Editors
Janez Prašnikar
Ljubica Knežević Cvelbar

Intangible assets as a potential for growth in Republic of Srpska

Ljubljana, 2012

Intangible assets as a potential for growth in Republic of Srpska

Faculty of Economics - monography Code: DKK12ZM112

Publisher:	Faculty of Economics Ljubljana Publishing Office
Printed and Bound by:	Copis, Ljubljana, Dunajska 158
First edition:	150 copies
Reviewers:	doc. dr. Črt Kostevc prof. dr. Maja Vehovec
Design by:	Robert Ilovar
Proofread by:	EditAvenue.com

CIP - Kataložni zapis o publikaciji
Narodna in univerzitetna knjižnica, Ljubljana

338(497.6)

Intangible assets as a potential for growth in Republic of Srpska / editors Janez Prašnikar, Ljubica Knežević Cvelbar. - 1st ed. - Ljubljana : Faculty of Economics, 2012

ISBN 978-961-240-238-9

1. Prašnikar, Janez

262242816

Acknwledgements

The research in this book was partially supported by the Slovenian Research Agency (ARRS) that funded following research projects:

1. J5-4169 (A) Analysis of firm-level investment in tangible and intangible capital from the perspective of future competitive advantages of Slovene firms
2. J5-2227 (B) The influence of ownership and employee participation in equity, profit and management of economic performance of firms in countries of former Yugoslavia

The study was partially financed by Ministry of Foreign Affairs of the Republic of Slovenia:

1. The influence of ownership and employee participation in equity, profit and management on economic performance of firms in countries of the former Yugoslavia.

The research was also funded from bilateral project between Slovenia and Bosnia and Herzegowina, cofinanced by the Ministry of Science and Technology of Republic of Srpska and Slovenian Research Agency:

1. BI-BA/12-13-008 The role of intangible capital for economic growth and restructuring in the Western Balkan countries and Slovenia.

We would also like to express our gratitude to two reviewers. Their comments helped us to improve the book.

TABLE OF CONTENTS

PREFACE

In the last 20 years, development of the Republic of Srpska has been turbulent. Due to political crisis in the early 1990s, ex-Yugoslavia started to fall apart. The crisis culminated with a war that caused huge material damage, human loss, and the break-up of international relations for the Republic of Srpska. The Dayton-Paris peace agreement ended the 1992-95 war and paved the way to peace and stability in the Republic Srpska. From 1995 to 2000 the nation faced slow recovery, followed by robust growth from 2000 to 2008. This period was characterised by high GDP growth and implementation of structural reforms involving price liberalization, trade and foreign exchange reforms, small and large scale privatization, competition policy, banking reform, infrastructure reform, and non-bank financial reform.

Today, economic growth is often created by intangible capital. The role of intangible capital and investment in intangibles is becoming very important for policy makers, practitioners and academics. Empirical evidence all over the world confirms that intangible capital increases value added, productivity and growth on both a micro level of the firm and on a macro level of the economy.

The aim of this book is to question is Republic of Srpska able to build its future growth on intangible assets. Does the Republic Srpska have the potential for developing and creating value through intangibles?

Our study presents some interesting results. Companies that are more investing in the development of intangible assets are export-oriented

companies and are less productive than companies oriented toward the domestic market. Thus, companies that operate mostly on the domestic market and are exposed to less competition show higher productivity. One of the main virtues of competition in the economic literature relates to its role in stimulating productivity. This is particularly the case when none of the firms on the market has enough economy of scale to dominate the market or create a monopoly. In fact, the economic theory suggests that when a firm is able to fulfil the total industry demand at a lower cost than if other firms were present, then economic welfare is maximized by restricting the number of firms to one. If such condition is met, a monopoly is likely to exist, and a particular firm is more likely to pass on higher prices to consumers.

Book discusses the main results from several angles. The first chapter closely looks at the macroeconomic situation in the Republic of Srpska from 1990 through today. The macroeconomic outlook comprises the analysis of available secondary data and provides a framework for better understanding of the primary data analysis. Chapter Two is dedicated to the description of the methodology. Research design including, questionnaire and data description are presented in this chapter. Chapters 3 to 7 examine the impact of intangibles on firm productivity in the Republic of Srpska. Chapter 3 focuses on social capital and its relation to firm efficiency, while Chapter 4 questions the importance of human resources and organisation on firm performance. Chapter 5 focuses on branding and brand capital; relationship and informational capital are presented in Chapter 6. Chapter 7 analyses research and development policy in Republic of Srpska companies and its

relation with performance. Finally, Chapter 7 is dedicated to the analysis of financial policies of Republic of Srpska firms.

Overall, this book is to acknowledging the reader on past and current development of the Republic of Srpska economy and provides perspective for its future growth.

On this occasion we would like to thank our colleagues from the Faculty of Economics in Banja Luka for their cooperation, great commitment and involvement during the work on this project. As well we want to thank our colleagues from the Faculty of Economics in Ljubljana that contributed their best as always.

