

**Report No. 54901-BA**

# **Are Skills Constraining Growth in Bosnia and Herzegovina?**

**December 2009**

**Poverty Reduction and Economic Management Unit  
Europe and Central Asia Region**



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## **CURRENCY AND EQUIVALENT UNITS**

(Exchange Rate Effective December 2009)

Currency Unit = Convertible Mark (KM)

KM 1.322 = US\$ 1.00

KM 1.95 = EUR 1.00

### **Government Fiscal Year**

January 1-December 31

### **Weights and Measures**

Metric System

## **ACRONYMS AND ABBREVIATIONS**

ATMs	Autonomous Trade Measures
BH	Bosnia and Herzegovina
C&SL	Capital and Skills Labor
CAD	Current Account Deficit
CEFTA	Central European Free Trade Area
CIT	Corporate Income Tax
CPI	Consumer Price Index
EBRD	European Bank for Reconstruction and Development
ECA	Europe and Central Asia
EFTA	European Free Trade Area
EI	Employment Institute
EPA	Export Promotion Agency
ERP	Effective Rate of Protection
ESI	Export Specialization Index
EU	European Union
FBH	Federation of Bosnia and Herzegovina
FDI	Foreign Direct Investment
FIPA	Foreign Investment Promotion Agency
FSA	Food Safety Agency
FTA	Free Trade Agreement
FX	Foreign Exchange
FYROM	Former Yugoslav Republic of Macedonia
FZZZ	Federal Employment Bureau 5n FBH
GDP	Gross Domestic Product
HAACP	Hazard Analysis and Critical Control Point
HBS	Household Budget Survey
HS	Harmonized System
ICA	Investment Climate Assessment
ICT	Information and Communication Technology

IFC	International Finance Corporation
IMF	International Monetary Fund
IPA	Instrument for Pre-Accession Assistance
LFS	Labor Force Survey
LSG	Linear Square Growth
MFN	Most Favored Nation
MIGA	Multilateral Investment Guarantee Agency
MNCs	Multinational Corporations
MOCT	Ministry of Communications and Transport
MOFTER	Ministry of Foreign Trade and Economic Relations
NFS	Non-Factor Services
NRP	Nominal Rate of Protection
NTBs	Non-Tariff Barriers
OECD	Organization for Economic Co-operation and Development
PIFs	Privatization Investment Funds
PIT	Personal Income Tax
R&D	Research and Development
rkm	river kilometers
ROW	Rest of the World
RS	Republika Srpska
S&M	Serbia and Montenegro
SAA	Stabilization and Association Agreement
SBA	Standby Agreement
SEE	Southeast Europe
TU	Trade Unions
UN	United Nations
UNMIK	United Nations Mission in Kosovo
USAID	United States Agency for International Development
VAT	Value Added Tax
VPEs	Voucher-privatized enterprises
WB	World Bank
WTO	World Trade Organization

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# EXECUTIVE SUMMARY

1. **The shortage of skills sought by key export-oriented and import competing industries in Bosnia and Herzegovina (henceforth, “BH”) is substantial and if left unaddressed, threatens to constrain future economic growth of the country.** Prior to the onset of the global economic crisis, BH enjoyed strong rates of economic growth based to a significant degree on the growth of exports. On average, exports grew at an impressive 34% per year between 1995 and 2008. Our analysis however confirms that the growth of exporting, as well as import-competing industries is increasingly becoming constrained by the shortage of skills in the labor force. In this report we seek to identify these shortages and their likely causes and recommend reforms and policies which can prevent the plummeting of economic growth due to lack of adequate skills.

2. **Firm-level evidence confirms that the shortage of qualified workers is becoming a serious obstacle to growth of BH exporting companies.** One third of managers of exporting firms in Bosnia indicated skills as a problem for doing business in 2009.<sup>1</sup> A related puzzle is that despite BH having one of the highest unemployment rates in the region and the world (estimated at 25%)<sup>2</sup> firms repeatedly claim that they find it difficult to recruit qualified employees.

3. **This report investigates what types of skills firms are looking for and are not finding in the marketplace.** We find that the problem of skill shortages can be broadly categorized in two areas: 1) Inadequate numbers of individuals trained in specific professions, encompassing all levels of the qualification ladder and including a deficit of mechanical engineers, administrative assistants, and welders, for example; and 2) A general lack of “soft-skills” sought by companies who do business as part of a global value chain and who compete internationally. These include sales and communication skills, computer skills, foreign languages, managerial and leadership skills across all classes of workers, but especially among tertiary graduates.

4. **At a broad level, the mismatch between demand and supply of skills is a result of the transition process, an undeveloped private market for skills provision, and lack of adequate government policies and strategies.** In large part as a result of the country’s transition from a republic of socialist Yugoslavia to an independent market economy and the conflict during 1992-1995, there is currently a mismatch between skills available in the workforce and those sought by the marketplace. Secondly, a market failure in the provision of skills exists in the private market. The private market for the provision of skills to adults is very underdeveloped and a very small number of the employed and unemployed are even willing to participate in and pay out of pocket for training. Thirdly, government institutions responsible for employment support and training (employment bureaus and public educational institutions) currently do not have clear strategies and policies to address the problem of skill shortage.

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<sup>1</sup> Based on results from 2009 *Enterprise Survey*, World Bank.

<sup>2</sup> Statistic based on 2009 Labor Force Survey (henceforth, “LFS”). See Box 1 for clarification on the use of official versus survey statistics.

**5. The policy recommendation section of this study seeks to provide ideas and direction for the BH government to address these labor market challenges. They include:**

- i. *A macro-level industrial development strategy* to develop key sectors of the BH economy.<sup>3</sup> A clearer industrial development strategy would provide incentives for firms to invest with greater certainty in their employees and would incentivize students and adult learners to pursue educational and training programs in anticipation of job availability. The strategy could be complemented with public sector support for certain training and development programs.
- ii. *An increase in the capacity of the Employment Institutes (“EI”)* to facilitate a greater number of counseling and training programs to the large number of long-term unemployed with inappropriate skills for the modern labor market. This objective could either be accomplished by increasing the operational capacity of the institutions to operate the programs directly or by securing financial capacity and enabling them to outsource provision of some services to the private sector.
- iii. *Creation of an overarching strategy for tertiary education*<sup>4</sup>, still largely unreformed from pre-war times. Near term priorities include reviewing funding mechanisms and increasing quality control and oversight. Medium term strategies should be developed to increase tertiary enrollment and align learning outcomes with labor market needs.
- iv. *A review of secondary school curricula* with the goal of reforming curricula to equip graduates with practical, flexible skills including a greater focus on new technologies, communications, foreign languages and entrepreneurship. *Continuation of implementation of vocational education reform* per the EU VET program guidelines, to make vocational education increasingly modular, flexible, and practical.
- v. *Creation of an adult education strategy and relevant frameworks/regulation* in order to encourage both supply and demand of adult training.
- vi. *Finally, a strategy for tapping into the country’s diaspora* to augment the skill base available to the country. Approximately one third of BH’s population migrated in the 1990s and the outflow continues today, especially among the younger

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<sup>3</sup> In this report we pay particular attention to four industrial sectors which, based on prior World Bank analyses appear most promising: Wood processing, automotive, agriculture, and tourism. An overarching strategy or a set of compatible strategies for each sector should ideally be developed for the whole country or at least at the level of the Federation of Bosnia and Herzegovina and the Republika Srpska (henceforth, the “Entities”).

<sup>4</sup> Throughout this report, “tertiary education” is used in accordance with OECD usage and refers to universities and other tertiary institutions that award degrees and advanced research qualifications as well as other post-secondary institutions that provide programs that would be classified at a lower level than a degree.



population. Outward migration represents a challenge for BH but the skill base and the networks of BH citizens living abroad could also be tapped into as a potential source of development and growth.

#### **General Note on BH's Political Framework**

Throughout the report, we refer to the “State” and the “Entities.” The Dayton peace agreement signed in December of 1995 established a constitution that defines BH as a State with two Entities, the Federation of Bosnia and Herzegovina (henceforth “FBH”) and the Republika Srpska (henceforth “RS”). In addition, the Constitution establishes ten “Cantons” within the FBH. The ten cantons are: 1) Una-Sana Canton, 2) Posavina Canton, 3) Tuzla Canton, 4) Zenica-Doboj Canton, 5) Bosnian-Podrinje Canton, 6) Central Bosnia Canton, 7) Hezegovina-Neretva Canton, 8) West Herzegovina Canton, 9) Sarajevo Canton and 10) Canton 10 (also known as West Bosnia County or Livno Canton).

FBH covers some 51% of BH's total area, while RS covers around 49%. According to the 2007 Household Budget Survey (“HBS”), out of a total population of 3.45 million, approximately 64% of the population lives in FBH and approximately 34% lives in RS (2% lives in Brčko District). Brčko District (“BD”) is a self-governing, entity-neutral, administrative unit under the sovereignty of the State, formally part of both the RS and FBH. Throughout this study, we do not report BD statistics separately, given that it accounts for a small number of the total population.

The scope of State institutions is generally limited and most government functions are highly decentralized and performed at the level of the Entity in RS and the levels of the Cantons in the FBH.

# I. Labor Market Characteristics and Trends

## A. Introduction

1. **Part I of this study assesses the current state of the labor market** and the extent of the mismatch between skills supplied by the labor force and skills demanded by enterprises in BH.
2. **In Section B, “Features of Labor Demand” we analyze recent trends in employment and wages to assess what they can tell us about the characteristics of labor demand.** We find that the main drivers of labor demand are service-oriented and higher value-added activities that require greater skills and specific qualifications.
3. **In Section C, “Features of Labor Supply” we look at the current stock of inactive and unemployed labor by age, educational attainment and other characteristics.** We find that the stock of available unemployed labor is predominantly low-skilled and.
4. **In Part II of the study we ask “Does a Skill Constraint Exist in Export and Import-Competing Industries” and evaluate the question directly by analyzing several recent firm-level surveys,** including the 2009 World Bank Enterprise Survey, the 2008 survey of employers conducted by the Federal Employment Institute (henceforth, “FZZZ”) and the 2009 employer survey by a leading on-line job-brokerage portal, *posao.ba*. The results of the surveys as well as perspectives from first hand interviews with leading firms in BH suggest that skills are a significant constraint and that firms are adjusting their behavior in order to respond to it often at a cost to themselves and to the growth of their enterprise.
5. **In Part III of the study we then turn to reviewing the performance of labor market institutions in BH and the education system** to see how the current institutional setting in the country is countering or perpetuating the problem of skills constraints.
6. **Finally, in Part IV we conclude with recommendations for reform with the target of increasing employment opportunities for BH’s population** and the growth prospects of BH’s enterprises – by better aligning skills with the needs of the modern economy.

## B. Features of Labor Demand

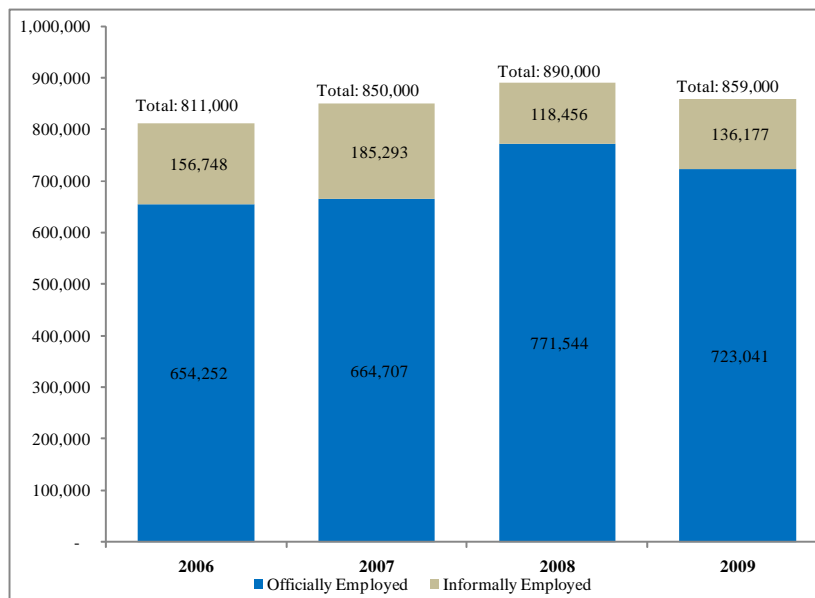
### A note on the use of (official and survey) statistics

Throughout the report, employment statistics are reported using estimates of Labor Force Surveys, which have been conducted in BH in accordance with international standards annually since 2006. The statistics on employment in the surveys differ markedly from the “official” statistics, which are based on the registered number of employed and unemployed people in the country. The presence of a sizable “informal” economy (workers who are employed without being formally registered) accounts for the majority of the difference.

Whenever possible, we will use data from the ILO Labor Force surveys in the report as they are more representative of reality. However, some statistics (such as employment by sector) are only available for the “official” sector. Whenever we are using the “official” statistics, it will be clearly specified. However, we can assume that trends in employment and wages of the two sectors are highly correlated so that the conclusions of the official data should also hold for the overall labor market. In Figure 1, we report employment broken down by “official” and “informal” and we also report the number of persons who are unemployed according to the ILO definition of unemployment.

**7. Despite its low aggregate level, employment in BH was generally on a decline from 2000 until 2006. Then it grew strongly until it flattened out in 2009 due to the global economic slowdown.** The number of people employed increased from 810,000 in 2006 to 890,000 in 2008 – a total growth in employment of 10%. In

**Figure 1: Employment in BH, 2006-2009**



addition to overall employment growth, this period also saw a transfer of employment out of the informal and into the formal economy – in part a result of the introduction of the Value Added Tax (VAT) starting in 2006. Due to a general economic slowdown, however, 2009 is likely to see a significant decline in employment, and also a movement of employment back into the informal economy.

\* Figures as of May of each year.

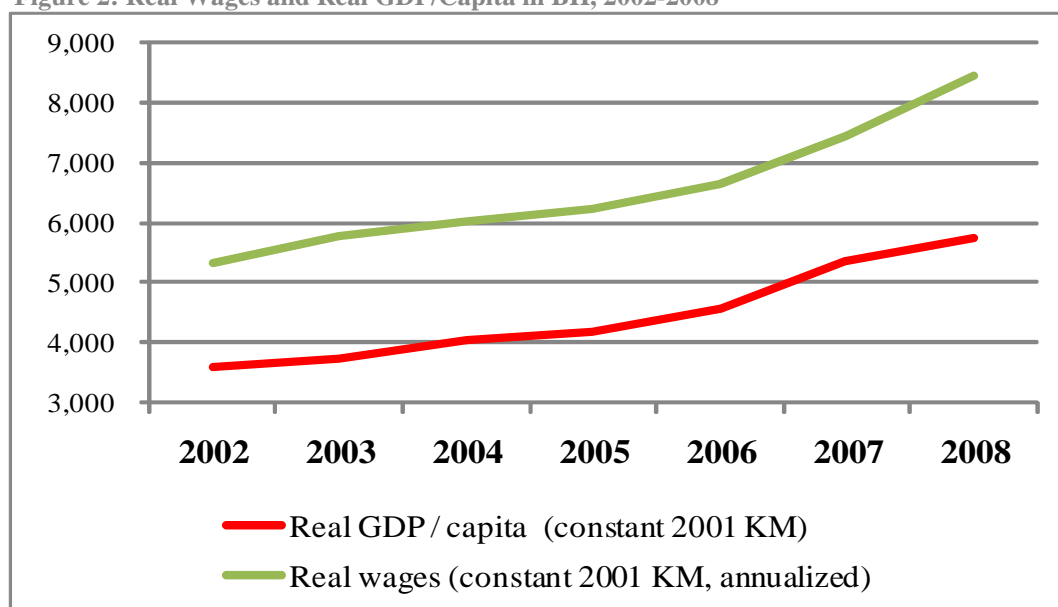
Data source: BH Agency for Statistics (BHAS) and annual LFS data.

**8. The size of the informal economy in BH is a result of multiple labor market rigidities. However, skill constraints are not likely to be relevant in the informal**

**economy.** Hiring and firing workers is difficult in BH. Per the 2009 *Doing Business* survey, BH ranks 117<sup>th</sup> out of 181 countries when it comes to the ease of employing workers (higher values indicate greater rigidity) with a cost of firing equal to 31 weeks of salary. Moreover, the high rate of payroll contributions (~35% on average) discourages formal employment. The resulting informal economy is large and highly concentrated in seasonal industries: Agriculture and in tourism. According to estimates, approximately 2/3 of those employed in the informal economy are male, between 25 and 49 years old. The majority has secondary school education and approximately 79% of live in rural areas.

9. **The cumulative employment growth from 2006 to 2008 of 10% was well below real GDP growth, which was 18%.** During the same time real wages growth of 21% outstripped real GDP growth by 3%, suggesting that worker productivity is rising. The remainder of the GDP growth likely came from capital formation.

**Figure 2: Real Wages and Real GDP/Capita in BH, 2002-2008**

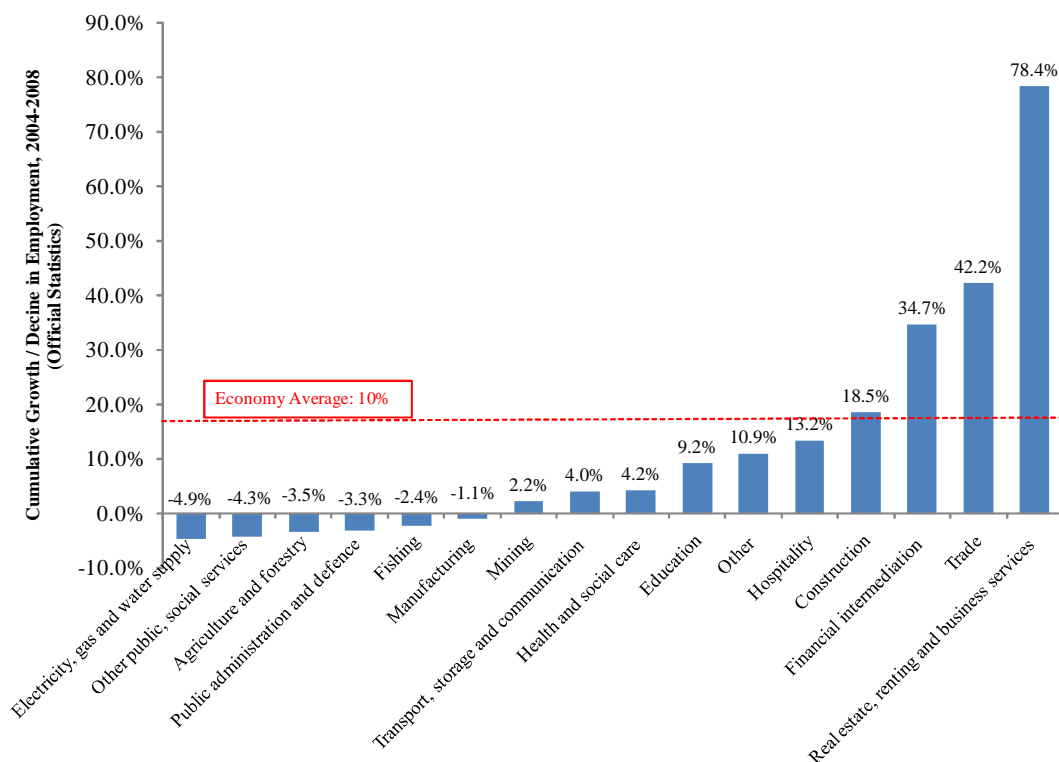


Data source: Staff calculations based on CBBH and IMF data.

