBUs)**



Source: Business Monitor International

Following a trend common to automotive component industries in Central and Eastern European countries, as well the neighbouring Western Balkan economies, a Serbian automotive cluster was created with the support of the Serbian government and the German Organization for Technical Co-operation (GTZ). Membership includes 12 companies and three scientific institutes.

The creation of a cluster stemmed from the crisis experienced by the Serbian automotive industry in the wake of the dissolution of the former Yugoslavia. Most automotive component suppliers were linked to Zastava and did not have exporting capabilities. The crisis of the big state-owned car manufacturer hit them particularly hard.

The industry is also supported by the presence of five faculties of mechanical engineering (in Belgrade, Kragujevac, Novi Sad and Nis) specialised in automotive mechanics and three institutes (in Belgrade, Kragujevac and Vinca) specialised in design, testing, homologation and certification for the automotive industry.

Among the key success factors of the Serbian automotive components industry, cost competitiveness has had a strong impact on investment location decisions. MIGA (2006) singled Serbia out as the South East European country with the most competitive operational environment for the automotive components industry. Thus, it is well placed to manufacture parts with a high labour content.

At the same time, the long-standing presence of car assembly activities in Serbia has resulted in a strong tradition of production of automotive parts, with many firms already having first tier supplier status and selling directly to major vehicle or component manufacturing brands.

In addition, local Serbian suppliers already have many of the characteristics required to build up and maintain strong collaboration with international partners. A good number of companies have quality levels that meet international standards. According to industry sources, foreign investors value the good quality ensured by Serbian suppliers. Quality levels are high even compared with that of suppliers in Bulgaria and Romania. However, out of 160 companies operating in sectors directly linked to the automotive industry only about 50 are currently ISO 9001 certified. As for the industry specific quality certification, only five companies were certified for the TS 16949 at the end of 2006 (ISO, 2007). The analysis therefore shows that despite the relatively good quality levels already existing, Serbia needs to step up efforts to further improve in this area. The Serbian Automotive Cluster, in co-operation with the Ministry of Economy and Regional Development, is actively organising training on issues related to quality, such as quality assurance and control, and supports local suppliers throughout the difficult process of obtaining international certification. However, some companies interviewed feel that support at government level lacks effectiveness. This is not necessarily a sign of poor commitment on the government side. Rather, it points to a need to increase the involvement of foreign investor in supporting local suppliers. In fact, the Serbian government announced that it will set aside about EUR 30 000 for the automotive industry cluster in 2008.

OECD interviews with foreign investors and local suppliers show that Serbian automotive component firms have the capabilities required to establish strong collaboration with customers. The RCS results show that Serbian suppliers consider product development the top area for collaboration with customers. A majority of companies surveyed have computer aided design (CAD) stations at their premises. Some of the companies interviewed already develop their own products, based on enquiries made by key customers (Box 12).

### Box 12. The new product development process

The development of new products typically goes through the following phases:

- After the initial enquiry by the customer, a feasibility study is carried out using failure modes and effects analysis (FMEA) technology;
- The necessary technical documentation is prepared (*i.e.* 2D drawings and 3D models);
- The newly created product goes through the prototype and check phases. These procedures are performed using 3D testing machines and controlled environmental testing;
- Following validation of the product, the “0” series is produced and sent to the customer for final validation.

Source: OECD interviews with local suppliers

Besides being able to develop their own products based on customer specifications, some companies interviewed show flexibility in adapting to potential customers’ new needs and requirements, which is another key differentiator in the choice of a supplier. For instance, a local Serbian supplier reported that it is always willing to adopt new software for 3D modelling based on the systems used by potential new customers.

The development of new design capabilities is also supported by the presence of five faculties of mechanical engineering specialised in automotive mechanics and three research institutes (in Belgrade, Kragujevac and Vinca) specialised in design, testing, homologation and certification for the automotive industry. Collaboration between these academic and research bodies and firms has already started within the Serbian Automotive Cluster, but should be further improved. The Virtual Manufacturing Network (VMnet) and the Center for Virtual Manufacturing (CeVIP) are examples of projects that can be used to improve the design and development capabilities of local suppliers by fostering co-operation between companies and academia and among companies themselves (Box 13). The Centre should aim at further involving foreign investors in its activities, for instance by promoting structured linkage programmes. This would lead to increased opportunities for more financing and better technology transfer. The same model could also be applied to other economies in the region.

### Box 13. The Serbian Center for Virtual Manufacturing

The Center for Virtual Manufacturing (CeVIP) was founded in 2006 within the Faculty of Mechanical Engineering of the University of Kragujevac. Creation of the Centre took place in the framework of the EU-funded project “Virtual Manufacturing Support for Enterprises in Serbia,” managed by the European Agency for Reconstruction. The main objective of CeVIP is to support the competitiveness and innovation of Serbian automotive companies by upgrading their capabilities in advanced technologies and techniques for virtual product development and process optimisation. To attain this objective, the Centre carries out the following activities:

- Acts as a catalyst for participation in EU-funded projects (through the 7<sup>th</sup> Framework Programme, Eureka, EAR and others);
- Has created a Virtual Manufacturing Network (VMnet) of Serbian R&D bodies, large enterprises and SMEs. The main objectives of the network are: (i) to establish strong and long-term linkages between research institutes and automotive companies; and (ii) to foster collaborative R&D (especially in terms of financing). The network has launched a web portal to disseminate EU best practices in virtual manufacturing techniques and new materials. Another function of the website is to support the commercialisation of R&D activities.

Source: OECD interviews, [www.cevip.kg.ac.yu](http://www.cevip.kg.ac.yu).

Serbia also enjoys a trade advantage. It is the only country in the Western Balkans that has signed a free trade agreement (FTA) with Russia. This FTA will most likely be ratified in the autumn of 2008 and enter into force in January 2009 (TND, 2008). It will give Serbian suppliers duty-free access to the vast and largely untapped market for automotive components, thanks to the presence of big customers such as the vehicle manufacturer AvtoVaz. The Russian market is growing and car sales are soaring. Local manufacturers are increasing production, while global carmakers are setting up assembly plants in Russia.<sup>37</sup> Traditional historic ties and the existence of an FTA favour Serbian suppliers over those based in the neighbouring economies. In addition, the quality levels of Serbian companies are significantly higher than those of Russian part suppliers.

### *Challenges and policy barriers*

A majority of Serbian suppliers surveyed through the RCS report that the main challenge they face is to maintain strong collaboration with customers. Serbian firms already partly meet some of the requirements for maintaining such collaboration. However, there are some areas where further improvement is needed if Serbian automotive suppliers are to be considered as stable and reliable partners by international customers. In particular, there is a need to improve skills.

The RCS shows that the Serbian companies surveyed identify availability of skills as the second most hampering policy barrier with an impact on their businesses and operations. Interviews with local suppliers reveal a broad consensus on the fact that there is a strong base of mechanical engineering in Serbia. However, there is a lack of education in applied skills. Firms report the existence of skills gaps in key business functions such as purchasing, supply chain management, product engineering and manufacturing engineering.

These findings suggest that the main challenge for the Serbian automotive industry is to improve existing mechanisms for upgrading skills and to introduce innovative ones. The presence of the Serbian Automotive Clusters and other forms of collaboration between companies and academia in the fields of quality control and virtual manufacturing is already a good start. However, existing forms of collaboration would greatly benefit from the implementation of structured and sector specific linkage programmes with foreign investors. These could bring critical assets such as new forms of finance, technology transfers and specialised knowledge.

However, there seems to be a lack of knowledge by international investors of the capabilities offered by Serbian local suppliers. The situation could be improved through stronger involvement by international OEMs such as Fiat in the privatisation of the state-owned carmaker Zastava. A targeted investment promotion strategy is starting to be implemented, using tools such as a sector specific supplier database. At the same time, there is a strong case for closing the information gap concerning Serbian suppliers' strengths and capabilities. This would facilitate the creation of stable partnerships and the improvement of skills to the required level.

Although the Serbian automotive industry is very cost competitive relative to other countries in South East Europe, its labour productivity levels in manufacturing remain relatively low. This could be due to the fact that many companies in the manufacturing sector are still state-owned or socially owned. OECD research shows that besides being stimulated by policies that foster investment in physical and human capital, labour productivity can be increased by increasing competition and bringing down barriers in the form of state control (OECD, 2007).

In its latest Progress Report on Serbia, the European Commission noted that there had been little or no progress on the restructuring and privatisation of large and inefficient state-owned companies. A deadline for privatising all remaining state-owned enterprises by mid 2007 has been missed and

moved to the end of 2008 (European Commission, 2007). According to estimates relating to the same period from the European Bank for Reconstruction and Development, the private sector accounted for 55% of GDP, the lowest figure among all Western Balkan economies (EBRD, 2007). Currently, it is estimated that around 400 companies remain to be privatised.

This is also true for the automotive components industry. The recent deal for the privatisation of Zastava between Fiat and the Serbian government is an important step towards creating the right policy setting for significant productivity improvements. However, further effort needs to be put into the privatisation process. According to the latest figures from SIEPA, the Serbian Investment and Export Promotion Agency, about 20 large to medium-sized automotive suppliers employing around 6 500 persons remain to be privatised. Therefore, the country should support productivity improvements by accelerating privatisation and facilitating further technology transfers from foreign companies.

#### *Key policy recommendations*

1. Adjust the investment promotion strategy to ensure that the sector specific supplier database and other information material reach the right targets;
2. Increase international customers' involvement in existing forms of collaboration between R&D bodies and firms, and among firms themselves;
3. Support increased labour productivity by (i) intensifying competition in the sector by strengthening the privatisation programme: and (ii) further promoting technology transfers from abroad.

### **NOTES**

1. Greenspan and Cohen (1996) estimated a statistically significant contemporaneous correlation of quarterly growth rates of motor vehicle sales and real GDP of about 0.5 over four decades, a correlation that rose to about 0.6 in the 1990s.
2. In particular, 63% of new models had electronic stability control; 84% were equipped with head-protecting side air bags; 85% had seat belt reminders; and 100% had anti-lock braking systems.
3. Consultancy Accenture surveyed 500 US consumers who owned or leased a car. The results shed some light on the factors that drive car purchasing habits: 84% of respondents wanted some form of in-vehicle technology, including telematics, in their cars. The survey findings confirmed the importance of safety and security: 69% of respondents ranked safety and security technologies as the most important features. However, information services, communications and entertainment were considered the most important features after safety and security. Half of respondents said they did not have the in-vehicle technologies they desired because of high costs.
4. A survey conducted by the UK Office for National Statistics on behalf of the Department for Transport found that respondents were most likely to believe that cars and vans/lorries were the forms of transport that contributed most to overall climate change. In addition, 88% of respondents agreed that the government "should do more to persuade people to buy more fuel-efficient, environmentally

friendly cars” and 63% agreed that the government “should do more to stop people driving more polluting cars” (UK Department for Transport, 2005). Impacts on supply were: cost reduction, consolidation and new value chain configuration

5. For example, Fujii (2006) found that in Japan environmental concerns did not have a significant relationship to the intention to reduce automobile use.
6. In July 2007 the US Senate passed a bill raising CAFE standards to 35 miles per gallon by 2020 for all passenger cars, SUVs and pick-up trucks (Reed and Simon, 2007).
7. Accenture (2005) reported that the number of existing models (including trucks and passenger cars) on the US market increased by 69% over ten years, from 925 models in 1994 to 1 566 in 2004. The average number of models per maker in the US market rose to 34 in 2004, compared with 20 ten years earlier.
8. However, PCW autofacts has estimated that the global capacity utilisation rate will grow to 85.2% in 2015. By the same year, Eastern Europe’s capacity utilisation rate should be 91.7%.
9. Showroom age can be defined as the number of years a model is on the market (FTI Consulting, 2007).
10. As an example, 36% of General Motors’ expected retail sales in North America in 2007 consisted of vehicles launched within 18 months (as reported in the company’s 2006 Annual Report).
11. Evidence suggests that the tier 0.5 supplier or system integrator has become a very important player in the automotive value chain. The importance of its role is bound to increase in the coming years. The University of Michigan Transportation Research Institute and Oracle Corporation (2003) surveyed a sample of first tier suppliers and found that only half of them expected to be at the same step of the supply chain by 2007: 20% expected to position themselves as second or third tier suppliers, and 30% predicted that they would evolve into 0.5 tier suppliers or systems integrators.
12. ISO/TS16949 is a technical specification developed by the International Automotive Task Force (IATF) and the Japan Automobile Manufacturers Association (JAMA). It is based on ISO 9000. In conjunction with ISO 9001, it defines the quality management system requirements for the design and development, production and (when relevant) installation and service of automotive related products. The requirements are intended to be applied throughout the supply chain.
13. The Failure Modes and Effect Analysis (FMEA) is a methodology that allows identifying potential failures within a system and the underlying causes of such failures. When implemented in the design phase, it is a tool to reduce or eliminate the risk of failures related to cost, safety, performance, quality and reliability at an early stage of the product development cycle.
14. Odette stands for “Organisation for Data Exchange by Tele-Transmission in Europe”. According to its website it “...sets the standards for e-business communications, engineering data exchange and logistics management, which link the 4000 plus businesses in the European motor industry and their global trading partners” ([www.odette.org](http://www.odette.org)).
15. It should be noted that one reason for the relatively good sales performance of automotive suppliers in the Western Balkans is likely to be the fact they start from a much lower basis.
16. OECD analysis based on data from national offices of statistics.



17. A relatively accurate way to account for these backward linkages would be to use input-output (I-O) tables. However, this is currently constrained by a general lack of I-O tables for the Western Balkan economies.
18. Wages refer to average earnings per month. They include: direct wages and salaries, remuneration for time not worked (excluding severance and termination pay), bonuses and gratuities and housing and family allowances paid by the employer directly to this employee. All indices are calculated on the basis of 2006 average earnings of all employees (*i.e.* manual or production workers and salaried employees). For the Czech Republic only, the index was calculated on the basis of 2005 average earnings of wage earners (*i.e.* manual or production workers).
19. MIGA (2006) estimated operating costs in the automotive components sector in the Western Balkans and Eastern Europe, based on field interviews with investors, and obtained similar results.
20. Following Eurostat methodology, apparent labour productivity is a simple indicator of productivity calculated as value-added divided by persons employed.
21. Along similar lines, in 2006 the Boston Consulting Group (BSG) estimated the difference in landed costs to Western Europe from the CEE and from China for a number of products. Cost estimates were based on cargo value, labour costs, content and logistics costs. The study found cost savings ranging from around 2% to 6% for importing from the CEE instead of China for the following products: tyres, steel products, automobile batteries, and motor vehicles themselves (BCG, 2006).
22. Best performing suppliers show a lead time on the order of a day (Veloso and Kumar, 2002).
23. The OECD estimates that reducing trade and transactions costs on trade in goods by 1% could result in an average increase in GDP of 0.47% in non-OECD countries (OECD, 2003).
24. High barriers on imports of capital goods have a negative effect on a country's international competitiveness and on FDI inflows. Through free access to capital goods at world prices, local companies could attain export competitiveness. In addition, the host country would benefit from an increase in capital accumulation (OECD, 2005).
25. Pan-European Corridor X (Ten) connects Salzburg in Austria with Thessaloniki in Greece via Ljubljana, Zagreb, Belgrade, Skopje and other major cities. The Western Balkans can also benefit from Pan-European Corridor V, which connects Turin in Italy to Kiev in Ukraine through Zagreb and Sarajevo.
26. FIPA. Total contributions amount to 69.47% of net wages in the Federation of Bosnia and Herzegovina. They range between 42% and 57% in the Republika Srpska.
27. Regulatory guillotines have begun to be used in Croatia, The former Yugoslav Republic of Macedonia, the Republika Srpska and Serbia.
28. In the mid-1970s lower labour costs caused several European and US carmakers to relocate production to the Iberian peninsula, mainly Spain. However, subsequent wage increases eroded cost competitiveness and by the late 1990s this was no longer an attractive destination for the automotive industry. Evidence suggests that the same process is occurring in Central and Eastern Europe, but at a much faster pace. See Betts (2008).
29. OECD analysis based on data from the Agency for Statistics of Bosnia and Herzegovina, 2007.
30. In SKD manufacturing the vehicle is assembled at a site other than that where the body is produced. In CKD (completely knocked down) manufacturing, individual parts are not welded together at the site

where they are manufactured. Assembly in the case of CKD manufacturing yields a high added value but entails high investment costs. The reverse is true for SKD manufacturing.

31. Pro Inno Europe is a European Commission initiative which aims to become the focal point for innovation policy analysis, learning and development in Europe ([www.proinno-europe.eu](http://www.proinno-europe.eu)). In the framework of this initiative, the CEE-ClusterNetwork consortium involves 11 neighbouring cluster regions in Central and Eastern Europe that are keen to mobilise and support national and regional innovation policy actors in carrying out and designing co-operation activities together with other competent public authorities. The Croatian Automotive Cluster is a partner in this project through the Croatian Employers' Association National Centre for Clusters.
32. Examples of geographical concentrations of automotive manufacturing activities include the Västra Götaland region in Sweden, the city of Turin in Italy, the Detroit/southeast Michigan area in the US and the Shanghai region of China. For more information, see OECD (2007c).
33. These fields include technical engineering, mechanical engineering, electrical engineering, technology and metallurgy.
34. OECD analysis, based on data from the Statistical Office of Montenegro.
35. Metal bearings are currently the main product manufactured in the Montenegrin automotive components industry. They are classified under NACE code 29, manufacture of machinery and equipment not elsewhere classified.
36. OECD analysis based on data from the Statistical Office of the Republic of Serbia.
37. In 2007 sales of new cars grew by 36% in volume and by 57% in value. Renault, Volkswagen, Toyota and Ford have already invested in vehicle assembly. General Motors, Nissan, Suzuki and Huyndai will follow. (The Economist, 2008).

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## BUSINESS PROCESS AND INFORMATION TECHNOLOGY OUTSOURCING

### 3.1 Summary

Business process and technology outsourcing (BPTO) refers to sharing organisational control of any company process including information and communication technology (ICT), human resources (HR), finance and accounting (F&A), sales, marketing, customer service and supply chain management to reduce costs. The BPTO sector includes firms either specialised in a segment such as call centres or finance or offering a full range of outsourcing services including HR, accounting, payroll, IT etc. Examples of such full service BPTO firms are EDS, Accenture, Capgemini.

#### *Market dynamics*

The global BPTO market has grown at a rate of 25% per year since 2005. This market is expected to reach USD 252 billion by 2010. India leads the sector today, with close to 60% market share. However, it does not have a monopoly. The Western Balkans has emerged as a strong contender in three segments: software development, back office development and call centres.

On the demand side, the rise of the BPTO sector in the Western Balkans has been fuelled by three key customer requirements: (i) cost reduction; (ii) a strategic focus on core competences; and (iii) the need to leverage external expertise. The BPTO sector has responded by providing facilities closer to customers and further adapting to customer requirements. For software development, sector and individual business driven solutions have been devised. This has entailed developing sector specific capabilities. It has also meant offering complete solutions, not just programmes. For back office services and call centres, suppliers have invested in accessing, attracting and training well qualified employees: 70% to 80% of costs are employee related.

#### *Western Balkans positioning*

The Western Balkans can be competitive in the BPTO sector with a growing ICT industry. ICT is 1.2% of regional GDP and expected to grow by 9% between 2007 and 2011 – a similar rate to that in the Asia Pacific region or China. The cost of labour in services is up to five times lower in the Western Balkan economies than in Hungary or Poland. In addition, proximity to the EU and other regional markets makes the Western Balkans a prime location for companies interested in outsourcing some of their operations. Short-term opportunities exist, as several large BPTO players are already present in neighbouring countries including Bulgaria, the Czech Republic and Romania. Both “hard” and “soft” capabilities already exist in the Western Balkans. For back office services and call centres, language capabilities are strong across the region, especially in English, German and Italian. The region shares understanding and social customs with EU countries. For software development, Croatia is one of the economies emerging as a leader.

However, to sustain competitiveness cost is not a long-term source of differentiation. Labour costs in the BPTO sector are increasing, while international companies increasingly require higher skill levels. Moreover, firms in this sector in the Western Balkans are currently too fragmented to compete effectively, with 13 employees per company on average.

### ***Operational recommendations for firms***

To compete more effectively, the BPTO sector in the Western Balkans should focus on four areas: (i) capture segments offering the best growth opportunities, such as software development, back office functions and call centres; (ii) leverage proximity to attractive markets, including Western and Eastern Europe; and (iii) target large global BPTO providers, such as Accenture, Capgemini and EDS, to develop value-added services, enable knowledge transfer, innovation, and building of capabilities (this does not exclude directly targeting end-customers); and (iv) for software companies, focus on providing customised customer solutions.

To respond to these BPTO challenges, companies in the Western Balkans need to specialise. For example, back office services and call centres should focus first on large or high-growth segments such as financial services and mobile telecom; firms offering these services should also have a few niche offerings in high-demand areas such as collection of accounts, sales and marketing support, technical assistance and remote security database administration. Specialisation increases productivity, allows firms to set higher prices and facilitates the creation of an international network of clients.

At the same time, each of the Western Balkan economies should compete by leveraging its strengths and capabilities. For example, Croatia should focus further on software development and knowledge process outsourcing (KPO), including advanced analytics. Other economies, especially Albania, Bosnia and Herzegovina and Kosovo under UNSCR 1244, should focus on low-cost, volume-driven back office work such as data processing and payroll management.

### ***Policy recommendations for governments***

The activities of many firms in the region have been hindered by three main policy barriers:

The Western Balkans suffers from a gap in skills availability. Education and training were cited by 70% of Regional Capability Survey (RCS) respondents as a key policy issue, both in terms of quality and availability. This is a problem, in particular, with respect to those positions that most need to be filled, such as project managers, application developers and multimedia designers and developers. There is also a need to better market and present firms' existing capabilities. Lack of qualified staff is leading to increased running costs, loss of service quality and loss of business. In addition, firms in this new sector are still too small and fragmented to offer long-term career growth and manage employee attrition. The shortage of qualified employees is accentuated by the "brain drain" to the EU and other countries;

ICT infrastructure needs further improvement. While Croatia has reached and even surpassed the level of some EU countries, and Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia and Serbia have fairly well developed infrastructure in major cities, peripheral areas tend to lag behind;

BPTO firms cite high social charges as a key issue for this labour intensive sector. Non-wage labour costs are on average 18% of gross salaries, significantly above the East Asia and Pacific average of 11%.



Among the three barriers the most important to address in the short and medium term is human capital development through private sector involvement and better tailored educational programmes.

In the software development segment, problem solving skills and specific knowledge of software and/or hardware are needed. The software segment requires constant technology upgrades: skills acquired only a few years earlier can cease to be relevant. This is particularly true for sector/technology specific skills like the ability to use computer aided design (CAD), computer aided engineering (CAE), design for manufacturability (DFM), enterprise resource planning (ERP) or vendor managed inventory (VMI). Knowledge of key software programming languages like PHP, SQL, Ajax, XML and ActionScript is also needed.

To address skills gaps, policy makers should involve academia and the private sector further at three levels:

- *At pre-employment level:* internships, participation in university courses, and exchange programmes with foreign vendors and universities;
- *During employment:* linkage programmes and company training, including sector/technology specific courses, e.g. legal, accounting (IFRS and US GAAP standards), the medical environment and medical technical support, and advanced business and technical languages for remote technical assistance;
- *During unemployment:* use of e-courses, particularly concerning new business activities like knowledge-intensive processes (e.g. R&D engineering for product development and legal e-discovery), as well as other analytical business functions (e.g. financial analytics for investment managers, patent prior art searches, freedom-to-operate and licensing out of support for patent engineers, etc.).

Medium-term requirements should focus on more structural reforms, including the establishment of a human capital co-ordination team in each country to bring together key decision makers from the ministries of education, labour and economy, as well as from the private sector and civil society. Analytical tools need to be developed to evaluate skills gaps, especially in knowledge-intensive BPTO niches. The ability of the labour market to favour the entry of new people into the market, and the development of skills through co-operation between the public and private sectors, also needs to be enhanced. This should include relief from social charges, with the amount of such relief to be reinvested in training.

### **3.2 Sector definition and segmentation**

#### ***Sector definition***

Clients engage in BPTO by hiring an external firm to handle business activities which were previously carried out in-house. BPTO encompasses a number of functions that are generally considered “non-core” to the primary business strategy of the outsourcing firm, including:

- *Information technology services and support*, including developing and maintaining data, software development<sup>1</sup> and website hosting, e.g. SAP Services: Software Maintenance and Support;

- *Finance and accounting*, including managing accounts payable and receivable, conducting financial accounting, and reporting and legal research, *e.g.* Capgemini: Finance and Accounting;
- *Human resources*, including payroll processing and administering the recruitment process, *e.g.* Accenture: Human Resources Management;
- *Sales, marketing and customer service*, including telesales, processing of orders and provision of customer services, *e.g.* EDS: Customer Relationship Management (CRM) Services;
- *Operations and logistics*, including tracking orders and supplying translation services, *e.g.* Accenture: Supply Chain Management.

Regarding the first segment, the OECD Working Group on Information Society Indicators (WPIIS) defines information and communication technology (ICT) as “a combination of manufacturing and services industries whose products capture, transmit or display data and information electronically” (WPIIS, 1998). In addition, “The production (goods and services) of a candidate industry must primarily be intended to fulfil or enable the function of information processing and communication by electronic means, including transmission and display” (OECD, 2007a,b).