Janez Prašnikar and Ljubica Knežević Cvelbar

Ljubica Knežević Cvelbar

1. MACROECONOMIC OUTLINE

1.1. Introduction

Bosnia and Herzegovina was a part of the former Yugoslavia. Due to political crisis in the early 1990s, ex-Yugoslavia started to fall apart. The Dayton-Paris peace agreement ended the 1992-95 war and paved the way to peace and stability in Bosnia and Herzegovina. The complex Dayton constitutional set up generated a fragmented policy-making process in Bosnia. The country was divided in two entities the Republic of Srpska and the Federation of Bosnia and Herzegovina. The main challenge, after achieving political stabilization, was implementation of constitutional and economic reforms (OECD, 2010).

From 1995 to 2000 the nation faced slow recovery. The war had completely destroyed the infrastructure, as well as relations among ethnic groups and prevented the functioning of democratic institutions and of the state itself. Political functioning of the state and international aid had to be assured in order to enable the state of Bosnia and Herzegovina to function. International assistance was first directed toward reconstruction of the infrastructure, housing stock and agriculture, which represent the basis for the normalization as well as the necessary infrastructure for further implementation of market reforms and the market economy.

From 2000 to 2008, the Bosna and Herzegovina witnessed robust growth in particular, high GDP growth. Economic growth from 2002 to 2008 exceeded the global average. During this period, reforms took place in two

stages. First stage reforms involved price liberalization, trade and foreign exchange reforms, and small and large scale privatization. Second stage reforms included enterprise reform, competition policy, banking reform, infrastructure reform, and non-bank financial reform (EBDR, 2009).

As a result of the economic crisis, Bosnia and Herzegovina's economy entered a sharp decline in late-2008, like many other countries of the region. Output fell significantly in 2009. The authorities have taken steps to preserve macroeconomic stability. Stable currency remains the key anchor of macroeconomic policy. The annual inflation rate fell to below zero in late-2009. The central bank took prompt action to preserve confidence in banks at the height of the crisis and played an active role in securing agreement among the six largest foreign-owned banks to maintain their exposure in Bosnia. On the fiscal side, some control was restored to public finances in late-2009, and the authorities concluded a new three-year Standby Arrangement (SBA) in July 2009 with the IMF to the value of around €1.1 billion (IMF, 2011).

Economic growth in 2010 and 2011 was modest. Given the low starting point, the economy should have potential for stronger growth over the medium term. However, this will require a firm commitment by authorities at all levels to a major structural reform agenda. A number of key reforms, including privatizations, have been taken slowly. Bosnia and Herzegovina ranks behind its neighbours in south-eastern Europe on a number of reform and business climate indicators, including the EBRD (2011) transition scores, the World Bank's (2011) ease of doing business indicator, and Transparency International's (2011) corruption perceptions index. There is also substantial investments need in a number of infrastructure projects. In

addition, the country faces medium or large transition challenges across all major sectors of the economy. Economic downturn was followed by lowered sovereign credit rating of Bosnia and Herzegovina to "B" from "B+" in October 2011 (Standard & Poor, 2011). Moody's Investors Service provided a B2 credit rating with negative outlook for the republic (Central Bank of Bosnia and Herzegovina, 2011).

1.2. War and its impact on economic development

Political crisis and ethical issues accelerated at the beginning of 1990s in the former Yugoslavia. It is fair to say that Bosnia and Herzegovina had arguably the most dramatic outcome and carried most of the consequences. Prašnikar at al. (2000) describes development of the political crisis in the country: "In accordance with its ethnic structure, the first free elections in November 1990 when Bosnia and Herzegovina still represented one of the Yugoslav republics brought into power nationalist forces from all three largest ethnic groups. The Bosniak nationalist party SDA ("Stranka demokratske akcije" – Party of Democratic Action) won 33% of all votes in the republic, the Serb nationalist party SDS ("Srpska demokratska stranka" – Serb Democratic Party) was second with 26% and the Croatian party HDZ BiH ("Hrvatska demokratska zajednica BiH" – Croat Democratic Union of Bosnia and Herzegovina) was third with 16% of all votes. They formed a coalition government and elected the president based on the rotation principle. Although this seemed to be the ideal and fair solution for multi-ethnic region, the arrangements failed to prevent the war that started in early 1992. Bosnia and Herzegovina declared independence from the former

Socialist Federal Republic of Yugoslavia in March 1992 when the war broke out."

The war in Bosnia resulted in human losses and long-lasting demographic and economic recovery. Statistical data show that the population fell by roughly 17 percent from 1991 to 1996 (Statistical year book BiH, 1998). The war caused a lot of human losses and intensive brain-drain. More than one million young and well-educated inhabitants left the country. Those losses have caused demographic shifts in terms of population age and household size (World Bank, 1998).