10. **A clear trend in employment growth is a shift toward service-oriented activities.** During 2004-2008 private sector employment growth was strongest in real estate and business services (78%), trade (42%), financial intermediation (35%), construction (19%) and hospitality (13%). The sectors that experienced a cumulative decline in employment included electricity, gas and water supply (5% decline), other public and social services (-4%), agriculture and forestry (-4%), public administration and defense (-3%), fishing (-2%) and manufacturing (-1%).<sup>5</sup>

<sup>5</sup> Employment decline represents a downsizing of the sector, rather than reallocation of labor due to increased productivity in all of the mentioned sectors, except manufacturing. During the 2004-2008 the percentage of GDP related to agriculture, hunting, forestry and fishing dropped from 8.9% to 7.4%, the share related to electricity, gas and water supply dropped from 5.2% to 4.1%, the share of public

**Figure 3: Cumulative Employment Growth / Decline by Sector, 2004-2008**



Data source: World Bank staff calculations based on data from FZS and RZSRS.

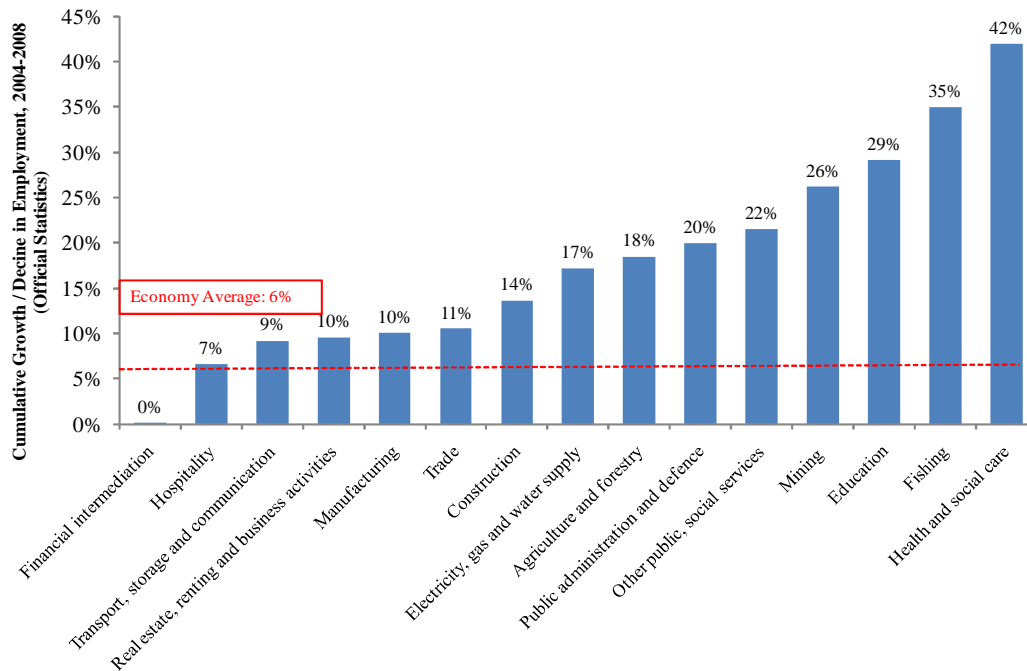
11. **Sectoral wage growth, however, follows a seemingly opposite trend:** Wage growth is high in the sectors that experienced employment decline and low in sectors that experienced the highest employment growth.

12. **The apparent puzzle can be largely explained by the large presence and spending patterns of the public sector in the overall economy of BH.** Employees in public administration, health, education and social services (which are government dominated) accounted for 28% of officially employed persons during 2008. However, this likely underestimates the total share public sector employees, as it does not take into account employees of publically owned enterprises in other sectors of the economy. While public sector employees generally receive above-average wages<sup>6</sup>, during 2006-2008, they experienced very strong wage growth as seen from Figure 4. This time coincided with a rapid increase in government spending overall, and government spending on employee compensation specifically increased from 9.9% of BH GDP in 2006 to 10.4% of BH GDP in 2008.

administration, defense and social services dropped from 11.1% to 10.8%. However, the share of GDP related to manufacturing grew from 9.4% to 11.5%, suggesting productivity growth is occurring.

<sup>6</sup> As of April 2009, the average wage in BiH was KM 1,217 (□619). Employees in public administration, health, and education earned 144%, 125% and 110% of the average wage, respectively

**Figure 4: Cumulative Growth in the Average Real Wage by Sector, 2006-2008**



Data Source: CBBH

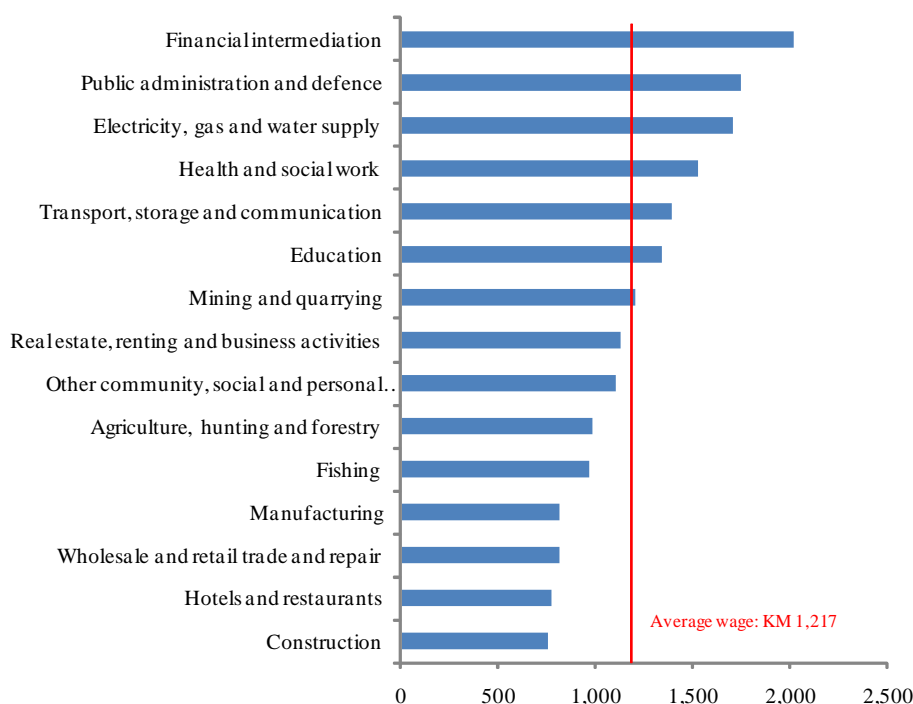
13. **However, a look at wage levels by sector confirms that more knowledge-intensive activities are receiving substantially higher wages.** Wages in BH are highest in financial intermediation and in all predominantly public sector activities (administration & defense, electricity, gas and water, health and social work, transport, education). While real estate, renting and business activities and hospitality services experienced very strong employment growth in the last few years, those sectors still pay below average wages, reflecting the lower average education level of employees in those sectors. Sectors that experienced a decline in employment over the past few years also tended to be those that have lower average wages and presumably a lesser-skilled workforce.

14. **As a result of the structural change in economic activity toward services, demand for labor skills has shifted to service related, higher-order, and multifaceted competencies.** For this study, we analyzed data provided by *posao.ba*, a leading on-line job brokerage portal in BH. While the sample of firms that advertise on the web portal is not wholly representative of the economy in general (firms that advertise are likely to be larger, more technologically savvy and overall more “modern”), the data are suggestive of trends in the sectors which this study is most concerned with: leading sectors with export activities and growth potential. The data suggest that demand for professions in sales, finance, commerce and banking, hospitality and tourism, and administrative services. According to the number of job listings on the portal, the top ten most highly demanded professions during 2008 were:

- 1) Salesman (in-store)
- 6) Accountant

- 2) Sales representative / manager
- 3) Administrative worker
- 4) Waiter / hospitality worker
- 5) Computer programmer
- 7) Economist
- 8) Mechanical engineer
- 9) Civil engineer
- 10) Tradesman / Craftsman

**Figure 5: Average Gross Wage in BH, as of April 2009**



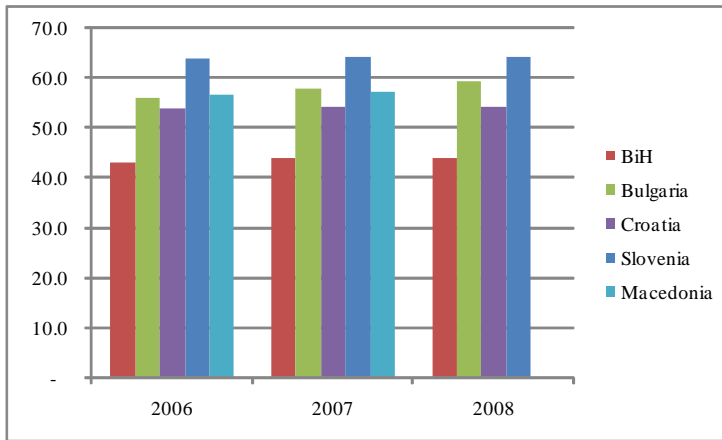
Data Source: BHAS

### C. Features of Labor Supply

15. **One of the striking features of the BH labor market is the very low aggregate activity rate.** An activity rate of 44% in BH implies that 1.47 million persons out of a total working age population of 2.65 million do not participate in the labor market and are “inactive”.<sup>7</sup> BH’s activity rate is well below those of other countries in the region. Moreover, it has been stagnant at its low levels for years with few signs of picking up.

**Figure 6: Activity Rates in BH and Select Other Countries, in %**

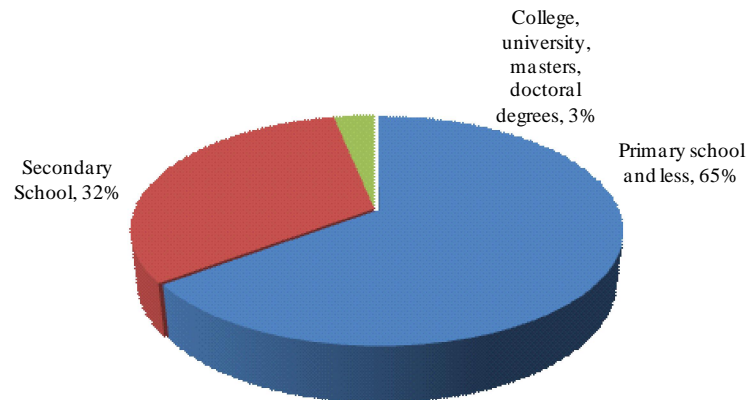
<sup>7</sup> Inactive personas are all persons of 15 years of age or older who are not employed, are not taking any measures to look for employment, and persons who would not be ready to start work should they be offered employment.



Data source: Eurostat for countries except BH. Source for BH: 2008 LFS.

16. **On average, those who are inactive are low-skilled** – 65% of the inactive population has completed only primary schooling or less, 32% has secondary education and only 3% has university education.

**Figure 7: Inactive Population in BH by Highest Education Completed, 2008**

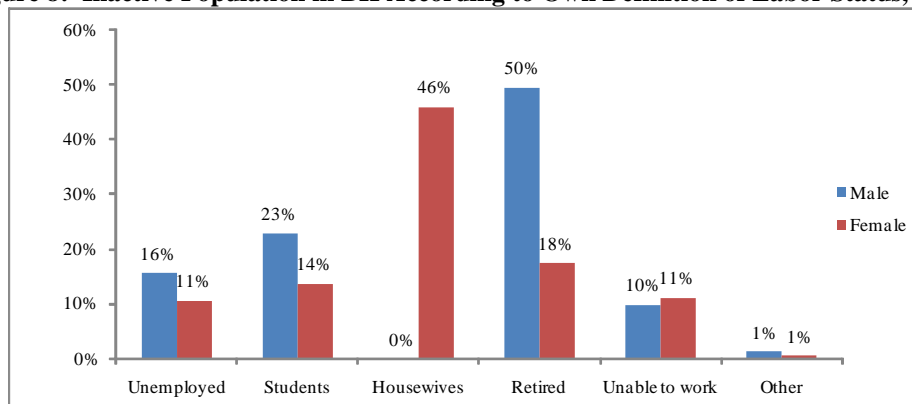


Data source: 2008 LFS

17. **The reasons for inactivity of several inactive categories appear to be deep rooted suggesting that a majority of the inactive population would be difficult to mobilize into the labor force.** Among these are 47% of inactive males who consider themselves “retired”, 21% of inactive males and females who consider themselves “unable to work” and a good portion of the 46% of inactive females who consider themselves “housewives.” Besides skill level and age, other reasons for the low activity rate of these populations are post-conflict trauma, insufficient motivation and difficulty adjusting to the market system. Additional factors that disincentivize employment are the perceived difficulty in finding work, a lax social benefits system, the perception that wages in the labor market are low, and support received through remittances.

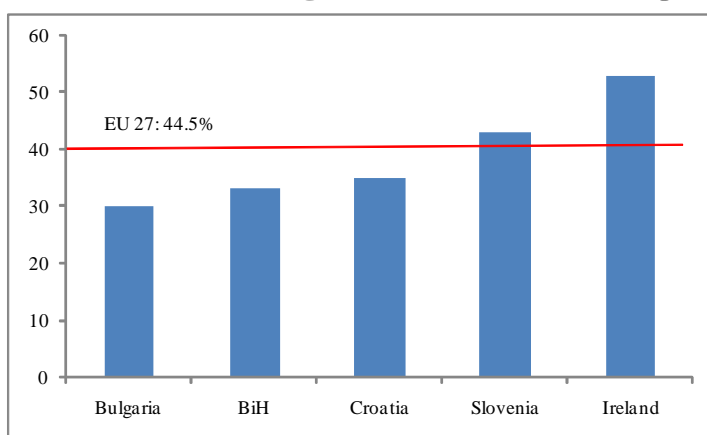


**Figure 8: Inactive Population in BH According to Own Definition of Labor Status, in %**



Data source: 2008 LFS

18. **The remainder of the inactive population (those describing themselves as “unemployed”, “students” or “other”) could presumably be mobilized into the labor force with the right incentives.** That could potentially raise the rate of activity in



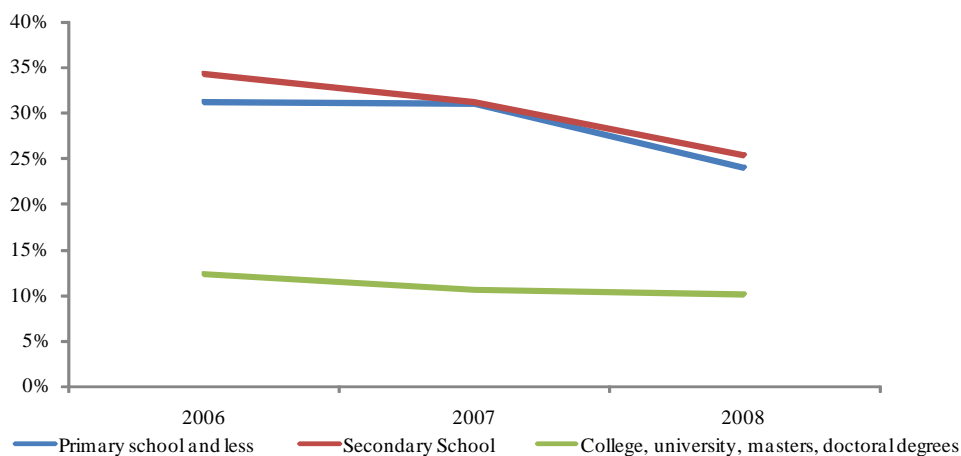
BH to above 60%, which is in line with EU member states. At this time, compared to other countries in the region and in the EU, the activity rate among the youth in BH is particularly low. Persons in the 15-24 years-old age group have an activity rate of only 33%.

**Figure 9: 15-24 Age Group Activity Rates in BH and Select Countries, 2008**

Data source: Eurostat for countries except BH. Source for BH: 2008 LFS.

19. **However, unless combined with a general rise in the level of skills, a higher activity rate would likely be counterproductive given that unemployment is already very high (in spite of low activity) among persons with primary and secondary education.** As of 2008, the unemployment rates among primary and secondary school graduates were 24% and 25% respectively. Meanwhile, the unemployment rate among university graduates was 10%. As of 2008, from the pool of 271,000 unemployed persons, 191,000 had secondary school education as the highest degree completed and 67,000 had primary school education. 13,000 persons in the pool of the unemployed had a university degree.

**Figure 10: Unemployment Rate by Highest Education Completed in BH, 2006-2008**

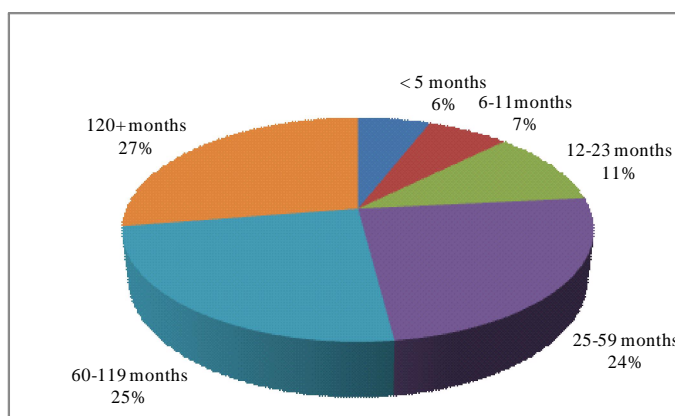


Data source: LFS.

20. **Moreover, 87% of the unemployed have been unemployed for longer than 12 months suggesting that they do not have the skills needed to become employed.** In addition, 77% were unemployed for longer than 2 years and 28% for longer than 10 years! A percentage of long-term unemployment of 87% suggests that structural, rather than cyclical factors are at work. The unemployed do not seem to possess the skills to become employed while companies do not seem to have demand for the types of skills available in the pool of the long-term unemployed.

**Figure 11: Unemployment by Duration in BH**

Data source: 2008 LFS.



21. **What is perhaps most worrisome is that about half of the unemployed are first time job-seekers, often graduates of secondary or vocational programs.** The unemployment rate among 15-24 year olds is a staggering 47%! This is suggestive of a fundamental problem in the labor market that makes it extremely difficult for young secondary school graduates to move into employment. Firm surveys and interview evidence suggest that recent secondary school graduates do not have the right type of training, skills and experience needed by firms. The high unemployment rate among young secondary school graduates coexists with a 7% tertiary enrollment rate, suggesting that *many young people participate neither in the labor market nor in higher education, which poses a serious challenge to BH's future economic growth.*

22. **The second-largest category of unemployed persons is those who suffered physical or emotional injuries in the war.** 26% of the registered unemployed in FBH are demobilized soldiers, members of families of deceased soldiers and persons with war-related disabilities. These persons can find it difficult to re-join the labor force as the war has taken a toll on their physical ability to work, as well on as their motivation. At the same time, social transfers which are based on evidence of unemployment provide an incentive to remain unemployed. An insufficient number of programs exist that encourage disabled and demobilized soldiers to refresh their skills or to engage in entrepreneurial activities.