For the purpose of this report, and taking into consideration current data availability, the definition of the ICT sector used here is based on the classification provided by the European Information Technology Observatory (EITO, 2008) (Table 25).

**Table 25. Definition of the ICT sector**

<b>Carrier services</b>	<b>ICT equipment</b>	<b>IT<sup>2</sup> services</b>	<b>IT software products</b>	<b>Digital consumer electronics</b>
Fixed voice telephone services	Data and network equipment	Professional services	Systems infrastructure	TVs, projectors
Fixed data services	End-user communications equipment	Product services	Application development	Audio and video players, hi-fi systems
Mobile telephone services	Office equipment	Knowledge management	Mobile and embedded software	Audio and video recorders, camcorders, cameras
Cable TV services	Computer hardware	Wholesale and business trade	Application solutions	Game consoles, car navigation

*Source:* EITO (2008).

The OECD Regional Capability Survey (RCS) included further sub-segments (*e.g.* application development, mobile and embedded software, applications solutions) as well as professional services, product services and knowledge management.

### **Segments**

The world market for offshore services in 2010 is projected to be around USD 252 billion. USD 58.8 billion will represent service centres for business functions, and USD 93.3 billion will represent information technology outsourcing (Table 26).

**Table 26. Global offshore services market, 2005-10**

Segment	Details	Size (USD billion)		CAGR 2005-10	Share of total	
		2005	2010		2005	2010
ITO services	Software maintenance and support; IT management; hardware management and support; development and integration	29.3	93.1	26%	36%	37%
BPO services	Shared service centres (captive or outsourced) for business functions; includes human resources (HR); finance and accounting (F&A); sales, marketing and customer care <sup>3</sup> ; supply chain management	19.3	58.8	25%	24%	23%
KPO services	Knowledge intensive high-end processes, including advanced analytical and technical skills as well as some decision making	3.1	31.0	58%	4%	12%
R&D engineering	R&D, prototyping, development, testing, maintenance, support and development for next generation products	5.8	19.0	27%	7%	8%
Content development and management	Development and management of local content for all ICT-enabled devices: internet, mobile devices, DVDs, multimedia, etc.	9.9	14.5	8%	12%	6%
Engineering/technical support centres	Call centres and other CRM methods requiring technical knowledge to provide support to internal/external customers of companies that deliver technology enabled products and services	4.1	12.4	25%	5%	5%
Call centres	Call centres and customer relationship management through other methods including email newsletters, postal mail catalogues, web site inquiries and chats	5.9	11.4	14%	7%	5%
Localisation and language services	Localisation of user interface (UI), user assistance (UA) printed and on-line documentation, computer-based training (CBT), web applications and desktop publishing	3.2	11.0	28%	4%	4%
IT products	High tech and software products designed as packaged solutions for multiple, off-the-shelf use	0.9	1.2	7%	1%	0%
<b>Total</b>		<b>81</b>	<b>252.4</b>	<b>25%</b>	<b>100%</b>	<b>100%</b>

Source: A.T. Kearney, Gartner, IDC, Neo-IT, OECD analysis

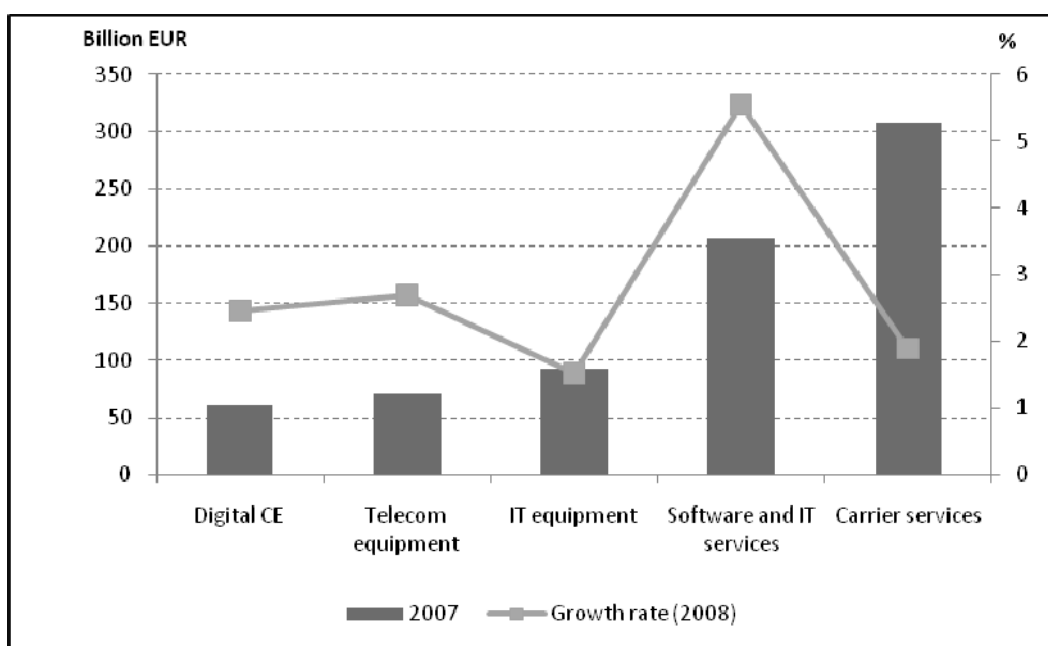
Growth in offshoring is driven by general growth in the ICT sector, which reached EUR 2 238 billion in 2007 and is increasing by more than 5% annually (EITO, 2008). The size of the EU's ICT market was EUR 739.3 billion in 2007, making it the largest in the world. Furthermore, the EU market has been growing by 3% on average for the last three years.

In 2007 the market size of the four main ICT segments in the EU was as follows:

1. *Carrier services*: EUR 307.2 billion;
2. *Software development and IT services*: EUR 207.2 billion;
3. *IT equipment*: EUR 89.8 billion;
4. *Digital consumer electronics*: EUR 61.2 billion.

Software development and IT services was the fastest growing segment, at 5.6%.

**Figure 49. EU market size (2007) and estimated growth rate by ICT segment (2007-08)**



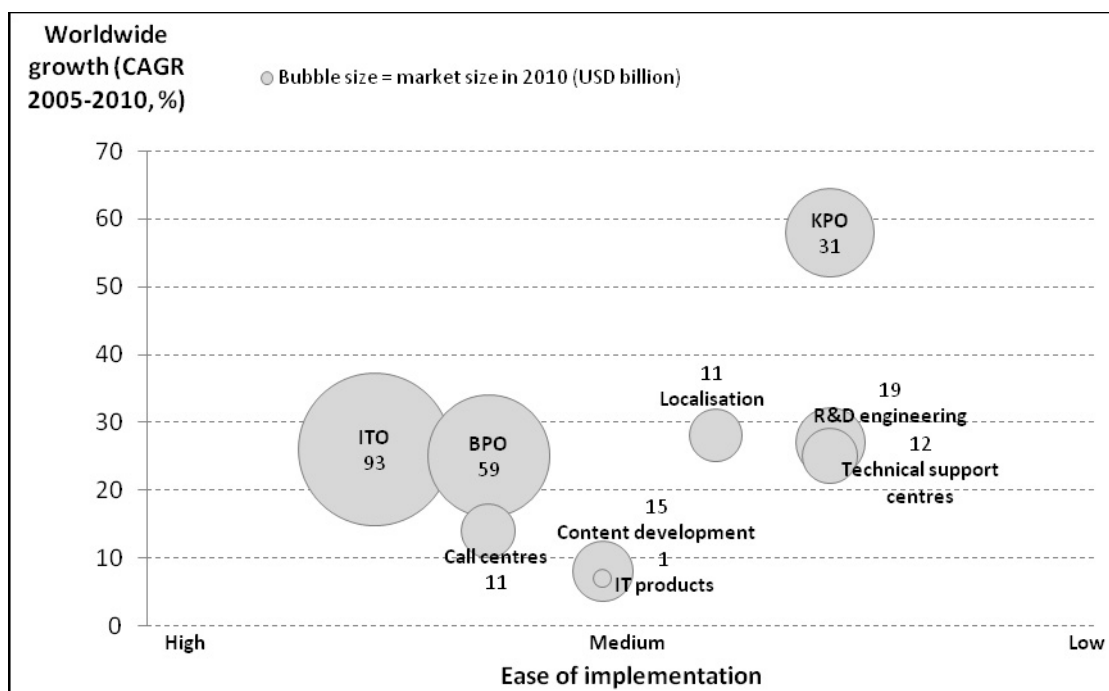
Source: EITO (2008)

The following segments have high growth prospects: enterprise resource planning (ERP) systems for SMEs (including in high growth ERP sectors like banking, telecom and retail), outsourcing of project management for ERP implementation, and compliance with international accounting standards.

Regarding software development, these sub-segments have the highest growth prospects: security, cross-platform business intelligence, service-oriented architecture (SOA) development, and desktop to mobile environment platforms.

The OECD has created a prioritisation matrix for use as a framework when considering whether to venture into a particular segment. It juxtaposes the ease of implementing a particular segment in a new location against the segment's worldwide growth rate (Figure 50).

**Figure 50. Ease of implementation and growth of the global BPTO industry by segment**



Source: Gartner, IDC, NeoèIT, A.T. Kearney, OECD analysis

Based on global trends and the prioritisation matrix, the OECD has identified three key segments within the BPO and ICT industries on which to focus:

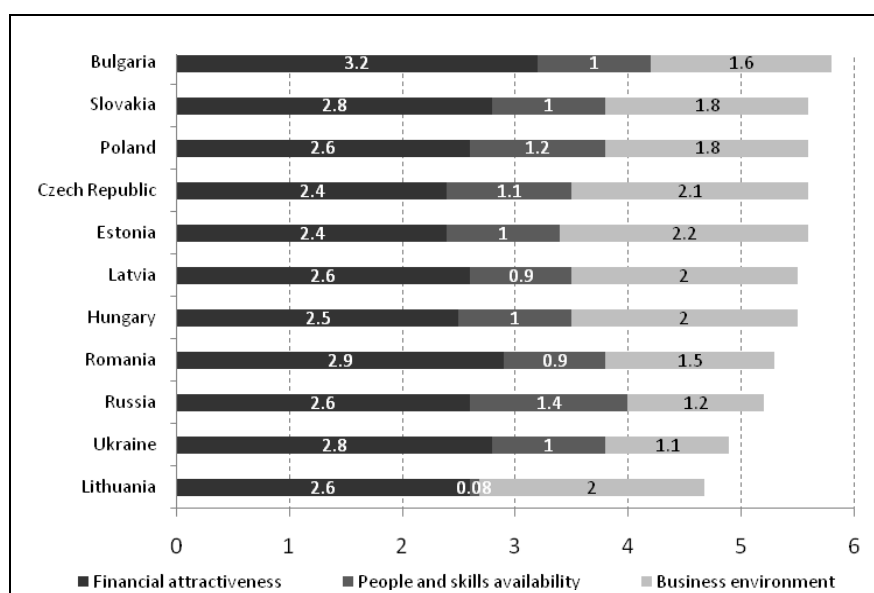
- Finance and legal support services;
- Software development services;
- Call centres.

### 3.3 Sector trends

The global BPTO phenomenon started in India and other countries in the mid-1980s with the arrival of several western companies (including General Electric, Motorola, Hewlett-Packard and Citigroup) that set up captive investments.<sup>4</sup> In India this trend was largely propelled by better government regulations, a reduction of import duties on hardware, the creation of special software technology parks and incentives for investors, and the general improvement in information technology worldwide.

India continues to lead the sector today in terms of offshore and/or outsourced services, with close to a 60% market share in 2005 (Engman, 2005), but it does not have a monopoly on the international BPTO market. Other contenders are emerging. Firms in several Central and Eastern European countries have entered the arena as shown by the A.T. Kearney Global Services Location Index which combines data on 50 locations worldwide to determine their competitiveness for attracting BPTO services (Figure 51). These and other emerging BPTO locations, including the Western Balkans, are taking advantage of three key trends that have been defining the BPTO sector: (i) improved infrastructure; (ii) growing demand for BPTO; and (iii) the move towards global service providers.

**Figure 51. 2007 A.T. Kearney Global Services Location Index**

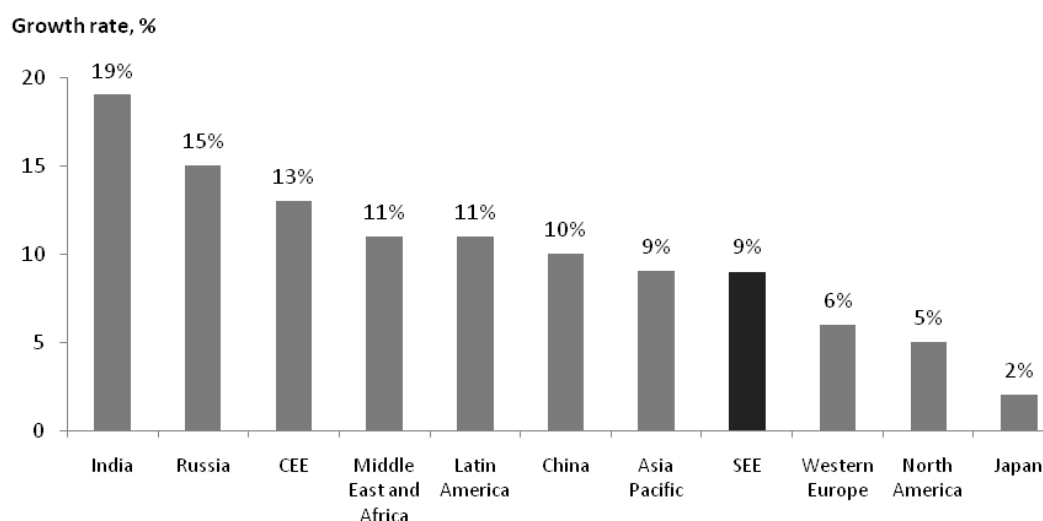


Source: A.T. Kearney (2007)

***The basis for growth: improved ICT infrastructure***

The most important trend shaping the BPTO sector is probably the rapid rate at which information and communication technology (ICT) is improving. Governments and private enterprise have reacted to the potential economic impact of ICT, in particular improved productivity levels, by investing heavily in ICT. Growth rates in ICT spending throughout the world are soaring (Figure 52). In 2006, 166 countries had broadband connections; it was estimated that as many as 177 countries would have them by the first half of 2008 (International Telecommunication Union, 2007).

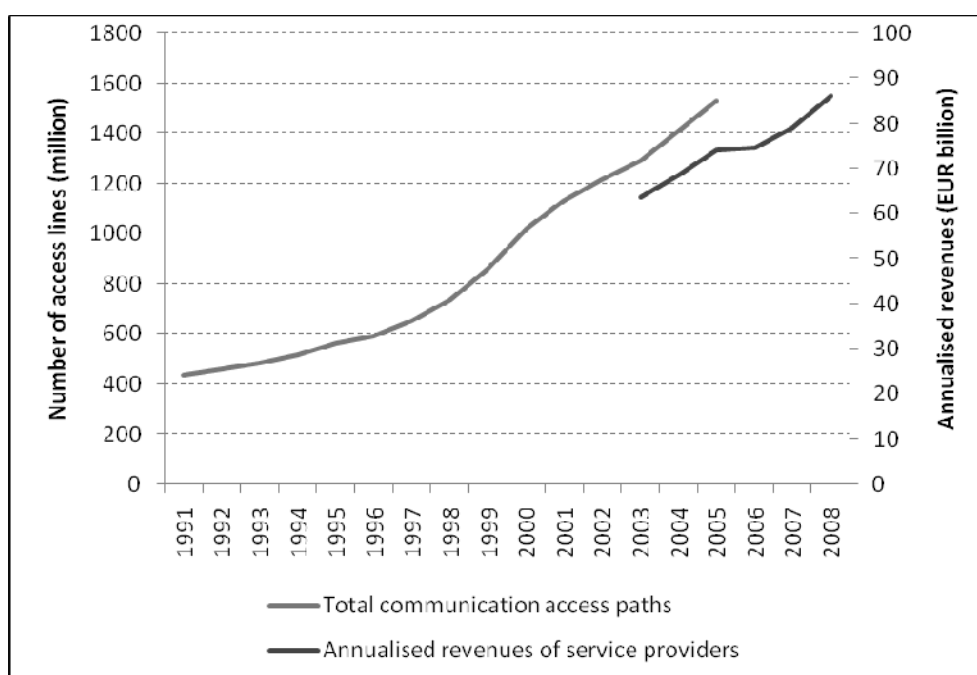
**Figure 52. Growth rates in ICT spending, 2005 (%)**



Source: Zitnik (2005)

Improved ICT infrastructure has an important impact on the BPTO sector. It makes product competition feasible in the services industry; ICT, especially broadband access, enables customers and producers of services to be located in different cities or countries, or even on different continents. This has opened up global competition in the BPTO sector, increasing both supply and demand of BPTO services and allowing customers to outsource/offshore what were previously in-house operations. Total communications access paths<sup>5</sup> have increased greatly since the early 1990s, largely through investments in broadband and mobile communication infrastructure. The revenues of providers of outsourced services have generally risen in line with improved ICT infrastructure (Figure 53).

**Figure 53. Number of access paths and service provider revenues**



Source: OECD (2008), TPI (2008)

The impact of ICT developments on the BPTO sector is continuing. Fibre capacity for long distance communication has increased more rapidly than demand, offering scope for further productivity increases as this oversupply is consumed. In addition, the boom in ICT innovation continues. New technologies have been developed, including WiMAX, which provides fast internet connections wirelessly to large geographical areas (Box 14), and IEEE 802.11n, a set of standards for wireless local area network computer communication with the potential to supply speeds up to 100 times faster than those currently available.

**Box 14. WiMAX**

Worldwide Interoperability for Microwave Access (WiMAX) is a telecommunications technology that provides long distance wireless broadband connectivity based on the IEEE 802.16 standard. It can supply thousands of households with speeds rivalling traditional DSL connections. It is also capable of supplying hundreds of businesses with T1 speed connectivity.<sup>6</sup>

The potential for WiMAX is especially important in the case of “last mile” connectivity, *i.e.* the provision of internet connections in remote locations where infrastructure investments in wired broadband like cable and DSL have not been made due to high costs.

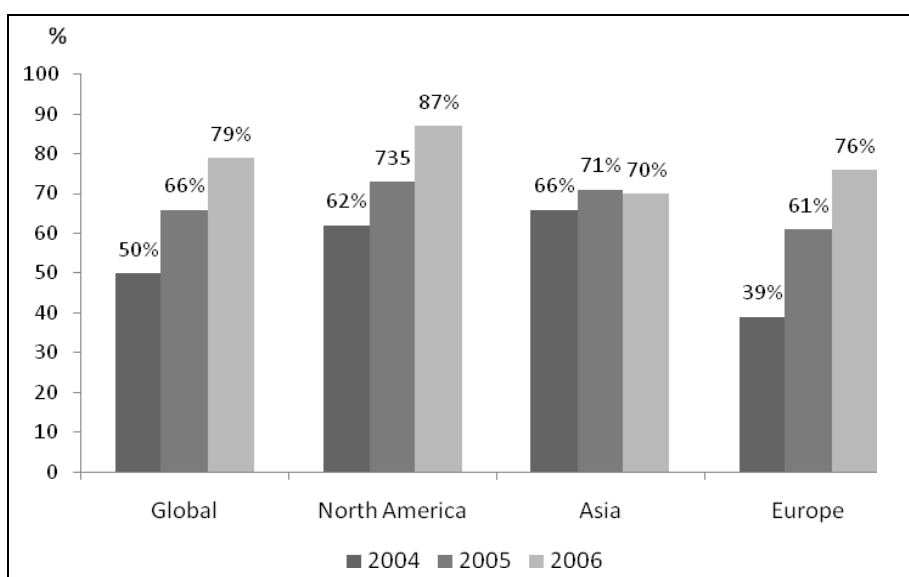
Source: WiMAX Forum website ([www.wimaxforum.org](http://www.wimaxforum.org))

Other recently emerging trends that have gained increasingly broad acceptance are the evolution of the internet towards Web 2.0 and the “open source” phenomenon.<sup>7</sup> Most ICT companies largely rely on components from other vendors that are increasingly integrated with open format or open source and application programming interface (API). This allows ICT companies to leverage the “loose modularity” principle, whereby a web site can combine data offered by other sources (typically free of charge) to create a new offering at very low cost (BCG, 2006, 2007). Worldwide software revenue based on Linux and other open source environments are estimated to grow between 2004 and 2009 at a cumulate average rate of 48%, reaching USD 16.7 billion. Many companies, large and small, are offering innovative open source solutions (e.g. EMC, Google, HP, IBM, Intel, Microsoft, MySQL, Novell, Oracle).

### ***Increasing demand for BPTO***

The BPTO sector has grown at an annual rate of 25% since 2005. According to the AT Kearney Foreign Direct Investment (FDI) Index, 79% of companies with global investments were planning to offshore some of their service activity in 2006, versus 50% in 2004 (Figure 54). This increase in interest in outsourcing BPTO services is largely attributable to three customer requirements: (i) cost reduction; ii) a strategic focus on core competences; and (iii) leverage of external expertise.

**Figure 54. Companies planning to offshore service activities (%)**



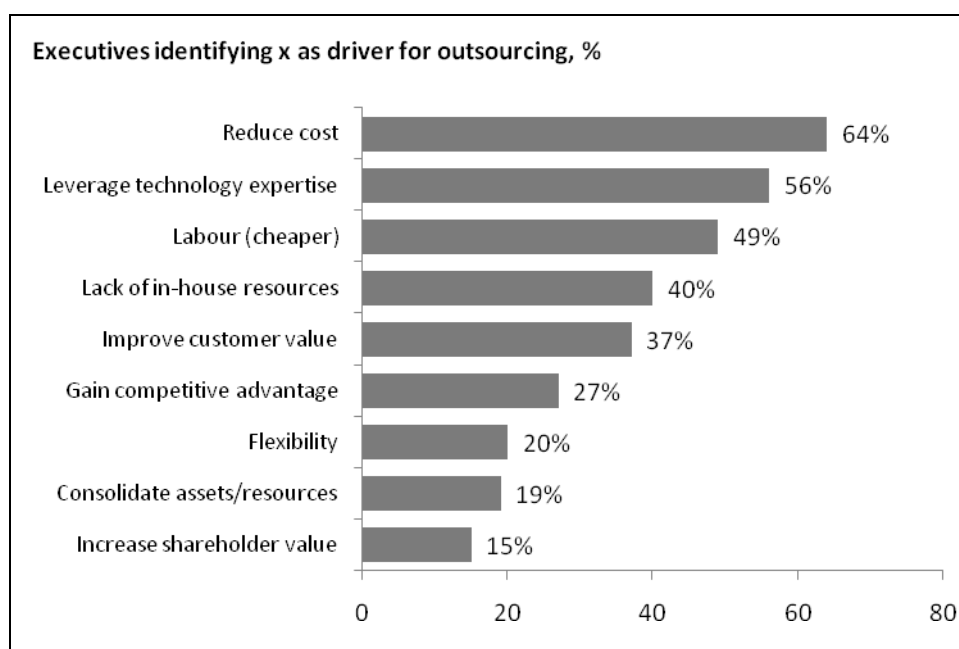
Source: A.T. Kearney FDI Index (2006)

### *The need to reduce costs and focus on core competences*

Cost reduction continues to be the primary factor motivating firms to outsource their business functions. According to a recent study by Deloitte, 64% of executives surveyed indicated that reducing costs was a driver for their outsourcing initiatives and 49% that tapping into cheaper labour was one of their main motivations (Deloitte Consulting, 2008). However, 56% were looking to leverage technology expertise (the second most important driver) while 27% hoped to gain a competitive advantage (Figure 55). The percentage which indicated that they felt their companies had benefited from significant innovation and from business process re-engineering due to outsourcing was 34% and 28%, respectively.



**Figure 55. Primary drivers of outsourcing**



Source: Deloitte (2008)

**Box 15. BPTO as a strategic investment**

As outlined in the Deloitte 2008 Outsourcing Report, many firms have already leveraged BPTO as a strategic investment and not simply a cost-cutting measure, providing value-added by improving competitiveness. One global media company cited used outsourcing to streamline its financial system. Prior to outsourcing, this company had almost a dozen individual financial control systems. The BPTO firm combined these into a single system. Internal trading volumes were reduced by 75% and financial management costs by 50%.

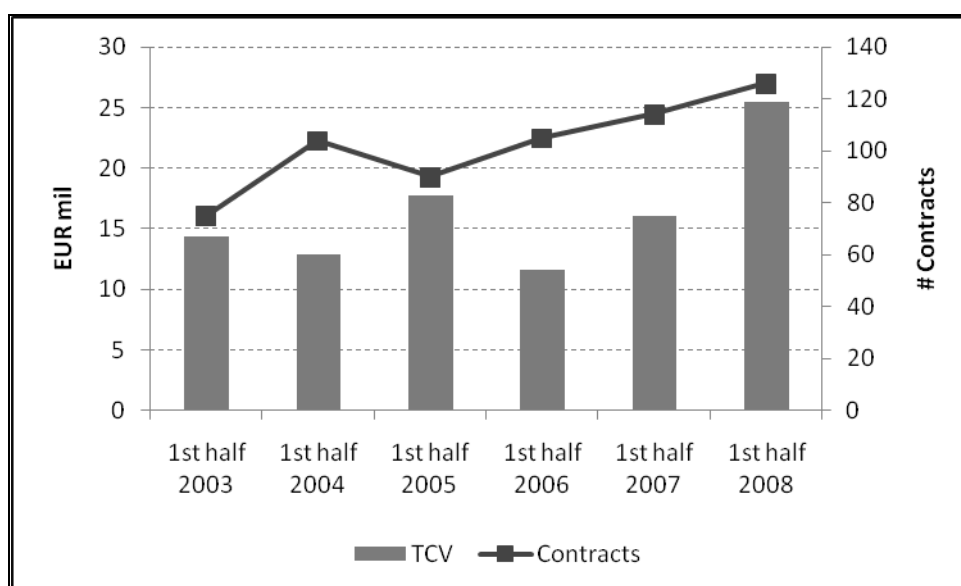
Another BPTO firm provided a large US retail company with a single IT platform, replacing a cumbersome multi-platform system. Processing time was reduced and system performance increased, enabling the company to better analyse purchasing data from customers and to reduce costs.