The economic losses were also huge. World Bank (1997) noted that not since World War II has a country in Central and Eastern Europe experienced such a massive collapse. The GDP dropped during the war to 25 percent of its pre-war level and per capita GDP fell from $2000 in 1991 to $500 in 1995 (World Bank, 1997). Industrial production was reduced by more than 90%. This collapse resulted in a 70 to 80% unemployed rate and in 1996 about 1.4 million people were totally dependent on humanitarian aid (World Bank, 1997).

The war also destroyed the country's infrastructure. According to the World Bank (1997) there was approximately US $20 billion of infrastructural damage due to the war. There are no exact data, but estimates show that more than 2.000 kilometres of roads were seriously damaged; more than 70 bridges were destroyed; all railways were inoperable; the Sarajevo Airport was partly destroyed; and public transport companies' vehicles and facilities were damaged (European Commission, 1998; World Bank, 1998). Due to the war, the whole country was paralysed.

In the electric power sector, more than half of the generating capacity was put out of operation, and more than 60% of the transmission system was seriously damaged. Around 30% of telephone connections and 90% of international telephone lines were damaged, while half of the power distribution network was destroyed (European Commission and World Bank, 1998).

In glance, the war had serious consequences on demographic and economic development of the country and the whole region. Many studies have tried to evaluate the material damaged caused by the war. The estimations vary between US$ 50 and 70 billion (World Bank, 1998). Decades will be needed to repair the human, economic and infrastructural losses. Bosnia and Herzegovina had unstable ground on which to build the new country. The first steps towards the recovery were made with the help of international assistance that financed reconstruction of the infrastructure, housing stock and agriculture. Those were the first ground-stones for building the new economy.

After the signing of the Dayton Peace Agreement, the international community sent enormous financial and logistical assistance to Bosnia and Herzegovina. Bosnia has received more financial assistance per capita than any other European country. Since 1996, the World Bank has committed over $1.1 billion, while other World Bank agencies have sent another half billion by 2010 (World Bank, 2011). From 1996 to 1999, $3.7 billion were allocated in Bosnia by 48 countries and 14 international organizations (IMF, 2005). According to the CES (2011), from 1996 to 2002, Bosnia's aid amounted to $1,400 per capita per year. In the aftermath of the war, foreign assistance in Bosnia focused on reconstruction, after 2000 attention turned

to the issues of governance, institutions and the financial sector (World Bank, 2009). Today, the EU is still actively involved in assistance to Bosnia, through the CARDS program and pre-accession IPA funds. Overall, the 2009 IPA allocation to BiH amounted to 89.1 million euros, as reported by the Commission of the European Communities (EU, 2010).

1.3. Political transition: From the Dayton agreement to present

The first step towards stabilizing political crisis was Dayton Agreement signed in 1995. Bosnia and Herzegovina was established as a single state within its existing borders and as a Member State of the United Nations. According to its Constitution, Bosnia and Herzegovina is a democratic state with a market-oriented economy consisting of two entities: the Federation of Bosnia and Herzegovina and the Republic of Srpska. There are two citizenships, one at the State level and another one at the Entity level. Citizens of each Entity must be citizens of Bosnia and Herzegovina. The institutions, designed at Dayton in November 1995, consist of a three-tier framework: 1) the institutions of the State of Bosnia and Herzegovina defined by the Constitution; 2) the institutions of the Entities; and 3) the institutions demanded by the Parties and provided by the United Nations High Representative.

Although not specified in the Constitution, the United Nations High Representative is the third tier of the institutional framework. The High Representative is appointed by the United Nations Security Council. Its mandate is to monitor the implementation of the civilian aspects of the Dayton agreemnet (Prašnikar et al., 2000).

Bosnia and Herzegovina have elections every two years. In principle, therefore, there is a commitment to democracy and respect for human rights, partly guaranteed by the continued strong influence of the international community. Unfortunately, ethnic allegiances still continue to dominate the political environment and Bosnia and Herzegovina is not working yet as an integrated state. In 2011, 15 years after the Dayton agreement, High UN Representative Valentin Inzko, states "apart from visa liberalization, the authorities in Bosnia and Herzegovina have failed to address any long-needed reforms, resulting in no progress towards either European Union or North Atlantic Treaty Organization (NATO) integration. The biggest step towards EU integration was made in 2008 when, the Stabilisation and Association Agreement was signed and the Interim Trade Agreement with the European Union came into force in the summer of 2008" (EBRD Transition Report, 2009). Due to the political crisis Bosnia and Herzegovina faced the most serious and most direct challenges after the Dayton Agreement (UN, 2011).