**Figure 12: Officially Unemployed Persons in FBH by Category, 2008**



Data source: FZZZ.

23. **From the above discussion we can draw the conclusion that skills play a large role in explaining two features of BH's labor supply: the high inactivity and the high unemployment.** A deficiency of skills is keeping labor supply deflated, as those with the lowest skills choose not to participate in the labor market. At the same time, among those who participate, unemployment is most pronounced among the primary and secondary graduates, and within these categories, most dire among first time job-seekers and demobilized soldiers.

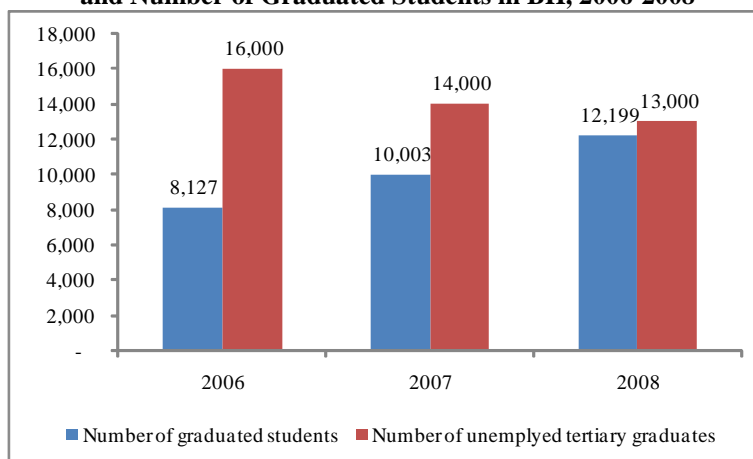
## II. Does a Skill Constraint Exist in Export and Import-Competing Industries?

### A. Supply-Side Evidence of Skills Constraints

24. **The stock of unemployed tertiary graduates as of 2008 was 13,000, only 5% of a total pool of 271,000 unemployed.** That level is down from 16,000 unemployed tertiary graduates in 2006. The approximate 3,000 net decrease in the number of unemployed graduates from 2006 to 2008 occurred in tandem with the graduation of 21,569 students from universities. The stark difference in the unemployment rate between secondary and tertiary graduates (25% versus 10%) despite a contrary difference in activity rates (61% for secondary graduates; versus 73% for tertiary graduates) suggests strongly that something specific to demand skills and qualifications,

rather than general labor markets rigidities or macroeconomic trends drives the differences in outcomes.

**Figure 13: Number of Unemployed Tertiary Graduates and Number of Graduated Students in BH, 2006-2008**



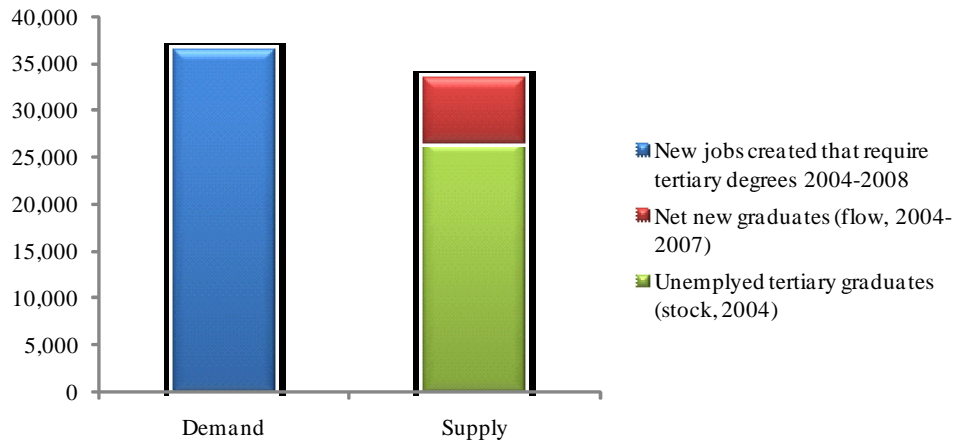
Data source: 2008 LFS and BHAS.

25. **However, despite the increasing number of new graduates, an estimate of the dynamic evolution of supply and demand of employees with tertiary degrees is suggestive of a skills shortage.** In Figure 13, we have sought to estimate and compare the “demand” and the “supply” of university graduated in the 2004-2008 period, one which experienced a spurt of employment growth. We estimate that out of approximately 263 thousand jobs created between 2004 and 2008, 14% required a university degree (14% is the share of tertiary graduates in total employment as of 2008). We further estimate the “stock” of unemployed university graduates in 2004 at approximately 7,000 as of 2004.<sup>8</sup> Finally, we estimate the net number of new labor market entrants who are university graduates as the number of new university graduates minus an estimate of retiring university graduates.<sup>9</sup> Despite generous estimates on the number of net entrants (the “flow”), we see that the number of new jobs created requiring a university degree was likely to have outstripped the sum of the 2004 “stock” and the 2004-2008 “flow.” Based on the results of the exercise, the “demand” outstripped “supply” by approximately 3,000 jobs. While these numbers are estimates, such a tight cushion between supply and demand is suggestive that a lack of tertiary graduates is a constraint and may become severe in the near future.

<sup>8</sup> 6,959 is the number of unemployed persons based on the official records of the Entities’ statistics agencies; it therefore represents an “upper-bound” estimate of the stock, as at least some of the “unemployed” tertiary graduates were likely working informally.

<sup>9</sup> For a detailed layout, see appendix. The number of “net entrants” is again likely to be an upper bound estimate as it assumes that 100% of new graduates enter the labor force (i.e. an implied activity rate of 100%).

**Figure 14: An Estimate of Supply and Demand for Tertiary Graduates in BH, 2004-2008**



Source: Own calculations.

## B. Demand-Side Evidence of Skills Constraints

26. **Firm-level survey evidence suggests that firms in BH continue to have an unmet demand for workers, despite the challenging global business environment.**<sup>10</sup> In a May, 2009 on-line survey of 933 firms that advertise on the web job brokerage portal *posao.ba* 83% of firms answered that they have an unfilled need for workers. Of these, 48% of firms responded that they have a need for university graduates, 33% for workers with secondary education, 4% for skilled labor and 2% for unskilled labor.

27. **A similar survey is also conducted annually by the Federal Employment Institute (FZZZ).**<sup>11</sup> According to the results of a 2008 survey of 2,158 firms, firms in FBH grew their existing employee base by 5% during 2008. 39% of firms expressed a continued shortage of employees while 49% of firms planned to increase the number of employees during 2009. Of these firms, 39% were in need of low-educated but skilled labor, 19% need of employees with secondary education and 25% in need of employees with higher education. We can note from the two surveys that the *posao.ba* sample, which included less public-sector enterprises tended to be more optimistic about growth prospects in 2009 and more biased towards hiring highly skilled people compared to the FZZZ sample. While both samples suffer from selection biases and neither is representative of the economy overall, both provide data points that suggest that firms have an unmet demand for skills.

**Table 1: Results of Surveys by *posao.ba* and the FZZZ**

<sup>10</sup> We analyzed data from two recent labor market surveys, one conducted by the Federal Employment Bureau in FBiH (FZZZ) and one by web portal *posao.ba*, the #1most-visited on-line job brokerage website in BiH. We also conducted one-on-one interviews with leading firms in BiH; Annex 1 provides case studies of select firms that were interviewed.

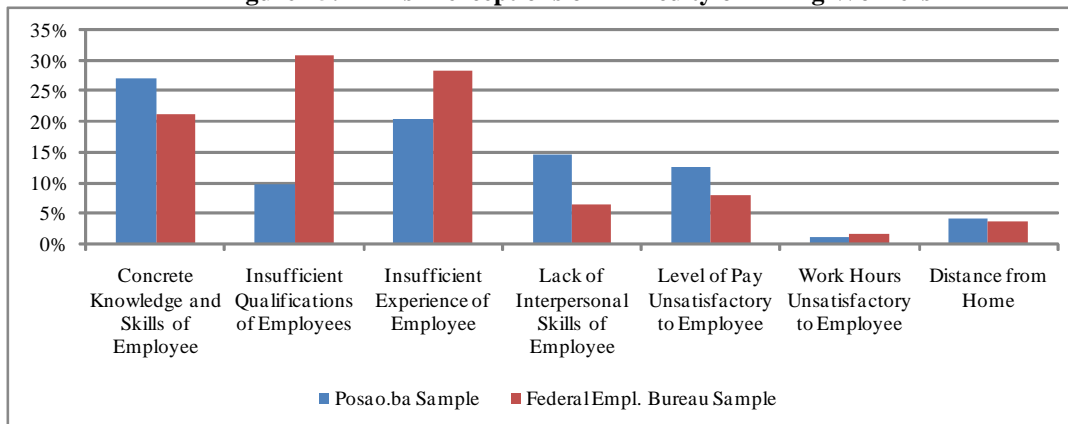
<sup>11</sup> In fact, the *pasao.ba* survey was modeled after the FZZZ survey and is therefore very similar in its design. One notable difference is that *posao.ba* broadcasts across the country, while the FZZZ survey was limited to FBiH and did not include enterprises active in the RS.

	<i>posao.ba</i> Sample	FZZZ Sample
# of Employers Surveyed	833	2,185
% Public	n/a	26%
Experienced Expansion in 2008	64%	57%
Currently in Need of Employees	83%	34%
Planning an Expansion of Workforce	n/a	49%
<i>Expected Need for Employees Skill Level</i>		
Low Skilled / Skill Level Not Important	3%	51%
Medium Skilled	44%	19%
Highly Skilled	53%	30%

Data Source: *posao.ba* and the FZZZ

28. **The reasons that firms most often cite for being unable to fill open positions are skill related, rather than related to wages, labor mobility, or flexibility in hiring and firing.** Firms interviewed in the surveys were asked what were the main causes of the current deficit of employees. A majority of firms gave reasons that related to skills including applicants' insufficient knowledge and skills concerning practical on-the-job matters, level of qualifications, and insufficient experience. A lack of interpersonal skills was also cited as a deficit. A much smaller percentage of firms saw wage demands, work hours or mobility as the major constraint to hiring.

**Figure 15: Firms' Perceptions on Difficulty of Hiring Workers**



Data Source: FZZZ (2008) and *posao.ba* (2009) employer surveys.

29. **Most of the surveyed firms also claim that they are in need of employee training.** 90% of firms surveyed by *posao.ba* say that they are in need for employee training and 64% of firms in the FZZZ sample answered affirmatively to the same question. The majority of firms in both samples answered that employees need training in specific, job-related tasks. However, a large percentage of firms in each sample also answered that employees need training in other general areas, including interpersonal skills, computer skills, foreign languages and communication. A lower number answered that their employees need additional experience/training in an accredited institution. An even smaller share of firms answered that their employees need additional academic qualifications / diplomas.

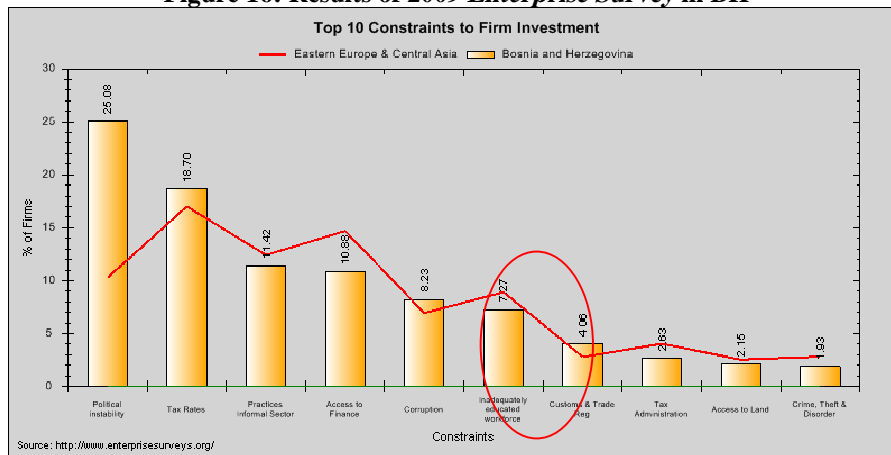
**Table 2: Types of Training that Employers Consider is Needed**

	<i>Posao.ba</i> Sample	FEB Sample
Training in specific, job-related tasks	39%	31%
General, interpersonal, and “soft” skills	36%	16%
Additional experience/training	12%	12%
Additional academic qualifications / diplomas	4%	9%
No need for training	10%	32%

Data Source: Surveys from Federal Employment Bureau (2008) and *posao.ba* (2009)

30. **The 2009 Enterprise Survey also suggests that skills represent a significant constraint to firms in BH.**<sup>12</sup> Among the top 10 constraints to doing business in BH, an inadequately educated workforce represents the #6 constraint. Approximately 7% of firms listed skills as *the major* constraint to doing business in BH. However, it is notable that the relative importance of most constraints to business in BH tends to be suppressed by the relative importance of the constraint posed by perceived political instability.

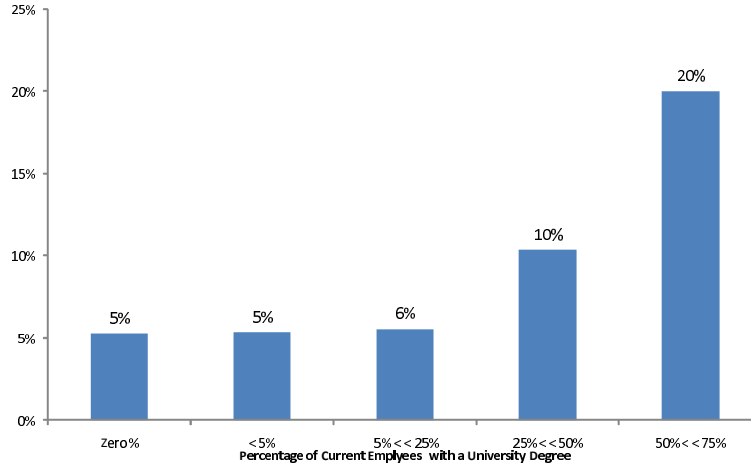
**Figure 16: Results of 2009 Enterprise Survey in BH**



31. **If skills were a constraint we would imagine that it would be most felt by those companies that employ a larger share of tertiary-educated employees.** To test this hypothesis, we rank up the firms included in the Enterprise Survey by the current share of tertiary-educated employees and look at how important skills are as a constraint. The data indeed suggest that firms that more intensively employ university graduates are much more likely to find that an inadequately educated workforce is the primary obstacle faced by their business. The percentage of firms that say that this is the binding constraint to business rises from 7% average to 20% for certain firms.

**Figure 17: Percentage of Surveyed Firms who say that "Inadequately Educated Workforce" is the Biggest Obstacle**

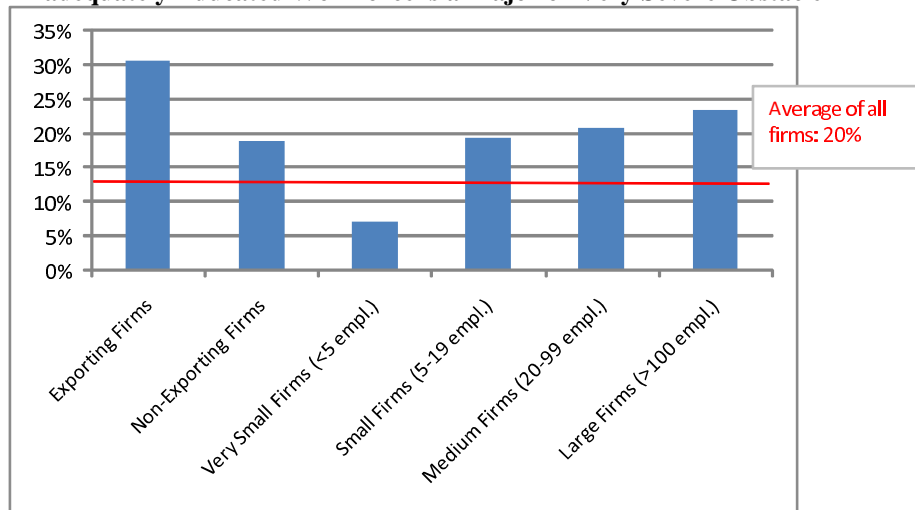
<sup>12</sup> The World Bank *Enterprise Survey* is a firm-level survey, representative of the private sector of an economy. The survey covers a broad range of business-environment topics including access to finance, corruption, infrastructure, crime, competition, and performance measures.



Data Source: 2009 Enterprise Survey

32. **Exporting and larger firms are also more likely on average to answer that an inadequately educated workforce is a major or very severe obstacle compared to firms that serve the domestic market.** To the question: “Is an inadequately educated workforce No Obstacle, a Minor Obstacle, a Moderate Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment?”, on average 20% of firms in BH answered that it is a major or very severe obstacle. However, of the firms for whom exports account for 50% or more of all sales, 31% answered that education of the labor force represents a major or very severe obstacle (compared to 19% of non-exporting firms). Compared to small firms, large firms are also more likely to find inadequate education to be a constraint.

**Figure 18: Percentage of Firms to whom Inadequately Educated Workforce is a Major or Very Severe Obstacle**



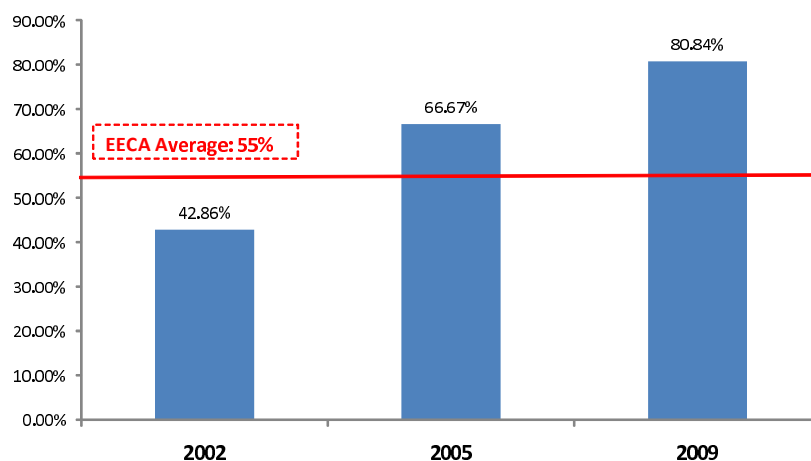
Source: Staff calculations based on 2009 Enterprise Survey.