Source: Deloitte (2008)

*The need for external expertise*

Global investors are increasingly offshoring non-core service activities to leverage external expertise. The global year-on-year growth rate for BPTO has been 25%. Demand growth is especially strong in the case of European investors: only 39% were planning to offshore their business functions in 2006, but by 2006 that share had reached 76% (Figure 54). Europe had a year-on-year growth rate of over 40% in the same period, the highest among the regions surveyed. This growth is mainly driven by large outsourcing contracts to technology companies like IBM, Accenture, Cap Gemini or EDS/HP. The total contract value (TCV) of the broader global outsourcing market in the first half of 2008 was over EUR 25 billion (Figure 56), demonstrating a year-on-year growth rate of 12% in the same period (TPI, 2008).<sup>8</sup> Between the first half of 2007 and the first half of 2008, the year-on-year TCV growth rate was 58%, compared with 24% for the broader global market. Many European firms are interested in benefiting from the same cost savings and productivity gains as earlier BPTO users.

**Figure 56. Value and number of BPTO contracts in Europe, first half of the year (2003-08)**



Source: TPI (2008)

### *How BPTO service providers are responding: globalisation and specialisation*

BPTO service providers have responded to customer trends by providing facilities closer to their customers and adapting further to their functional requirements. This has translated into sector specific specialisation and, in the software development segment, into offering companies complete solutions and not just programmes.

#### *Getting closer to the customer base*

The BPTO sector is increasingly building a “global service model”. Many large BPTO firms are creating global companies able to provide services that cater to a diverse group of business needs and geographical locations. To achieve this, they have set up businesses in a number of different areas (from Asia to Latin America to Europe) to capitalise on disparate time zones as well as to offer different languages and skill sets. Aided by the emergence of global trade in services, these firms have expanded their clientele beyond national borders to service international clients. For example, WNS (an Indian BPTO company) was founded as a ticketing office for British Airways in Mumbai. Today it is a global company with offices throughout the world, including in Romania. In 2007 its revenues were more than USD 352 million. Intelnet Global Services started as a joint venture between HDFC, an Indian retail bank, and Tata Consultancy Services. Today it is an independent company with 17 000 employees in six countries. Firstsource Solutions, another Indian BPTO firm, has emerged as a major global player. It has over 17 000 employees and operates in the US, the UK, India, Argentina and the Philippines. Convergys, a global call centre operator, operates in 35 languages in 70 countries. It has over 74 000 employees and revenues in excess of USD 2.8 billion.

#### *Specialisation: sector capabilities and comprehensive business solutions*

Service providers have also responded by specialising, either in a particular sector (vertical specialisation) or in a particular function (horizontal specialisation). Specialisation has been shown to increase the productivity of service exporting firms in India (Manova and Shastry, 2006). The more

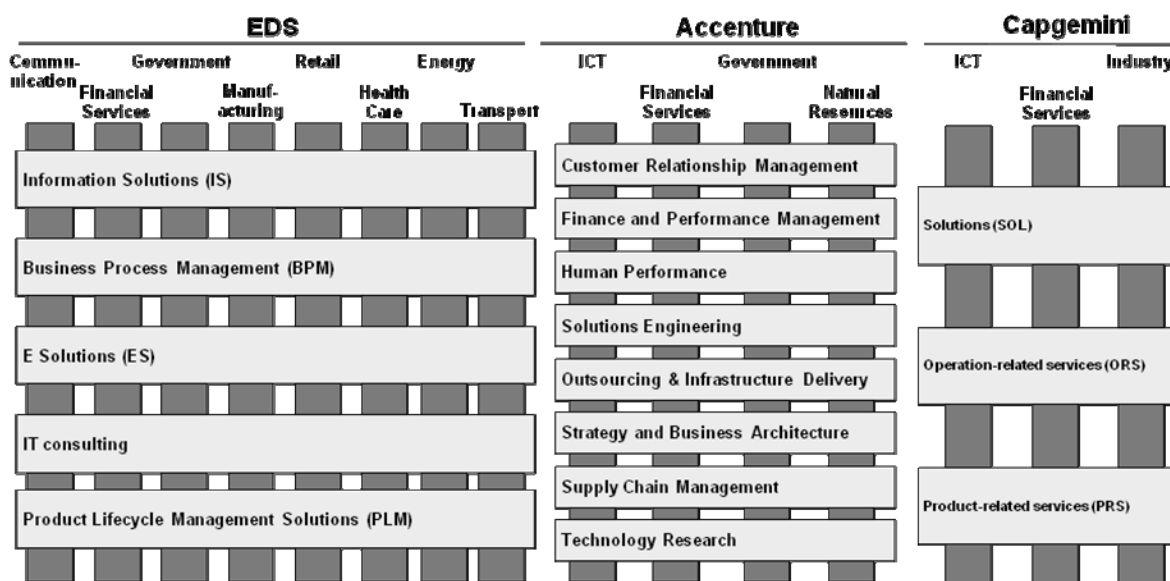
productive Indian service providers offered a smaller spectrum of services to a smaller set of industries. One reason for this is probably management capability. Numerous studies have outlined how management capability declines over a wider range of products.<sup>9</sup>

At the same time, BPTO firms that are more specialised have greater control over setting their own prices for the services they offer. The more specialised the product, either horizontally or vertically, the fewer the number of actors that will be able to provide the product, increasing BPTO providers' scope to set their own billing rates. To increase the impact of having more control over prices, firms with particular expertise and specialisation in an area will probably also produce higher quality services.

Specialisation can make it easier for a new entrant in the BPTO market to build an international reputation. Not only does specialisation facilitate meeting relevant clients, but it also allows a firm to develop a reputation in a niche area that could attract future customers.

In the BPTO sector, software developers in particular are linking their offerings to individual industries. Many leading IT vendors have vertical as well as regional organisational structures (Figure 57). For example, EDS, a BP and IT outsourcing company is vertically specialised in specific industries, including transportation and retail. Accenture and Cap Gemini specialise in the communications and high technology industry.

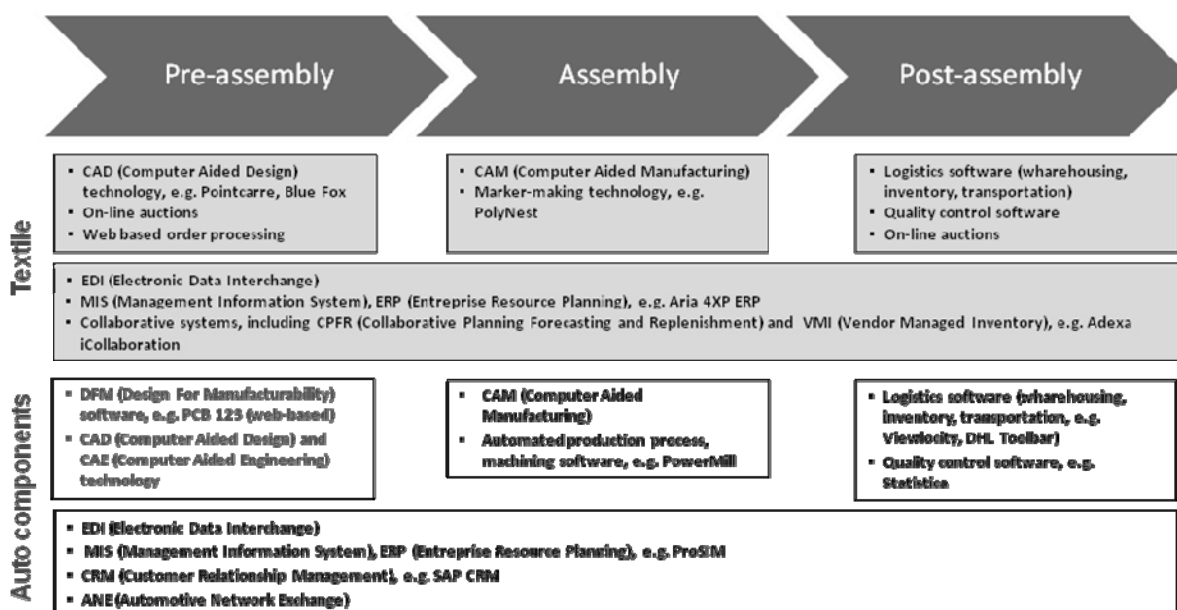
Figure 57. Vertical linkages



Source: Annual reports/SEC filings, company websites, OECD analysis

The implication of this trend is that software development companies need in-depth knowledge of the processes and dynamics specific to individual industries. Figure 58 shows some software development solutions in the textile and automotive component industries, covering the pre-assembly, assembly and post-assembly stages of the production process.

Figure 58. Linking software services to sector needs



Source: OECD analysis

The importance of sector specialisation to the software services segment is also related to positive spillovers with respect to economic growth and productivity. This is true not only for the economy overall, but also at the level of individual firms. Among other positive effects, empirical research shows that IT stimulates increases in labour productivity and helps firms to improve overall efficiency in all economic sectors (OECD, 2004). As demonstrated by experience in OECD countries (notably the US and Scandinavian countries), investment in IT research, both public and private, unleashes the innovation potential not only of the IT segment itself, but also of manufacturing and service industries (e.g. automotive, textile, energy, environmental technologies, telecommunications, tourism).

Another way to respond to customer demand is to increase offerings of complete business solutions rather than just programs. For example, Web 2.0 (which enables consumers and communities to communicate with each other directly) has had an impact on many traditional approaches to consumer relationships. Companies today need to have a more comprehensive approach to business solutions. Therefore, companies like IBM, Accenture, Cap Gemini and EDS are offering end-to-end solutions converging hardware and software (like mobile phones linked to office software), as well as solutions tailored to companies' new requirements. The age of product and programme offering is declining.

### 3.4 Sector implications and key success factors

Trends in both customer demand and service provision have important implications for the BPTO sector. This sector is labour intensive and highly competitive. Therefore, improving the quality of a firm's staff is immensely important for its continued growth and ability to differentiate itself. This is particularly the case for back office services and call centres. Above all, two types of activities are key to improving internal human capital: (i) maximising nearshoring advantages; and (ii) improving "hard skills".

### ***Maximising the advantages of nearshoring***

One way firms that offer back office services and call centres can differentiate themselves is by maximising their nearshoring advantages with respect to a large client, country or region. For example, Latin America is often cited as an excellent location for services outsourced from Spanish customers (see A.T. Kearney's BPO index). In Romania, the fact that 85% of schoolchildren learn French makes that country a natural choice for French clients.<sup>10</sup> In particular, BPTO firms should ensure that they have two key skill sets to set them apart: (i) language ability; and (ii) cultural understanding and "soft skills".

#### *Language ability*

Much of India's success in the back office and call centre segments is due to a large percentage of its large English speaking population. However, there remain large untapped back office and call centre opportunities in Europe, where people are often really fluent only in their mother tongue. Service providers in the Western Balkans whose employees speak European languages other than English (*e.g.* German, French or Italian) could have a competitive advantage here.

Fluency in a language used by the outsourcing firm is often a requirement. Call centres devoted to customer care need staff fluent in the appropriate language. A certain level of fluency in the client's native language is also needed to process claims and receipts in the case of firms outsourcing back-office functions.

#### *Cultural understanding and "soft skills"*

According to a recent survey, 56% of UK companies cited language and culture as among the key problems they face with outsourcing services (Career Opportunities News, 2002). This is in spite of the fact that the UK and India, its largest outsourcing partner, share a language and cultural history.

Firms offering back office services and call centres should maximise their cultural affinities with large BPTO source markets. Communication is a more complex matter than simply speaking the same language. It can include accents and expressions, and even body movements and. When these "signals" are ignored or misunderstood, this can translate into additional costs. Firms need to ensure that staff have the "soft skills" needed to interact successfully with clients. Communicating on a one-to-one basis can involve a "cluster of personality traits, social graces, language skills, friendliness and optimism" (Career Opportunities News, 2002).

Ensuring that staff have the necessary cultural understanding and soft skills ought to take place at two levels:

*At the hiring level*, through careful screening of potential employees for the skills required by the services provider. This should include interviews with the firm's human resources or management team, together with various tests (*e.g.* language and voice tests for a call centre operator);

*During employment*, by putting in place initial and on-going soft skills training courses for staff, highlighting language and cultural issues which might be relevant.

For back office services, call centres and software development marketing and self-promotional skills are also essential for company managers. This is especially important in light of key gaps identified in this area in the Western Balkans. Relevant skills include presentation, communication and the ability to be convincing.

### Continuous improvement of technical skills

Soft skills are not the only type of skills needed. “Hard skills” (*i.e.* technical, analytical and problem solving skills, together with relevant subject knowledge) are also important. Software development firms must have familiarity with, and problem solving skills in, specific technical areas. There is also a need for continuous technology upgrades, new introductions and improvements, as skills acquired only a few years earlier may no longer be relevant. Software development firms working in highly specialised areas need to ensure that they continually upgrade staff expertise.

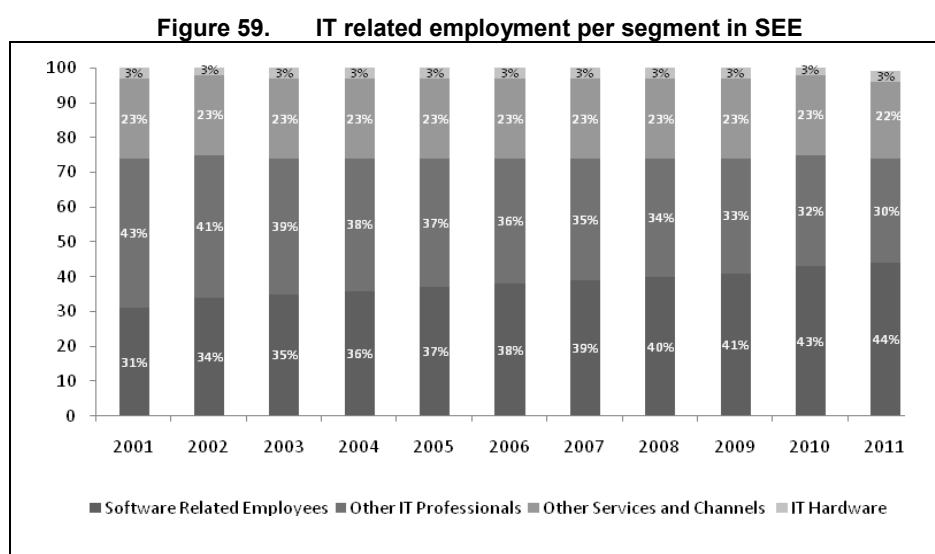
This can be achieved in a similar way to making sure that employees have requisite soft skills. The best practice is for firms to ensure that newly hired staff members have at least a basic understanding of, and familiarity with, the hard skills relevant to the BPTO service, identified through interviews and testing. There should also be a systematic employee training programme to upgrade staff expertise and keep employees abreast of the latest developments.

### 3.5 Sector attractiveness in the Western Balkans

Although the BPTO sector is still in its infancy in the West Balkans, outsourcing to this region is increasing rapidly. Three factors support this growth: (i) low labour costs; (ii) proximity to EU markets; and (iii) existing skills.

#### *A nascent but fast-growing sector*

The ICT market represents 1.2% of the Western Balkans region’s GDP, with 9% growth projected between 2007 and 2011 (a similar rate to that in Asia Pacific or China). FDI and exports in the outsourcing sector are not accounted for in national statistics, as the sector is still relatively marginal in this region. However, sector data cross-checks clearly indicate very high annual growth rates of 25%, in line with EU trends. In addition, as ICT infrastructure gradually improves, the focus will shift to software development and IT services. Forecasts of IT employment in the countries of South East Europe show this growth in terms of employment in segments. By the end of 2007, software development accounted for 39% of IT employment; this share is forecast to reach 44% by 2011 (Figure 59). About 7 000 companies currently operate in the software development segment in the Western Balkans.



Source: IDC, 2007

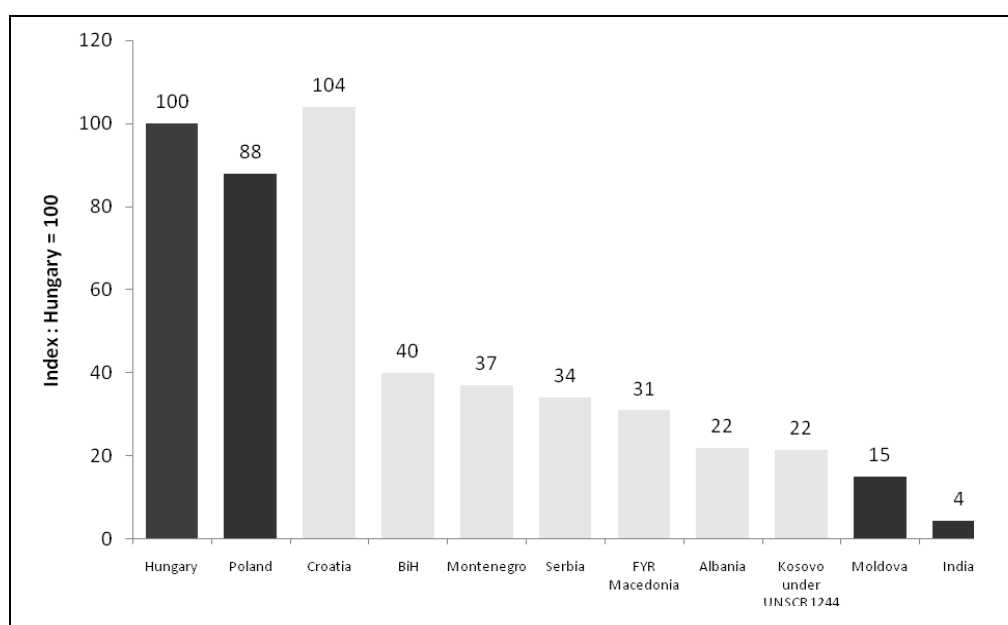
**Table 27. Key figures for the IT/software development segment in the Western Balkans**

Market size (€ million)	1 300
Market growth (2006-08)	25%
FDI (inward flow, € million)	40
Exports (€ million)	75
Employment	55 000
Number of firms (estimates)	8 000

### *Relatively low labour costs*

The Western Balkans is particularly competitive in labour costs, above all compared to its CEE neighbours (Figure 60).

**Figure 60. Index (100 = Hungary) of average monthly labour costs in services (2005)**



Source: OECD analysis based on LABORSTA (ILO)

Note: Monthly wages calculated as a 2003-05 or 2003-06 average, using the LABORSTA Labour Statistics database for financial intermediation, business activities, real estate and renting activities. Data for Albania is based on wages in transport, storage and communications. Data for India is based on average monthly wages for all services. India and Moldova are included in Figure 60 for comparison. It should be noted that India has been experiencing wage inflation at 15-18% per year on certain professional service functions.

### *Proximity advantages*

Many potential client firms, especially in Europe, are just beginning to use service outsourcing. Although worldwide telecommunications are instantaneous, these firms often consider easy access to the CEE or to the Western Balkans region as one of the main selling points for relocating certain activities. The Western Balkans region has regular and reliable flights to Western Europe (Table 27). Belgrade is only two hours from Frankfurt and Tirana is only three hours from London. This is in contrast to an approximately nine-hour flight from Mumbai to Western Europe.

**Table 27. EU flight destinations**

City	Destinations
Tirana	Athens, Bergamo, Bologna, Budapest, Cologne, Cuneo, Florence, Forli, Frankfurt, Genoa, Ljubljana, London, Milan, Munich, Parma, Perugia, Pisa, Rimini, Roma, Sofia, Treviso, Trieste, Turin, Verona, Vienna
Sarajevo	Ancona, Budapest, Cologne, Frankfurt, Ljubljana, London, Munich, Rygge, Vienna
Zagreb	Amsterdam, Brussels, Budapest, Cologne, Dortmund, Düsseldorf, Frankfurt, Lisbon, London, Munich, Paris, Prague, Rome, Stockholm, Stuttgart, Vienna, Zurich
Skopje	Amsterdam, Berlin, Budapest, Copenhagen, Düsseldorf, Hamburg, Ljubljana, Milan, Paris, Prague, Rome, Vienna, Zurich
Podgorica	Brindisi, Budapest, Frankfurt, Ljubljana, Naples, Oslo, Paris, Rome, Zurich
Belgrade	Amsterdam, Athens, Berlin, Brussels, Cologne, Copenhagen, Düsseldorf, Frankfurt, Gothenburg, Larnaca, Ljubljana, London, Malta, Milan, Munich, Oslo, Prague, Rome, Stockholm, Stuttgart, Trieste, Vienna, Zurich
Pristina	Berlin, Budapest, Cologne, Copenhagen, Düsseldorf, Frankfurt, Geneva, Hamburg, Ljubljana, London, Munich, Stuttgart, Verona, Vienna, Zurich

Source: [www.tirana-airport.com](http://www.tirana-airport.com); [www.sarajevo-airport.ba](http://www.sarajevo-airport.ba); [www.zagreb-airport.hr](http://www.zagreb-airport.hr); [www.airports.com.mk](http://www.airports.com.mk); [www.montenegroairports.com](http://www.montenegroairports.com); [www.airport-belgrade.co.yu](http://www.airport-belgrade.co.yu); [www.airportpristina.com](http://www.airportpristina.com)

### *Emerging capabilities that need further improvement*

#### *Languages*

Students in the Western Balkans are relatively proficient in English. The results of the TOEFL exam<sup>11</sup> for Croatia and Serbia show that students in both countries have strong English language ability, especially when compared with those in countries with which they might be competing in the BPTO sector. Croatian students score high on the entire English exam, particularly listening. They are just one point behind India with respect to the average total TOEFL score. Serbia scores somewhat lower, although its students' ability is in line with that of Brazilian or Russian students and significantly higher than that of Chinese students (Table 28).

**Table 28. Average cross-country TOEFL scores**

	Total	Reading	Listening	Speaking	Writing
India	91	22	23	23	23
Hungary	90	22	24	22	22
Croatia	90	22	24	23	22
Czech Republic	88	20	23	23	21
Brazil	85	21	23	21	21
Russia	85	20	23	22	21
Serbia	84	19	23	21	20
Ukraine	83	19	22	22	20
China	76	20	19	18	20

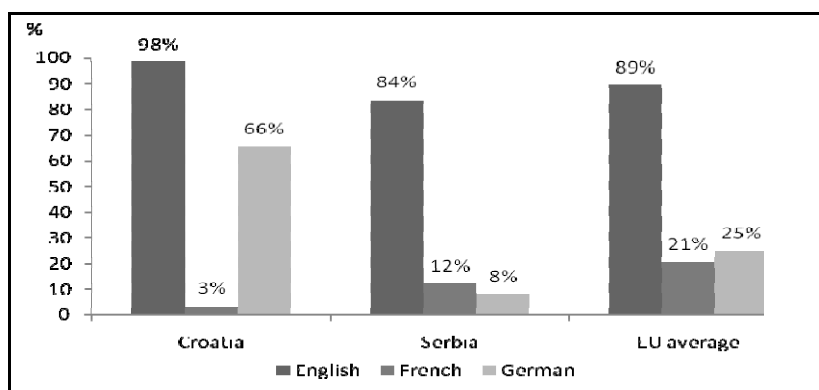
Source: ETS (2007)

According to the results of the Regional Capability Survey (RCS), almost 45% of back office services, call centre and software development firms consider the English language skills of their staff to be adequate for their business operations. Only one-third of firms feel that there is room for minor improvement in their staff's English language skills, and only about one-tenth of firms consider that there is room for significant improvement.



Not only do the Western Balkan economies have strong English language skills, but students often learn other European languages, especially German (Figure 61). Western European countries are therefore an under-exploited BPTO market, and proficiency in German gives many firms in the Western Balkans a competitive advantage over other BPTO providing countries, including India and China (where knowledge of European languages beyond English is minimal). Over 60% of schoolchildren in Croatia learn German. While official data is not available on the number of Albanians who speak Italian, anecdotal evidence suggests that the level of Italian spoken by many people in that country is very high.

**Figure 61. Pupils learning English, French and German in Croatia, Serbia and the EU (%)**



Source: Eurostat, Statistical Office of the Republic of Serbia

According to the RCS results, there is further room for improvement in German, French, Italian and Russian. Although roughly one-half of respondents consider that their staff's knowledge of these languages is adequate for their firm's business objectives, one-quarter to one-third consider that lack of fluency in these languages represents a significant barrier to improving their operations (Table 29). European languages in addition to English are taught, but most students do not obtain the same level of fluency in these languages as in English. It should be noted that while these languages might not be spoken fluently, the fact that they are taught and spoken at all indicates a basic level of proficiency which can be improved upon.