According to Freedom House, democratic reforms stagnated in Bosnia and Herzegovina since the mid-2000s. The reason was slow progress toward meeting the goals for EU membership and ethical issues that enable efficient national governments (USAID, 2011). According to the European Commission, development of the judiciary system is too slow and still at an early stage of development (EU, 2010). Another limitation for further development is corruption. In 2009, legislation regarding corruption agency laws was passed and new corruption strategy was developed. However, it remains to be seen whether these reforms will be implemented (IMF, 2010). Moreover, corruption remains prevalent throughout public and private

sectors and is perceived as among the highest in the CEE according to Corruption Perception Index (Transparency International, 2010).

1.4. Macroeconomic transition of the Republic of Srpska

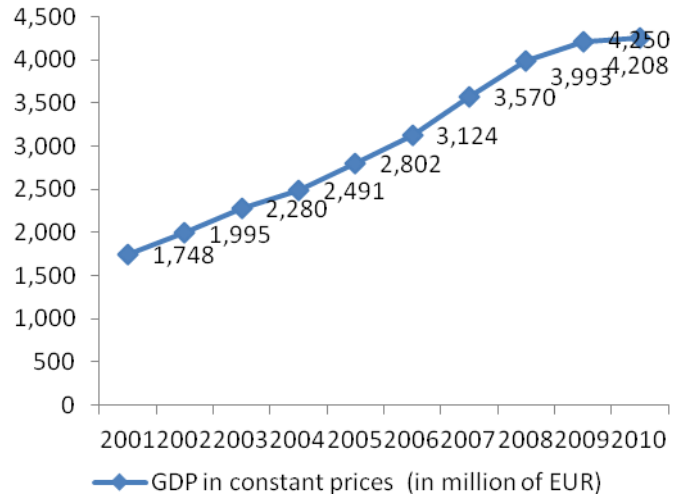
The initial conditions in Bosnia and Herzegovina enable us to better understand macroeconomic development of the Republic of Srpska. As an entity of Bosnia and Herzegovina, the Republic of Srpska is tightly related to the Federation, as well as to other countries in the region, especially Serbia. Further analysis will focus on the macroeconomic transition of the Republic of Srpska but also considers general flows in Bosnia and Herzegovina.

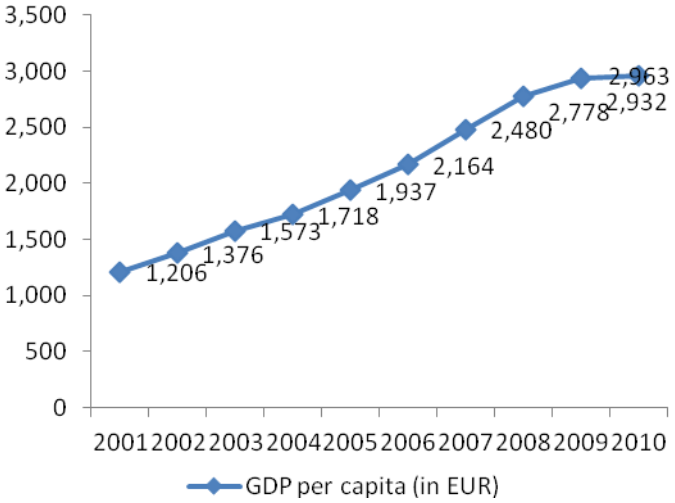
1.4.1 GDP growth

After the war, serious reconstruction of infrastructure, household and agriculture started. Most activities were financed by international assistance. The Republic of Srpska economy started to stabilize in early 2000. The period from 2000 to 2010 can be referred as period of macroeconomic transition. The Republic of Srpska started structural reforms with the help of international institutions and international financial assistance. Macroeconomic transition resulted in economic growth in Republic of Srpska from 2000 to 2010. However, when analysing this growth, we must consider poor initial conditions and the fact that hight growth was expected after economic stabilization.

Figures 1 and 2 show that GDP, in constant prices, grew from 1.7 billion EUR in 2001 to 4.24 billion EUR in 2010 (SORS, 2011). In the same period, GDP per capita increased from 1,206 EUR in 2001 to 2,963 in 2010 (SORS, 2011).

Figures 1 and 2: GDP in constant prices and GDP per capita in period 2001-2010 in Republic of Srpska





Source: Republic Srpska Institute of Statistics, 2011.

The period from 2000 to 2008 included a double-digit GDP nominal growth rate and a real growth rate between 6 and 7 percent (Figures 3 and 4).