33. **We see further evidence of a growing skill constraint in the BH economy by the fact that a quickly rising number of firms in BH actually provide employee training.** In the 2002 firm survey, 43% of firms in BH provided formal employee



training. By 2009, that percentage had quickly risen to 81%. While in 2002, BH firms were less likely than other firms in the region to provide official employees training, they surpassed the regional average already in 2005 and continued to surpass it in 2009. Such a result suggests that firms may be compensating for inadequate education / training provision by the state and other institutions of training. They also suggest that the costs of employee training may become a significant competitive burden to firms in BH, compared to firms in other countries of the region.

**Figure 19: Percentage of Large Firms Offering Formal Training in BH and the Region**



Data Source: Enterprise Survey.

34. **Anecdotal evidence further suggests that firms strongly compete for high-skilled people and even recruit skills from abroad.** In our interviews with leading BH firms, most firms that are engaged in more sophisticated manufacturing activity (such as automotive, or high-end furniture manufacturing and design) have sought to circumvent the skills constraint by recruiting employees from the ranks of foreign-educated BH citizens or recruiting foreign experts.

### C. The Impact of Demographic and Migration Trends

35. **Demographic trends in BH could increase the urgency of the skills constraint if it is not addressed sufficiently and in time.** A declining birthrate and an aging population are decreasing the size of school-age cohorts in BH. Per the 2007 Household Budget Survey, which surveyed 7.468 households in BH, the percentage of population aged less than 15 years in BH was 17.5% in 2007, down from 19.8% in 2000. This is currently on a par with more developed countries and slightly above countries in Eastern and Southern Europe. However, the size of school age cohorts is expected to decline in BH faster than in all those reference groups. The percentage of population aged less than 15 years in BH is expected to decline to 13.1% by 2025 and to 11.8% by 2050 according to the UN World Population Prospects. For this reason, the future vigor of BH economic growth will receive a lesser boost from population growth.

Consequently, the provision of appropriate education, training, and life-long learning programs for the existing population is even more crucial for BH.

**Table 3: Regional and Global Comparison of Percentage Population Aged 0-14 (%)**

	2000	2010	2020	2030	2040	2050
BH	19.8%	15.2%	13.4%	12.6%	11.7%	11.8%
Eastern Europe*	18.2	14.7	15.9	14.6	14.0	15.2
Southern Europe**	15.8	15.0	14.6	13.5	13.5	14.1
More developed regions***	18.3	16.5	16.3	15.4	15.1	15.4
Less developed regions, excluding LDCs	31.8	27.3	24.7	21.9	19.7	18.5
World	30.3	26.9	25	22.7	20.7	19.6

Source: UN World Population Prospects, the 2008 Revision, <http://esa.un.org/unpp>

\*Belarus, Bulgaria, Czech Republic, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Ukraine.

\*\*Albania, Andorra, Bosnia and Herzegovina, Croatia, Gibraltar, Greece, Holy See, Italy, Malta, Montenegro, Portugal, San Marino, Serbia, Slovenia, Spain, The Former Yugoslav Republic of Macedonia.

\*\*\*All regions of Europe plus Northern America, Australia/New Zealand and Japan

36. **Moreover, BH continues to experience population decline due to strong outward migration.** The population of BH dwindled from approximately 4.4 million in 1989 to approximately 3.5 million in 2007. The World Bank Migration and Remittances Factbook for BH estimates that 1.5 million BH citizens were living abroad in 2004, or 37.7% of the total population. While a large part of BH's population migrated during the conflict in the early 1990s, the desire to migrate has not ended with the end of the conflict. World Bank survey evidence from 2001 suggests that *30.2% of the BH residents would like to migrate to a foreign country if they had the opportunity to do so.*

37. **Migration is more common among more highly educated members of the population, making the concept of “brain drain” relevant in BH.** The Migration and Remittances Factbook estimates that the emigration rate among those with tertiary education in BH was 28.6% in 2000, which following that of Croatia is the highest tertiary outward migration rate in the region. A recent econometric analysis of the LSMS surveys in BH finds that highly educated, healthy and young individuals are most likely to migrate, suggesting that the implications on the labor market of migration are likely to be negative (see Dimova & Wolff, 2009). Difficult employment conditions at home and the pursuit of further education abroad are the most common reasons why young people wish to leave the country.

38. **“Brain drain” – emigration of individuals with above-average levels of technical skills and knowledge – is likely to have negative effects on the BH economy.** While economists acknowledge that migration can have both positive and negative effects on the home country empirical studies suggest that the negative effect is

likely to dominate if probability of migration of highly educated people is high, such as is the case in BH.<sup>13</sup>

39. **BH could benefit greatly from strengthening links with diaspora communities and from taking steps to repatriate the knowledge base of the diaspora and of foreign-educated citizens.** It is a well observed fact that citizens who were educated or lived abroad can have large impacts on the development of their home country as they are more likely to start new ventures and implement new ideas and technologies upon their return. For example, overseas Chinese contributed 70% of China's foreign direct investment during 1985–2000 (see Kuznetsov, Yevgeny). Besides making financial investments, they also serve as “bridges”, providing networks, access to markets, know-how and expertise.

40. **BH can borrow ideas from other countries that have successfully repatriated the skills of foreign-based citizens.** Croatia, for example, has as of late made concrete efforts to attract educated diaspora, for example by establishing an active on-line network (the *Croatian Scientists Portal*) which facilitates connection of several thousand Croatian scientists throughout the world. Through a similar program, Croatia has set aside funding for research programs for scientists from abroad who are conducting research relevant to the development of Croatia. Similarly, the Scottish Government Economic Development Agency in 2001 pioneered *GlobalScot*, which is considered a model for a quality on-line network, connecting about 850 business-minded Scots around the world and supporting exchange of contacts and ideas. Chile has used its development organization, *Fundacion Chile*, to co-invest in entrepreneurial start-up projects of diaspora which are contributing to knowledge- and technology-transfer in strategic sectors in Chile. Currently Chile is also in the process of designing a program called *ChileGlobal*, similar to *GlobalScot*.

41. **Leading economic research<sup>14</sup> which has taken a new approach to identifying the impact of human capital and democratic trends on economic growth shows that incremental changes in fertility and migration can have large effects on growth prospects.** Cross-country regressions using that dataset show that the positive effects of human capital on economic growth are even greater than previously thought. Moreover, they show that differences in the education level of *younger* age groups are better able to explain differences in income per capita across countries than measures of average education levels of the entire population, likely because younger age groups play a more active role in technology absorption.

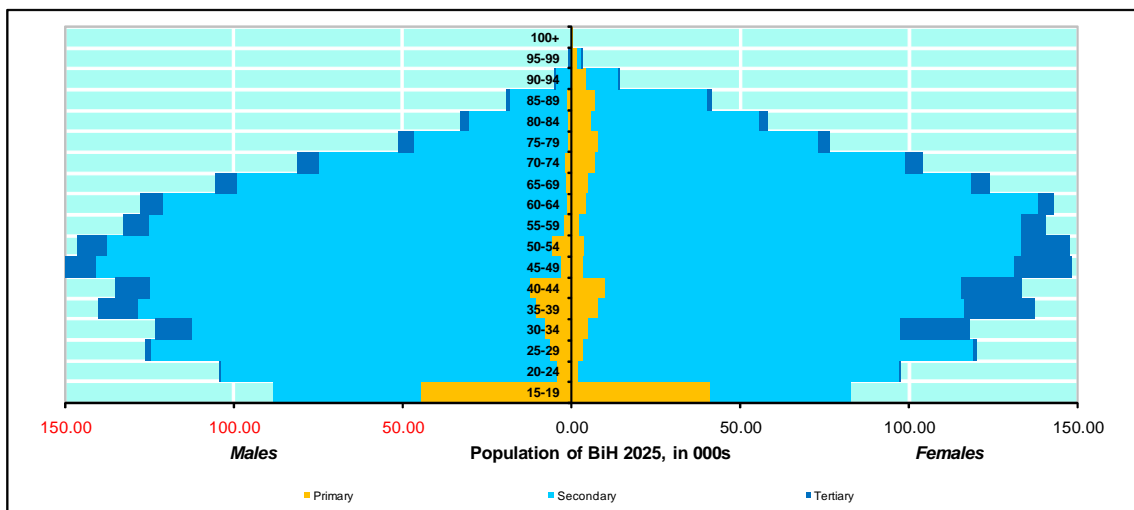
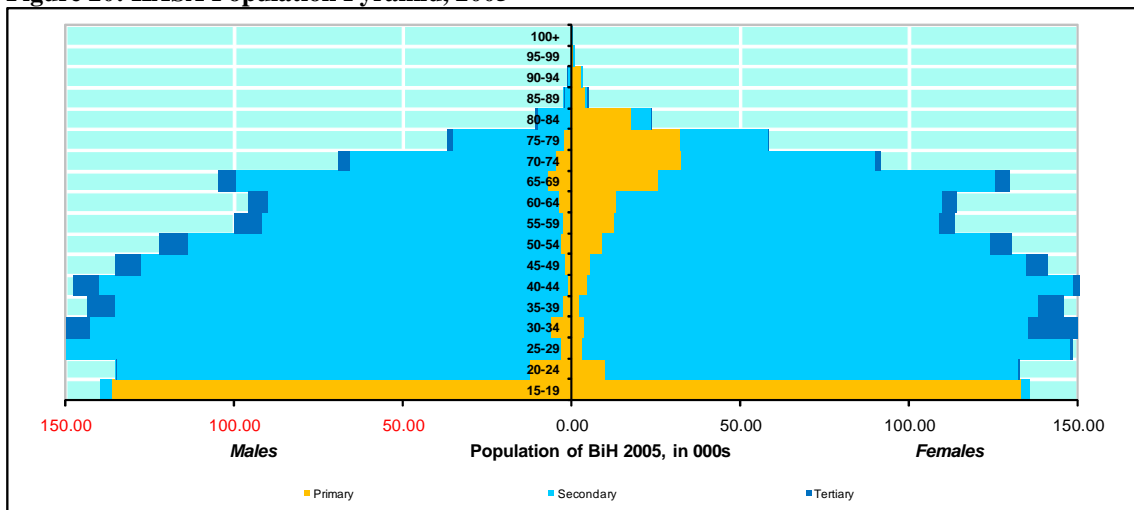
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<sup>13</sup> One potential positive effect of easier migration is that it encourages investment in education formation in the host country, as returns to education rise. Another is the possibility of return-migration of educated migrants who bring with them education, skills, experience and contacts acquired abroad. A negative effect is that the emigration of educated people can leave the country with a skills constraint and reduced labor force.

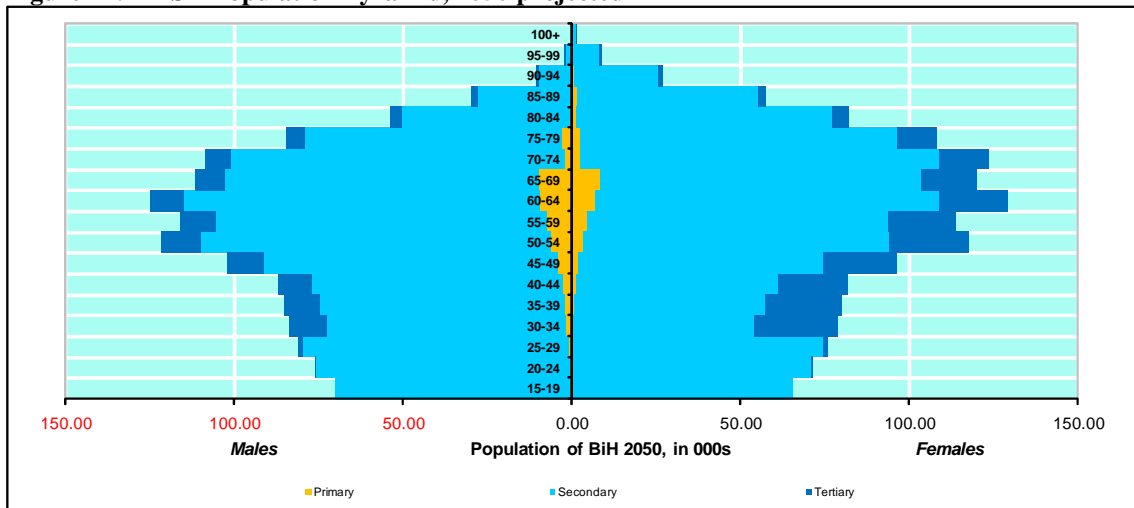
<sup>14</sup> A new methodology developed by the International Institute for Applied Systems Analysis (IIASA) uses data on educational attainment by age groups to construct a dataset of educational attainment by five-year age groups for 120 countries for the period 1970-2000. IIASA uses a similar methodology to create forward-projections of populations and educational attainment. More information is available from the IIASA Population Project, [www.iiasa.ac.at](http://www.iiasa.ac.at).

42. **Unless countered with more proactive policy, brain drain, coupled with declining demographics could lead to a decreasing quality of the age-education pyramid and imperil the future growth of the BH economy.** As part of this study, IIASA developed a set of projections, showing how under likely bases case assumptions, the population and education structure of BH would evolve until 2050. Under the current trend, the shape of BH’s pyramid will almost “invert” by 2050, as the population ages and there are fewer working age citizens relative to the overall population. Also, at the status quo assumptions for educational development, the percentage of the population with tertiary education in BH will be only 12.5% by 2050 - lower than the tertiary achievement level of Slovenia today and well below the levels of other EU countries.

**Figure 20: IIASA Population Pyramid, 2005**



**Figure 22: IASA Population Pyramid, 2050 projected**



## B. Overview of Labor Market Institutions<sup>15</sup>

46. **A major challenge in BH is that currently there is very little engagement in active labor market policies by government institutions responsible for labor market outcomes.** At the state-level, the department of labor, employment and social policy at the Ministry of Civil Affairs is the highest-ranking institution with oversight of labor market policy. Its engagement in labor market policy tends to be limited to the passing of state-level laws (but not their enforcement) and the “coordination” of the activities of the entities. A second state-level institution, the Employment Agency of BH, is primarily responsible for international labor market cooperation and ILO standards implementing. It does not engage in active measures to provide support to the unemployed.

47. **The main public institutions responsible for employment support in BH are the Employment Institutes of the entities.** They include the Federal Employment Bureau in FBH (FZZZ) and the Employment Service of the Republika Srpska in RS (ZZZRS), as well as ten cantonal employment bureaus in FBH. Their mandates are wide and encompass: i) registering and keeping evidence of unemployed persons, ii) providing unemployment benefits to unemployed persons, iii) collecting and publishing information on labor market supply and demand, iv) providing support to unemployed persons in changing their qualifications and skill set with the goal of finding employment, and v) engaging in other active labor market policies that increase employment opportunities. However, in practice, the largest part of the activities of the institutions relate to benefits administration rather than active measures that create employment or help match unemployed persons to jobs.

48. **The budgets of the Employment Institutes are financed by employer contributions.** Payroll percentage deductions are 1.5% in FBH and 1% in RS. In FBH, 30% of the total contributions are allocated to the FZZZ and 70% to the cantonal bureaus, which support 74 municipal employment bureaus. In the RS, all funds go to the ZZZRS, which allocates funds as needed to 63 municipal employment bureaus. In addition, the entities are free to finance the bureaus from their general budgets, as needed. In 2008, total public employment funds amounted to 187.2 million convertible marks in FBH and 28.8 million convertible marks in the RS.<sup>16</sup>

49. **However, the financial resources of the Employment Institutes are used largely for social transfers, which do not necessarily contribute to employment creation and private sector employment growth.** In FBH, the various categories of benefits that the cantonal bureaus are responsible to provide include cash benefits and health insurance to the unemployed, benefits to demobilized soldiers and their families, benefits to workers of public enterprises that are in the process of privatization, liquidation or restructuring. In FZZZ’s 2008 program 153.6 million were spent on

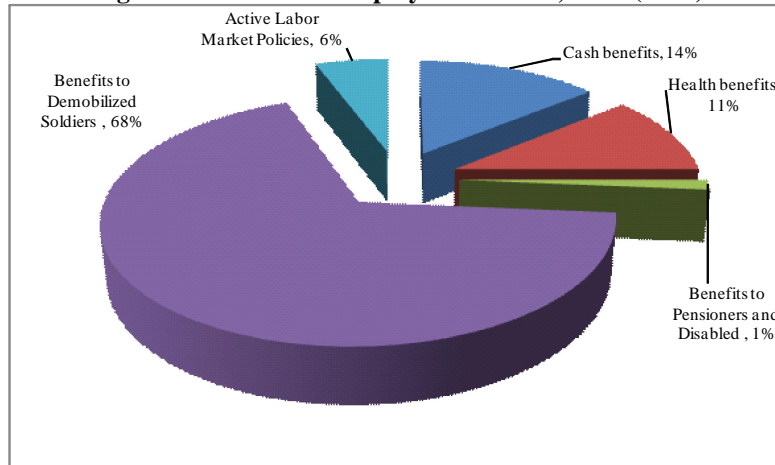
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<sup>15</sup> For a graphical depiction of the structure of labor market institutions in BiH, see Appendix I.

<sup>16</sup> In current USD, this equals US\$283 and US\$111 of revenue per unemployed person per year in the FBiH and RS, respectively.

social benefits and only 9.2 million on active labor market measures. In the RS, the categories of benefits are fewer and mainly relate to unemployment benefits and health insurance. In the RS, out of a total budget of 28.8 million, 19.1 million were spent on social benefits.

**Figure 23: Uses of Unemployment Funds, FBH (2008)**



Source: 2008 FZZZ Annual Report and World Bank staff calculations.

50. **Recent changes have caused the budget of the FZZZ to become even further stressed.** With the implementation of a law effective January 1, 2007 all demobilized unemployed soldiers were granted additional benefits to be financed 50% from the budgets of the cantonal employment bureaus and 50% from the general budget of FBH. *In 2008, these benefits alone accounted for 58% of the bureaus' total income.* And a further responsibility for the bureau was a decision brought by the FBH government in January of 2007 regarding the social insurance of employees of state enterprises undergoing privatization, liquidation or restructuring. Under this new program, FZZZ and cantonal employment bureaus were mandated to allocate 20% of their total budget toward providing unemployment and pension benefits to all workers of state owned enterprises who become unemployed or receive early retirement as part of privatizations, liquidations or restructurings of those enterprises.<sup>17</sup> From these examples it becomes evident that the political and administrative pressures that the employment institute faces render it largely ineffective at providing employment support and enhancing employment opportunities for the great number of unemployed persons in BH.

51. **The Employment Institutes are also the government institutions responsible for regulating the entry of foreign nationals into the labor market and the granting of work visas.** Therefore, the decisions of granting foreign work visas are made on the entity level rather than the state level and some policies differ. For example, in FBH visas are granted for one year at a maximum and have to be annually renewed. In RS, the term is not necessarily limited (usually valid as long as person fulfills residency

<sup>17</sup> The remainder of the financial resources for the plan was to come from FBiH allocating 15% of proceeds from privatizations of the enterprises towards the program. However, as of 2008, the Federal and cantonal privatization agencies had not fulfilled their responsibilities under this program.

requirements).<sup>18</sup> In 2008, 1,650 work visas were granted to foreign citizens in FBH – a large number to persons starting new enterprises or to skilled foreign experts (703 of the visa recipients had a university degree). However, the quota of work visas to be granted in 2009 was drastically cut to 835 for all of BH, while the quota for the number of work visas allowed to be extended was allocated at 1,745. This implies that out of the 1,650 visas granted in FBH during 2008, about half would likely not be extended! It appears reasonable to think that such a strict quota policy is not encouraging skill transfers from abroad, although such transfer would be more likely to lead to job creation in BH rather than compete with local labor.