**Table 29. Gaps in staff language abilities in the Western Balkans (%) (2008)**

	English	German	French	Italian	Russian	Other
No gap	44.79	46.88	54.17	56.25	53.13	53.13
Minor gap	36.46	12.50	6.25	10.42	8.33	3.13
Major gap	12.50	32.29	31.25	25.00	28.13	6.25
No response	6.25	8.33	8.33	8.33	10.42	37.50

Source: OECD RCS (2008)

### *Cultural understanding and soft skills for call centres*

The Western Balkan region shares a wide spectrum of history and cultural understanding with Western European countries. This facilitates communication with clients, whose signals, intentions and objectives can be better interpreted. For example, Western Balkan university students often participate in study abroad programmes or study full time in Western Europe. In 2006, 6.6% of all Western Balkan university students studied in one of the EU-15 countries and 8.4% studied in one of the EU-27 countries. The most popular locations were Italy, Germany and Austria (Table 30).

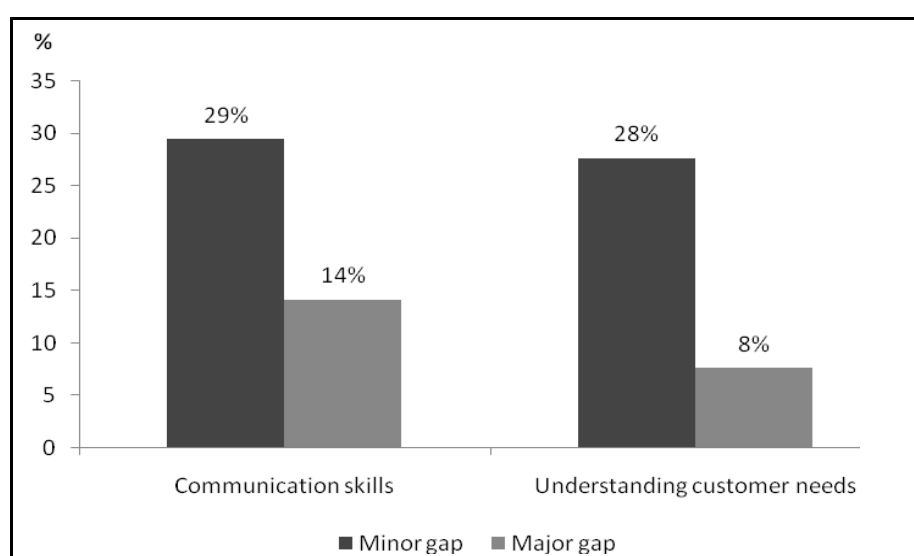
Despite strong ties with Western Europe through many study abroad programmes, the RCS results indicate that there is still scope for BPTO firms in the Western Balkans to improve cultural understanding and other soft skills, especially with respect to back office services and call centres. Of the firms surveyed, 35% indicated that their staff's understanding of customer needs was either partially or significantly lacking. For 43% of firms, there was a minor to major gap in their staff's communication skills (Figure 62).

**Table 30. Most popular destinations for Western Balkan students studying abroad (2006)**

	Albania	Bosnia and Herzegovina	Croatia	The former Yugoslav Republic of Macedonia	Serbia and Montenegro
Italy	10 959	310	1 334	234	1014
Germany	701	2 950	4 955	850	3 327
Austria	164	2 392	1 188	225	1 159
Bulgaria	192	22	6	3 638	345
Greece	2 652	32	9	38	152
United Kingdom	483	213	407	207	901
Turkey	620	555	15	329	225
Switzerland	197	203	337	165	692
Hungary	16	11	191	6	1 163
France	444	160	135	126	518
Slovenia	6	220	598	147	140
Romania	246	1	1	118	283
Sweden	22	207	96	25	188
Norway	19	199	71	157	0
Spain	38	96	69	71	64

Source: Eurostat

**Figure 62. Perceived gaps in soft skills in Western Balkan BPTO firms**

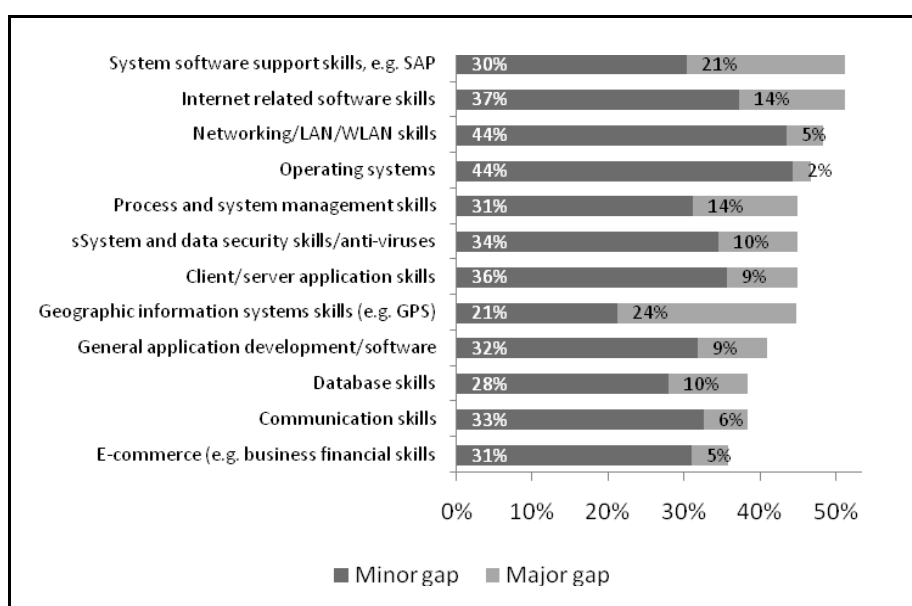


Source: OECD RCS (2008)

*Growing but still limited technical skills for software development and back office services*

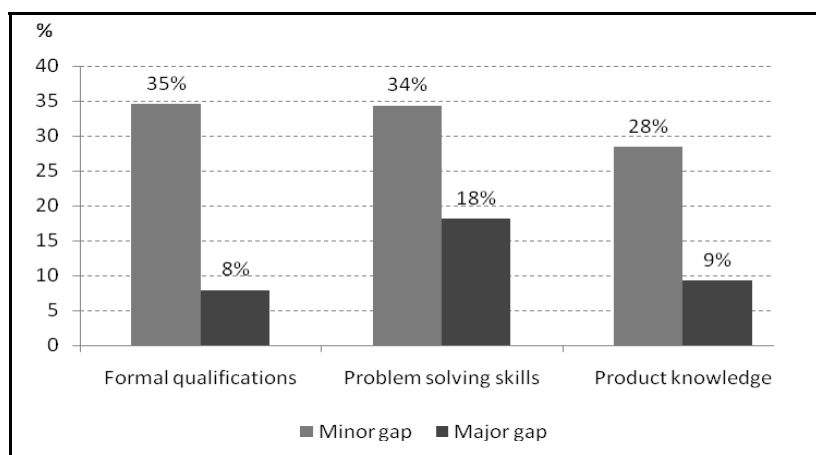
There seems to be a sever lack of technical skills in Western Balkan software development firms. Lack of skilled resources and qualifications was cited by 57% as their top challenge. This is especially the case for those positions that most need to be filled, such as project managers, application developers and multimedia designers and developers. While only a few firms reported a major gap in technical expertise, over half considered that there was a minor to major gap in internet related software skills and system software support skills. Significant skills gaps were also identified in networking/LAN/WLAN skills and operating systems (Figure 63). Western Balkan BPTO firms also identified a major gap in the problem solving skills of their employees: 18% felt there was a major gap and 34% that there was a minor one (Figure 64). This means that over half of all firms have a minor to major gap in their staff’s problem-solving skills.

**Figure 63. Priority gaps in technical skills in software development companies**



Source: OECD RCS (2008)

**Figure 64. Perceived gaps in hard skills**



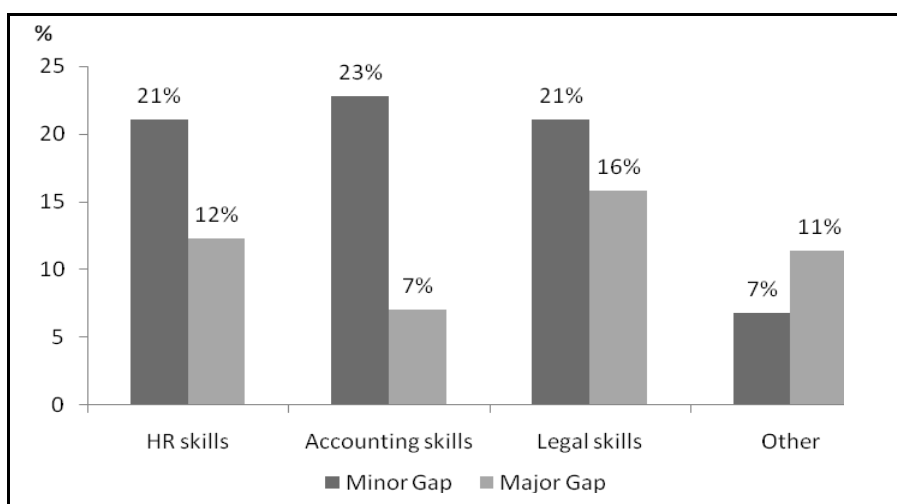
Source: OECD RCS (2008)

Software development firms across the Western Balkans need to continuously improve the technical skills of their staff. Even in Croatia, one of the region's most technologically advanced economies, there is a skills shortage. This means hiring and nurturing employees with problem solving and analytical skills, as well as with actual experience involving equipment, software and the industry or business processes in which the firm specialises.

Despite the lack in technical skills, according to the RCS results, few software development firms in the region consider the formal qualifications of their staff to be a serious problem: only 8% identified them as such. Product knowledge on the part of staff appeared not to be lacking, with only 9% of firms considering it a serious problem.

There also appears to be no lack in technical skills for firms providing back offices services: when asked about gaps in technical skills, back office outsourcing firms specialising in human resources, accounting or legal skills did not consider these skills to be lacking (Figure 65).

**Figure 65. Gaps in technical skills in BPTO firms specialising in back office functions**



Source: OECD RCS (2008)

### 3.6 Regional strategy

For future growth in the BPTO sector in the Western Balkans, both operational and policy changes need to be made. On the operational side, firms should specialise and focus on EU markets. On the policy side, the government should address gaps in human capital, upgrade ICT infrastructure, decrease social charges and target investment promotion activities at global BPTO providers.

#### *Operational recommendations*

##### *Focus on EU markets*

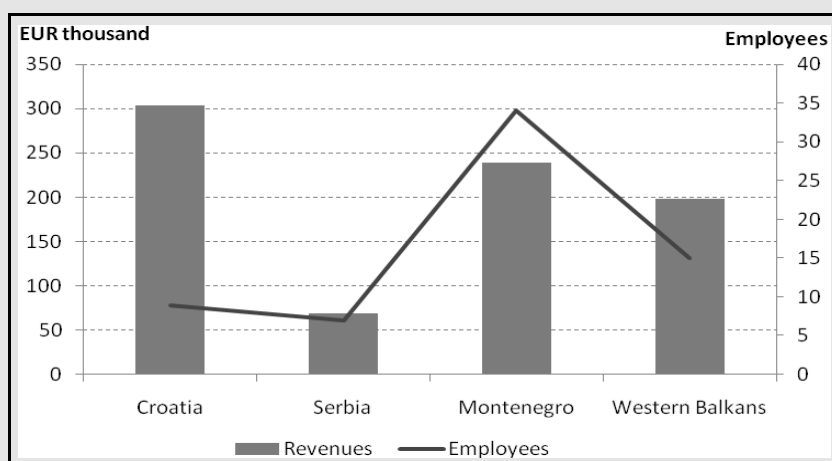
Western Balkan BPTO firms would be wise to leverage their proximity advantage through nearshoring, including targeting the regional market and Central and Eastern Europe. They should pay particular attention to countries in which they have strong language skills, including France, Germany and Italy.

### Box 16. A fragmented sector

Both software development and BPO (back office services and call centres) firms have relatively low revenues and numbers of employees per company to be able to compete effectively at the global, regional or even national level. Average sales of such companies in the region are about EUR 200 000 and average employment is just 15 employees (see figure below).

This high level of fragmentation makes it difficult for firms to compete for large tenders, limits access to capital and provides them with fewer opportunities to recruit qualified staff. However, anecdotal evidence suggests that firms are beginning to consolidate. For example, the Serbian ComTrade Group has recently acquired Hermes Lab, a Slovenian company based in the Western Balkans region.

**Figure 66. Western Balkan BPTO firms: revenues and employment**



Source: OECD RCS (2008)

### *Specialise*

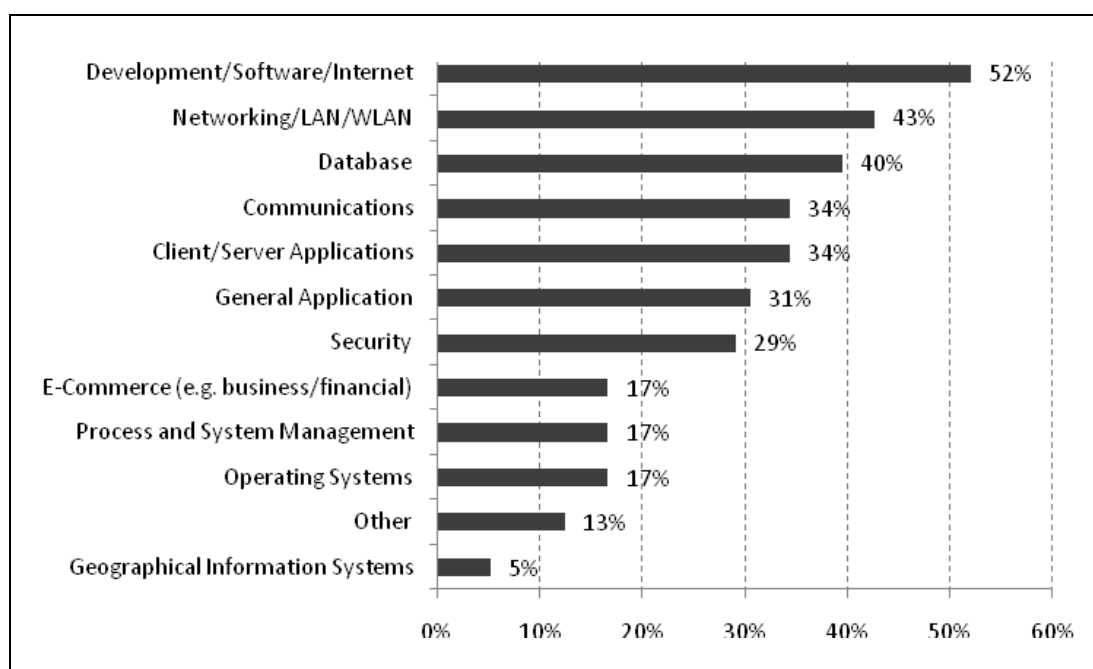
To go beyond cost competitiveness, there is also a need to specialise. Specialisation has been shown to increase productivity, allow firms to set higher prices and facilitate building an international network of clients. The findings of the OECD analysis suggest that BPTO firms in the Western Balkans should carve out their own niches and implement a more targeted strategy concerning where and how to compete.

For software development companies, there is a need to focus further on industry expertise and shift towards solutions as opposed to programme offering. Specifically, expertise in the apparel manufacturing and automotive sectors could be valuable.

Firms offering back office services and call centres should begin by focusing on large or high-growth segments like financial services and mobile telecom. Providers of back office services and call centres should also have a few niche offerings in high-demand areas like collection of accounts payable, sales and marketing support, technical call centres and remote security database administration

A first step would be to strengthen existing capabilities. The RCS collected data on the main applications or services of IT firms in the region. On average, these firms specialised in four main outsourced services. The ones most frequently offered to clients included software development, networking expertise and database development (Figure 67).

**Figure 67. Outsourced services provided by Western Balkan IT firms**



Source: OECD RCS (2008)

Specifically, based on the RCS results and OECD interviews with international and local firms, the following is required:

- For software development, knowledge of sector/technical specific applications is needed, including Enterprise Resource Planning (ERP) and Vendor Managed Inventory (VMI). Knowledge of key software languages such as PHP, SQL, Ajax and XML is also essential;
- For back office services, knowledge of accounting standards is needed, including International Financial Reporting Standards (IFRS) and the Generally Accepted Accounting Principles (GAAP) as well as appropriate legal codes, e.g. the Code Napoléonien;
- For call centres, in addition to enhancing existing capabilities, a further focus should be put on languages such as German and French.

#### **Box 17. Leapfrogging technology**

Improvements in ICT infrastructure and technological developments create the possibility for developing countries with poor connectivity to leapfrog earlier stages of technological progress. For example, wireless local area networks (WLAN) are an inexpensive technology allowing both telephony and high-speed internet, and a less expensive alternative to wireline broadband (OECD, 2005).

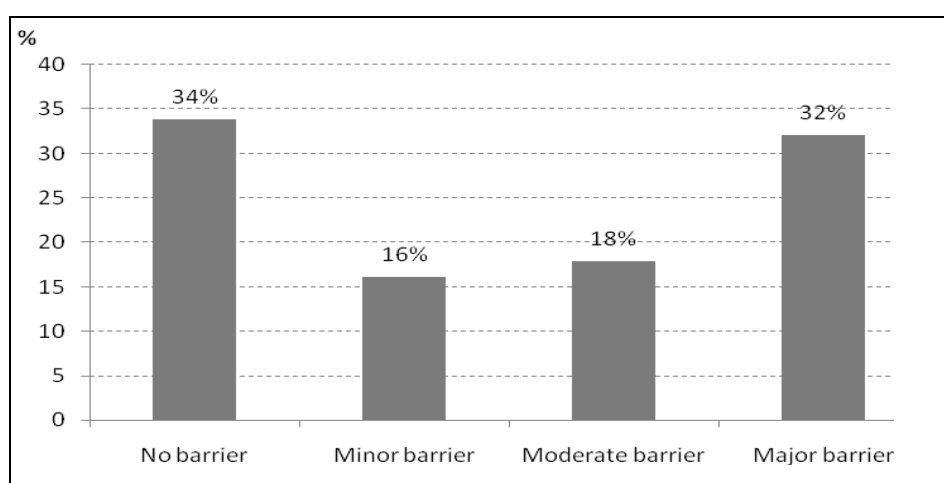
Although mobile ICT is still at an early stage for services, the Western Balkan economies can move directly into the latest technologies, as was the case in Croatia with the introduction of 3G and WiMAX. In addition, the transition to Web 2.0, open source and new research in the field of web engineering offer promising avenues for new entrants to apply “systematic, disciplined and quantifiable approaches to the cost-effective development and evolution of high-quality solutions in the World Wide Web” (International Society for Web Engineering, 2006). Thus, innovative companies can invent new business models. This new approach to user-generated content offers opportunities for niche players in the Western Balkans, such as GISData in Croatia, to develop and commercialise new solutions, building on speed and fast propagation.

## Policy recommendations

### First address gaps in human capital

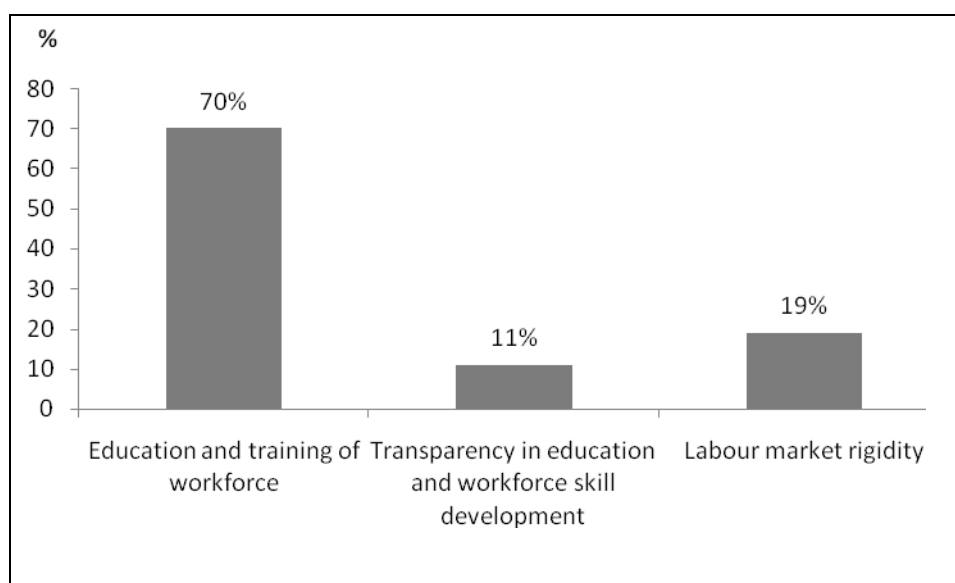
The key area identified as a policy barrier by the RCS results is the general gap in availability of skills throughout the Western Balkans. Firms need to do more to ensure that they have fostered both the soft and hard skills of their employees. By the same token, governments in the region should ensure that there is a constant increase in the skills of its workforce. Of the BPTO firms surveyed, 52% considered the skills and education of available employees to be a barrier and 70% considered education and training to be one of the key policy issues needing to be addressed (Figure 68 and 69).

**Figure 68. Human capital policy barriers**



Source: OECD RCS (2008)

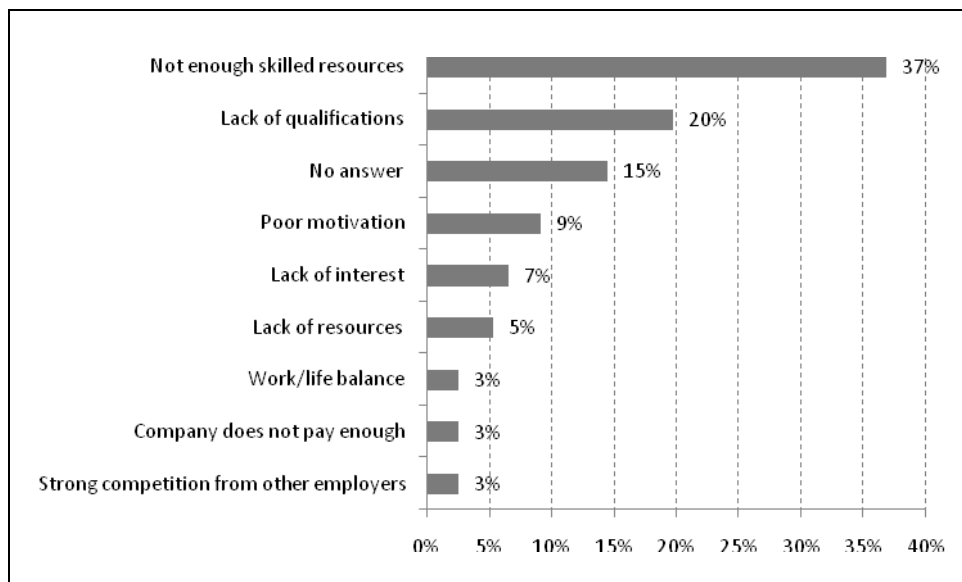
**Figure 69. Key issues concerning human capital policy**



Source: OECD RCS (2008)

It is estimated that in the period 1995-2005 up to 70% of skilled professionals in the Western Balkans emigrated (UNESCO, 2005). According to software development companies surveyed by the OECD, the two most important reasons for difficulty in filling vacancies in the region are lack of appropriately skilled workers (Figure 70).

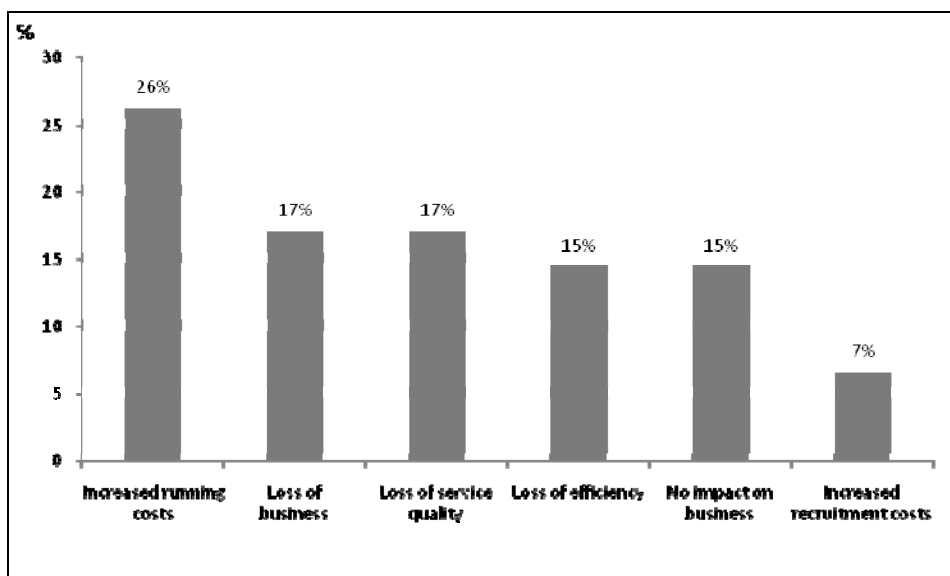
**Figure 70. Reasons for difficulty in filling vacancies**



Source: OECD RCS (2008)

The discrepancy between the supply of skilled employees and demand by companies is negatively impacting competitiveness. This is especially true in software development firms, which are suffering from increased costs, lower service quality, loss of business and lower operating efficiency (Figure 71).