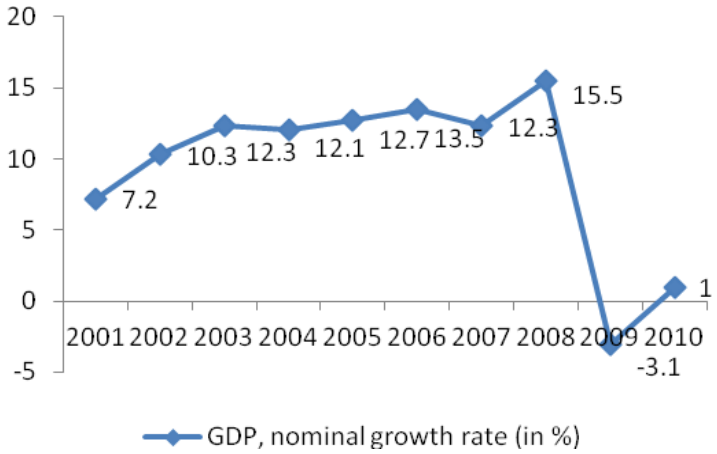
Growth was stimulated by international assistance, increased foreign and domestic investments, credit boom funded by foreign banks and booming domestic demand financed from abroad. While residents in all Balkan countries spent more than they earned from domestic sources from 2000 to 2008, the Republic of Srpska boasted some of the highest ratios of domestic absorption over GDP. This was made possible mainly by large remittances from family members working abroad. Estimations are that those transfers generates between 15 to 18 percent of GDP each year (EBRD, 2011).

After several years of robust growth, the economy entered a sharp decline in late 2008, like other countries of the region and output fell significantly in 2009 (EBRD, 2010). The extent of the GDP decline in 2009 was around 3 percent. Economic activity was affected by falling commodity prices, which affects key exports, declining demand from regional neighbours and from the EU, as well as from tighter credit conditions, with total credit growth slowing significantly, from 22.3 percent in December 2008 to less than 2 percent in April 2010 (IMF, 2011). Foreign direct investment also fell significantly in 2009 relative to the previous years (IMF, 2011).

In the face of these difficulties, government have taken some commendable steps to preserve macroeconomic stability and diminish the downturn. The currency was stable and there was almost no inflation (see Section 1.6). The level of deposit insurance has also been raised substantially, with the support of the Central Bank and other international institutions. On the fiscal side, some control was restored to public finances in late 2009 and a new three-year Standby Arrangement (SBA) was completed in July 2009 with the IMF to the value of around €1.1 billion (IMF, 2010).

Economic downturn settled a bit in 2010 and was likely to be positive (but very modest) in 2011. Future growth will be dependent on FDI and will be modest. Adherence to the IMF standby arrangement, a key requirement for the preservation of macroeconomic stability, will depend on the implementation of fiscal reform, that have to be implemented in the near future (IMF, 2010, 2011).

Figures 3 and 4: Real and nominal GDP growth rate in 2001-2010 in Republic of Srbska



Source: Republic of Srpska Institute of Statistics, 2011.

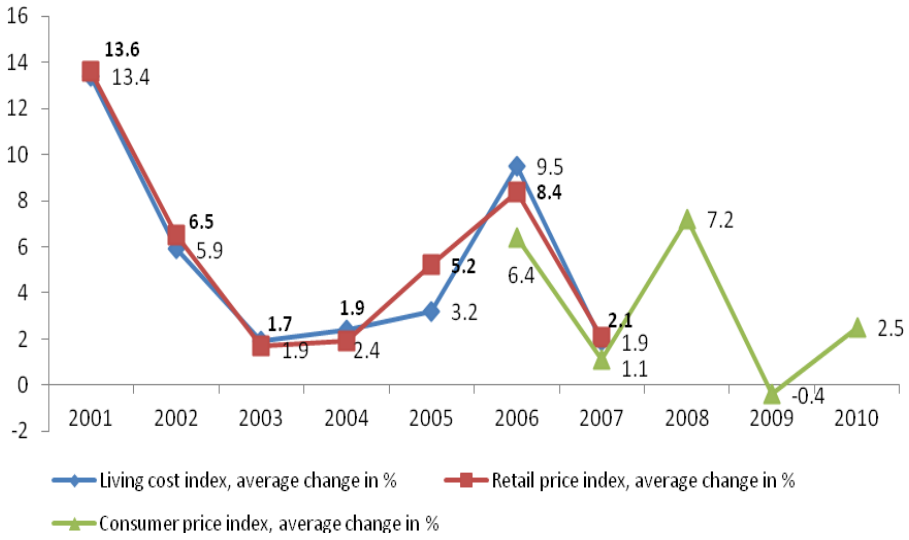
IMF predictions for postcrisis growth of the Republic of Srpska are dependent on credit growth, reflecting the switch of banks' funding from foreign borrowing to domestic deposits. Unless private and public savings increase significantly relative to the baseline projection and/or structural reforms create fiscal space for stepped up public infrastructure investment, this suggests that the real GDP growth will be lower in the post-crisis period (IMF, 2011).

1.4.2 Inflation

After the Dayton agreement, Bosnia and Herzegovina aimed to create a stable currency with the help of international community. In 1995, the Bosnian Convertible Mark (BAM) was introduced. It was equal to the German Mark at the time. In 2002 when the Euro replaced the German mark, the convertible mark changed at the same ratio (Central Bank BiH, 1996).