52. **Surveys of employers and the unemployed show that neither group views the Employment Institutes as effective job-brokerage institutions.** According to survey evidence from FZZZ, only 19% of firms used it when looking to hire a worker during 2006. Only 13% of firms that participated in the survey by *posao.ba* used the employment bureaus when looking to hire workers. The majority of firms used web portals, the media, and personal contacts and networks. A survey of the unemployed (2008, SERDA) showed that only 31% of the unemployed used the bureaus during their search for employment because they do not consider the bureaus competent in helping them to find employment. *More than half of the respondents (54.7%) answered that they registered at an unemployment bureau in order to receive health benefits, which is considered the chief service provided by the government to the unemployed.*

### C. Educational Institutions

53. **Under the current institutional arrangement, education policy and finance are highly decentralized in BH.** In FBH, the responsibilities for education lie with the cantons, each of which is authorized to transfer it to the city or municipality within its territory. Thus the scope the Federal Ministry of Education is rather limited. In effect, there are 11 administrations of education in FBH (1 Federal, 10 cantonal), each with its own ministries, policies and budgets. Responsibilities for the education system in RS are centralized at the level of the entity. The main administrative functions are exercised by the Ministry of Education and Culture and RS's Pedagogical Institute. The state level institution in charge of education policy in BH is the Ministry of Civil Affairs of BH. However, education is only one of its many mandates and, as is the case with labor market policy, its ability to administer reforms or programs is limited. Its main functions are to pass laws at the state-level and to coordinate the activities of the entities.

54. **The amount of public spending on education (as a percentage of GDP) in BH is in line with comparable countries.** RS and Brčko District spend approximately 4% of GDP on education. The FBH spends 6%; however, the extent of decentralization of the education administration and finance in FBH leads to some cost duplication and

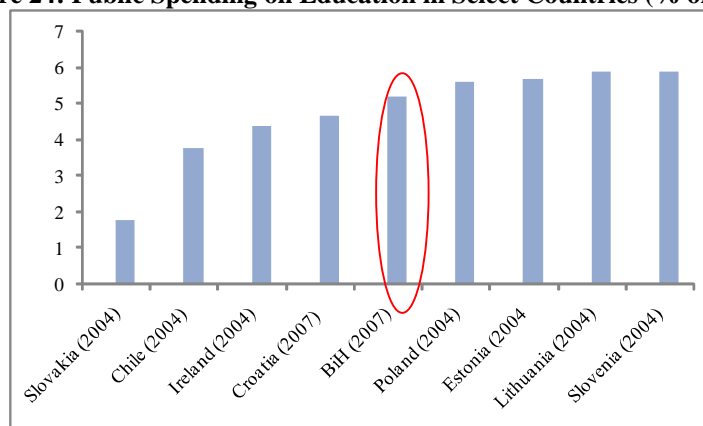
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<sup>18</sup> See “Law on Employment of Foreign Citizens”, FBiH Official Bulletin 8/99 and “Law on the Employment of Foreign Citizens and Persons Without Citizenship”, Official Bulletin of the RS, Nr. 97/04,96/05,123/06.



inefficiencies in the system. Overall, all levels of government in BH spent 5.2% of GDP on education in 2007.

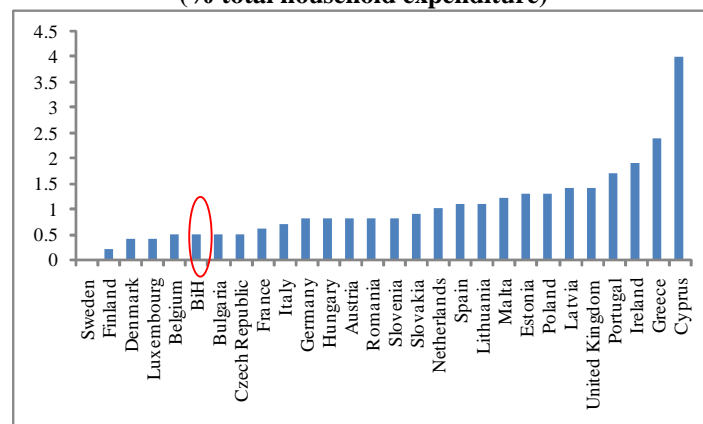
**Figure 24: Public Spending on Education in Select Countries (% of GDP)**



Data source: Eurostat

55. **Private spending on education in BH is low compared to other countries**, which is attributable at least in part to the socialist legacy of cost-free education. At 0.5% of total household expenditures, private expenditure on education in BH is lower only in the European countries with most advanced social benefits provision systems, such as Sweden, Finland, Denmark, Luxembourg, Belgium but is higher in most other European economies.

**Figure 25: Private Spending on Education in Select Countries (% total household expenditure)**



Source: World Bank; IMF.

56. **Primary and secondary education in BH is almost exclusively provided by the State and the majority of schools in BH were inherited from pre-war times.** The 2003 Law on Primary and Secondary Education in BH mandates a 9-year primary curriculum (previously 8-years) and primary schools are currently in the process of adaptation. Secondary schools comprise general education schools, also known as gymnasiums (which enroll 25% of all students in FBH and 22% in RS); 4-year technical

schools (which enroll 45% of students in FBH and 58% in RS); and 2- or 3-year vocational schools (which enroll 26% of students in FBH and 20% in RS) and other specialized schools (art, music, religious, special needs).

**57. Tertiary education is dominated by public universities located in the largest cities, which each have a wide offering of degrees at their various semi-autonomous faculties.** The public universities of the FBH are located in Sarajevo, Tuzla, Zenica, BHa□and Mostar; the public universities of the RS are located in Banja Luka and Eastern Sarajevo. The last few years saw some growth in the number of private universities, but they still represent a very small fraction of the tertiary education system. A few successful models of western-style 4-year private universities have been established, in partnership with universities in the U.S. and Britain.

**58. Public institutions devoted solely to the provision of adult education do not exist and small-scale private training providers do not have the legal authority to issue diplomas.** The BH Council of Ministers has adopted several strategies that refer to the importance of adult education but neither the state nor the entities have yet adopted laws governing the provision of adult education and the issuing of diplomas by private institutions. Currently, secondary vocational schools provide most of the adult training in BH but their activities are limited and most do not have specialized curricula catering to the specific needs of the labor market and adult learners. No secondary school or public university has programs designed specifically for adult learners. A number of small-scale private and NGO-operated training providers exist, offering training in various disciplines including computer training, languages, and production techniques.<sup>19</sup> However, most can only issue certificates of achievement and not accredited diplomas.

**59. Institutions offering career guidance and counseling services in BH are also virtually non-existent.** In schools, school psychologists are, among other duties, entrusted with career guidance functions. However, few options exist for adults because no ministry or agency in BH has the formal responsibility for promoting and implementing professional orientation for adults. The Ministry of Civil Affairs is too burdened with various other mandates and cooperation with education ministries is low. The Employment Institutes have prepared some informational materials on interviewing and job seeking skills in the past; however, as discussed, they do not have the resources to engage in one-on-one counseling or other active measures. Trade unions in BH also do not invest in the development of professional orientation.

## **D. Education Outcomes**

**60. Primary school enrollment and completion rates are satisfactory in BH.** According to statistics from the Education Policy Data Center (EPDC), the primary

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<sup>19</sup> Though no exact statistics on the exact number of training providers are available, a survey conducted as part of the EU VET programs in 2005 identified 560 providers. Of the providers that completed the survey, 67% were public (mainly schools), 9.5% private and 23% operated by NGOs.

gross enrollment rate in BH was 97.8% in 2007 (101% for males and 94.3% for females), meaning that almost all school-aged children do enroll in primary schools.<sup>20</sup> The completion rate in primary schools was ~98%. Literacy rates for young adults in BH are close to 100%, both in urban and rural areas.

**61. Enrollment in secondary education in BH is well below European standards and shows biases towards enrolling the wealthier, the urban, and females and against the poor, rural residents and males.** Estimates of the upper secondary gross enrollment rate are 77% (76% for males and 78% for females), which is above the rate of lower middle income countries globally (62%) but well below the average rate of countries in Europe (93%), where secondary education is often compulsory. In addition to low enrollment in BH, there are a significant number of drop-outs. The completion rate in secondary schools is estimated at ~61% overall and is lower for the poorest 40% of the population (39%), for males (55.6%) and for rural residents (49.8%) (Source: EPDC). In addition to low enrollment, due to repetition and drop-out rates, only 57% of the overall number of students who completed primary school in one generation went on to complete secondary education (World Bank 2005).

**62. Due to a downward trend in birth rates, the total number of students enrolled in primary schools and secondary schools has been declining in BH.** Since 2004, the number of elementary school cohorts has declined by 0.5% on average per annum. The total number of pupils enrolled in secondary schools has been declining at 1% per annum on average from 2003 to 2007.

**63. An indicator of international competitiveness of BH primary education suggests that the quality of primary education in BH may be below average.** In 2007, BH students for the first time participated in TIMSS, the Trends in International Mathematics and Science Study, which compares mathematics and science achievement across countries. BH eight-graders ranked below average in both math and science with a score of 456 and 466, respectively (500 being the average) and below the other countries in its region that participated in the test (Serbia and Slovenia).

**64. Quality of secondary education also remains a key issue, although efforts are being made to align the system with the EU, especially in vocational education.** Vocational education in BH has received a considerable amount of attention and is being partially reformed thanks to efforts led by the European Commission. VET programs last two to three years and are designed to lead to employment, although students are allowed to continue their studies to the next educational level by passing additional exams. The EC VET reform programs have, among other goals, sought to reduce the occupational categories (from almost 500 to about 100); create modular education curricula for families of skills to make the system more flexible and allow for increased mobility of students across occupations; encourage entrepreneurship and occupational orientation of pupils by forming virtual and real companies at secondary institutions as

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<sup>20</sup> The gross enrollment rate is a common UN measure calculated by expressing the number of students enrolled in a particular level of education (primary, secondary and tertiary), regardless of age, as a percentage of the population of official school age for that level.

well as career development centers; and make the VET schools more responsive to labor market needs through greater interaction between schools, students, and employers. During 2008, the BH Parliament formalized the strategies for VET reform by adopting the Framework Law on Secondary Education and Training. However, it will take time before the results of reform will be reflected in improved labor market outcomes.

**65. However, general and technical secondary education has undergone little reform and is thought to be too broad and insufficiently practical to equip graduates with the types of skills needed to be employable in the labor market.**

Secondary schools in BH include 4-year general schools (gymnasia), 4-year technical schools, and other 4-year specialty schools. Gymnasia typically lead to enrollment in higher education; technical schools are designed to lead to employment, enrollment in non-university post-secondary vocational education or to higher education. Government targets are to increase enrollment into 4-year gymnasia and technical schools from the current 20% and 30% respectively, to 30% and 40%, respectively. However, little reform or modernization of curricula has occurred which would make these choices more attractive to students or would improve their chances of success in the labor market.

**66. The tertiary education system has also undergone very little reform thus far, largely due to resistance and insufficient buy-in from key stakeholders.**

The most significant step towards reform was the adoption of the Framework Law on Higher Education in 2007, which followed four years of debate and re-drafting. The main elements of the law are that it provides a legal background for the establishment of two new independent institutions to provide support to higher education development<sup>21</sup> and a legal basis for integrating the autonomous faculties. The Law also confirms BH's commitment to the Bologna objectives, which include moving towards EU standards through the standardization of degrees, establishment of quality assurance mechanisms, maintenance of addenda to diplomas in order to promote employment, improvement of freedom of mobility of students and teachers, recognition and of study periods spent at other universities or in other countries, and promotion of European cooperation in quality assurance and curricula development.

**67. Even while reforms have been adopted legally, implementation of reforms in tertiary education has been very slow.**

The Framework law left critical aspects of higher education development, in particular the public financing of higher education unresolved. Moreover, in the two years since the law was passed, none of the institutions established by the Framework Law has been fully empowered and is capable of leading the higher education reform process.

**68. Enrollment in tertiary education in BH is low, despite significant returns to tertiary education.** Currently, only 3% of the total population of BH has a tertiary

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<sup>21</sup> The Law established the Agency for the Development of Higher Education and Quality Assurance whose role will be accrediting, evaluating, monitoring and supporting development at universities and the Centre for Information and Recognition of Documents in the field of higher education. The law also stipulates functions of the Rectors Conference in B&H.

degree. A slightly higher percentage (5%) of the population aged 25-65 has a tertiary degree. In comparison, 11% of the population in Croatia aged 25-65 and 18% of the population of Slovenia aged 25-65 have a tertiary degree. In the EU, on average, 24% of the population has a tertiary degree. A positive sign is that the total number of students enrolled in tertiary education in BH has registered a strong increase, from 62,525 students registered in 2001 to 104,938 students in 2008. The number of Master's and Doctoral degrees granted has also increased, from 195 in 2001 to 563 degrees in 2008.

**Table 4: Wage Premia for University Education over Basic Education, 2005**

	<i>Albania</i>	<i>Bosnia and Herzegovina</i>	<i>Macedonia</i>	<i>Serbia</i>
<i>All people of working age</i>				
1-3 years of secondary school	19.2	-1.2	5.3	13.3
4-5 years of secondary school	11.5	7.4	19.2	31.0
Post-secondary education	62.2	32.6	57.4	70.5
<i>Young people (less than 35 yrs)</i>				
1-3 years of secondary school	15.9	-1.3	-4.1	12.7
4-5 years of secondary school	21.2	9.9	7.6	27.6
Post-secondary education	70.2	45.6	49.2	66.1

Source: Linden, et al. (2008)<sup>22</sup>

69. **One of the chief deterrents to tertiary enrollment are the low incomes of the population and the cost of university education.** According to results of the 2001 LSMS<sup>23</sup>, average annual tuition fees per student in tertiary education were quite low (189 convertible marks). However, the actual private cost of tertiary education is significantly higher because students often move away from home and to one of the larger cities where universities are located, thus incurring boarding, transport and other living expenses. LSMS data shows that the total average annual household spending per tertiary student in 2001 was 1,506 convertible marks, which is a significant share of an average household's budget and is unaffordable for many households.<sup>24</sup> At the same time, opportunities for stipends are few and often merit-based rather than need-based and a student loan market is virtually non-existent. Hence, despite the fact that the cost of tuition is heavily subsidized in BH, the ability to pay for other education-related expenses is likely to be a constraint to increasing enrollment.

70. **A second deterrent to greater enrollment is the low internal efficiency of universities. Each year in FBH universities, nearly 24 percent of students repeat an academic year and nearly 13 percent drop out completely.** Only roughly 50 percent of students who enroll in universities actually graduate. As a result of the high repetitions, it takes an average student almost 7 years to complete a 4-year degree in BH. More than 12% of all students take more than 10 years to graduate! As a result, *students are on average 27 years old when they complete their tertiary education.* In effect,

<sup>22</sup> Sourced from Betcherman et al. 2007. For Bosnia, data is from 2004. For Albania and Bosnia, figures are for vocational secondary versus general secondary schools, rather than for different lengths of secondary education programs.

<sup>23</sup> Living Standards Measurement Study, the World Bank.

<sup>24</sup> In 2001, GDP / capita in BiH was 3,441 convertible marks (Source: IMF).

schools produce a low number of graduates each year. In 2008, the number of graduating students as a percentage of all students enrolled was only 12%.

**Table 5: Indicators of Tertiary Education Outcomes**

Students by Year of Study, FBiH, 2008					
<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>
25,387	18,524	11,643	11,623	1,200	227
37%	27%	17%	17%	2%	0%

Students by Years Spent at University at Graduation, FBiH, as of 2007								
<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10+</u>
478	381	1,271	1,536	1,241	996	573	442	953
6%	5%	16%	20%	16%	13%	7%	6%	12%

Students by Age at Graduation, FBiH, as of 2007									
<u>&lt;22</u>	<u>23</u>	<u>24</u>	<u>25</u>	<u>26</u>	<u>27</u>	<u>28</u>	<u>29</u>	<u>30+</u>	
322	638	1,180	1,119	848	599	469	315	2,408	
4%	8%	15%	14%	11%	8%	6%	4%	30%	

Data Source: Entity Agency of Statistics

71. **Because students and universities continue to receive state support for the entire duration of study, there are few incentives to improve efficiency and performance.** One financial implication of the low efficiency of universities is that some 43 percent of the public university budget goes to finance dropouts and repetitions that do not have an obvious educational or economic payoff.<sup>25</sup> This represents a cost to society both in terms of public funds going towards students for more than 4 years of study and a cost to the economy in terms of underutilization of skilled employees.

72. **The quality of instruction at public universities is below par due to a general lack of qualified professors in BH.** As a result of the war, many academics left the country and the ones who remained were divided between eight universities instead of the original four. At the same time, the student population boomed in recent years and total enrollment has now surpassed pre-conflict numbers. Secondly, the academic expertise of many teachers is shaped by the pre-conflict needs of the economy and is less relevant to the more diverse needs of today's economy. Thirdly, the growth of private universities has adversely affected the staff problem in the public universities, as private institutions are drawing staff from public universities with better pay. As a result of the limited supply of teaching staff and the perceptions of low wage, it is not unusual for academics take on posts at several faculties or even more than one university, thereby drawing several salaries but not providing quality teaching.

**Table 6: Student-Teacher Ratios in FBH Universities**

	Students	Professors	Students / Professor
Public Universities	65,456	1,053	62
Religious Universities	777	32	24
Art Academies	623	78	8
Intl Universities	813	29	28
Private Universities	915	38	24
<b>Total/Avg.</b>	<b>68,584</b>	<b>1,230</b>	<b>29</b>

Data Source: FZS.

<sup>25</sup> See the European Commission report on reform of higher education finance, March 2009.

73. **Corruption is reported to be endemic in public universities, largely a result of poor oversight and insufficient quality control.** Anecdotal evidence suggests that professors often do not appear in class, that students can “buy” their grades, that teaching staff is supplementing incomes by charging students for the re-taking of exams.