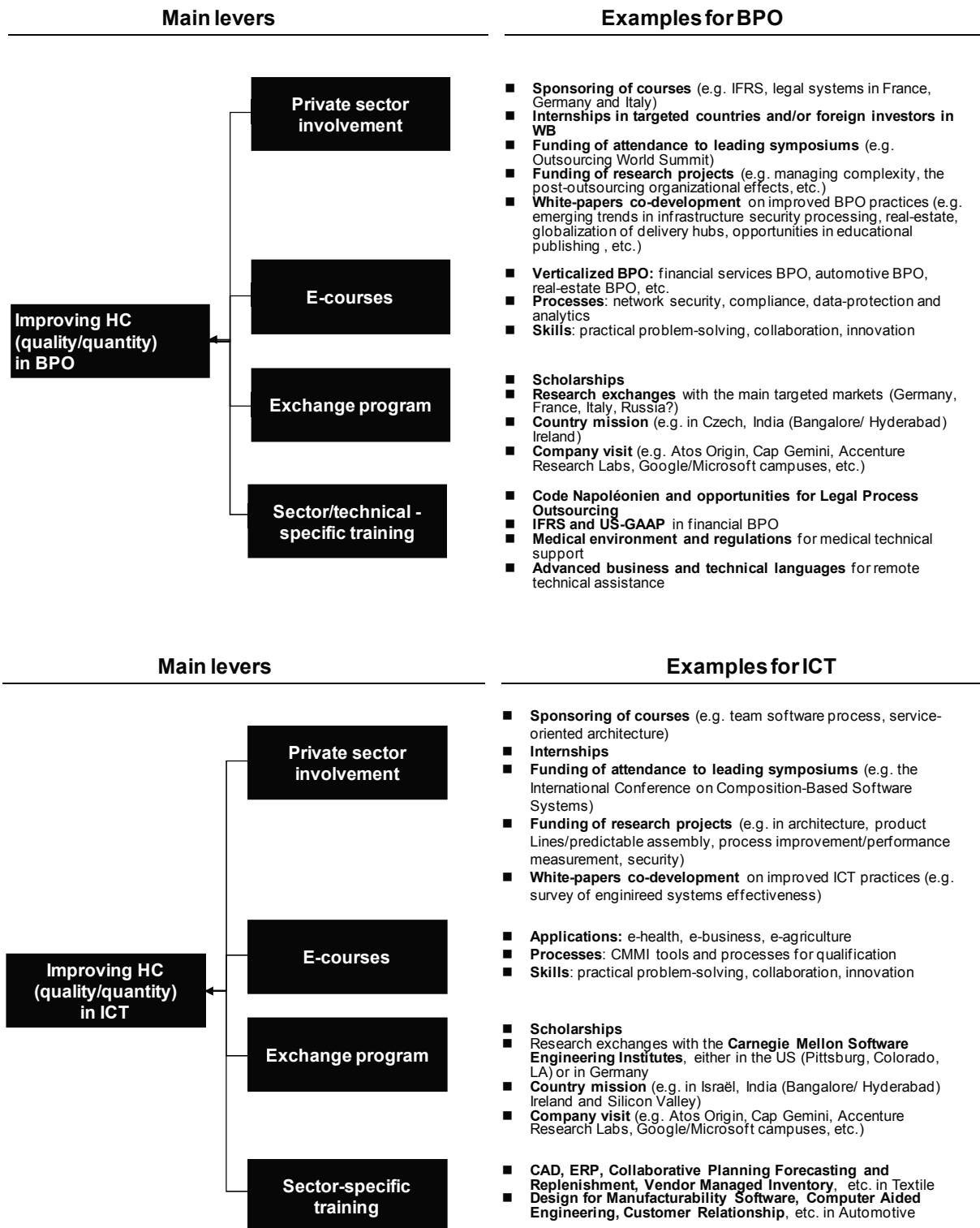
**Figure 71. Impact of skills gaps on software development firms**



Source: OECD RCS, 2008



Figure 72. Approach to improving software development and back office and call centres education involving the private sector



To address this gap and move up the value chain, there is a need to invest in both the quality and quantity of human capital through private sector involvement and more tailored educational programmes.

In the software development segment, problem solving skills and specific knowledge of software and/or hardware are needed. This segment requires constant technology upgrades, making skills learned only a few years earlier no longer relevant.

To address this gap, policy makers should involve academia and the private sector further at three levels:

- Pre-employment by, for example, offering of internships, sponsoring university courses<sup>12</sup> and exchange programmes and sponsoring projects with foreign vendors and universities.
- During –employment, through company training including sector/technical-specific training, e.g. Code Naolónien, IFRS and GAPP. E-courses should be leveraged as much as possible during employment.
- During unemployment, through the use of functional e-courses such as new product development processes and steps toward obtaining relevant licenses for setting up a business or getting a patent.

Medium-term requirements should focus on more structural reforms including the establishment of a human capital co-ordination team within each country, bringing together key decision-makers from the ministries of education, emigration, labour and economy as well as the private sector and civil society. Secondly, analytical tools should be developed to evaluate skills gaps, especially in knowledge-intensive BPTO niches. Thirdly the labour market should better favour the entry of new people on the market and the development of skills through the co-operation of the public and private sectors.

Policy makers should act to increase the number of graduates in IT and in the languages needed by outsourcing companies. For example, the state quota in The former Yugoslav Republic of Macedonia is about 400 for IT, against a demand estimated at 800 by the MASIT, Macedonian National ICT Association.

Finally, and most importantly, policy makers and the private sector should consolidate efforts at the regional level to cement sub-critical BPTO players and build regional champions. Practically speaking, this could be done through regional/cross-border clusters. In parallel, regional education could be envisaged (Figure 73).

### *Upgrade ICT infrastructure*

ICT infrastructure is another important policy area on which the Western Balkan economies need to focus in order to sustain a competitive BPTO sector. The phenomenon of digital integration has significantly increased the possibility to develop new products and services and has created new market niches. In addition, new technologies for mobile data transfer, such as 3G.5 and WiMAX, require investments in ICT infrastructure.

The need to modernise, adopt EU standards and provide public administrations with updated equipment is an important driver for IT spending in the region, accounting for more than half of resources spent. Thus most such investment was in hardware rather than in software and IT services in the period 2005-07 (IDC, 2007).

**Figure 73. Successful regional educational models: CEMS and TIME**

CEMS Community of European Management Schools	TIME Top Industrials Management Europe
<ul style="list-style-type: none"> <li>• CEMS is a strategic alliance of leading business schools and multinational companies</li> <li>• 26 world-class academic institutions (17 full members and 11 associate members)               <ul style="list-style-type: none"> <li>• E.g. HEC Paris, London School of Economics, Copenhagen Business School</li> </ul> </li> <li>• 57 corporate partners to offer international internships opportunities and inputs from the private sector               <ul style="list-style-type: none"> <li>• E.g. Michelin, McKinsey, SG, ING, JP Morgan</li> </ul> </li> <li>• Promotes high-quality business education</li> <li>• Produces graduates who are able to work in many cultures</li> <li>• 6 months to ramp-up</li> <li>• Lean infrastructure funded by each university</li> </ul>	<ul style="list-style-type: none"> <li>• TIME is a network of 51 leading engineering schools and faculties and technical universities               <ul style="list-style-type: none"> <li>• Technische Universität Wien, Ecole Centrale Paris, Ecole Nationale des Ponts et Chaussées</li> </ul> </li> <li>• Voluntary bilateral agreement between members</li> <li>• Offers promotion and recognition of academic excellence               <ul style="list-style-type: none"> <li>• Double degrees in engineering and a related field</li> <li>• Students are chosen from among the best in their respective universities, studying between five and six years, and are awarded two Masters-level degrees from two different countries at the end of their study</li> </ul> </li> <li>• Promotes high quality engineering education</li> <li>• Produces graduates who are able to work in many cultures</li> </ul>

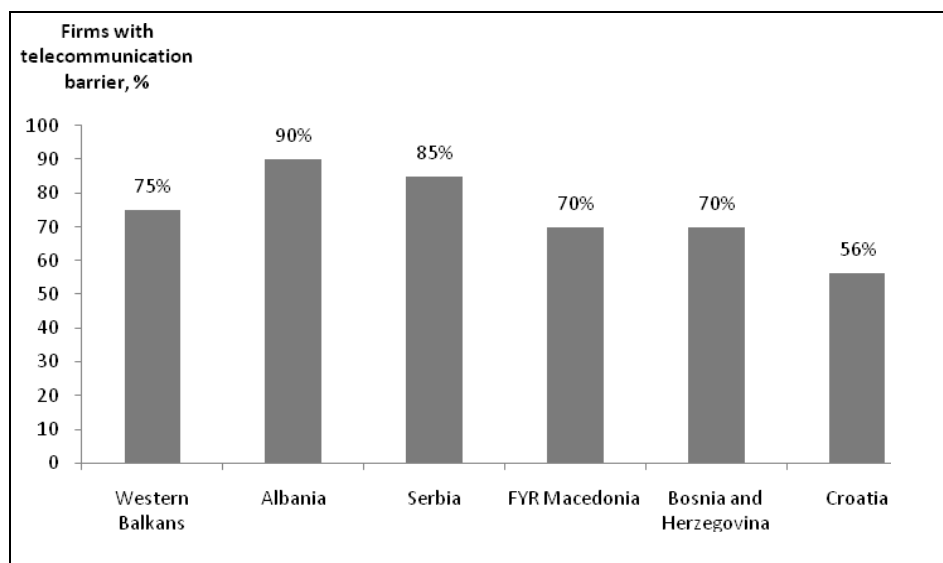
Source: OECD interviews

The region should benefit from a catch-up effect as ICT infrastructure in all of the Western Balkan economies becomes more developed. Related reports indicate that while Croatia has reached and even surpassed the level of some EU countries,<sup>13</sup> and Bosnia and Herzegovina, The former Yugoslav Republic of Macedonia and Serbia have fairly well developed infrastructure in the major cities, peripheral areas tend to lag behind in those countries.

The most critical situation in the Western Balkans, in terms of quality of infrastructure, is in Albania and in Kosovo under UNSCR 1244. These two economies are still unable to provide minimal conditions for an ICT company, e.g. 24-hour internet access with 1 Mbps Optical Fibre Leased line (network) connection extensible to 2 Mbps, 256 Kbps line for VoIP, 128 Kbps ISDN backup, as well as support for disaster recovery processes with back-up of client data, back-up management, and physical back-up of data maintenance in secure locations outside the premises. But these countries could turn this disadvantage into an opportunity. They are in a good position for leapfrogging and for focusing on the most advanced mobile technologies.

The RCS results show that BPTO firms consider that there is room to improve in almost all the region's economies with respect to ICT infrastructure, particularly telecommunications (Figure 74).

**Figure 74. Telecommunications as a barrier to the operations and growth of BPTO and ICT companies**

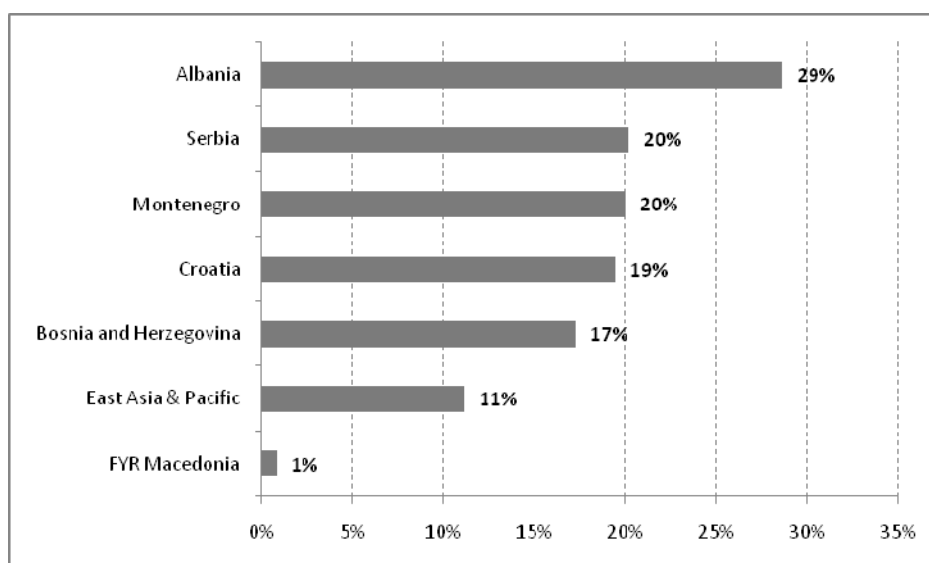


Source: OECD RCS (2008)

### *Reduce social charges*

One key problem identified by the RCS results is high social security contributions. During interviews, firms largely identified social charges as one of the most burdensome types of tax. Since the BPTO sector is very labour intensive by definition – it uses the intellectual knowledge of its workforce to perform services – it is understandable that this is seen as such a problem. World Bank *Doing Business* estimates of non-wage labour costs for the region are 18% of gross salaries. While this figure is in line with or even lower than in many OECD countries, it is much higher than the East Asia and Pacific average of 11% (Figure 75).

**Figure 75. Social charges as a percentage of gross wages**



Source: World Bank (2007)

While it should be recognised that social security and other employer paid payroll taxes contribute to needed public services and health care, in labour intensive industries such as BPTO current levels are reducing the competitiveness of Western Balkan firms. Countries might consider lowering these contributions as a short term solution to maintaining competitiveness taking into consideration general fiscal sustainability.

#### *Target investment promotion activities at global BPTO providers*

Investment promotion activities in the BPTO arena should first target global BPTO providers, especially with respect to value-added services, knowledge transfer, innovation and capability building. Prime targets should be European grown or based sector leaders already present in the region. Several IT and business outsourcing service providers have established capabilities in Poland (e.g. IBM, EDS, Capgemini), the Czech Republic (e.g. Accenture, SAP), Hungary (e.g. Tata, Convergys) and Romania (e.g. Genpact, Wipro).

### **3.7 Country specific recommendations**

#### ***Albania***

##### *Sector overview*

The BPTO sector has not yet been developed in Albania. The country has relatively developed infrastructure, but still lags behind its neighbours in the Western Balkans.

Albania's main advantages are its proximity to Puglia, a southern Italian region where many Italian firms have established call centres and the high level of Italian language skills. However, it should be noted that the labour force's general fluency in Italian would need to be improved for Albania to compete effectively with its main competitor, Romania, where Italian companies have already established their presence in terms of offshoring.

An example of Italian investment in the BPTO sector in Albania is the company Answers Group, a business services company serving firms and public administrations in Italy. It has co-operated with a local Albanian start-up and created the firm IDS to provide call centre services to Italy. Answers Group reroutes around 4 000 calls per week to IDS and plans to increase the traffic volume considerably. Therefore, it anticipates supporting or directly realising the creation of a 50-workstation call centre. The main requirements for investing are considered to be: hiring and training around 150-200 people able to speak Italian perfectly; and finding a convenient way to manage voice and data traffic between Albania and Italy. The possibility of directly creating a training school in Albania is being considered in Answer Group's attempt to respond to the need for human resources training (UNDP, 2007).

The ICT sector in Albania lags behind the regional level. The penetration rate for fixed telephones is only 39%, compared with more than 95% in Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia and Serbia. The only country in the region with a lower penetration rate is Kosovo under UNSCR 1244, at 26.9% (UNESCO, 2005).

Basic ICT infrastructure is underdeveloped, compared with the situation in most other European countries. According to a World Bank study, access to telephone lines is still lower than the average in Europe and Central Asia, although it increased from 50 to 88 people per 1 000 between 2000 and 2005, (World Bank, 2007b). The situation is similar with respect to mobile subscribers. Despite a huge leap in the number of such subscribers, this is still well below the level in other countries in Europe and Central Asia (Table 31).

**Table 31. ICT sector performance in Albania**

	Albania		Europe and Central Asia	
	2000	2005	2000	2005
Telephone main lines (per 1 000 people)	50	88	205	273
Mobile subscribers (per 1 000 people)	10	405	306	34
Population covered by mobile telephony (%)	84	90	N.A.	624
Internet users (per 1 000 people)	1	60	95	
Personal computers (per 1 000 people)	8	12	45	190
Telephone faults (per 100 main lines per year)	70.2	57.2	25	15.7

Source: World Bank (2007)

The biggest lag is in internet usage and in personal computers per 1 000 people. The reliability of IT infrastructure is also critical, with telephone faults per 100 lines higher than in the compared region.

#### *Challenges and policy barriers*

The growing number of accountants, lawyers and HR consultants in Albania are mainly focused on domestic markets. They could become active in business process services provided their orientation changes towards external markets, which could stimulate the BPTO sector.

In the ETF report *Albania Country Analysis 2006*, the lack of skilled and educated workers, coupled with a weak educational system, are indicated as among the major challenges with respect to Albania developing its economy and enhancing production capacities for higher value-added products. Outdated curricula and a lack of trained and motivated teaching staff at all levels of education impact the quality of the learning process and the acquisition of business relevant skills (ETF, 2006a).

Apart from the apparent need to further invest in ICT, as well as in basic infrastructure,<sup>14</sup> the critical area for the development of the software development sector in Albania is the quality of the IT labour force. Due to the lack of financial means, there is also a lack of adequate technological means to provide businesses with relevant knowledge and technical (but also soft) skills. Proficiency in English also needs to be improved.

#### *Policy recommendations*

To benefit from the Italian language advantage, there is a need, in the short to medium term to invest in human resources in order to create the right kind of skills for developing and consolidating Albania's competitive advantage in the future. Closer linkages between the Italianistics faculty in Tirana and other training institutions with the local and foreign-based private sector (including Albinvest) should be developed.

It is necessary to develop educational programmes aimed at training people for the services sector in order to provide the relevant set of skills. In the short term, the Albanian BPTO sector would benefit from immediate training to provide staff able to speak Italian perfectly, who could be employed by call centres, an area for which there is potentially high demand from Italian companies.

Promoting and marketing the Albanian BPTO sector in Italy and other countries should take place on a regular basis, e.g. through publishing brochures on the Albanian BPTO sector, organising visits to companies, and bringing potential investors to Albania.

The ICT sector needs to be supported by improving the quality and accessibility of infrastructure throughout the country. As mobile technology is still at an early stage for services, Albania could leapfrog directly to the latest technologies. This could be done by leveraging public/private partnerships to support the creation of high quality infrastructure.

Government commitment to improve the quality of education should be supported with adequate resources to increase the quality of higher education through providing skills, ICT competency and practical advanced knowledge of benefit to Albanian students in real business life.

Albanian IT companies should be encouraged to co-operate and network with other companies in the Western Balkans, as this would enable them to enlarge their market (especially in regard to Kosovo under UNSCR 1244) and transfer knowledge, skills and technology to their operations. Moreover, IT companies need to develop closer linkages between themselves and vertical industries as a means of conceptualising and delivering advanced ICT solutions.

### **Summary of key recommendations**

1. Further develop the use of investment promotion events to promote, including in Italy and Switzerland, the capabilities of Albanian back office services and call centres;
2. Improve the quality of education by including IT education in curricula at all levels and modernising secondary and graduate level education to develop ICT core competencies, soft skills and practical advanced knowledge relevant to industries' demands;
3. Develop a network of excellence involving back office services, ICT companies, universities and key vertical industries to ensure the transfer of technical knowledge, skills, technology and business processes to IT students and professionals;
4. Support participation in regional IT events and conferences, in order to create linkages with other IT companies and associations in the Western Balkan region;
5. Establish e-courses offering programming tools and languages (including domain specific ones and modelling), e.g. PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and ActionScript;
6. Establish and develop the capacity of a co-ordinating body at government level to promote and co-ordinate human capital development;
7. Speed up the development of accessible and reliable ICT infrastructure, possibly based on wireless communication.

## ***Bosnia and Herzegovina***

### *Sector overview*

The BPTO sector in Bosnia and Herzegovina remains relatively underdeveloped. Possibilities to invest in this sector mainly exist in the information technology segment, reflecting the presence of dynamic local IT firms. Still, some positive examples point to the potential for other segments of the BPTO sector in Bosnia and Herzegovina.

International companies have recognised the potential of the country's BPTO market. KPMG is an example of a company that has already established a captive centre. It employs 25 people and provides audit, tax and financial advisory services, using the company's international standards.

The IT sector in Bosnia and Herzegovina is developing in all its segments, with new companies being started, new people being employed, and new products and services being introduced. Firms are shifting the focus from "box moving" and hardware sales to software development and provision of services, especially through localising world brand software products (e.g. Microsoft, Oracle, SAP).

The IT market in Bosnia and Herzegovina was estimated at EUR 105 million in 2007, with annual growth of 6% to 9%.<sup>15</sup> The fastest growing segment is software development and related services (BAIT, 2006). According to the Bosnian Association for IT, Bosnia and Herzegovina had more than 2 500 IT firms in 2005, with more than 5 000 employees. Approximately 70% of IT companies are local and the others belong mainly to firms representing international companies. The majority of IT firms (36%) have up to five employees, while only a few (3%) have 50 to 100 employees. The average number of employees in an IT firm was about 20 in 2006, compared to 12 in 2004 (BAIT, 2006). The biggest IT company, apart from the telecom sub-sector, is Hermes Softlab d.o.o., a subsidiary of a regional software development company based in Slovenia. The client structure is shifting from a focus on the state and the international community to private sector companies, which are primarily based in the country.

#### *Challenges and policy barriers*

Lack of employment and development opportunities and the low level of economic activity in the years after the war led to a decline in quality on the supply side of the labour market. Today there is increased participation by young people in education and training, often assisted by foreign aid. Although widespread skills gaps do not yet exist, there are specific shortages of and general concern about basic skills, partly concealed by low levels of demand in the formal economy.

The educational attainment levels of the population 25-65 years of age lag behind those in the EU, with a higher percentage that have low levels of education and a lower percentage that have higher levels (Table 32).

**Table 32. Educational attainment rate of the population aged 25-65 (2002)**

	Low	Medium	High
Bosnia and Herzegovina total	41.8	47.4	10.8
EU-15	35	43	22
New EU Member States	19	66	19

"Low" = primary education or less (ISCED levels 0-2); "medium" = secondary or post-secondary non-tertiary education (ISCED levels 3 or 4); "high" = tertiary education (ISCED levels 5 or 6).

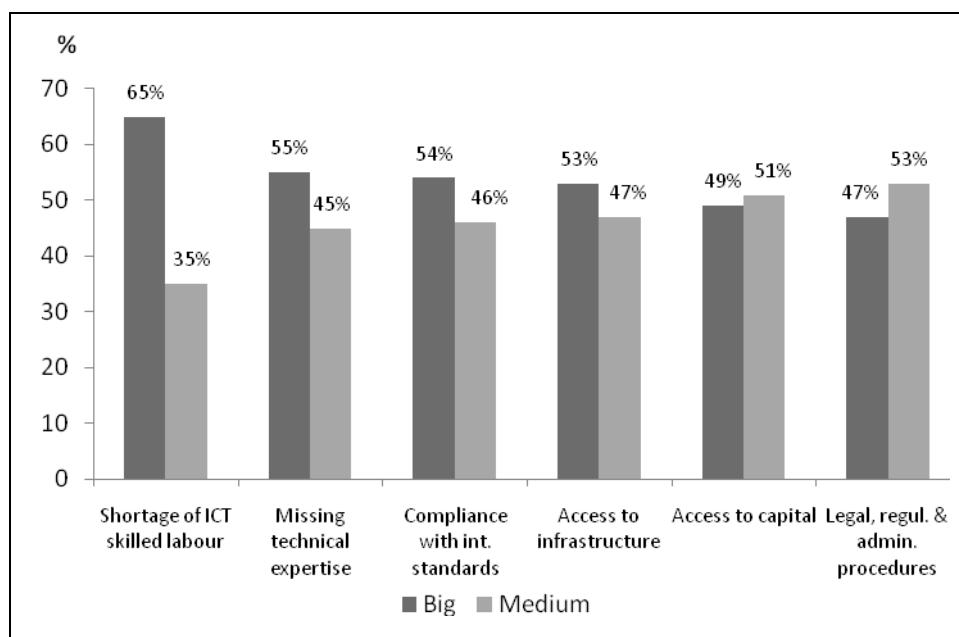
Source: LSMS, ETF calculation, Eurostat

Despite a lack of data on the technical skills mismatch, employers in Bosnia and Herzegovina stressed a significant lack of soft skills, such as teamwork and a positive attitude to work (ETF, 2006b). A 2004 labour market survey by the Employment Service of two administrative entities in Bosnia and Herzegovina, in the Republika Srpska and in the Federation showed that 31.5% of enterprises interviewed required workplace skills and only 10% required specific skills and knowledge (ETF, 2006b).



With respect to software development, the main challenges consist in the fragmentation of IT companies and the lack of an adequate labour force, both in number and quality. Gaining technological expertise, and finding and training IT workers, remain top challenges for increasing competitiveness (BAIT, 2006).

**Figure 76. Limitations on increasing competitiveness in Bosnia and Herzegovina**



Source: BAIT (2006)

Among other problems for Bosnia and Herzegovina's IT industry are the brain drain, lack of implementation of ICT technologies in business operations, and the slow progress of the modernisation of public administration (BAIT, 2006).