Consequently, the Republic of Srpska achieved relatively stable inflation after 2002. The values of the living cost index, retail price index and consumer price index are presented in Figure 5. Inflation was still high in 2001, but the Republic of Srpska managed to stabilise inflation from 2003 to 2006. The increase in 2006 was mostly due to the introduction of VAT (EU Commission, 2007). Inflationary pressures decreased in 2007. In 2009, after the economic downturn, the government achieved stabilization. IMF and EBRD forecasts predict stable currency rate for the mid-term (IMF, 2011 and EBRD, 2011).

Figure 5: Living cost index, retail price index and consumer price index 2001-2010 in in Republic of Srbska

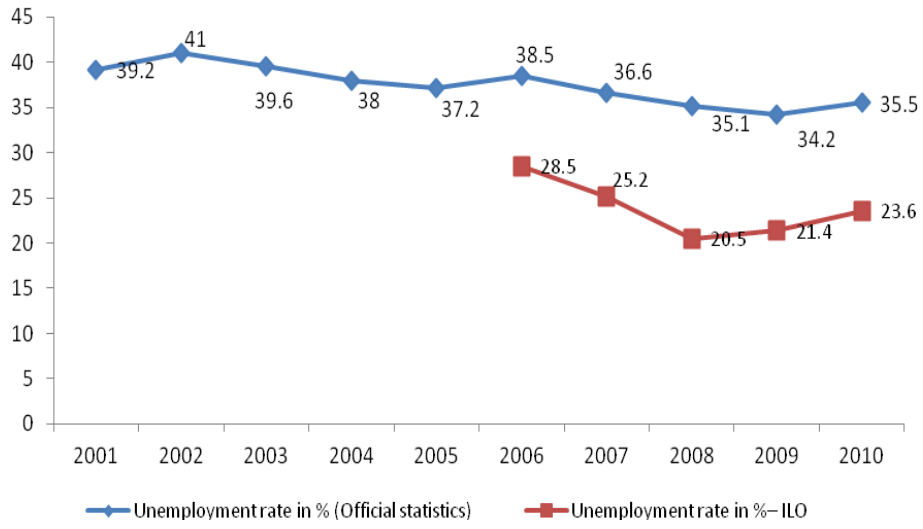


Source: IRBIS, 2011.

1.4.3 Unemployment

Bosnia and Herzegovina has one of the lowest labour force participation rates and one of the highest unemployment rates in Europe. Unemployment is one of the major problems of the Republic of Srpska economy. During the macro economic transition and the period of high economic growth between 2002 and 2008, the unemployment rate remained at a high level. The official rate was 39 percent in 2001 and 35 percent in 2010. Unemploymnet rate reported from ILO was lower (figure 6).

Figure 6: Unemployment rate in period 2001-2010



Source: Republic of Srpska Institute of Statistics, 2011.

To understand the Republic of Srpska labour marker, it is important to understand the initial conditions. Political and economic crises in the early 1990s created large imbalances in the labour market that lasted ever since. As already mentioned the economy of Bosnia and Herzegovina, including

the Republic of Srpska, was heavily industrialized and dominated by large-scale, export-oriented enterprises in the energy, raw materials and military industries (World Bank, 1997). War in 1990 led to massive deindustrialization. In the post-war period, new small-scale private firms operating in agriculture, services, and light manufacturing were established. During this period, the share of the manufacturing industry declined from 43 percent of the GDP in 1990 to around 20 percent in 2008 (IMF, 2010). Transition required restructuring the labour market, since demand for low-skill workers increased (ETF, 2007). This created a large mismatch between demand and supply in the labour market.

If we closely look at the structure of the unemployed population, data shown that young people under the age of 25 are most affected, with close to 50 percent unemployed (IRIS, 2011). Furthermore, 75 percent of the unemployed in Bosnia have been out of work for more than two years, and 50 percent for more than five years (BHAS, 2008). This indicates that a large scale of the population is excluded from the labour market. Most are on state social support programs and working illegally in the "grey economy" The size of the grey economy is estimated at around 21 percent of the GDP (ETF, 2007). The informal employment is concentrated in agriculture and light manufacturing (ILO, 2009). Informal jobs are much lower paid than in the formal economy, do not pay social security or health care contributions, and lack job security (IMF, 2010).

As mentioned, high informal work arrangements can be partly explained by social benefits (WB, 2009, 2010). There are a number of government-run, noninsurance, cash benefits programs. For instance, war invalid benefits, medal holder benefits, demobilized soldier unemployment benefits, civilian

victim of war benefits, and non-war invalid benefits collectively represent approximately 4.5 percent of Bosian and Herzegovina GDP. Thus, the system of social benefits does not provide sufficient incentives for (re)entry in workforce. Such anomalies can be also found among employees in state-owned and voucher-privatized firms, who usually work in the grey economy and in state owned firms. They are reluctant to quit, because they expect large payouts of back wages in the case of privatization, and state firms cover their social security contributions (World Bank, 2010).