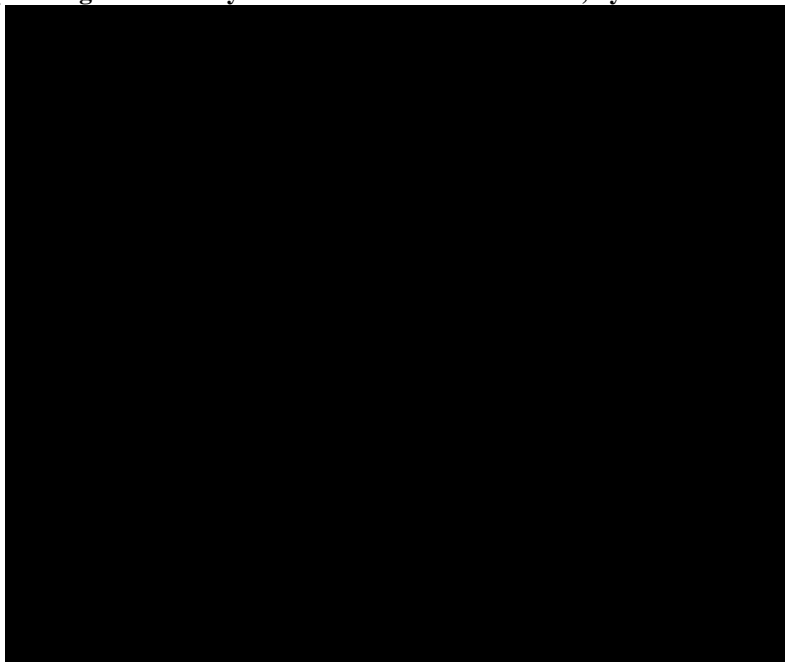
74. **A recent EU report has identified the financing structure of higher education in BH as one of the main causes of the many inefficiencies and quality problems.** While in RS higher education financing is centralized in the Ministry of Education, in FBH higher education is financed by the cantons. Although students come from every canton, it is the cantons where universities are located that provide the bulk of finance. Secondly, funding in both FBH and RS is driven by inputs (staff salaries) rather than outputs (number of graduates). *As a result, there is no financial incentive to encourage the more efficient management of students and the teaching process.* A more effective funding framework, as recommended by the EU, would centralize the higher education financing, if not at the level of the state at least at the entity level, re-arrange the education budget so that it is classified according to the objectives and specific outcomes to be achieved, and establish funding through a per-student formula.

75. **Another shortcoming of the public university system is its lack of responsiveness to private sector needs.** The numbers of students admitted to the various degree types are based on a process whereby the faculties within the university establish quotas for the maximum number of students to be admitted that year. The quotas are set by the faculties more or less autonomously, and most universities do not have a university-wide strategy for recruitment. The demand at some faculties in the end exceeds the quota, while some degree types remain under filled. Within this structure, the needs of the private sector for certain types of graduates do not really come to bear. For example, although the private sector constantly expresses a need for mechanical engineers, the University of Sarajevo Faculty of Mechanical Engineering did not succeed in filling its quota in the 2008/09 school year. While in the 2007/08 school year 339 first-year students enrolled at the faculty, the planned enrollment for the 2009/2010 school year is 270 students. One reason often cited for the low number of enrollees at the engineering faculty is that this program is considered simply too difficult. At the same time, a large number of students continue to enroll in economics, law, philosophy and political science degrees, although unemployment rates among these categories of graduates are highest.

76. **A strategic and funding framework for research and development that would enhance productive collaboration between universities and the private sector is also largely lacking.** The Framework Law on Higher Education separated scientific research from teaching and left decisions in regards to R&D to be regulated by a separate law, however, that separate law has not yet been created. Funding for research and development in BH currently makes up only 0.05% of GDP, while such spending in the member states of the EU is usually between 2% and 3% of GDP. The newly established Agency for Accreditation and Quality Assurance in BH is to become the institution to “... propose general guidelines and criteria based on which funds from the

budget of the institutions of BH may be allocated to higher education institutions for the purpose of scientific research”, however, the capacity of the institution is currently low.

**Table 7: Top 15 Degrees of Study at Public Universities in FBH, by Total # of Enrollees in 2008**



Data Source: FZS.

**77. Adult education is very much underprovided in BH and only a small number of adults actively participate in continuing education and training programs.** The reasons for this are manifold and have both demand and supply side causes. Individual motivation is poor reflecting the view, no doubt inherited from socialist times that employment should be provided by the state. Moreover the cost of adult education and training and the absence of career counseling and support services also contribute to low take up. Demand from firms is constrained by their financial resources, by the high level of unemployment which ensures a steady supply of labor for some professions, and concerns about the quality of training providers. Supply, on the public side is limited to adult training services that very few secondary schools provide. However, these services are usually constrained by the secondary schools’ ability to allocate resources and their own lack of expertise in adult training method. On the private side, the absence of an institutional accreditation, certification and quality assurance framework limits private sector activity in providing adult education.



## IV. Recommendations for Policy Reform

### A. Introduction

78. **Because the problem of skills mismatches and constraints is complex and wide-ranging, policy recommendations will also have to address several sides of the problem,** including how to create incentives for people to acquire the needed skills, whether through their secondary and tertiary education choices or by re-training and augmentation of existing skills; how to better support the unemployed in finding employment that matches their skills; how to prevent the mismatch from continuing to grow by thinking of ways in which secondary schools and universities can learn about and address labor market needs; how to begin exploring the potential of BH citizens from abroad in adding to the development of the BH economy. In this section we recommend ways in which the government can address these objectives through action in six key areas:

1. *Macro labor market strategy:* Developing a clear strategy and targets for growth in key sectors of the economy that capitalize on BH's competitive advantages and can become drivers of export-oriented growth and employment creation.
2. *Labor market institutions:* Strengthening the capacity of the Employment Institutes to engage in active labor market policy. This could be paralleled with creating the appropriate legal framework and incentives to also involve the private sector in the provision of the services needed in the labor market.
3. *Secondary education and VET reform:* Focusing on secondary education reform to give graduates the flexible skills demanded by the labor market as well as to position them better for continuing education and life-long learning. Continuing to implement the reforms already initiated in the VET sector via the EU VET reforms.
4. *Tertiary education reform:* Designing a vision and strategy for the overarching reform of tertiary education in BH that involves buy-in from various stakeholders.
5. *Life-long learning and continuing education:* Designing a framework for continuing education and life-long learning (LLL). Continuing education and LLL represents a fertile area for private sector involvement, which could take some responsibilities of education off the shoulders of the government.
6. *Diaspora Involvement:* Creating a strategy for tapping into the country's diaspora to further the development process.

79. **What follows are policy options that may be helpful to the BH government in formulating the strategic initiatives so urgently required to address the skills constraints that will undoubtedly inhibit growth in BH.** Many of these options need to fit in to a broader economic framework and, in each case, prioritization should be undertaken in consultation with stakeholders as reform, especially education reform, is both complex and takes a long time. Without stakeholder involvement, reform will not succeed.

### *1. Macro Development and Employment Strategy*

80. **BH has suffered extensive damage and lost much of its productive capacity during the war.** Since the war, its economy has become more outward-oriented. Today, trade alone accounts for 19% of the labor force. While BH does not have the mass, physical or human, to be a global leader in many manufacturing activities, *its proximity to European markets and certain features of its natural and human resources do endow it with competitive advantages* for the production of certain goods and services that can be competitive on European and even global markets.

81. **Based on World Bank analyses of economic activity in BH, activities in the wood processing sector, automotive industry, agriculture, and tourism represent promising areas for export growth.**<sup>26</sup> In recent years, foreign and domestic entrepreneurs have sought to restore productive capacity in these sectors. However, industrial development in an economy where physical capital and infrastructure was destroyed by a war and which is transitioning from a socialist system to a market economy may need targeted and coordinated state support to be successful. To capitalize on the potential of these sectors, the government should seek to develop a set of compatible strategies on how to encourage private sector investment in the physical and human capital needed to support growth of these industries. In turn, growth of export-oriented industries can provide employment, tax revenue and foreign currency for the benefit of the development of the government and the country as a whole.

82. **Economic literature has demonstrated that in instances where externalities exist,**<sup>27</sup> **activities that are subject to externalities tend to be underprovided.** If the activities are desirable and profitable, the government can often play a crucial role in supporting or providing the goods that are subject to externalities; such as by supporting health and education to increase the quality and capacity of human capital, infrastructure to increase the quality and availability of physical capital, and research and development, to increase productive capacity. Another common type of externalities are coordination externalities. For example, industries often need a range of intermediate

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<sup>26</sup> See other reports of the World Bank Country Economic Memorandum.

<sup>27</sup> Basically defined, externalities exist when the social return to a certain activity exceeds the private return to that activity. For example, externalities often exist in the training of employees: while one firm bears the private cost of training, other firms and the economy as a whole can benefit if the employee transfers the knowledge acquired by switching jobs. Also, externalities often exist in the adoption of new technologies. The first firm to adopt the technology bears the cost and risk of learning the technology and adapting it to local conditions. Subsequent entrants can copy the technology at lesser cost and with less risk.

inputs to be competitive. When these intermediate inputs are unavailable domestically and too expensive to import, industries can fail to form, even though, once formed, they could be competitive and profitable. Governments can play a key role through targeted policy interventions, such as coordinating investors, guaranteeing some investments or providing favorable tax treatment, or sponsoring the augmentation of the kind of skills required by the targeted industries through subsidized employee training programs.

83. **Concretely, for the government of BH, we believe that pushing BH up the value chain and promoting exports should be a development priority.** In order to succeed in this objective, however, BH needs an educated and mobilized labor force, able to communicate across borders and serve the needs of global companies and consumers. By creating and promoting a clear macro-development strategy and prioritizing and supporting the development of select industrial sectors, the government can provide assurance and motivate individuals to educate themselves in the kinds of skills needed for these industries. On the supply side, the government can coordinate between the companies and public education institutions to seek to better align school curricula with labor market needs. The government can work with the private sector to spur the private provision of training and education programs that help individuals acquire the kind of skills that make them employable. An important caveat to such active government policy is that perceptions of government inefficiency or corruption in this process can seriously undermine the development outcome. It is important to actively involve key stakeholders and develop and implement policy in a transparent manner.

## 2. *Labor Market Incentives, Institutions, and Infrastructure*

84. **The State has an important role to play in improving labor market outcomes and employment opportunities for the unemployed.** The government should develop ways to *provide incentives for individuals to seek employment or become self-employed rather than subsisting on social benefits and transfers*, such as by providing credit support to small-scale entrepreneurs. Another area that is in need of greater government attention is the informal economy in BH. The government can seek to contain and decrease the size of the informal economy through facilitating flexibility in hiring and firing (especially flexibility for temporary hiring), by reviewing the social contribution rates that companies are required to pay and, where possible through efficiency measures or financing out of general budget, decreasing the burden of contributions that fall on the private sector, thus making them more competitive.

85. **The Employment Institutes need to be enabled, financially and institutionally to take on the leading role in providing active labor market policy.** As was shown in this report, their capacities are currently consumed by providing unemployment benefits. While the provision and administration of these benefits are important, the question is whether they are better provided by the Employment Institutes or by a different government institution. As in the case in other countries, (e.g. Poland), it is generally good government *policy to de-link active and passive labor market measures*. Our recommendation would be to transfer benefit administration to a different government

institution, while allowing the Employment Institutes to focus on active labor market measures.

**86. A regulatory framework is needed so that the *Private Sector* can also become a more important player in providing services to match job seekers with jobs.**

Currently, private sector provision of job placement services and training is almost non-existent due to low demand and the absence of an appropriate framework to regulate such activities. In other countries, governments often actively recruit private sector expertise and resources to administer some employment or training programs. A more effective and responsive solution could be one where the Employment Institutes are responsible for deciding how to allocate their budget to active employment policies and then *subcontract a large number of the implementation to qualified private sector firms*. While many such firms do not currently exist in BH, a government strategy that promised such policy measures would provide incentives for the establishment of private employment and training providers.

### **3. *Secondary Education Reform***

**87. *General secondary education institutions have undergone little reform thus far.*** Overall, the curricula in general schools (technical and gymnasias) are thought to be too impractical to make graduates directly employable. At the same time, they are extremely rigid and do not allow students much flexibility. In order to modernize the curricula, priority should be given to languages, computer training, soft skills (communication, team work, entrepreneurship) in BH schools. The role of career orientation and counseling should also be enhanced, so that students are better prepared to assume a position in the 21<sup>st</sup> century labor market, as well as better directed and more motivated when it comes to the pursuit of higher education and life-long learning.

**88. *Vocational schools should adopt and continue with the process of implementing the process of reform using the modular and flexible curricula concepts developed via the EC VET programs.*** Vocational schools should also seek out stakeholder input and, as much as possible, form partnerships with local enterprises in order to create training and employment opportunities for the school graduates and ensure that the skills the students are being taught are relevant to the local labor market. In these partnerships, the private sector should contribute by providing opportunities for practical internships for students, which would both increase the students' skill-set as well as enable an easier transition to future employment at the firm.

**89. *Besides a greater orientation toward practical skills and the needs of the labor market, VET institutions should also develop curricula that would augment the skills levels of early school leavers and adults.*** These programs should offer training in related clusters of skills (for example, ICT, languages, environment sciences, together with skills such as team work, problem solving, etc.) in order to provide students with a sufficiently broad skill base to respond to different labor market opportunities. While some schools already offer training programs to adults, they are

rarely tailored to the needs of adult learners. Expertise from other countries and international organizations could be used for development of such curricula.

#### **4. Tertiary Education Reform**

90. **In tertiary education, little reform has occurred and there are multiple areas that are in urgent need of attention.** Our principal recommendation is that the government, in collaboration with key stakeholders (ministries, educators, public and private university administrators, employer and student representatives) create a long-term (10 year) and medium term (5 year) *national strategy* for higher education reform and work on committing the key stakeholders to perform their part to actually deliver on the strategy. The vision and related set of national policy objectives should pay particular attention to:

- Commitment to and a speedier implementation of the Bologna reforms;
- Strengthening the capacity of the Quality Assurance body, which has been created by the Higher Education Law of 2007, but which is not yet fully functional;
- The transfer of tertiary financing from the cantonal to a national, or at least entity level, and the linking of finance to educational outcomes, rather than inputs;
- The reform of student stipends, so as to create incentives to ensure greater efficiency and value. Measures could include better targeting of economically disadvantaged students and the downsizing of state support to students who repeat a year or study longer than the standard course duration;
- Encouraging the growth of diverse (private) tertiary institutions that provide more occupationally oriented programs and more flexible delivery mechanisms;
- The provision of adequate and efficient financing for R&D, such as via creation of partnerships between companies and public universities, and the encouragement of innovation via greater financial support of teaching fellows and researchers at public universities.

#### **5. Development of Life-Long Learning**

91. **The priority in enabling better provision of continuing training / life-long learning, opportunities is to provide the regulatory infrastructure for the provision of public and private training services.** The state law needs to set standards, quality measures and certification processes. Such government initiatives would kindle private sector interest in providing adult training services and would increase demand by workers and companies for these services, a demand that has been constrained to date by the lack of quality assurance and certification. Activities have started to develop a feasibility study on adult education in BH; but legislation, strategies and regulatory institutions have yet to be established.

92. **While the public education system should ensure that graduates have the basic skills expected** from their educational training, **employers** should take the responsibility for providing in-house training for specific work-related tasks. Many countries have established tax schemes to encourage the provision of training by employers. Most EU accession countries have used grant schemes, tax credits, or training subsidies during the 1990s to create incentives for firms to provide in-house training to their employees. In addition to providing task-specific training, companies can be encouraged to collaborate with governmental bodies and the private sector in the provision of continuing education in more general skill areas, with some support from the government. An example of a company in BH that is a leader in this approach is ASA Prevent, which without state support has developed a management training program for its employees, in collaboration with the University of Sarajevo (see Case Study 1 in the Appendix).

## 6. *Migration / Repatriation*

93. **While outward migration represents an outflow of skills, it can also represent an excellent opportunity if BH succeeds in repatriating its citizens and the skills and knowledge that they acquired abroad.** An initial step that could be taken to identify and bring together the network of BH diaspora is the creation of an on-line portal for BH scientists and graduates of higher educational programs, similar to the Croatian Scientist Network sponsored by the Ministry of Education in Croatia. Another complementary project would be to create an on-line network of entrepreneurs and business-minded individuals, such as *GlobalScot* which was created to bring together Scottish diaspora.

94. **Other concrete steps that the government could take to facilitate the return of skilled citizens from abroad is to review and streamline the procedures and processing time of requests for the recognition of foreign diplomas.** Currently, diploma recognition is required by law for certain employment positions in the public and private sector. However, the process can take more than one year to complete and provides a disincentive for BH citizens who study abroad as well as other foreign citizens seeking employment in BH.

95. **Finally the government should review and potentially revise its policy on the granting of work permits which may affect some BH diaspora** but also limit the opportunities of qualified nationals of other countries to contribute to the development and growth of the BH economy.

## Annex I

### A. Facing Constraints – Case Studies from the Wood Processing, Automotive, Agricultural, and Tourism Sectors

Many countries successfully developed competitive export industries by creating a clear macroeconomic strategy that focused on promoting innovation and development in certain sectors in which that country exhibited a comparative advantage. A recent report by the World Bank<sup>28</sup> shows that during 2002-2006, BH achieved impressive growth in exports of goods and non-factor services of 10.9% - the highest export growth rate among SEE economies during that period. Trade statistics for BH between 2003 and 2007 suggests that the export growth was broadly based on industries that are intensive in factors with which BH is well-endowed and in which BH was competitive even in pre-war times: wood products, automotive parts, steel and metals, textiles, chemicals. Most of these industries were dealt a heavy blow by the war but their recent export success capitalized on many of the skills, expertise, and natural resources that remained. The challenge in creating sustained future growth will be to modernize these industries into exporting higher value-added and more skill-intensive products by bringing them in line with the knowledge and technologies of the 21<sup>st</sup> century.

#### 1. Wood Processing Industry

BH is well endowed with forests, which cover approximately 42-47% of the BH area and provide high quality wood. In 2007, the various forms of wood-processing and wood-based products amounted to US\$ 706 million, or 17% of BH's exports (of which exports of wood furniture accounted for US\$64 million). This represents significant and steady growth from \$US 224 million of export value in 2003. Due to strong growth, as of 2006, BH became a net exporter of wood furniture.

**Table 1: Developments in wood cluster trade (forest 'gate' and wood-based products) in 2003-07**

	2003	2004	2005	2006	2007
	Exports in millions of \$US				
Logs	6.1	12.1	19.2	34.0	40.8
Primary wood processing	8.8	12.6	11.0	12.9	13.8
Secondary wood processing	197.5	276.5	325.9	485.6	579.6
Other wood based products	11.1	34.4	43.7	56.4	71.0
<b>Total above</b>	<b>223.7</b>	<b>336.0</b>	<b>400.2</b>	<b>589.3</b>	<b>705.8</b>
Share in total exports	21.8	20.8	16.8	17.2	17.0

Source: Kaminski, 2009

However, the forest products sector still lacks a harmonized and transparent strategy for sector development and is characterized by a large gap between its current conditions and its potential. The growth challenge in this sector will be to minimize the contributions to exports of unprocessed raw materials (logs) and to drive growth in higher-added value products / secondary processing sector (e.g., solid wood furniture, windows and doors, joinery, semi-finished products and elements). In order to become

<sup>28</sup> Kaminski, Bartłomiej (2008)

even more competitive in this industry, BH government strategy should focus on strengthening an integrated supply chain for this industry within BH (so as to minimize imports of certain inputs in production) and on supporting the adoption of leading wood processing technologies. Abundance of quality raw material, availability of labor with a tradition of wood processing, international recognition of BH branded products, and the proximity to EU markets make investment in this sector a proposition with competitive returns.