One of the main obstacles to competitiveness is the skills gap. The shortage of software development experts was recognised as a limitation by 68% of RCS respondents and lack of technical expertise by 55% (Figure 76).

Co-operation with the public sector, as indicated by a survey of the Bosnian Association of IT (BAIT), is also weak and insufficient.

#### *Policy recommendations*

The gap on the labour market supply side, in terms of adequate skills and knowledge of international standards, should be tackled by increasing the involvement of the private sector, with sponsorship of courses (*e.g.* in IFRS and US GAAP). Courses should focus on building both technical (hard) skills (*e.g.* network security, compliance, data protection and analytics) and soft ones (*e.g.* practical problem solving, collaboration, management). The legal systems of other countries, especially those where Bosnia and Herzegovina's large diaspora lives, such as Germany, Austria and Italy, should also be studied. Skills and knowledge can be disseminated through e-courses.

It appears that Bosnia and Herzegovina has a limited pool of human resources and needs to work with the region's other economies in order to compete with Central and Eastern European countries. Banking is an area where skills and knowledge have grown considerably. The telecom sector is also relatively competitive with that in EU countries. Therefore, BPTO actors on the local level can initiate pilot projects to provide specialised solutions in banking, with already existing co-operation protocols, usage and tools.

Currently there are no specific incentives or government projects to support IT firms in Bosnia and Herzegovina. Opportunities for development in the sector could benefit from specialisation, clustering and linkage programmes.

Vertical knowledge in specific strong industries (*e.g.* metal processing, automotive, wood processing, food processing) should be utilised, complementary to IT skills. For example, before the war Bosnia and Herzegovina had strong competencies in engineering (*e.g.* Energoinvest) and automated processes. Companies in these fields employed thousands of people, with large IT departments having more than 100 staff. The restructuring and privatisation process led to the fragmentation of those companies and segmentation of the IT market. It is essential, therefore, to build integrated clusters focusing on country benefits but also on regional advantages, such as costs, innovation advantages, and new service lines related to the integration of vertical industries and the IT sector. In this regard, it would be conducive to the development of the IT sector to leverage companies to support and lead applied courses that would help to develop SME-FDI linkages.

#### **Summary of recommendations:**

1. Assess the skills gap and labour shortages in regard to languages, finance, legal and IT qualifications;
2. Increase quotas for language and IT graduates at universities;
3. Leverage companies' strong competencies (*e.g.* engineering) to support and lead applied courses that would help develop better integration of IT and vertical industries, such as metal processing, automotive parts, food processing and tourism;
4. Establish e-courses teaching programming tools and languages (including domain specific ones and modelling), *e.g.* PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and Action Script;
5. Establish and develop the capacity of a co-ordinating body at government level to promote and co-ordinate human capital development;
6. Reduce barriers to participation by IT professionals in specialised international conferences, seminars and training.

### ***Croatia***

#### *Sector overview*

Croatia has the most highly developed BPTO sector in the Western Balkans. IT, accounting and call centres are the segments most frequently outsourced to Croatian firms. Following trends in Central and Eastern Europe, the leading users of outsourcing services are banks.<sup>16</sup> The IT service and accounting segments are leading the growth trend, with most new firms opening in these fields in Croatia.<sup>17</sup>

Interest in Croatian BPTO companies was recently shown by one of the leading Indian integrated BPTO firms, ExlService Holdings Inc., which plans to acquire a local company as it seeks to take full advantage of the increasing trend of captives selling out to third-party BPTOs. Croatia was chosen primarily because of its language skills.

The IT industry in Croatia follows global trends in terms of the significant growth of the IT sub-sector within the ICT sector, measured by the number of employees in each sub-sector. According to IDC research, in the period 1999-2004 the growth of the IT sub-sector was 8.9% while the telecom sub-sector grew by only 0.6% CAGR. The share of employment in the IT sector in total employment is growing fast. It is the fastest growing sector of the Croatian economy (IDC Adriatics, 2006).

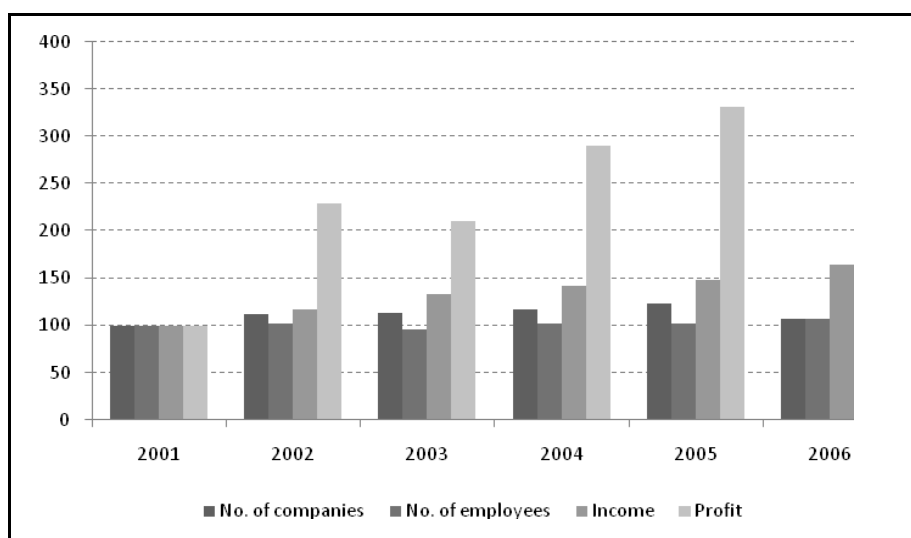
**Table 33. Share of the ICT sector in number of employees in the overall economy in Croatia (1999-2004)**

	1999	2000	2001	2002	2003	2004	CAGR
IT sub-sector	6 068	6 484	7 437	8 093	8 903	9 303	8.9%
<i>Growth (%)</i>		6.9%	14.7%	8.8%	10.0%	4.5%	
Telecom sub-sector	14 007	14 677	15 278	15 488	14 786	14 460	0.6%
<i>Growth (%)</i>		4.8%	4.1%	1.4%	-4.5%	-2.2%	
ICT total	20 075	21 161	22 715	23 581	23 689	23 763	3.4%
<i>Growth (%)</i>		5.4%	7.3%	3.8%	0.5%	0.3%	
Share in employment (%)							
ICT	2.8%	2.9%	3.1%	3.1%	3.0%	2.9%	
IT sub-sector	0.8%	0.9%	1.0%	1.1%	1.1%	1.1%	
Telecom sub-sector	2.0%	2.0%	2.1%	2.0%	1.9%	1.1%	

Source: IDC Adriatics, 2006

Research on the ICT sector by the Croatian Chamber of Economy shows that there were 2 523 ICT companies with 31 014 employees in 2006, with an income of Kuna 37 billion, 10.4% higher than the previous year and representing 6.6% of total income in the Croatian economy (Croatian Chamber of Economy, 2007).

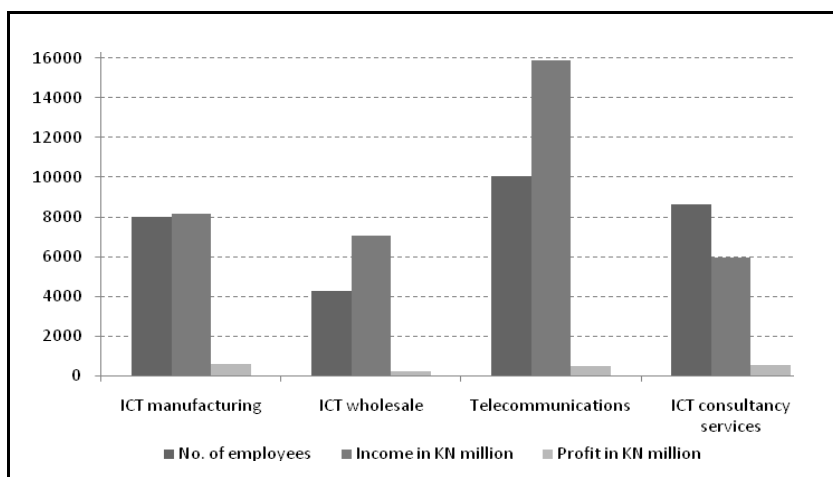
**Figure 77. The Croatian ICT sector: number of companies, employees, income, profit (2001-2006)**



Source: Croatian Chamber of Economy, 2007

The accelerated growth of income and profit in 2006, compared with number of employees, shows a higher level of labour productivity. In the period 2004-06, ICT companies' total income and profit rose by 16.1% and 29%, respectively (Croatian Chamber of Economy, 2007).

**Figure 78. Structure of the ICT sector in 2006, according to NCEA**



Source: Croatian Chamber of Economy, 2007

According to IDC, in 2006 IT spending in Croatia reached USD 934 million (Kuna 5.45 billion), for year-on-year growth of 18.9% expressed in USD and 15.9% in national currency taking account of exchange rate fluctuation. The IT outsourcing market in Croatia is estimated at around EUR 40 million and is considered one of the fastest growing segments.

IT services were the largest growth area, with spending soaring by 39.0%, while hardware deliveries grew by 9.9% and software by 13.1%. The shift from hardware to software and services points to the maturing of the country's IT market. The Croatian IT market is expected to grow to USD 1.235 billion by 2010, according to the IDC forecast. Expenditure on software and IT services, along with data storage and network equipment, is expected to be among the fastest growing segments, at 10.7% and 12.6% respectively (IDC Adriatics, 2006).

**Table 34. Analysis and forecast of IT spending by technology in Croatia (USD million) (2005-10)**

<b>Servers</b>	44.04	45.89	48.58	50.99	50.07	55.0	9.2
<b>Data storage</b>	38.47	46.98	54.47	60.61	67.45	74.09	14.0
<b>PCs</b>	201.25	217.34	231.13	240.49	248.93	260.22	5.3
<b>Work stations</b>	0.53	0.43	0.23	0.24	0.20	0.18	-19.2
<b>Network equipment</b>	72.66	82.99	95.62	107.83	114.39	124.41	11.4
<b>Software</b>	125.45	141.74	157.25	174.19	190.65	208.55	10.7
<b>IT services</b>	222.68	251.55	271.29	313.52	356.20	403.81	12.6
<b>Others</b>	84.34	97.17	100.37	103.22	104.71	108.42	5.2
<b>Total</b>	789.43	884.09	958.94	1 051.08	1 132.61	1 234.69	9.4

Source: IDC Adriatics, 2006

The ICT sector is highly fragmented. In 2004 there were eight companies with more than 200 employees, all in the telecom sector. There were nine ICT companies with between 100 and 200 employees (IT services providers, software developers and distributors). Fifty-nine ICT companies had more than 30 employees, but the majority had less than 30 employees (IDC Adriatics, 2006).

### *Challenges and policy barriers*

Among the recognised challenges facing Croatian BPTO sectors, as reported at the Second International Logistics Forum in April 2008, are the non-existence of large outsourcing companies, an unfavourable legal framework and corruption.<sup>18</sup> As in other Western Balkan economies, BPTO companies are confronted with barriers related to human resources.

Overall investments in education have recently reached 4.3% of GDP, which is still less than in EU countries. Reforms in the educational sector rely heavily on external funding.

Nevertheless, Croatia scores highest (3.5 out of 5) among the Western Balkan economies on human capital, sub-dimensions education and training of the workforce, transparency in education and workforce skills development (OECD Investment Compact, 2006). Compared to the EU countries, it also does well with respect to other indicators of educational level, such as percentage of young people aged 20-24 who have completed at least upper secondary education or percentage of 18- to 24-year-olds who have not completed secondary education and are no longer in education (early school leavers). But Croatia performs very poorly in terms of its adult learning participation rate. Moreover, the number of graduates in mathematics, science and technology is fairly low compared to the EU average (ETF, 2006c).

**Table 35. European benchmarks in education and training**

	<b>Benchmark 2010</b>	<b>Croatia*</b>	<b>EU-25</b>	<b>New EU Member States</b>
Completion of upper secondary education aged 20-24 (2004)	At least 85.0	92.5	76.7	90.1
Early school leavers (2004)	No more than 10.0	6.2	15.7	8.4
Graduates in maths, science and technology (2003)	Increase by 15.0 already achieved	3.4		31.1
Participation in adult learning	At least 12.5	2.0	9.9	5.0

*Source:* Draft 2006 Joint Report of the Council and the Commission; Eurostat: Structural Indicators; OECD: PISA database; ETF Key Indicators Database. \* = most recent year for which data is available.

The extent of education, however, tells little about skills acquired and their appropriateness to the labour market. For example, regarding IT skills, a study released by Cisco Systems Croatia in March 2006 showed that Croatia would lack more than 5 000 IT experts in 2008. The average shortage of IT experts was 16% in 2005. It was forecast to grow to 25% by 2008 (IDC, 2006).

A discrepancy between skills supply and demand is reflected in the high level of dissatisfaction with the competences of young people who have just left school, shown in a survey undertaken by the Croatian Chamber of Economy in 2005. According to the survey results, the education system, particularly in the case of vocational and educational training, has not followed economic trends and many young people continue to be trained using outdated materials and equipment. Moreover, technical skills are insufficient and key competences, such as using IT, communication skills in their

own and foreign languages, numeric skills, motivation to work, teamwork, problem solving and independence and self-initiative, are underdeveloped. This situation, according to employers, is due to the lack of systematic dialogue between social partners and the education system on labour market issues.

Concerning skills acquisition, numeracy skills and new types of basic skills such as computer literacy and problem solving are also lacking. The lack of basic skills is particularly important in regard to acquiring more advanced ones. Unlike employers in most EU countries, in Croatia most firms do not feel responsible for training their own employees. Most Croatian firms do not provide as much training as is required, preferring to try to attract trained workers from the labour market or from other firms. Some firms do not appreciate the need for and value of training, and some (under serious cost pressures) have cut training budgets as an apparently avoidable expense.

Larger and international firms are more likely to appreciate the need for employee development, especially management training, but there are problems particular to the numerous SMEs in Croatia. They are less aware of the importance of employee development; or it can be more costly or difficult for small firms to give time off for training (ETF, 2006c). A number of institutions of higher education are developing business education studies leading to diplomas or MBAs, but there may be some question as to the quality of such training. A 2002 survey showed that less than 15% of first-line and middle managers, and less than 9% of top managers, underwent additional training. The general impression is that management training, and the need for managers to engage in continuous learning, are not taken seriously enough in Croatia (Alka Obadic, 2004).

The same ETF report repeats a criticism made by the Croatian National Council for Competitiveness (NCC) regarding the quality of management in relation to the objective of improving competitiveness and suggests that management training receive special attention (ETF, 2006c).

Croatia's level of government spending on education is low compared to that in the EU: only 4.5% of GDP compared to 5.5% in the EU in 2005 (Eurostat, 2008). The structure of spending is of more concern since very little is devoted to new projects and research. Spending is rather on faculty salaries and on maintenance (Ministry of Finance of the Republic of Croatia, 2008).

Until now there has not been a comprehensive analysis to systematically examine the responsiveness of the education system to labour market needs. However, research undertaken through the OECD Regional Capabilities Survey (RCS) and OECD interviews, as well as other research, indicate a mismatch.

Both the RCS and interviews with IT firms show a considerable lack of skills and of educated workers in the IT field. Half the IT firms interviewed consider that there is a significant gap between the types of skills their employees have now and those needed to meet current business objectives. About 90% of IT firms consider that there is a gap in general skills related to management, leadership and showing initiative. Of those skills related to IT, those with the highest identified gaps (55% to 78%) are database, general application development, internet related software, and system software support.

The findings of the recently drafted Human Resource Development Operational Programme are similar. The Croatian population is reported to have "relatively high rates of secondary education but low rates of higher education and the workforce has relatively low skill levels. There appears to be a significant mismatch between the content of education (even vocational education) and the requirements of the labour market and very low levels of provision of adult education and training" (CODEF, 2007).

Croatia has one of the highest levels of brain drain in South East Europe (29.4%) or in Europe in general (World Bank, 2004). Compared with the EU, it has a considerably lower share of highly skilled workers in the total number of employed. The share of highly skilled non-manual workers (including managers, professionals and technicians) in 2004 was 38.4% in the EU-27 but only 29.6% in Croatia. Croatia also lags behind the EU-27 regarding the share of tertiary (ISCED 5 and 6) education graduates in the population, even in younger generations, although it is ahead of countries like Italy and the Czech Republic. The difference is expected to be reduced, as the number of graduates increased from 13 510 in 2000 to 18 190 in 2006 (34.6% growth).<sup>19</sup> Adult participation in education and training was only 2.3% in 2005, while the EU-27 rate in 2006 was around 9.6% (CODEF, 2007).

The EU CARDS project calculated that at least 800 IT engineers per year on average graduate from Croatia's five universities. Most come from the the faculty of Electrical Engineering and Computing in Zagreb. Croatian engineers and IT specialists are often highly regarded for their skills. Top global IT companies have described them as "world class with excellent technical education, flexible, innovative and creative, possessing high efficiency and productivity levels in software engineering" (CARDS, 2006).

Interviews with employers show that the output of skilled engineers has not been meeting demand. All foreign companies suggested at least a 50% increase on current output. The RCS results also highlight the lack of availability of people with really good "soft" management skills, such as marketing, human relations and negotiating.

**Box 18. Overview of the Faculty of Electrical Engineering and Computing (FER) curriculum**

The faculty in Zagreb has three major disciplines: Electrical Engineering/Information Technology; Computing/Computer Science; and ICT/Informatics/Communications. Total enrolment is close to 4 000, with a breakdown of approximately one-third of students in each discipline.

There is a five-year programme with an annual intake of 650 per year, totalling 3 250. The remaining 750 students are accounted for through part-time, repeat, and those students undertaking further/higher studies. The drop-out rate from FER is under 10%, or 600+ graduates on an annual basis. Under the Bologna Process, aimed at making higher education in Europe comparable and compatible, the time spent studying for a bachelor's degree has been shortened to three years, with a further two years to complete a Masters.

FER collaborates very closely with existing technology companies, particularly Microsoft, Ericsson, Siemens, Cisco Systems and Oracle. Plans are being finalised to work with SAP and IBM.

FER confirms the lack of unemployment among graduates and cites the brain drain out of the country, at more than 10%. It is estimated that more than 4 000 recent FER graduates live and work abroad, principally in Germany, the US, Ireland, Sweden and Australia.

In Croatia, FER graduates find employment in banking, insurance, other financial organisations, electrical engineering/IT, general industry, power utilities, telecommunications and electrical engineering.

*Source:* CARDS (2006)

The employers surveyed by the RCS were also of the opinion that a lack of global and innovative thinking in universities is impeding the development of higher education, and that the system is "rather rigid, inward looking, as well as theory oriented, with low levels of practical and industry related training." The quality of education in engineering and science, on the other hand, is considered good, unlike the situation in other faculties. Research also indicates that there is a lack of training facilities and resources to provide new skills for the unemployed.

Another acute problem in the IT sector, besides lack of human resources, is lack of funding, particularly for advanced research (CARDS, 2006).

### *Policy recommendations*

Overall, Croatia should focus on high value-added software development to justify the relatively high level of cost of labour in services. In terms of vertical focus, Croatia needs to leverage its sector base and further advance the expertise of its financial, telecom and tourism sectors in areas relevant to business process outsourcing. This requires a shift from traditional call centres to more value-added services and rounded packages. More value-added services should include research and analytics, human resources administration, cash and investment management, tax compliance and internal audit.

Focusing on strengthening technical and soft skills and competencies calls for establishing exchange programmes and tailored courses with foreign BPTO firms and universities. Policies related to the quantity and quality of the labour market in Croatia should aim to build those capabilities by using e-courses, teleconferencing, etc.<sup>20</sup>

The SME sector in Croatia, which is particularly large and vibrant, presents an opportunity for local BPTO firms to offer packaged solutions and adapt them for the EU market, preferably in partnership with a first tier BPTO company from abroad.

Croatia has gone far in skills gap analysis, but its approach to planning human resources needs to be more comprehensive and systematic. This implies setting up a human capital development co-ordination team under the Prime Minister, involving the ministries of education, labour and economy and the Investment Promotion Agency.

Moreover, the Croatian Investment Promotion Agency needs to increase promotion of the BPTO sector through brochures, videos, conferences, etc.

In modern and competitive small economies, the traditional approach of supporting production has given way to fostering research and innovation. This shift has not been reflected in Croatian state budget lines, despite the government's objective of making Croatia a competitive knowledge-based economy with the IT sector at the forefront. Therefore, if Croatia's public sector is to catch up and improve its competitive position on the European and global market, this sector as well as private companies need to further invest in applied research and innovation.

The integration gap of businesses and IT is an impediment to Croatia (the most advanced economy in the Western Balkans) leveraging business opportunities for its companies. Croatia may not be able to compete with the other Western Balkans economies in terms of labour costs, but its advantage lies in its advanced know-how, high rate of absorption of new technologies and IT, and vertical expertise in fields such as mobile technologies, geo-information systems, shipbuilding and pharmaceuticals. It is therefore necessary to promote closer co-operation between the IT and other industries in order to further Croatia's competitive position in these segments and, consequently, in the IT industry itself.

The quality and readiness of IT students entering the labour market should also be addressed. Initial linkages between universities offering courses in IT and computing and the private sector need to be further developed in order to produce high quality engineering and business education relevant to business requirements.

The growing gap between the demand for and supply of IT experts needs to be addressed more systematically. It is essential to align the Ministries of Economy, Labour and Entrepreneurship and Education with priorities stipulated by the Ministry of Science, Education and Sports, in co-operation with the private sector. It could be beneficial to leverage Irish and British best practices in terms of planning human resources conducive to economic development.



### **Summary of key recommendations:**

1. Utilise public-private partnerships to create venture capital funds focused on supporting software development companies engaged in applied research and innovation;
2. Develop closer collaboration between IT companies and the private sector to achieve business-oriented process improvements in specific industry segments (e.g. mobile communication, geo-information, shipbuilding and pharmaceuticals);
3. Conduct a thorough skills gap analysis of the IT sector based on initial work by USAID and the Trade and Investment Promotion Agency of Croatia;
4. Increase quotas for IT graduates at universities;
5. Strengthen linkages between local and international universities offering courses in the IT and computing fields to produce high quality engineering and business professionals;
6. Establish e-courses offering programming tools and languages (including domain specific ones and modelling), e.g. PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and ActionScript;
7. Establish and develop the capacity of a co-ordinating body at government level to promote and co-ordinate human capital development.

### ***Kosovo under UNSCR 1244***

#### *Sector overview*

The BPTO sector in Kosovo under UNSCR 1244 is in an embryonic phase of development. Local BPTO firms are very fragmented and are mostly focused on accounting and financial services. Although the infrastructure essential for BPTO services has been renewed, it still lags behind that of the rest of the Western Balkans region.

The presence of the international community has resulted in a transfer of skills and knowledge to local companies. Local educational institutions, eroded in the 1990s, have been undergoing a process of improving the quality of education offered.

Nominally, the legal system has been aligned with that of the EU. However, implementation has fallen behind.

The ICT market is in an early development stage. In 2006 it achieved substantial growth, of 200% (American Chamber of Commerce in Macedonia, 2007). Starting from a lower basis than most of the other economies in the Western Balkans, market growth potential is considerably high.

Despite the challenge of data collection, a USAID project attempted, primarily through interviews, to estimate the main characteristics of the IT sector in Kosovo (USAID, 2007). According to this study, the IT sector has annual income of approximately EUR 35 to 50 million. Some 25% to 30% of this income represents IT services and the rest represents equipment resale, installation and related services.

It is estimated that the sector is growing by about 20% to 25% annually, and that there are currently fewer than 100 firms in the sector. The IT market is very fragmented; most IT firms are micro size, with one or two employees. There are about 25 to 30 firms with more than five employees, and from four to eight firms have more than 20 employees. It is estimated that there are about 400 to 600 people working directly in the IT sector.<sup>21</sup>

The majority of IT solutions used are developed outside Kosovo under UNSCR 1244. Most IT spending comes from the government and banking sectors. A few firms resell basic business application packages, some of which they have developed themselves. Only a few firms provide outsourcing of software integration or development services internationally, and only a few firms market their services.

Average labour costs correspond to those in The former Yugoslav Republic of Macedonia and Serbia. A junior engineer earns approximately EUR 300 to 500 and a senior engineer earns EUR 550 to 850 per month (USAID, 2007).

### *Challenges and policy barriers*

The educational system of Kosovo under UNSCR 1244 was renewed in 1999, but education delivery remains significantly undermined by deficient infrastructure, administration and management. Teaching methods and outcomes are still poorly developed, and there are serious concerns about the quality of higher education. Such a situation inevitably affects work performance and productivity. A 2006 World Bank labour market assessment suggests that employers are disregarding formal qualifications in the hiring process, with the underlying assumption that the formal education system is not meeting the needs of the market (World Bank, 2003).

In an economy which relies heavily on international aid and on transfers made by Kosovars working abroad, it is estimated that up to two-thirds of young people leave school without qualifications while the lack of pre-university adult education remains a constraint on supporting employability. Vocational training is offered to the unemployed, but limited resources mean that only 0.8% of the registered unemployed actually benefit from public service training (ETF, 2006e).

The ETF report, on the basis of the difficult business operations that firms are facing, assumes that the private sector does not invest significantly in staff development and management training. Among other obstacles to private training development, it mentions an underdeveloped private training market, inappropriate learning methodologies and the absence of accreditation and quality assurance systems (ETF, 2006e).