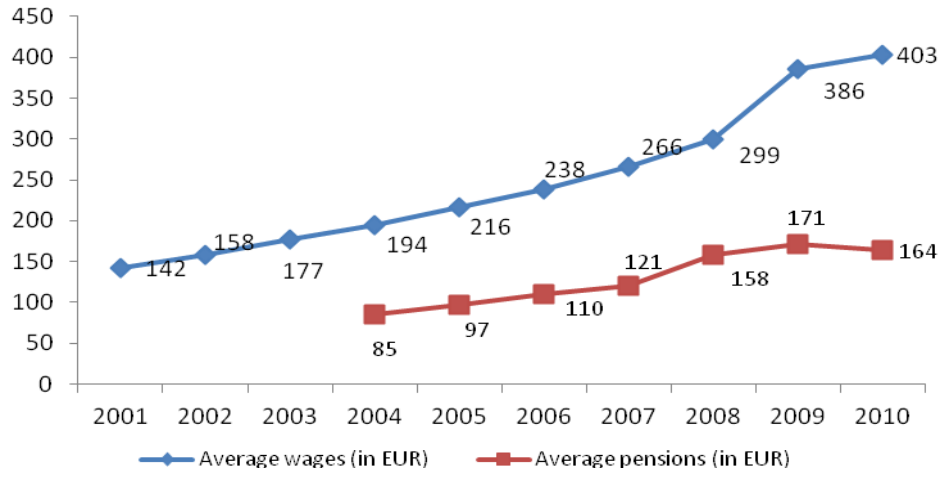
The public sector is a major employer and often prices-out the private sector in attracting workers. The Dayton Agreement created a decentralized governmental structure with numerous and often duplicating levels of government. As a result, the share of the public sector in total employment is among the highest in Europe. The public sector offers higher wages as well as job security and other benefits, making private sector jobs less attractive (IMF, 2010).

Female activity rates are below regional and EU comparators in both entities. The situation in the Republic of Srpska is much better than in the Federation. Females comprised 47.2 percent of the unemployed in 2010 (IRIS, 2011).

Concerning education World Bank data (2009) shown that the shares of the population with completed secondary and higher education fall short of the old and new EU member averages. Furthermore, the World Bank report states that more than 70 percent of secondary school students are enrolled in four-year technical schools or three-year vocational schools. Most of those schools have outdated programs (World Bank, 2009). Reforms in the education system started in 2003, when nine-year primary education was

introduced. Unfortunately, reform in pre-school, vocational and higher education is too slow (ILO, 2009). In 2011 Parlament adopted new Educational Reform 2011-2012. The plan involves reform in vocational and high education in Republic of Srpska. However, one-third of exporting firm managers state an inadequate skill pool as an obstacle to their operations (World Bank, 2009). If we closely look at the average net salaries and wages in the Republic of Srpska (Figure 7), we see high growth from 2001 to 2010. In 2001, the average monthly wage was 142 EUR; in 2010, it was 403 EUR. Average monthly pension grew from 85 EUR in 2004 to 164 in 2010. The average monthly social unemployment benefits, equal 40 percent of the average net wage in Republic of Srpska (ILO, 2009

Figure 7: Average net wages and pensions 2001-2010



Source: IRBIS, 2011.

Labor laws in the Republic of Srpska are fairly flexible (ETF, 2007). However, they are supplemented by an extensive and generally rigid set of

rules in collective bargaining agreements carried over from the old system. For example, the WB (2005) lists 40 different allowances that exist between the two entities, including a tenure premium that puts younger workers at a disadvantage to older workers. The wage setting relies on a system of coefficients based on tenure and education.

Furthermore, the difference between employment cost to the firm and worker net pay discourages new jobs creation in the formal sector. The overall social security contribution rates in the Republic of Srpska are 34 percent, when calculated as the average wage including allowances. OECD average is 29.5 percent (World Bank, 2005).

This illustrates the complexity of the labour market. The global economic crisis further emphasises and enlarges the current problems that could be burden for the future economic growth.

1.4.4 External trade and foreign direct investments (FDI)

Republic of Srpska relations to other world economies were rebuilt after the Dayton Agreement. Due to the severe decrease in the production of goods and services, the Republic of Srpska imported much more than it exported from 2000 to 2010. The trade balance is in deficit and will likely continue in the future.

However, export grew from 306 million EUR in 2001 to 1,113 million EUR in 2010. The average annually growth rate of exports in that period was 13 percent. Thus, the growth of exports was higher than the growth of GDP in the observed period. Exports represented 20 percent of Republic of Srbska GDP in 2001 and 26 percent of GDP in 2010. If we look closely at the

export structure, 89 percent of exports come from manufacturing (e.g. food and beverage, production of leather, basic metals, manufacture of furniture). Similar trends were recorded for imported of goods and services. There were 868 million EUR of imported goods and services in 2001 and 2,072 million EUR in 2010. The average annual growth rate of imports in the observed period was 9 percent. Imports represented 50 percent of Republic of Srbska GDP in 2001 and 48 percent in 2010. Moreover, 82 percent of imports come from manufacturing, specifically, manufacture of food products and beverages, chemicals and chemical products, motor vehicles, trailers and semi-trailers, machinery and equipment and basic metals.