#### **Case study 1: McMilan Furniture**

McMilan is a furniture production company established in Banja Luka in 1999, which sells made-to-order furniture products through an authorized dealer network. 75% of its sales (9.25 million KM in 2008) are currently in BH, but the company is looking to expand to Serbia, Croatia and other countries in the region.

McMillan began its business by importing and distributing furniture products from *Black Red White*, a leading furniture manufacturer from Poland. In 2002, McMillan invested in production machinery and started manufacturing furniture under its own label. Today, the company continues to operate in partnership with *BRW*, largely by importing luxury items from *BRW*. In 2003, McMilan entered into partnership with another Polish furniture firm, *Komandor*, which specializes in providing custom designed wall-to-wall closets with the help of its in-house software. Through the partnership agreement with *Komandor*, McMilan acquired the rights to utilize their software in offering custom design solutions to its own clients. Currently McMilan is seeking to expand into kitchen and office furniture. A constraint in these plans is the need to import wood-based panels (MDF, currently not being produced in BH) which adds to production delay and product cost.

At the current time, the global slowdown in new construction activity is affecting McMilan's operations and finances but the availability of quality labor is one of the largest constraints during regular times of business. While the company has no problems finding skilled production employees, it does have a hard time finding tertiary-educated quality designers. Last year, the company took on 10 interns from the architectural college in Banja Luka, but they proved short-lived. Most did not have the right practical skills to do independent design work but also lacked general motivation and entrepreneurial drive. A second difficulty is finding motivated and experienced sales people, to expand the network of McMilan authorized dealers and manage client relationships. Potential sales people interviewed in the past did not have the right type of sales- and communications skills.

#### **Case study 2: Artisan Furniture**

Started from a family tradition in 1997, Artisan is a small-scale producer of high-quality furniture items, located in the industrial zone in Tešanj. As part of larger projects, the company has designed and furnished several high-end establishments in BH and also exports furniture abroad. Currently, the company is capacity-constrained – its work spaces and work force (32 employees) are unable to meet all of the demand for its furniture. However, the company currently is planning for a future expansion of its workspaces and capacity. Artisan has recently invested in a new technology that will increase its production capacity and ability to meet certain sophisticated client demands.

Artisan is also the founder of ARTECO Wood Technology Center Tešanj, established with the support of USAID and the Norwegian Ministry of Foreign Affairs in February 2009 with the mission to provide technical education services and access to new CAD/CAM technologies to



SMEs in the wood processing and other sectors in BH in order to increase the competitiveness of these SMEs. It is one of the only institutes in BH that focuses on bridging the human capital gap in the private sector and can be considered a model approach that should be supported in this and other sectors of significance to the overall development of BH's economy. ARTECO's goals are to, through association, develop the production capacities of SMEs in the wood processing industry and strengthen the domestic supply- and value chain that will lead to increased exports for all BH furniture makers.

Artisan collaborates with the secondary school in Tešanj to contribute to opportunities for practical experience for students. In addition to an ongoing internship program, Artisan is creating a "Wood Academy", whereby motivated high school students will be recruited and trained in design and production.

At this time, Artisan has a difficult time finding employees with the right kind of IT/software skills, finding quality designers, and a proactive sales force with sufficient foreign language skills. Currently, Artisan outsources much of its design work to freelance designers from abroad and a design studio in Zagreb, Croatia. Recently, Artisan started collaborating with the architectural college in Sarajevo and organized a design competition whereby the best student designs were selected for production. These proactive projects are a model of the type of collaboration that is needed between employers and educational institutions. Universities should be urged to work with the private sector to establish institutions/programs providing research and technical assistance to companies in their specific areas of need.

## 2. Automotive Parts Industry

Exports of automobiles & parts represent a small but dynamically growing share of BH exports. Their export value of automotive parts grew from US\$20 million in 2002 to US\$223 million in 2007. Successful growth in this sector was aided by increased foreign direct investment (largely in the form of joint ventures), combined with BH's historical specialization in machine building and automotive products, which had been disrupted and damaged by the war.

**Developments in trade in automotive networks of production and distribution in 2002-06**

Product	Export Value (\$ millions)						LS Growth (%)
	2002	2003	2004	2005	2006	2007	2002-07
Auto network parts exports	17	70	127	192	211	205	46.1
Of which:							
Parts nes int-c engines (SITC 7139)	5	59	103	155	164	157	58.9
Motor vehicle parts/access (SITC 784)	6	8	17	32	41	37	41.7
Auto network final products exports	2	3	13	7	8	18	36.1
<b>Total Automotive Exports</b>	<b>20</b>	<b>73</b>	<b>140</b>	<b>199</b>	<b>220</b>	<b>223</b>	45.2
Share of auto network in total exports (%)	1.7	5.8	7.0	7.6	6.7	5.8	
Auto network import intensity (%)	52	51	59	74	65	78	

Source: Kaminski, 2009

Now that BH has successfully re-integrated into global automotive networks of production, the challenge in this sector will be to continue to attract joint ventures and foreign investment that will transfer leading production technology to BH and diversify

and grow its customer bases, and to remain competitive in terms of labor skills, labor costs, final product cost and technological capabilities.

### **Case study 3: ASA Prevent**

Founded in 1952 and based in Wolfsburg, Germany, the Prevent Group is a manufacturer of automotive products (largely car seat covers) with 35 sites and over 10,000 employees worldwide. ASA Prevent in BH is part of the global supply chain of the Prevent Group and largely focuses on producing seat covers for Volkswagen. The company is currently seeking to expand its product offering, including into yacht interiors.

Lack of certain skills is a major constraint to the growth of ASA Prevent. The company is in constant need of quality mechanical engineers. The company also has a difficult time recruiting middle managers who bring to the table an understanding of the company's global presence, international perspective, who possess sales and communications skills and at least a basic understanding of finance. Such qualities (international perspective, sales, and foreign language skills, basic computer skills) are difficult to find among recent university graduates, whose training is often too theoretical with too little practical, real-world skills and application. In the view of ASA Prevent, its need for highly skilled workers is under filled by 20%. As a result of the difficulty of finding skilled employees locally, ASA often recruits its managers from abroad, in particular for the communities of BH diasporas. Here, the difficult diploma recognition and certification requirements of the state present a constraint.

The company also has a hard time finding skilled technical personnel. One position that is difficult to fill is for AutoCAD technicians (persons who are able to create basic drawings needed in the automotive industry using the AutoCAD software) because students are often not introduced to the standard software during their technical training or internship programs.

ASA Prevent also faces challenges finding qualified production employees. Recently, the company had to recruit a leather expert from Germany because they were not able to recruit one locally. The company is in constant need of quality lacquer finishers. One problem in recruiting is that persons are relatively unwilling to commute or move closer to the company's production facility in Visoko.

In order to counter the skill constraint it faces, ASA Prevent invests a good amount of resources into employee training programs, which can last up to three months, depending on the position. In addition, recently the company implemented a pilot program: the ASA Prevent Leadership Program (APL), an in-house leadership and management training program designed to equip the next generation of mid- and top-level managers. The program is administered in partnership with the University Sarajevo Employment Academy and a private consulting firm. A total of 120 employees have entered the program and the first 60 persons will graduate in November 2009 after 18 months of training.

ASA Prevent takes on interns and manages them actively. The company also provides scholarships to current employees for further education but does require employees to sign a continuing contract or repay the scholarship as a loan.

While the company is a model of proactive investment in its employees, the activities present a financial burden which rests solely on the company, while the benefits of some of the types of training provided are an externality to the sector and the economy as a whole. The responsibility

for some of the training that ASA invests in (language training, sales and communication, computer and software training) should rest with the secondary and tertiary education system.

#### **Case study 4: CIMOS TMD**

CIMOS TMD was established as a joint venture between the CIMOS Group of Slovenia and TMD in 2001. The production facility located in Gradačac (other facilities forming in Zenica and Srebrenica) supplies engine parts, of which 90% are supplied to U.S. engine production company *Honeywell Garrett*, and later integrated in the motors of many leading car brands.

Human capital is a definite growth constraint at CIMOS. The company has recently invested in production space and new technologies but is at a deficit of people to operate them. On the management level, IT and language skills (English and German) are a top deficiency and CIMOS sponsors language training to select employees. On the technical level, recent graduates from mechanical engineering faculties do not have sufficiently practical skills and are lacking in some basic knowledge of common production technologies, quality control/assurance and production process management. Such employees are being sent to Switzerland for comprehensive and costly training. The company also sponsors the training of professors who then teach CIMOS employees at the mechanical engineering faculties of the Universities of Sarajevo, Tuzla, and Zenica. In this sense, a private company is subsidizing the public education system in BH, which left on its own, has not been producing the research and expertise needed by the growing automotive industry.

#### **Case study 3: Unico Filter / Manhummel**

Unico Filter commenced production of filters for the automotive industry in Tešanj in 1974. In 2005, the company was privatized and integrated into the German MANN+HUMMEL Group, which employs more than 11,500 people in over 41 locations world-wide.

Following privatization, many of Unico Filter's employees were re-trained using MANN+HUMMEL's production technology. The company's employee training programs are now fully integrated into those of the MANN+HUMMEL Group and employees are often sent abroad for training. New production employees go through basic standards and safety training, and then spend several months on-the-job before they are tested and hired as a full time employee upon passing of a practical exam. The identified deficiencies in new recruits are largely in foreign languages (English and German) and computer skills. The profession for which the company is currently having a difficult time finding professional and experienced personnel is internal auditors.

The company has a good collaboration with the secondary school in Tešanj. The company likes to host students on an internship basis during their final years of study and then hire on a full-time basis those who performed best.

The company also provides scholarships to about 60 university students (largely at electrical or mechanical engineering faculties) who almost always receive an employment offer following graduation. The company is also currently beginning collaboration with the economics faculties of the University of Sarajevo and the University of Zenica to recruit candidates.

Through these proactive programs, the company seeks to counter the skills constraints which would otherwise present a constraint to growth. Its affiliation with the larger MANN+HUMMEL network affords it the financial stability and expertise for its human capital investments.

### 3. Agriculture / Food Processing

The agricultural sector is a small, but important part of the BH economy, which accounted for 9.8% of GDP in 2007 but, per recent LFS estimates, accounts for approximately 21% of employment (official and informal) in BH. The share of agri-food in total imports declined substantially from 22.5 percent in 2003 to 16.1 percent in 2007, while its share in total exports remained stable within a range of 5 to 6 percent.

While agricultural yields and labor productivity are currently low in BH, the sector has significant growth potential. As consumers in the EU market are increasingly demanding higher value, “healthier” and “organic” foods and food prices are rising, markets for agricultural products are becoming increasingly valuable. BH’s agri-food sector has potential comparative advantages in producing organic produce and niche products due to favorable prices for land and labor, good climate, and a proximity to EU markets.

Small-scale subsistence farmers, who currently dominate the agricultural sector, currently cannot match the price and quality level of imported agricultural products. Key challenges in this sector are to educate and support farmers, food processors, and retailers of the need to consolidate and integrate vertically and horizontally to improve quality standards, reduce costs, and boost competitiveness. Existing public services in the area of education, extension, research, and information systems do not sufficiently promote a more competitive and quality-oriented agricultural sector.

#### **Case study 1: Vitaminka d.d.o**

Vitaminka, established in 1947 became one of the largest fruit and vegetable processing companies in former Yugoslavia. Recently, the company was privatized to *Kreis Industriehandel*, a food distribution company established in 2002 in Basel, Switzerland. Vitaminka produces high-quality jarred fruit and vegetable products and fruit- and vegetable-based beverages. In 2008, sales amounted to approximately 30 million KM and the company employed 213 full-time workers and 87 seasonal workers.

The company faces an almost constant constraint in its production operations from a lack of availability of certain production professions dealing with heating and cooling equipment and operations. The difficult in labor supply comes from the fact that the work conditions are difficult and the positions are usually not well enumerated. At the same time, certifications which are needed to become licensed in these professions are expensive and few workers are willing to make the up-front investment. Training is provided by a government agency but is not paid for by the state.

Exports currently account for about 20% of all sales, but the company is looking to expand its international presence, especially into specialty “ethnic” stores in response to demand from diasporas abroad. Expansion into the general EU market is currently not part of the strategy.

## Annex II – Tables and Figures

**Table A1: BH Population Estimates, 2000-2050**

(in 000s)	Actual		Projected				
	2000	2005	2010	2020	2030	2040	2050
0-4	217	182	170	159	137	121	116
5-9	222	220	181	165	148	126	118
10-14	291	227	220	170	159	136	120
15-19	290	294	226	180	165	147	126
20-24	273	291	292	218	168	157	135
25-29	270	274	289	223	178	163	145
30-34	279	271	271	289	215	166	155
35-39	300	281	269	286	220	176	161
40-44	293	302	279	268	286	213	164
45-49	271	294	298	264	281	217	173
50-54	210	270	287	270	261	279	208
55-59	166	206	259	282	252	270	209
60-64	205	160	196	265	252	245	264
65+	408	508	522	637	797	871	915
<b>Total</b>	<b>3,695</b>	<b>3,780</b>	<b>3,759</b>	<b>3,676</b>	<b>3,519</b>	<b>3,287</b>	<b>3,009</b>
<i>%-age under 15yrs</i>	<i>19.8%</i>	<i>16.6%</i>	<i>15.2%</i>	<i>13.4%</i>	<i>12.6%</i>	<i>11.7%</i>	<i>11.8%</i>

Data Source: UN World Population Prospects.

**Table A2: BH, Official Employment by Sector, as of April, 2009**

Sector	Employed	Percent
Agriculture, hunting and forestry	18,830	3%
Fishing	503	0%
Mining and quarrying	20,533	3%
Manufacturing	150,220	21%
Electricity, gas and water supply	23,060	3%
Construction	45,609	6%
Wholesale and retail trade and repair	144,238	20%
Hotels and restaurants	35,882	5%
Transport, storage and communication	44,620	6%
Financial intermediation	14,908	2%
Real estate, renting and business activities	27,291	4%
Public administration and defense	70,518	10%
Education	57,701	8%
Health and social work	45,991	6%
Other community, social and personal service activities	27,564	4%
<b>Total</b>	<b>727,468</b>	<b>100%</b>

Data Source: BHAS

**Table A3: Official Employment by Sector, FBH**

	2004	2005	2006	2007	2008	2004- '08 Change
Agriculture and forestry	10,265	10,089	10,044	9,468	9,487	-8%
Fishing	189	175	151	156	166	-12%
Mining	16,132	16,170	16,232	15,343	15,129	-6%
Manufacturing	88,641	84,720	82,507	85,093	87,695	-1%
Electricity, gas and water supply	14,299	14,906	14,691	13,346	13,216	-8%
Construction	23,616	23,007	23,923	26,167	27,526	17%
Trade	51,163	53,124	54,633	68,689	76,959	50%
Hospitality	14,840	15,086	13,875	15,656	17,641	19%
Transport, storage, communication	27,784	27,525	27,662	28,434	28,898	4%
Financial intermediation	7,703	8,019	8,396	8,981	9,989	30%
Real estate, renting	8,667	9,761	10,642	14,581	16,108	86%
Public administration	48,542	47,233	47,024	46,623	45,069	-7%
Education	33,079	33,773	34,526	34,751	35,413	7%
Health and social care	27,405	28,088	27,970	27,272	27,855	2%
Other public, social services	12,856	13,588	14,206	15,917	16,123	25%
Private household employment	72	90	75	58	114	58%
Exterritorial organizations	913	1,140	1,140	1,184	1,279	40%
Other	2,144	1,924	1,904	1,957	2,078	-3%
<b>Total</b>	<b>388,310</b>	<b>388,418</b>	<b>389,601</b>	<b>413,676</b>	<b>430,745</b>	<b>11%</b>

Data Source: FZZZ.

**Table A4: Official Employment by Sector, RS**

	2004	2005	2006	2007	2008	2004- '08 Change
Agriculture and forestry	8,816	8,453	8,074	8,098	8,918	1%
Fishing	304	262	261	282	315	4%
Mining	3,537	3,272	3,561	4,348	4,970	41%
Manufacturing	59,107	56,893	51,590	50,490	58,356	-1%
Electricity, gas and water supply	9,415	9,701	9,188	8,959	9,347	-1%
Construction	11,815	12,079	12,078	12,700	14,447	22%
Trade	40,272	43,736	47,036	50,688	53,081	32%
Hospitality	13,709	13,146	14,649	15,598	14,685	7%
Transport, storage, communication	14,510	14,768	15,205	16,089	15,078	4%
Financial intermediation	2,604	2,666	2,792	3,272	3,890	49%
Real estate, renting	5,688	8,317	9,204	10,173	9,500	67%
Public administration	19,892	18,670	19,401	20,245	21,092	6%
Education	16,018	16,724	17,111	17,692	18,196	14%
Health and social care	14,396	15,306	15,800	15,926	15,692	9%
Other public, social services	16,156	18,631	22,185	23,676	11,638	-28%
<b>Total</b>	<b>236,239</b>	<b>242,624</b>	<b>248,135</b>	<b>258,236</b>	<b>259,205</b>	<b>10%</b>

Data Source: ZZZRS.

**Table A5: BH, Average Wages by Sector, as of April 2009 (formal economy)**

<i>(in KM)</i>	<b>Gross</b>	<b>Net</b>	<i>Rel. to Avg.</i>	
			<i>Gross</i>	<i>Net</i>
Financial intermediation	2,020	1,296	166%	162%
Public administration and defence	1,747	1,131	144%	142%
Electricity, gas and water supply	1,706	1,109	140%	139%
Health and social work	1,525	994	125%	124%
Transport, storage and communication	1,388	908	114%	114%
Education	1,342	876	110%	110%
Mining and quarrying	1,206	803	99%	100%
Real estate, renting and business activities	1,127	741	93%	93%
Other community, social and personal services	1,103	727	91%	91%
Agriculture, hunting and forestry	987	655	81%	82%
Fishing	963	639	79%	80%
Manufacturing	811	543	67%	68%
Wholesale and retail trade and repair	810	539	67%	67%
Hotels and restaurants	769	516	63%	65%
Construction	757	509	62%	64%
<b>Economy Average</b>	<b>1,217</b>	<b>799</b>	<b>100%</b>	<b>100%</b>

Data Source: BHAS

**Table A6: BH, Growth in Gross Wages, Net Wages, and GDP per Capita**

	<b>Annualized Gross Wage</b>	<i>Growth</i>	<b>Annualized Net Wage</b>	<i>Growth</i>	<b>GDP/Capita</b>	<i>Growth</i>
<b>1998</b>	5,448		3,552		2,589	
<b>1999</b>	6,036	11%	4,116	16%	2,913	13%
<b>2000</b>	6,468	7%	4,464	8%	3,199	10%
<b>2001</b>	7,176	11%	4,896	10%	3,441	8%
<b>2002</b>	7,920	10%	5,352	9%	3,602	5%
<b>2003</b>	8,604	9%	5,808	9%	3,760	4%
<b>2004</b>	8,976	4%	6,060	4%	4,059	8%
<b>2005</b>	9,576	7%	6,456	7%	4,319	6%
<b>2006</b>	10,428	9%	7,032	9%	4,841	12%
<b>2007</b>	11,220	8%	7,560	8%	5,434	12%
<b>2008</b>	13,356	19%	9,024	19%	6,147	13%

Source: Central Bank of BH, IMF

**Table A7: BH Activity, Employment, and Unemployment by Highest Education Achieved, 2006-2008**

		<b>Education Category</b>			
		<i>Primary or less</i>	<i>Secondary</i>	<i>Tertiary</i>	<i>All Groups</i>
Activity Rate	<b>2006</b>	2%	62%	73%	43%
	<b>2007</b>	22%	62%	75%	44%
	<b>2008</b>	22%	61%	73%	44%
Employment Rate	<b>2006</b>	15%	40%	64%	30%
	<b>2007</b>	15%	42%	67%	31%
	<b>2008</b>	17%	46%	66%	34%
Unemployment Rate	<b>2006</b>	31%	34%	12%	31%
	<b>2007</b>	31%	31%	11%	29%
	<b>2008</b>	24%	25%	10%	23%

Data Source: 2008 LFS.