### *Policy recommendations*

The first priority for Kosovo under UNSCR 1244, in regard to its relations with the BPTO sector, is to ensure good quality education, modernised and adapted to firms' business operations. Internship programmes can be established, and firms can be encouraged to co-operate with the university and other educational institutions. The focus should first be on back office services and call centres, as opposed to software development.

Possibilities for co-operation with Albania and The former Yugoslav Republic of Macedonia are increasing and should be considered. Co-operation at the university level and with the private sector would give Kosovar firms needed experience in developing the BPTO sector and would later help determine the direction in which local BPTO firms were heading.

Lack of IT skills, mostly due to a theoretical approach to knowledge acquisition, is also a characteristic of the education system of Kosovo under UNSCR 1244. The report outlined that "engineering schools may have basics, but far behind providing technical skills for work." Most new IT workers come from the University of Priština and have reasonable math and analytical skills, but are ill prepared for work until they receive at least six months of additional on-the-job training. Soft skills, such as management and entrepreneurship, are deficient (USAID, 2007).

The situation in regard to education and training may change, not only due to the start of management training, but also as there appears to be strong support from the new technology dean at the University of Priština for improving public/private collaboration.

The OECD assessment was conducted in the context of a very high unemployment rate, estimated at between 35% and 60%, one of the highest in South East Europe. Kosovo under UNSCR 1244 has one of the youngest populations in the region, with over half the population under the age of 25. Unemployment is estimated to be highest among those aged 15 to 24.

For the development of the BPTO sector, one of the key challenges that first needs to be addressed is inadequate physical and ICT infrastructure. As in Albania, it would be desirable to invest in modern wireless communication technologies, *e.g.* HSDPA and WiMAX.

Apart from providing basic theoretical knowledge, the technical faculty at Priština and other technical schools should aim to upgrade skills and ensure training in the new advanced technologies and standards which are key to building the competencies of IT experts. Moreover, training in entrepreneurship skills needs to be offered to students and to IT professionals.

#### **Summary of key recommendations:**

1. Establish internship programmes and encourage firms to co-operate with universities and other educational institutions;
2. Consider possibilities for co-operation with Albania and The Former Yugoslav Republic of Macedonia at the university level and with the private sector;
3. Address inadequate physical and ICT infrastructure. As in Albania, it would be desirable to invest in modern wireless communication technologies, *e.g.* HSDPA and WiMAX;
4. The technical faculty at Priština and other technical schools should aim to upgrade skills, and to ensure training in new advanced technologies and standards which are key to building the competencies of IT expert;
5. Offer to students and IT professionals training in entrepreneurship skills.

#### ***The former Yugoslav Republic of Macedonia***

##### *Sector overview*

The BPTO sector in The former Yugoslav Republic of Macedonia has been developing significantly, with advances in computer and telecommunications technologies and a reduction in their prices, making business processing and call centres viable technically and from the point of view of cost. The fastest growing segments are IT, accounting and call centres.

The country has demonstrated that it is both technically and commercially possible to operate multilingual contact centres, servicing other economies in the region. For example, Euroanswers, a UK based outsourcing company with strong Romanian connections, recently established a multilingual call centre in Skopje. It provides a help desk service on a 24/7 basis for a leading multinational hardware company. In addition to Macedonian clients, there are clients in Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo under UNSCR 1244, Montenegro, Serbia and Slovenia. There are a number of contact centres in the country, dealing with the local market. The largest are for telecommunications and financial services. Macedonian Telecommunications (MakTel) has two contact centres in the country, in Skopje and Veles, providing directory enquiries, fault

reporting and internet support on a 24/7 basis. The vendor for these services is Avaya IP Contact Center Solution. Other telecommunications companies, such as OnNet, also have contact centres. Another company, Direkt, has a contact centre providing visa support services to a number of foreign embassies based in Skopje. EOS Matrix and Mellon Solutions provide services to the financial services sector.

The IT sector is one of the fastest growing sectors in the country. According to research carried out by IDC, this sector reached about USD 77 million and was expected to grow by about 16% in 2007 compared to 2006. It is forecast to reach USD 150 million by 2010. The main drivers of growth are expected to be liberalisation of the telecommunications sector and the EU harmonisation process, which will require reliable and always accessible IT infrastructure and solutions. Increased competition among telecom service providers will stimulate new services, for which it will be necessary to upgrade and introduce new platforms and solutions.

In 2005, according to the income figures, the value of the Macedonian telecommunications sector was eight times larger than that of the IT sector. There are about 400 firms in the IT sector and about 100 in the telecommunications sector. The IT sector employs about 2 000 people, while the telecommunications sector employs about 4 000 people (American Chamber of Commerce in Macedonia, 2007). These figures demonstrate the fragmentation of IT firms, which employ five workers per company on average.<sup>22</sup>

The IT market faces several development issues, such as slow industry development, insufficient services and a small market size.

#### *Challenges and policy barriers*

The main challenges lie in training and educating a new generation of employees. One of the three key challenges recognised by ETF experts in their 2006 analysis of education and training in The former Yugoslav Republic of Macedonia was to enhance the education and skills of the population through better education and training opportunities for all (ETF, 2006d).

The overall supply of the country's labour force related to the BPTO and ITO sectors is insufficient. Currently there are weak linkages between education (universities) and employers and often curricula are not based upon technological development, either in secondary, VET (vocational education training) or university education. While the focus in training is on technical skills and much less on the soft skills, the methods of teaching and knowledge transfer are outdated and need to be upgraded (OECD Investment Compact, 2007). There is also a need to establish a lifelong learning system, with the identification and recognition of competences acquired through non-formal and informal learning in order to allow work and education mobility in the formal system (ETF, 2006d).

OECD interviews conducted with the largest Macedonian IT firms revealed that while there is excellent technical knowledge, IT workers lack adequate soft skills (*e.g.* in management, teamwork and entrepreneurship). There is also inadequate expertise in domain knowledge, such as billing, international financial standards, etc. Training at the universities is primarily directed towards the acquisition of theoretical knowledge and not aligned with industry needs and contingent business operations. Co-operation between the university and the private sector has been initiated, *e.g.* by offering internships for students, although this is still in its early stages. The Macedonian Association of IT Industry (MASIT), in particular, is engaged in developing better linkages between all stakeholders with the aim of increasing the competitiveness of the IT sector.

To respond to the increased demand for IT workers, the number of students enrolled in the electrical engineering and IT programmes at the University of Skopje has been increased from 360 in 2006/2007 to 400 in the 2007/2008 academic year.

The need to provide widespread access to IT infrastructure and to raise the level of IT awareness and skills at an early stage has prompted the initiation of two major projects. The first is “Wireless Macedonia” (USAID and AED, 2007), a plan supported by USAID funds to make internet access across the country available wirelessly. The second project is a government plan (“A Computer for Each Child”) to provide some 180 000 computers with a value of about USD 10 million.

The level of fragmentation of companies is another main challenge. ICT firms only have the size to compete on international markets. Seavus is one of the few successful models (Box 19).

Local firms regularly are not large enough to build deep vertical-expertise, and there are no or limited linkages between the public and private sectors. A comparison of sponsorships at a leading IT university in the US and The former Yugoslav Republic of Macedonia shows that 114 sponsorships/co-operation initiatives were announced at the Carnegie Mellon School of Computer Science (Carnegie Mellon University, 2007) and none at the Faculty of Electrical Engineering and Information Technologies in Skopje (S.s Cyril and Methodius University, 2007).

**Box 19. Seavus case study: a pioneer ICT company facing strong impediments to growth due to acute shortage of labour**

Seavus is representative of the challenges faced by an ICT firm in the Western Balkans. The firm was started in 1999 by a young Macedonian entrepreneur, who had been living in Sweden. It has 300 employees in Skopje and employs mainly graduates of the State University; employees are also hired through the international network. Seavus has approximately 15 international experts in domain knowledge working as trainers, including coaching and shadowing. It has offices in Belarus, Denmark, Latvia, Serbia, Sweden, the UK and the US, and customers in 30 countries including Volvo, Airbus, Tele2, Ericsson, Chevron, and the Ford Corporation. It offers products/solutions around Seavus Project Solutions (products that complement and enhance Microsoft Project), Seavus Callisto CTI (customer service), Seavus Parking System (on-line and off-line parking surveillance), telecom software (billing, middleware) and E-procurement, e-tax and e-commerce software.

The company's strong point is its products' quality-price ratio. For example, according to an assessment, Seavus Project Viewer EPM is ten times cheaper than MSFT, with greater reliability and functionality. Seavus has a significant marketing and promotion budget (EUR 2 million). Internet sales are its most significant source of income. All employees are well educated, the majority through a systematic individualised training plan. Internationalisation has begun, with some software translated into many languages including Japanese.

The company plans to hire dozens of programmers, including from abroad, since none can be found in The former Yugoslav Republic of Macedonia. There are projects to develop domain knowledge expertise, and multi-disciplinary approaches in the research and testing of software and services. The company is thinking of co-operating with like-minded firms to establish a university centre with a high quality teaching cadre in the IT field. The company has expressed concerns, and raised points for attention, that can serve as a reference for any player in the Western Balkans. Co-operation with the government in obtaining more graduates in the technical field, including increased funds for their education, is the main source of concern. Mobility (visa and customs obstacles for exports and imports) is another. The main challenge is that Seavus cannot find enough qualified employees, but must re-train people coming from universities and the labour market

Source: OECD interviews (2007)

### *Policy recommendations*

One of the highest priorities for The former Yugoslav Republic of Macedonia is to develop linkages between education and the private sector in order to upgrade skills. In addition, economic free zones could be utilised to serve as a hub for other BPTO companies interested in the European market.

With Croatia and Serbia, The former Yugoslav Republic of Macedonia has the most developed BPO and ITO sectors. Joining forces with other economies in the region on a common project, *e.g.* offering package solutions for banking or telecom services, could serve not only as a basis for obtaining economies of scale and often required substantial size, but could also re-orient the focus of BPO services to higher value-added. The region's economies could work towards creating a regional brand based on quality standards.

Besides increasing the quantity and quality of graduates, which it has begun to do, the government could offer incentives to local firms to invest in education, training, and standards certification.

In the last few years the country has been able to market itself as a "Singapore of Europe", strongly emphasising its competitiveness in the IT sector. In reality, there is a critical lack of available workers in the Macedonian IT industry, a problem which needs to be addressed promptly. It is therefore necessary to invest in human resources in order to strengthen delivery with respect to the number of people trained, the quality of their training and linkages to businesses.

The number of workers can be increased by raising state quotas for ICT graduates at faculties that provide IT education and training. A diploma in the IT field could be introduced for short courses at the vocational education level. The content of the curriculum needs to be adapted to rebalance the share of theoretical courses, reinforce training in soft skills (*e.g.* project management, foreign languages) and explore linkages with businesses/other scientific domains (*e.g.* design, bio-informatics). Closer linkages between the industry and education could be achieved through, for example, introducing master classes with industry experts. Funding of student exchanges with leading foreign universities, internships, sponsored courses and research projects could also create better connections with the private sector.

Macedonian IT firms should be engaged in regional efforts to initiate projects that would enable them to offer software solutions to the public, banking and mobile communications sectors and others (*e.g.* Seavus has IT offshoring experience with Chevron, Texaco, Volvo). This co-operation should aim to produce regional leaders, which would result in greater visibility of the country's IT sector internationally and help to build a joint Western Balkans IT brand.

Finally, IT firms should increase their presence at ICT conferences and forums (CeBIT<sup>23</sup>, e-forums, etc.) to establish their presence on the wider market.

#### **Summary of key recommendations:**

1. Develop linkages between education institutions and the private sector in order to upgrade skills;
2. Join forces with other economies in the region on a common project;
3. Offer incentives to local firms to invest in education, training, and standards certification;
4. Introduce a diploma in the IT field for short courses at the vocational education level;

5. Adapt the content of curricula to rebalance the share of theoretical courses, reinforce training in soft skills, and explore linkages with businesses and other scientific domains;
6. Introduce master classes with industry experts;
7. Fund student exchanges with leading foreign universities;
8. Support the presence of IT firms at ICT conferences and fora.

## **Montenegro**

### *Sector overview*

The BPTO sector in Montenegro, one of the smallest economies in the region with a population of 665 000, is not yet developed apart from a number of local firms, rather small in size, serving other local firms (*e.g.* accounting, financial services).

The IT market has been relatively underdeveloped compared to that in neighbouring countries, such as Croatia and Serbia. But Montenegro has begun to catch up in the last couple of years with investments in ICT infrastructure, namely in mobile telecommunications, including 3G, and broadband infrastructure. The size of Montenegro's IT market was EUR 20 million in 2006 and EUR 25 million in 2007, an increase of 25%. It is estimated that IT investments in 2008 could raise market value to EUR 40 million, a further increase of 60% (ISSP, 2008).

IT expenditure, according to the same source, is estimated to increase from EUR 44 per capita in 2006 to EUR 167 per capita in 2011, representing CAGR of 30.6%. The internet penetration rate reached 38.8% in 2007, increasing 62% compared with the year before (ISSP, 2008).

The internet penetration rate in 2007 was 40% (Internet World Stats, 2008). While 85% of households used dial-up as their main internet connection in 2006, this had fallen significantly, to 65%, in 2007. At the same time, the number of ADSL users jumped from 4% of households to 35.4% (ISSP, 2008).

### *Challenges and policy barriers*

Montenegro spends the highest proportion GDP on education of any Western Balkan economy (4.7%, close to the average in OECD countries of 5.4%). It ranks second, immediately after Croatia, in the assessment of the human capital dimension of the IRI report (OECD Investment Compact, 2007).

In a 2005 World Bank study, the following factors were identified as reducing the education system's contribution to the development of a quality workforce: poor school infrastructure, outdated learning material, equipment, teaching methods, except from those which benefited from teacher development projects. In 2006, few schools had access to ICT infrastructure (ETF, 2006f).

In 2005 some 52% of young people (15-24 years) were unemployed, but there are no specific employment measures in effect to address this problem. It is estimated that only about 10% of Montenegro's young people are in full time employment, and that only around 1.5% of unemployed young people benefit from vocational training programmes (ETF, 2006f).

The issue of the confidence of the market in the vocational skills being provided by the education system is reflected in an ETF labour market review which makes no distinction in unemployment rates between those with primary education and those with vocational education.

Furthermore, ETF research, using the European Charter for Small Enterprises and the National Report for Montenegro in 2005, found that there is little data available on the level of investment by businesses in staff training, apart from isolated efforts at more corporate oriented training (*e.g.* marketing, business strategy, standards), mostly supported by international donors and geared towards improving business performance with no reported investment in shop floor workers (ETF, 2006f).

Although the situation in terms of ICT infrastructure has improved, challenges related to human capital remain, especially with respect to providing the right set of skills related to the business world.

Among the main challenges for the IT industry in Montenegro is the inadequate supply of IT experts. Montenegro has suffered from a brain drain in this field, although the problem is fixing itself – the number of people receiving a university degree in ICT related fields is constantly increasing. IT firms in Montenegro find state support for training to be inadequate for their needs.

IT firms have difficulty finding people with the right skills, especially project managers and employees with ICT skills (*e.g.* systems and network engineers), above all in security and software development.

#### *Policy recommendations*

To develop the BPTO sector in Montenegro, there is a need to invest in the quality and quantity of human capital through both private sector involvement and more tailored educational programmes. Such schemes include offering internships, interventions in universities courses, exchange programmes with foreign vendors and universities. This applies to call centres, back office services and software development. Due to Montenegro's small size, BPTO firms, to compete internationally, are bound to co-operate with BPTO firms in the region's other economies. The content of BPTO focused training should aim towards high value-added services, including sector/technical specific training and opportunities for legal process outsourcing, IFRS and US GAAP in financial BPTO, medical environment and regulations for medical technical support, advanced business and technical languages for remote technical assistance.

Management of labour market supply should be strengthened by furthering initial skills gap assessments and moving towards longer term planning. This would involve not only setting up an efficient mechanism for dialogue between all key stakeholders, including the public and private sectors and civil society, but also creating a co-ordination body for developing human capital in Montenegro.

One of the first specific priority policies for Montenegro in the IT sector is related to human capital development, primarily IT graduates. Outdated learning material, sometimes obsolete equipment and teaching methods for young IT graduates require a shift in the planning and implementation of IT curricula, but also in project management, communication, marketing and sales relevant to the IT industry. Closer linkages between the private sector and the technical faculty need to be developed in order to bring real business life and requirements closer to students.

High internet penetration in Montenegro is not consistent with the level of technology usage. Less than half of households have a computer, indicating a fairly low level of computer literacy. The government should consider implementing technical educational programmes to provide basic IT skills and further increasing computer and internet access at schools.

As a small country, Montenegro should work closely with the region's economies, such as Croatia and Serbia, to identify strong verticals, *e.g.* tourism (sailing) and mobile communications,



which could then be integrated with IT courses, enabling IT professionals and firms to move higher on the value-added products and services scale.

#### **Summary of key recommendations:**

1. Focus the content of BPTO training towards high value-added services;
2. Set up an efficient mechanism for dialogue between all key stakeholders in the field of education, including the public and private sectors and civil society;
3. Create a co-ordination body for developing human capital;
4. Improve the planning and implementation of IT curricula, as well as of project management, communication, marketing and sales relevant to the IT industry;
5. Develop closer linkages between the private sector and the technical faculty;
6. Implement technical education programmes to provide basic IT skills and further increase computer and internet access at schools;
7. Identify and promote areas of specialisation, e.g. tourism and mobile communication.

### ***Serbia***

#### *Sector overview*

The BPTO sector in Serbia has been growing significantly since the end of 1990s. Business potential has increased in the last few years, assisted by the process of EU integration and a free trade agreement with Russia.

The most developed BPTO fields are ITO, accounting, CRM, human resources and call centres. Trizma, founded in 2002, was the first company in Serbia to offer a complete range of call centre outsourcing services and is an example of innovative and strategic planning in the BPTO sector. This Belgrade-based company provides clients with inbound and outbound interaction handling for customer service, debt collection, appointment scheduling, marketing campaigns and other CRM operations. Trizma was established through a joint venture between a Hungarian software company, Geomant, and an American investment company, Convex. Its clients include major companies in key market segments such as the food, telecommunications, and the financial and banking sectors, including Coca-Cola (customer service, marketing support, remote store delivery support), Delta Banka (inbound customer care call handling), Maxi, American Embassy and Delta Osiguranje (outbound lead generation and appointment scheduling) (Altitude Software, 2005).

Major international firms such as PricewaterhouseCoopers (PWC) have already established their captive centres. PWC employs 160 people and primarily offers package services (financial audit, advisory business compliance, tax and legal consultancy) to international clients with operations in Serbia. The company considers local staff to be creative and open minded, with high value-added. However, there is a problem finding experienced and qualified people with the right set of skills (OECD Investment Compact, 2007).

Serbia has developed telecom infrastructure in major cities, but in some provincial areas it is lagging behind.

The value of the Serbian IT market in 2007, according to Business Monitor International (BMI), was estimated at USD 454 million, an increase of 25% compared with the year before. It is expected to

continue to grow at higher than the regional rate, with CAGR of 15% up to 2012 (BMI, 2008). There are an estimated 1 300 software development firms in Serbia, but the majority (70%) are in the hardware business, whereas services are just above 20% and software production 10% (OECD Investment Compact, 2007).

**Box 20. Example of a technologically advanced approach to BPTO in Serbia**

One of the innovative contact centre solutions implemented by Trizma is Altitude Collaborator software. Altitude Collaborator is a module that bridges internet self-care with the contact centre. The Altitude uCI suite is a call centre solution with a universal queue and full-blended support for voice (inbound, preview, power and predictive dialling), IVR, email response management, web collaboration and web chat. IT provides flexibility and functionality for responding to customer needs in real time and quickly designing and maintaining agent front office applications tailored to customers' requirements. A new system, multichannel customer interaction management, enables Trizma to efficiently roll out personalised inbound and outbound campaigns on behalf of its customers, viewing contact results in real time and monitoring overall contact centre activity to generate efficient CRM campaigns.

*Source:* Altitude Software (2005)

Major multinationals such as Microsoft (its fourth development centre in the world), Intel, Ericsson, Siemens and IBM are present in Serbia. A number of smaller European firms have also established a presence, both in order to expand their market reach and to develop IT products for the region.

Over 100 leading private ICT firms and representatives of universities and research institutes have established an ICT cluster in Serbia. More than 1 000 IT professionals per year are produced. The cost of graduate level qualified staff is considerably lower than in Western Europe (OECD Investment Compact, 2007).

The Serbian government has ambitious plans for the development of the IT market. Thus, it is planning to set up a range of technology parks in Belgrade, Niš, Novi Sad and Indija, the last to be the largest technology park in the region (SIEPA, 2008).

Labour costs also represent a significant advantage compared with those in the EU or even in Serbia's neighbours. At the end of 2004, average monthly wages in Serbia were EUR 180 compared with EUR 785 in Croatia and EUR 832 in Hungary (SIEPA, 2005).

*Challenges and policy barriers*

The outdated early education system and its lack of flexibility are evidence of the insufficient quality of the compulsory education system. Serbia holds one of the lowest positions in terms of reading ability and proficiency in mathematics for 15-year-olds (OECD, 2007). Employers in Serbia are not satisfied with the content and quality of skills and knowledge that the education system provides to young people: there is a lack of problem solving skills and entrepreneurial spirit, excessive theoretical knowledge and inadequate general and specific technical skills (ETF, 2006g). In 2005, only 15% of the population had a university education against 22% in the EU (Statistical Office of Serbia and Eurostat, 2008). Moreover, the performance and quality of university education seems weak. Only 11% of students graduate on time and the average length of studies is around eight years (ETF, 2006g).

As described in the 2006 ETF Country Report, despite the lack of available data on the skills and competitiveness of Serbia's labour force the "long years of disinvestment in new technologies and modern methods of work organisation within enterprises, involvement in subsistence agriculture and informal sector activities, suggest that a large section of the labour force may have the formal qualifications but not the updated skills necessary for a market-based economy" (ETF, 2006g).

The ETF Country Report mentions the findings of the CARDS project, which highlighted that basic skills (*e.g.* communication skills, teamwork, reliability, a positive attitude to work) are often missing in Serbia, rather than technical and occupational ones.<sup>24</sup> Serbian employers often stress the need for knowledge of foreign languages and IT skills (ETF, 2006g).

With regard to training infrastructure, what had been considered a well established training infrastructure in the former Yugoslavia collapsed after the transition to a market economy and a multi-party system. Of the 200 workers' and people's universities in existence in 1990, only around 20 to 25 still actively provide courses in vocational training, foreign languages and IT. Most have inadequate facilities and staff, as reported in the ETF Country Report (ETF, 2006g).

Simultaneously and instead of the former training infrastructure, a new body of training providers, including formal education institutions (secondary vocational schools and universities), Chambers of Economy, NGOs, private training providers and small and medium-sized agencies are being organised. Still, the demand for training surpasses the needs of the adult population and the scope of training remains somewhat limited.

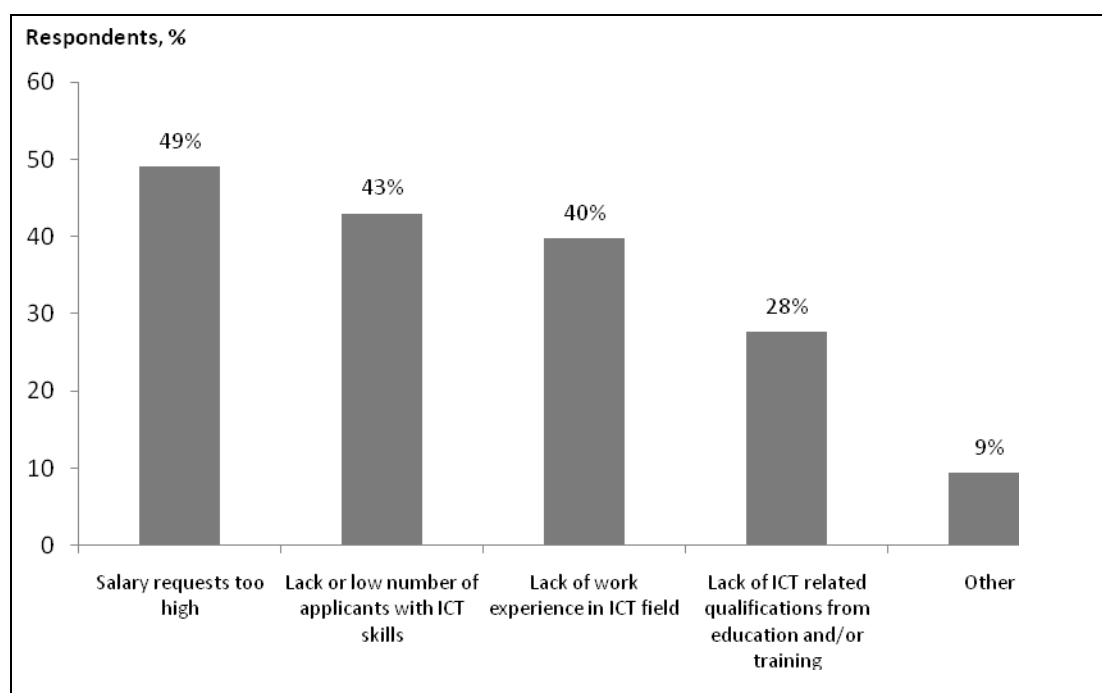
Some firms, usually if they are large and foreign owned, are implementing management and employee training schemes, especially in the ICT, banking and insurance sectors. Others, especially SMEs, have reduced training to a minimum. The ETF report estimates that "only 31% of enterprises offer some kind of training to their staff" (ETF, 2006g).