**Table A8: BH Activity, Employment, and Unemployment by Age Group, 2006-2008**

		<b>Age Group</b>				
		<i>15-24</i>	<i>25-49</i>	<i>50-64</i>	<i>65+</i>	<i>All Groups</i>
Activity Rate	<b>2006</b>	33%	66%	37%	6%	43%
	<b>2007</b>	33%	67%	39%	6%	44%
	<b>2008</b>	33%	69%	40%	5%	44%
Employment Rate	<b>2006</b>	13%	47%	31%	6%	30%
	<b>2007</b>	14%	49%	32%	6%	31%
	<b>2008</b>	17%	53%	34%	5%	34%
Unemployment Rate	<b>2006</b>	62%	29%	17%	0%	31%
	<b>2007</b>	59%	27%	18%	0%	29%
	<b>2008</b>	47%	22%	15%	0%	23%

Data Source: 2008 LFS.



**Table A9: Employment Fund Revenues and Expenses in FBH and RS, 2006 - 2008**

	FBH			RS		
	2006	2007	2008	2006	2007	2008
<b>REVENUES</b>						
Taxes	5	-	-	-	-	-
Social Contributions	94,138	110,500	133,703	15,492	17,619	22,221
Grants	1,332	72,053	51,608	2,164	2,097	6,415
Other Revenue	2,486	1,673	1,910	187	194	183
<b>Total Revenues</b>	<b>97,961</b>	<b>184,226</b>	<b>187,221</b>	<b>17,843</b>	<b>19,910</b>	<b>28,818</b>
<b>EXPENSES</b>						
Employee comp	12,997	13,581	15,473	3,358	3,881	5,556
Goods and services	6,321	4,320	14,995	1,066	992	1,245
Interest	0	2	1	-	-	-
Subsidies	17,232	23,738	15,806	574	39	2,765
Grants	5,330	-	-	10	-	-
Social benefits <sup>(1)</sup>	41,428	136,571	180,377	14,663	15,838	19,131
Other expense	8,849	9,996	8,779	-	-	-
<b>Total Expenses</b>	<b>92,158</b>	<b>188,208</b>	<b>235,431</b>	<b>19,670</b>	<b>20,750</b>	<b>28,697</b>
Net Operating Balance	5,802	(3,982)	(48,210)	(1,827)	(840)	122
# officially Unemployed	362,368	367,552	338,643	144,106	134,207	133,074
Revenues / # of Unempl	270	501	553	124	148	217

(1) As of 2007, include benefits to demobilized soldiers in FBH.

Source: Government fiscal expenditure records and World Bank staff calculations.

**Table A10: Institutions of Education in BH, 2006/2007 School Year**

	FBH	RS
<b>Primary Schools<sup>(1)</sup></b>	1,085	764
# of Students Enrolled	195,027	115,949
# of Students Graduated	26,988	12,250
# of Teachers	14,670	7,726
<i>%age students graduated</i>	<i>14%</i>	<i>11%</i>
<i>Avg. Student-teacher ratio</i>	<i>13</i>	<i>15</i>
<b>Secondary Schools<sup>(2)</sup></b>	197	92
# of Students Enrolled	106,463	50,046
# of Students Graduated	31,559	13,845
# of Teachers	8,006	3,160
<i>%age students graduated</i>	<i>30%</i>	<i>28%</i>
<i>Avg. Student-teacher ratio</i>	<i>13</i>	<i>16</i>
<b>Public Universities</b>	6	2
# of Students Enrolled	66,876	21,567
# of Students Graduated	7,898	2,362
<i>%age students graduated</i>	<i>12%</i>	<i>11%</i>
<b>Private Universities</b>	14	7
# of Students Enrolled	1,728	5,121
# of Students Graduated	n/a	928

(1) Includes schools with 5-year and 9-year programs.

(2) Includes 4-year general schools), 4-year technical schools, and 2-3 year vocational schools.

Data source: FZS, RZSRS.

**Table A11: Spending on Education by Levels of Government, 2008**

(in 000s of KM)	Education Expenditures	Total Govt. Expenditures	Education Spending / Total Spending
<b>State-Level</b>			
State Govt.	2,329	664,208	0.4%
<b>RS</b>			
RS Central Govt.	263,920	1,467,996	18.0%
RS Muni. Govt.	38,812	628,218	6.2%
<b>FBH</b>			
FBH Central Govt.	17,452	1,339,971	1.3%
FBH Cantons	761,848	1,927,923	39.5%
FBH Muni. Govt.	20,077	624,852	3.2%
Brčko District	24,352	181,274	13.4%
<b>Total BH</b>	<b>1,128,790</b>	<b>6,834,443</b>	<b>16.5%</b>
<b>2007 GDP</b>	<b>21,647,000</b>		
Education Expend. / GDP	5.2%		

Data Source: Government fiscal expenditure records and World Bank staff calculations.

**Table A12: BH Education Enrollment Statistics by Gender**

	Children in Preschool Institutions				
	Girls	Boys	Total	% Female	% Male
<b>2002</b>	4,021	7,671	11,692	34%	66%
<b>2003</b>	6,401	7,147	13,548	47%	53%
<b>2004</b>	6,238	6,897	13,135	47%	53%
<b>2005</b>	6,112	6,877	12,989	47%	53%
<b>2006</b>	6,299	7,085	13,384	47%	53%
<b>2007</b>	6,956	7,561	14,517	48%	52%
	Pupils in elementary schools (end of school year)				
	Girls	Boys	Total	% Female	% Male
<b>2002</b>	177,285	187,196	364,481	49%	51%
<b>2003</b>	175,988	184,971	360,959	49%	51%
<b>2004</b>	182,236	192,679	374,915	49%	51%
<b>2005</b>	184,872	195,814	380,686	49%	51%
<b>2006</b>	182,311	192,396	374,707	49%	51%
<b>2007</b>	178,843	188,333	367,176	49%	51%
	Pupils in secondary schools (end of school year)				
	Female	Male	Total	% Female	% Male
<b>2002</b>	83,673	84,955	168,628	50%	50%
<b>2003</b>	83,469	84,866	168,335	50%	50%
<b>2004</b>	83,003	83,898	166,901	50%	50%
<b>2005</b>	81,985	82,758	164,743	50%	50%

<b>2006</b>	80,976	81,458	162,434	50%	50%
<b>2007</b>	80,054	80,443	160,497	50%	50%

#### Students in Higher Education

	<b>Female</b>	<b>Male</b>	<b>Total</b>	<b>% Female</b>	<b>% Male</b>
<b>2002</b>	36,429	29,817	66,246	55%	45%
<b>2003</b>	39,411	31,545	70,956	56%	44%
<b>2004</b>	43,177	33,856	77,033	56%	44%
<b>2005</b>	47,075	37,347	84,422	56%	44%
<b>2006</b>	50,352	40,911	91,263	55%	45%
<b>2007</b>	55,155	44,402	99,557	55%	45%
<b>2008</b>	58,624	46,314	104,938	56%	44%

#### Graduates of Higher Education

	<b>Female</b>	<b>Male</b>	<b>Total</b>	<b>% Female</b>	<b>% Male</b>
<b>2002</b>	2,419	2,025	4,444	54%	46%
<b>2003</b>	2,572	1,747	4,319	60%	40%
<b>2004</b>	3,536	2,503	6,039	59%	41%
<b>2005</b>	4,007	2,841	6,848	59%	41%
<b>2006</b>	4,747	3,380	8,127	58%	42%
<b>2007</b>	5,773	4,230	10,003	58%	42%
<b>2008</b>	7,168	5,031	12,199	59%	41%

#### Masters of Science and Specialists

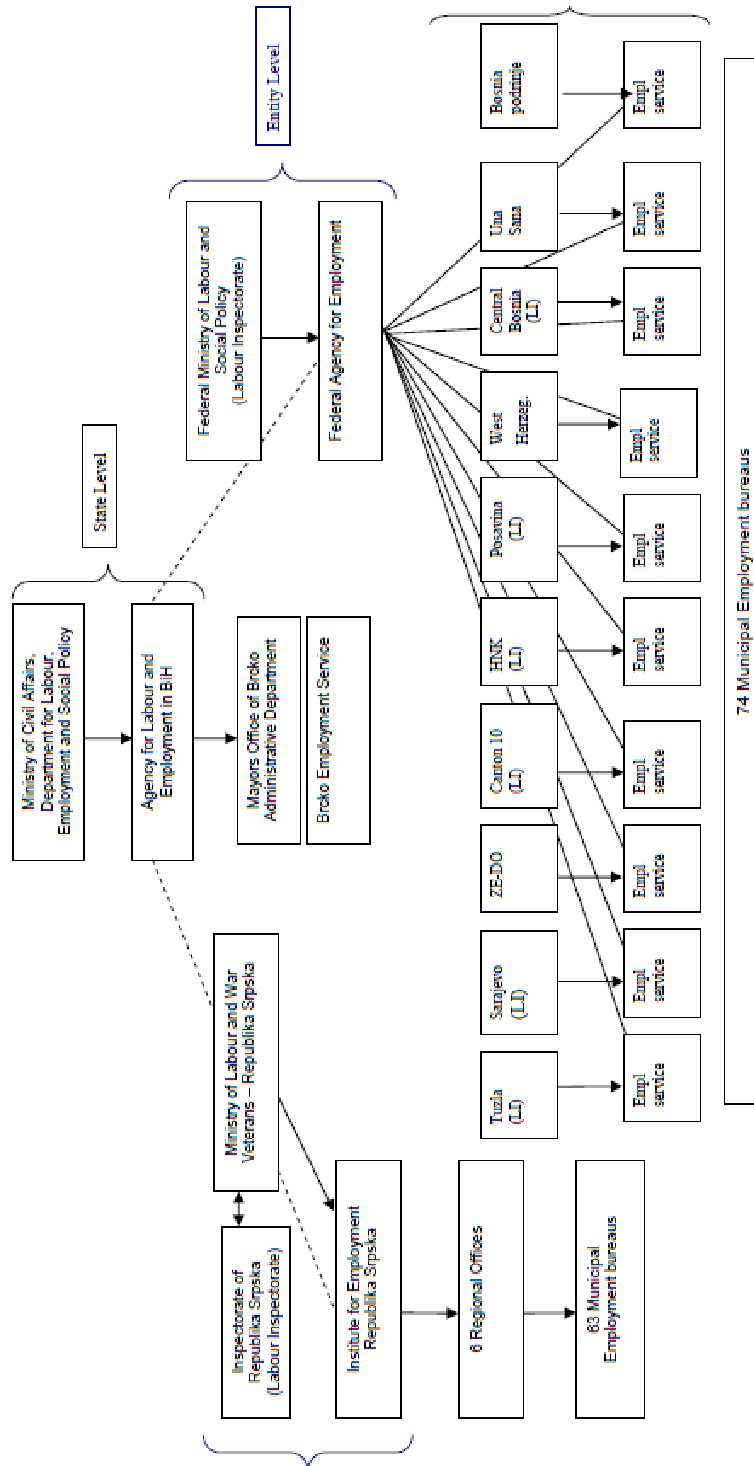
	<b>Female</b>	<b>Male</b>	<b>Total</b>	<b>% Female</b>	<b>% Male</b>
<b>2002</b>	55	117	172	32%	68%
<b>2003</b>	85	143	228	37%	63%
<b>2004</b>	97	136	233	42%	58%
<b>2005</b>	102	169	271	38%	62%
<b>2006</b>	104	200	304	34%	66%
<b>2007</b>	140	188	328	43%	57%
<b>2008</b>	182	245	427	43%	57%

#### Doctors of Science

	<b>Female</b>	<b>Male</b>	<b>Total</b>	<b>% Female</b>	<b>% Male</b>
<b>2002</b>	21	28	49	43%	57%
<b>2003</b>	26	49	75	35%	65%
<b>2004</b>	15	35	50	30%	70%
<b>2005</b>	24	45	69	35%	65%
<b>2006</b>	27	64	91	30%	70%
<b>2007</b>	54	80	134	40%	60%
<b>2008</b>	45	91	136	33%	67%

Data Source: BH Office of Statistics, Women and Men in Bosnia and Herzegovina, 2009.

### Annex III



Canton Ministries in charge of labour and employment sector: Ministry of Labour and Social Policy - Tuzla Canton, Ministry of Labour, Social Policy, Refugees and Displaced Persons - Sarajevo Canton, Ministry of Labour, Social Policy and Refugees - Zenica-Doboj Canton, Ministry of Labour, Social Policy and Refugees - Canion 10, Ministry of Health, Labour and Social Protection - Hercegovacko - Neretvanski Canton, Ministry of Health, Labour and Social Protection - Posavina Canton, Ministry of Health, Labour and Social Protection - West Herzegovina Canton, Ministry of Economy - Central Bosnia Canton, Ministry of Economy - Una - Sana Canton and Ministry of justice, public administration and labour - Bosnia-Podrinje Canton.

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 Source: ec.europa.eu

## REFERENCES

Agency for Statistics of Bosnia and Herzegovina (2008), Labor Force Survey. Sarajevo, 2008.

Arnhold, Nina, Linden, Toby, and Krill, Vasiliev (2008), "From Fragmentation to Cooperation: Tertiary Education, Research and Development in South Eastern Europe," Washington, D.C.: The World Bank.

Beine, Michel, Docquier, Frederic, Rapoport, Hillel (2001), "Brain drain and economic growth: theory and evidence," *Journal of Development Economics* Vol. 64., 275–289.

Benhabib, Jess and Spiegel, Mark (2002), "Human Capital and Technology Diffusion," FRBSF Working Paper #2003-02.

Betcherman, Gordon, Olivas, Karina and Dar, Amit (2004), "Impacts of Active Labor Market Programs: New Evidence from Evaluations with Particular Attention to Developing and Transition Countries," The World Bank.

Crespo Cuaresma, Jesus, Lutz, Wolfgang (2007), "Human Capital, Age Structure and Economic Growth: Evidence from a New Dataset," *International Institute for Applied Systems Analysis Interim Report IR-07-011*.

Council of Ministers of BH, *Strategy for the Development of VET Education and Training, 2007-2013*.

Dent, Rhian and Wiseman, June (2005), "Continuing Vocational Training Survey 2005," DIUS Research Report 08/17.

Dimova, Ralitz, Wolff, François-Charles (2009), "Remittances and Chain Migration: Longitudinal Evidence from Bosnia and Herzegovina." Discussion Paper IZA DP No. 4083. Bonn, Germany.: Institute for the Study of Labor.

European Union (2006), “Continuous Vocational Training and Education in Bosnia and Herzegovina, review and analysis.”

European Union (2009), “Feasibility Study for High Education Financing Reform,” final report, Letter of Contract N°2008/160909.

European Union (2008), “Overview of achieved results in the activities launched for recognition of prior learning in the project „Qualified more than you think“ at Bosnia Podrinje Canton.”

European Bank for Reconstruction and Development (2006), “*Identifying investment Projects for Sustainable Forestry Industry Business in Bosnia and Herzegovina – Sector Study*”, Interim Report.

European Training Foundation (ETF) (2009), “Needs and Perspectives for the Development of Adult Learning in Bosnia and Herzegovina.”

European Training Foundation (ETF) (2006), “Designing Adult Learning Strategies – the Case of South-Eastern Europe.”  
Federal Employment Institute (FZZZ), 2008 Annual Report.

IOM International Organization for Migration (2007), “Bosnia and Herzegovina Migration Profile.”

Kaminski, Bartłomiej (2008), “*Governance and Foreign Trade Performance of Bosnia and Herzegovina - The Challenge of Sustaining Impressive External Performance*”, Washington D.C.: The World Bank.

KC Samir, Barakat, Bilal, Goujon, Anne, Skirbekk, Vegard, Lutz, Wolfgang, “Projection of Populations by Level of Educational Attainment, Age and Sex for 120 Countries for 2005-2050,” International Institute for Applied Systems Analysis, Interim Report IR-08-038.

Kuznetsov, Yevgeny (editor) (2006), “*Diaspora Networks and the International Migration of Skills: How Countries Can Draw on Their Talent Abroad*”, Washington D.C.: The World Bank.

Lutz, Wolfgang, Goujon, Anne, Wils Annababette (2005), “Forecasting Human Capital Using Demographic Multi-State Methods by Age, Sex, and Education to Show the Long-Term Effects of Investments in Education,” Education Policy and Data Center, Working Paper WP-07-03.

Matić Božidar, Pašić Zijo, Radić Danica, Avdagić Amra (2006), “Strategy for Scientific and Technological Development in Bosnia and Herzegovina,” Academy of Sciences and Arts of Bosnia and Herzegovina.

Ministry of Civil Affairs of Bosnia and Herzegovina, *Development of Education in Bosnia and Herzegovina*, October 2008. *Strategic Guidance for Development of Education in BH with an Implementation Plan for 2008-2015*, Official Bulletin of BH, No. 63/08.”

OECD: “Education at a Glance 2007.

SERDA (2008), “An Analysis of the Demand and Potential of the Labor Market with Policy Recommendations for the Sarajevo Region (Analiza Stanja Potreba i Potencijala Trzista Rada sa Prijedlozima Rjesenja za Podrucje Sarajevske Makroregije)”, Sarajevo: SERDA.

World Bank (2009), *Doing Business 2009, Country Profile for Bosnia-Herzegovina*. Washington D.C.: The World Bank.

World Bank (2007), “The Labor Market and Education and Training in the Western Balkans, A Policy Note.”

World Bank (2008), *Migration and Remittances Factbook*. Washington D.C.: The World Bank.

World Bank (2007), *Country Partnership Strategy for Bosnia and Herzegovina*, Washington D.C.: The World Bank.

World Bank (2006), “Bosnia and Herzegovina: Addressing Fiscal Challenges and Enhancing Growth Prospects, A Public Expenditure and Institutional Review,” Washington D.C.: The World Bank.

World Bank (2005), “Labor Market Update: The Role of Industrial Relations,” Washington D.C.: The World Bank.

World Bank and the International Labour Office (2000), *Vocational Education and Training Reform*, New York, N.Y.: Oxford University Press.