In this context, education and continuous training are the key levers for the region and for each country to be able to compete.

Other challenges include problems with law enforcement. Despite laws having been put in place, there are problems with their implementation, which hinders business operations.

In addition, the results of the Regional Capability Survey (RCS) indicate a lack of availability and employability of IT experts in Serbia. The main challenges in regard to employing IT experts in 2006, according to the firms surveyed, were related to education and training. Only 13.3% of enterprises provided training to their IT experts, and 10.1% of these did so within their own firms (OECD Investment Compact, 2007).

**Figure 79. Obstacles to obtaining skilled ICT workers in Serbia**



Source: OECD Investment Compact, 2007

Serbia's professional IT labour force is produced through a rather academic approach of imparting knowledge and skills. Each year around 1 000 students graduate in Electrical Engineering and Computer Science, which represents 7% of total university graduates. Since 1968, students from high schools specialised in mathematics, physics and informatics have won an impressive number of prizes at international competitions. In August 2005, students from the ETF (School of Electrical Engineering at the University of Belgrade) won first place in the largest international competition for young electrical engineers, the "IEEE International Future Energy Challenge 2005", at the Illinois Institute of Technology (SIEPA, 2005).

Strong technical knowledge, coupled with the development of soft skills and a deeper understanding of business processes and verticals, would give Serbia a leading position for attracting IT operations from abroad.

#### *Policy recommendations*

Based on its strengths, such as expertise in telecom, banking, engineering, and a good quality-cost ratio, Serbia should focus on value-added BPTOs in selected niches (banking, telecom). As the automotive industry is experiencing a second wave and new large investments, Serbia should also draw on the experience of other countries in the CEE in order to take advantage of this emerging opportunity.

A strong diaspora, comprising young and educated people, has not been sufficiently capitalised on and could be an important bridge for moving towards knowledge process outsourcing (KPO).

BPTO firms can be located elsewhere than Belgrade, which would reduce operational costs. Such a shift to second and third tier locations would require closer collaboration in training local people in technical and soft skills.

For the IT segment, the major priority policy is to invest in meeting the market demand in terms of both quantity and quality of IT graduates. Quotas at the main engineering faculties in Serbia need to be adapted to increasing demand. Overall human resources planning needs to be given strategic priority. Best practices from Ireland and Britain could be used to optimise adjustments in the labour market and in educational and economic development policies.

Co-operation between electrical engineering and computing schools and management schools in South East Europe should be considered a priority and should receive government support in order to take place in a systematic manner. This would be aimed at preparing IT students to work together with vertical industries (*e.g.* the automotive industry) and to acquire the soft skills needed in the competitive environment of the real business world.

Many Serbian IT firms have expressed the need to reform trade related regulations in order to make IT products and services more attractive as exports. There also appears to be a lack of access to financing for IT firms, preventing them from developing their businesses. To overcome this problem, linkages would need to be developed between IT firms and financial institutions.

***Summary of key recommendations:***

1. Increase quotas for language and IT graduates at universities;
2. Adapt curricula to rebalance the share of theoretical courses, and reinforce training in soft skills (*e.g.* project management) and sector/technical specific training (*e.g.* ERP, VMI, DFM, CAE);
3. Establish e-courses offering programming tools and languages (including domain specific ones and modelling), *e.g.* PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and ActionScript;
4. Introduce a master class with industry experts, to create closer links with the private sector;
5. Establish a funding scheme for student exchanges with leading foreign universities, internships, sponsored courses and research projects;
6. Support participation in regional BPO and IT events and conferences, in order to create linkages with other firms and associations in the region;
7. Support regional co-operation in obtaining international projects;
8. Establish and develop the capacity of a co-ordinating body at government level to promote and co-ordinate human capital development.

## NOTES

1. Software development involves turning a process or idea into a software tool. It can include creating new software or modifying or re-engineering existing software.
2. “IT” is used throughout the chapter to refer to activities related to the IT services and software products in Table 25. “ICT” is used to refer to all the activities designated in Table 25.
3. “Customer care” refers to systems put in place by businesses to ensure customer satisfaction with the product or service they produce.
4. In the BPTO sector, a “captive investment” refers to Company A setting up a second company, Company B, which solely provides goods or services to Company A. For example, Company A sets up Company B, a call service centre, to handle customer relations solely for Company A.
5. Total communication access paths = standard analogue access lines + ISDN lines + DSL + cable modems + mobile subscribers.
6. T1 lines provide very high speed data connection, operating at about 1.5 million bits per second. This is typically used by businesses. DSL connections, which are slower than T1 connections, are generally used by homes due to their lower cost.
7. Web 2.0 refers to the use of internet-based services evolving from a “read-only” to a “read-write” medium. Initially, it was a loose collection of recently developed concepts and technologies, *e.g.* weblogs, wikis, podcasts, web feeds and other forms of collaborative publishing, reinforced by social software, web APIs, web standards, on-line web services and Ajax (White, 2008). This concept has now been mainstreamed and is influencing the B2B environment. “Free” or “open source” software means “...that a user possessing copy has the legal right to use it, to study the software’s source code, to modify the software, and to distribute modified or unmodified versions to others” (Von Hippel, 2002).
8. This figure only includes contracts greater than EUR 20 million.
9. See Bernard, Jensen and Schott (2005) and Nocke and Yeaple (2006).
10. Eurostat.
11. The Test of English as a Foreign Language (TOEFL) measures English reading, listening, speaking and writing ability. It is a prerequisite for study in many Anglophone universities when the student is not a native English speaker. Scores range from 0 to 120. Since its inception in 1964, this test has been taken by over 20 million people.
12. It is not uncommon for firms to sponsor university courses related to their field of activity, whereby they contribute to university staff salaries and course materials as well as presenting information and case studies on their business.
13. Telecom infrastructure has a 100% digitalised network since January 2003.

14. According to the OECD Investment Compact's research and the RCS results, the Albanian economy suffers from irregular provision of electrical energy.
15. OECD Investment Compact analysis, based on IDC data.
16. Survey conducted by Roland Berger Strategy Consultants, in Croatian News Agency article reporting on the Second International Logistics Forum held in Zagreb on 10 April 2008 ([www.hina.hr](http://www.hina.hr)).
17. Croatian News Agency article reporting on the Second International Logistics Forum held in Zagreb on 10 April 2008 ([ww.hina.hr](http://ww.hina.hr)).
18. Croatian News Agency, article reporting on the Second International Logistics Forum in Zagreb, 10 April 2008 ([www.hina.hr](http://www.hina.hr)).
19. The ratio of graduates in 2005 to those enrolled in 2000 (the first year) was less than 40%, implying a dropout rate higher than 60%, especially for those who finished only general preparatory (gymnasium) education and therefore did not have useful job skills. The problem of dropouts is expected to be even greater in the future, due to the large and growing enrolment at universities (from 91 874 in 1998/1999 to 132 952 in 2005/2006, a 44.7% increase).
20. A good example is co-operation between Infosys BPTO and Karnatak University in Bangalore, India. In this setting, students are offered specially designed curricula and are trained in communication skills, personality development, domain skills, problem solving and creative solutions, helping them to be employable in BPTO companies.
21. The figures do not include those working in IT departments of non-IT companies.
22. The former Yugoslav Republic of Macedonia is the home of the largest IT and software development company in the region, Seavus, which employs around 800 people.
23. Annual trade show for information and telecommunications technology.
24. Except in dynamic sectors such as health care, banking and financial services.

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**PART III**  
**RECOMMENDATION FOR A REGIONAL COMPETITIVENESS INITIATIVE**



## REGIONAL COMPETITIVENESS INITIATIVE

### 5.1 The need for a regional level competitiveness initiative

#### *Sustaining longer term reforms*

Sustaining competitiveness in the longer term at both the country and regional level is vital. The OECD recommends addressing the cost trap the region is currently facing by developing institutions, mechanisms and processes to increase its competitiveness with limited outside support. To enhance competitiveness and sustain it in the longer run, the OECD proposes an approach based on three self-reinforcing pillars.

**Figure 80. Proposed key pillars to support sustainable competitiveness in the Western Balkans**



*Human capital development:* Develop the mechanisms to match skills supply with market demand and enhance overall skills in the region.

Specific objectives: (i) reduce skills gaps; (ii) increase firms' hiring flexibility; (iii) ensure the sustainability of human capital policy with well-defined mechanisms for consultation and institutionalisation.

*Competitive clusters:* Develop a systematic regional approach to generate innovative projects through partnerships between local firms and international firms, universities and civil society.

Specific objectives: (i) improve the level of innovation by focusing on research and development; (ii) enhance valued-added skills through knowledge transfer; (iii) develop policies to organise and deliver government services more efficiently (clusters provide a good organisational framework for delivering government services that are tailored to industry demand); (iv) develop policies that target investments to clusters (*e.g.* investment strategies to help less research oriented cluster members adopt new technologies and become more innovative); (v) develop policies to increase clusters' networking, learning and workforce skill set.

*Sector specific policy reform:* Develop a systematic approach to removing policy barriers to investment and trade in key sectors. The expected outcome would be to enable targeted sectors to compete more effectively at the regional, European and global level in the longer term.

Specific objectives: (i) improve sector attractiveness by removing sector specific policy barriers on a continuous basis; (ii) regularly monitor and assess sector specific policy reform progress.

### ***Acting on the three pillars of competitiveness at the regional level***

#### *Human capital reforms*

To sustain human capital reforms in the longer term, these areas need to be addressed:

*Institutional development:* Set up a human capital development co-ordination team within each government, involving the ministries of education, labour and economy and Investment Promotion Agencies.

Specific output: An action plan for the creation of an inter-ministerial unit, including all relevant stakeholders in most countries of the region, and setting up of the unit. To be carried out with the Regional Cooperation Council (RCC), and in collaboration with the Regional School for Public Administration,<sup>1</sup> to potentially provide future staff.

*Developing the tools to analyse skills gaps and shortages:* Identify the skills required to better respond to investment opportunities, determine the future skills profiles of the labour force based on analysis of labour market dynamics, and define training and educational objectives in line with current and future skills profiles.

Specific output: A tool to analyse sector specific skills gaps by anticipating market growth and future skills needs. Work to be carried out in collaboration with the European Training Foundation (ETF), DG EMPL<sup>2</sup> and DG EAC.<sup>3</sup>

*Labour market regime:* Determine the labour market's ability to favour the entry of new people, especially those with the needed skills profiles.

Specific output: A sector specific analysis of the impact of labour market regulations and hiring charges. Work to be carried out in collaboration with DG EMPL.

*Mechanism for dialogue:* Ensure continuous discussion and debate among key stakeholders from both the public and private sectors and civil society, aligning reforms with the requirements of all affected parties.

Specific output: Consultation mechanisms, processes and communication to encourage policy reform sustainability. Work to be carried out in conjunction with bodies such as the Centre for Excellence for Entrepreneurship Education (Zagreb).

#### *Regional clusters*

This pillar involves developing competitive clusters, including local and international firms, academia and research bodies, NGOs and trade unions in order to work on collaborative activities, leveraging models such as France's competitive clusters.

Setting up competitiveness clusters<sup>4</sup> has been identified in the “Sector Specific Sources of Competitiveness” (SSSC) project as one of the key next steps. Most of region’s economies have implemented some form of economic zones or clusters, but these remain to be fully leveraged. By building a network of players at the forefront of innovation, the end goals of the new policy are the creation of new wealth and jobs in local areas. Clusters impact competitiveness in three ways: (i) by increasing the productivity of firms based in the area; (ii) by driving the direction and pace of innovation; and (iii) by stimulating the formation of new businesses within the cluster. Geographical, cultural, and institutional proximity provide firms with special access, closer relationships, better information, powerful incentives, and other advantages that are difficult to profit from at a distance.

In the short term, the goal is to increase even further the competitiveness of the targeted four sectors by involving foreign and local investors as well as civil society in their growth. In the long term, the aim is to sustain and embed the initiative following best practice in OECD countries such as France and Finland. As in OECD countries, the Western Balkan economies can stimulate the creation of clusters and sustain their growth through appropriate policies. These areas need to be addressed:

*Assess cluster initiatives in the Western Balkans* in order to focus on the economies and sectors that most require competitive cluster support.

Specific output: (i) mapping and analysis of the current strengths and weaknesses of cluster initiatives in the region; (ii) a strategy and roadmap to address gaps in cluster policy.

*Define an organisational structure and governance model* for a cluster approach by garnering funds and resources, designing the structure and determining the ministries to be involved (e.g. compare France’s inter-ministerial DIAC unit).

Specific output: (i) design of the funding mechanisms required for two pilot projects based on OECD best practices; (ii) definition and design of the organisation of a unit working on establishing the different competitive clusters and administering the legal and administrative hurdles faced in their establishment.

*Define the objectives and scope of the cluster initiatives*, as well as sector coverage and type of project (network fostering, regional brand creation, technical standard establishment, export promotion, etc.).

Specific output: (i) strategy for one cluster per country as a pilot to be rolled out by the country; (ii) initial implementation of high-level roadmap.

The above actions should be developed in collaboration the RCC, Ministries of Economy, Country Economic Team (CET) Leaders, Investment Promotion Agencies (IPAs) and a select number of international organisations such as the German Organisation for Technical Co-operation (GTZ) working on competitive clusters.

### *Sector specific policy reforms*

*Set up regional sector specific working groups* that will work on common issues such as access to finance for the apparel manufacturing sector, or accreditation requirements for the automotive components sector. The working groups will support the drafting of policies and action plans to be ratified by parliaments or other relevant government channels.

Specific output: (i) the design and setting up of sector specific regional working groups operating under the umbrella of the RCC; (ii) mechanisms to identify and reduce sector specific policy barriers; and (iii) an initial high-level road map to address sector barriers.

*Monitor and report on reform progress* by leveraging OECD instruments such as the Policy Framework for Investment, the Investment Reform Index, the SME index and Private Sector Development Reports.

Specific output: Design and put in place indicators that the RCC and working groups can use to monitor and report on reform progress.

The above actions should be developed in collaboration with the RCC, Ministries of Economy, CET Leaders and IPAs. Twinning with EU sector specific working groups could be envisaged in the form of expertise sharing.

The recommendations listed above also aim at supporting the EC and RCC objectives for the region, including:

1. Developing the economy and human capital (objectives 1 and 5 of the RCC);
2. Focusing research and development efforts through a competitive cluster approach;
3. Further increasing investment and trade, through targeted sector specific policy reforms;
4. Involving civil society further.



## NOTES

1. The Regional School for Public Administration (ReSPA) is a joint initiative of the European Union and the OECD to boost regional cooperation in the field of public administration, strengthening administrative capacity and developing human resources ([www.respaweb.eu](http://www.respaweb.eu)).
2. Directorate General for Employment, Social Affairs and Equal Opportunities of the European Commission.
3. Directorate General for Education and Culture of the European Commission.
4. A competitiveness cluster is an association of companies, research centres and educational institutions, working in partnership and under a common development strategy, with the goal of generating synergies in the execution of innovative projects in the interest of one or more given markets. There are five success factors for each competitiveness cluster: (i) implementing a common economic development strategy that is consistent with the area's overall development strategy; (ii) creating extensive partnerships between players for specific projects; (iii) focusing on technologies for markets with high growth potential; (iv) reaching sufficient critical mass to acquire and develop international visibility; (v) developing dialogue with civil society to include all key stakeholders



*Annex I*

**SUMMARY OF COUNTRY RECOMMENDATIONS**

**ALBANIA**

**Apparel manufacturing**

1. Actively promote the apparel sector as a target for foreign and local investment;
2. Improve electricity infrastructure to minimise disruptions to firm activity;
3. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
4. Develop training for apparel firm managers to leverage opportunities to increase competitiveness of Albanian firms.

**Business process and technology outsourcing**

1. Further develop the use of investment promotion events to promote the capabilities of Albanian back office services and call centres, including in Italy and Switzerland;
2. Improve the quality of education by including IT education in curricula at all levels and modernising secondary and graduate level education to develop ICT core competencies, soft skills and practical advanced knowledge relevant to industries' demands;
3. Develop a network of excellence involving back office services, ICT companies, universities and key vertical industries to ensure the transfer of technical knowledge, skills, technology and business processes to IT students and professionals;
4. Support participation in regional IT events and conferences, in order to create linkages with other IT companies and associations in the Western Balkans region;
5. Establish e-courses offering programming tools and languages (including domain specific ones and modelling), *e.g.* PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and ActionScript;
6. Establish and develop the capacity of a co-ordination body at government level to promote and co-ordinate human capital development;
7. Speed up development of accessible and reliable ICT infrastructure, possibly based on wireless communication.

## **BOSNIA AND HERZEGOVINA**

### **Apparel manufacturing**

1. Harmonise the tax systems in Bosnia and Herzegovina between the two entities and the Brčko District;
2. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
3. Develop training for apparel firm managers to leverage opportunities to increase competitiveness of Bosnian firms.

### **Automotive components**

1. Support companies in obtaining international quality certifications and training people in business functions related to quality assurance and quality control;
2. Create a sector specific database with detailed information on the existing supplier base (types of companies);
3. Expand and develop existing clusters by refining the value proposition;
4. Reduce the labour tax wedge to help maintain Bosnia and Herzegovina competitiveness;
5. Simplify procedures for obtaining licenses and streamline administrative procedures.

### **Business process and technology outsourcing**

1. Assess the skills gap and labour shortages in the languages, finance, legal and IT qualifications;
2. Increase quotas for language and IT graduates at universities;
3. Leverage companies' strong competencies (*e.g.* engineering) to support and lead applied courses that would help develop better integration of IT and vertical industries, such as metal processing, automotive parts, food processing and tourism;
4. Establish e-courses teaching programming tools and languages (including domain specific ones and modelling), *e.g.* PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and Action Script;
5. Establish and develop the capacity of a co-ordination body at government level to promote and co-ordinate human capital development;
6. Reduce barriers to participation by IT professionals in specialised international conferences, seminars and training.

## CROATIA

### Apparel manufacturing

1. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
2. Develop training for apparel firm managers to leverage opportunities to increase competitiveness of Croatian firms.

### Automotive components

1. Facilitate the improvement of skills in design and product engineering by promoting linkages with foreign companies through supplier collaborative initiatives;
2. Support the creation of R&D centres specific to the automotive components industry;
3. Propose clustering co-funding with the private sector and enhance collaboration among different clustering initiatives;
4. Reduce the length of judicial proceedings;
5. Simplify procedures for obtaining building permits.

### Business process and technology outsourcing

1. Utilise public-private partnerships to create venture capital funds focused on supporting software development companies engaged in applied research and innovation;
2. Develop closer collaboration between IT companies and the private sector to achieve business-oriented process improvements in specific industry segments (*e.g.* mobile communication, geo-information, shipbuilding and pharmaceuticals);
3. Conduct a thorough skills gap analysis of the IT sector based on initial work by USAID and the Trade and Investment Promotion Agency of Croatia;
4. Increase quotas for IT graduates at universities;
5. Strengthen linkages between local and international universities offering courses in the IT and computing fields to produce high quality engineering and business professionals;
6. Establish e-courses offering programming tools and languages (including domain specific ones and modelling), *e.g.* PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and ActionScript;
7. Establish and develop the capacity of a co-ordinating body at government level to promote and co-ordinate human capital development.

## KOSOVO UNDER UNSCR 1244

### **Apparel manufacturing**

1. Actively promote the apparel sector as a target for foreign and local investment;
2. Improve electricity infrastructure to minimise disruptions to firm activity;
3. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
4. Develop training for apparel firm managers to leverage opportunities to increase competitiveness of Kosovar firms.

### **Automotive components**

1. Implement programmes to support companies in obtaining international quality certification;
2. Design and implement a sector specific investment promotion and facilitation strategy;
3. Support local suppliers' participation in international fairs (such as the Automechanika Fair in Frankfurt);
4. Enhance the legal framework and the administrative capacity for IPR protection.

### **Business process and technology outsourcing**

1. Establish internship programmes and encourage firms to co-operate with universities and other educational institutions;
2. Consider possibilities for co-operation with Albania and The Former Yugoslav Republic of Macedonia at the university level and with the private sector;
3. Address inadequate physical and ICT infrastructure. As in Albania, it would be desirable to invest in modern wireless communication technologies, e.g. HSDPA and WiMAX;
4. The technical faculty at Priština and other technical schools should aim to upgrade skills and ensure training in new advanced technologies and standards which are key to building the competencies of IT expert;
5. Offer to students and IT professionals training in entrepreneurship skills.

## THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

### **Apparel manufacturing**

1. Actively promote the apparel sector as a target for foreign and local investment;
2. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
3. Develop training for apparel firm managers to leverage opportunities to increase competitiveness of Macedonian firms.

### **Automotive components**

1. Continue to support the implementation of a sector specific investment promotion strategy, including the creation of an interactive database of automotive suppliers;
2. Promote the improvement of quality levels and applied skills in mechanical and electrical fields through the adoption and implementation of sector specific linkage programmes and clustering;
3. Streamline customs administrations and reduce import duties on capital goods.

### **Business process and technology outsourcing**

1. Develop linkages between education institutions and the private sector in order to upgrade skills;
2. Join forces with other economies in the region on a common project;
3. Offer incentives to local firms to invest in education, training, and standards certification;
4. Introduce a diploma in the IT field for short courses at the vocational education level;
5. Adapt the content of curricula to rebalance the share of theoretical courses, reinforce training in soft skills, and explore linkages with businesses and other scientific domains;
6. Introduce master classes with industry experts;
7. Fund student exchanges with lead foreign universities;
8. Support the presence of IT firms at ICT conferences and fora.

## **MONTENEGRO**

### **Automotive components**

1. Implement an investment promotion strategy focused on sectors that have strong backward linkages with the automotive components industry;
2. Define an investment promotion strategy to attract greenfield investment from automotive components manufacturers (second and third tier suppliers).

### **Business process and technology outsourcing**

1. Focus the content of BPTO training towards high value-added services;
2. Set up an efficient mechanism for dialogue between all key stakeholders in the field of education, including the public and private sectors and civil society;
3. Create a co-ordination body for developing human capital;
4. Improve the planning and implementation of IT curricula, as well as of project management, communication, marketing and sales relevant to the IT industry;
5. Develop closer linkages between the private sector and the technical faculty;
6. Implement technical education programmes to provide basic IT skills and further increase computer and internet access at schools;
7. Identify and promote areas of specialisation, e.g. tourism and mobile communication.



## SERBIA

### Apparel manufacturing

1. Support companies in obtaining financing by informing them about all existing sources of finance, both local and international;
2. Develop training for apparel firm managers to leverage opportunities to increase competitiveness of Serbian firms.

### Automotive components

1. Adjust the investment promotion strategy to ensure that the sector specific supplier database and other information material reach the right targets;
2. Increase international customers' involvement in existing forms of collaboration between R&D bodies and firms, and among firms themselves;
3. Support increased labour productivity by (i) intensifying competition in the sector by strengthening the privatisation programme: and (ii) further promoting technology transfers from abroad.

### Business process and technology outsourcing

1. Increase quotas for language and IT graduates at universities;
2. Adapt curricula to rebalance the share of theoretical courses, and reinforce training in soft skills (*e.g.* project management) and sector/technical specific training (*e.g.* ERP, VMI, DFM, CAE);
3. Establish e-courses offering programming tools and languages (including domain specific ones and modelling), *e.g.* PHP/MYSQL, Ajax, PHP-.Net, XML, Flash Animation and ActionScript;
4. Introduce a master class with industry experts, to create closer links with the private sector;
5. Establish a funding scheme for student exchanges with leading foreign universities, internships, sponsored courses and research projects;
6. Support participation in regional BPO and IT events and conferences, in order to create linkages with other firms and associations in the region;
7. Support regional co-operation in obtaining international projects;
8. Establish and develop the capacity of a co-ordinating body at government level to promote and co-ordinate human capital development.



*Annex 2*

**SPF WEIGHT ALLOCATION METHODOLOGY**

<b>Variables</b>	<b>Literature review score</b>	<b>Analysis score</b>	<b>Synthesis</b>	<b>Weight</b>
Market attractiveness				100%
Share of industry's value-added in total value-added	5	5	5	35%
Growth of industry's value-added	4	1	3	20%
Exports	4	2	3	10%
Trade balance	2	1	2	5%
Share of industry's firms in total number of firms	5	1	3	10%
Growth of industry's number of firms	5	4	5	20%
Country benefits				100%
Growth of industry's FDI as percentage of GDP	3	1	2	10%
Share of industry's employment in total employment	5	5	5	35%
Growth of industry's employment	5	4	5	35%
Innovation	3	3	3	20%

KEY:

<b>Score</b>	<b>Definition</b>	<b>Weight allocation</b>
1	No proof or limited correlation	> 5%
2	Some indication of correlation	5-10%
3	Good indication of correlation	10-20 %
4	Very strong indication of correlation	20-40 %
5	Well proven correlation	40-50 %

Source: OECD



*Annex 3*

**REGIONAL CAPABILITY SURVEY QUESTIONNAIRES**

The five questionnaires of the Regional Capability Survey (apparel manufacturing, automotive components, back office functions, call centres and software development) are available on the website [www.oecd.org/daf/psd](http://www.oecd.org/daf/psd).