Table 1: External trade in the Republic of Srpska from 2001 to 2010

	2001	**2002**	**2003**	**2004**	**2005**
Export in mio EUR	306.1	289.2	312.2	430.9	578.0
Import in mio EUR	867.9	1,106.6	1,164.5	1,381.9	1,509.9
Balance	-561.7	-817.4	-852.3	-950.7	-931.9
Coverage of export with import in %	35.28	26.13	26.81	31.19	38.3
	2006	**2007**	**2008**	**2009**	**2010**
Export in mio EUR	786.9	854.6	982.0	855.3	1,113.4
Import in mio EUR	1,411.2	1,711.7	2,117.9	1,823.8	2,072.3
Balance	-624.2	-857.0	-1,135.2	-968.4	-958.8
Coverage of export with import in %	55.8	49.9	46.4	46.9	53.7

Source: The Republic of Srpska, Institute of Statistics, 2011.

Political uncertainty, poor infrastructure, slow privatization and implementation of structural reforms were the main reasons for the relatively low foreign direct investments inflow in the Republic of Srpska.

Net value of FDI was 65 million EUR in 2001 and only 16 million in 2010. When Republic of Srpska Telecom was sold in 2007, it represented 53 percent of all net FDIs. This was by far the largest foreign investment in the Republic of Srpska in the last decade (table 2).

Table 2: Net value of FDI from 2001 to 2010

Year	**2001**	**2002**	**2003**	**2004**	**2005**
FDI mio EUR	17.4	134.8	18.2	314.7	134.5
% participation	0.93	7.14	0.96	16.68	7.13
Year	**2006**	**2007**	**2008**	**2009**	**2010**
FDI mio EUR	52.7	995.3	84.7	53.4	16.1
% participation	2.80	52.73	4.49	2.83	0.86

Source: The Republic of Srpska, Institute of Statistics, 2011.

Tables 3 and 4 present the structure of FDIs by activities from 2005 to 2010. We presented five main sectors in terms of FDIs, the value of FDIs and the number of projects financed from FDIs. As we can see from Table 6, the main activities that attracted FDIs in 2005 and 2006 were the industry and banking sectors. Those two sectors generated more than 95 percent of net FDIs in 2005 and 2006. In 2007 65 of all FDI were generated in the telecommunications sector.

Table 3: FDI inflows by sector 2005-2007

2005				2006			
Activity	**Value (000)**	**%**	**No. pr.**	**Activity**	**Value (000)**	**%**	**No. pr.**
Industry	98,020	62.2	39	Banking	42,981	62.5	5
Banking	50,665	32.2	4	Industry	16,488	24.0	25
Trade	5,352	3.4	9	Services	4,292	6.2	4
Transpor	2,183	1.4	4	Trade	2,603	3.8	6
Services	375	0.2	4	Tourism	2,007	2.9	2

2007			
Activity	**Value (000)**	**%**	**No. pr.**
Telecomm	649,981	65.1	3
Industry	307,958	30.8	39
Banking	21,300	2.1	3
Trade	11,676	1.2	11
Other	4,093	0.41	

Source: The Republic of Srpska, Institute of Statistics, 2011.

Statistics from 2008 to 2010, shown that trade was the most interesting sector for FDIs. In 2008, 2009 and 2010, trade generated 43, 49 and 30 percent of all FDIs, respectively. There were 44 industry projects financed from FDIs in 2008; 23 in 2009; and 11 in 2010. From 2008 to 2010, FDIs increased in the insurance sector and six projects were financed. Total investments in the insurance industry totaled 10.3 million EUR.

Table 4: FDI inflows by sector 2008-2010

2008				2009			
Activity	**Value (000)**	**%**	**No pr.**	**Activity**	**Value (000)**	**%**	**No. pr.**
Trade	66,738	43.2	37	Trade	30,907	49.42	27
Industry	53,382	34.5	44	Industry	22,888	36.6	23
Banking	23,508	15.2	3	Telecomm	4,220	6.75	2
Insurance	5,266	3.4	4	Services	1,535	2.46	5
Services	2,817	1.8	4	Insurance	1,514	2.42	1

2010			
Activity	**Value (000)**	**%**	**No. pr.**
Trade	5,096	29.6	12
Insurance	3,470	20.2	1
Industry	3,175	18.5	11
Banking	2,556	14.5	1
Services	2,064	12.0	6

Source: The Republic of Srpska, Institute of Statistics, 2011.

Most FDIs came from the countries in the region including Slovenia, Serbia and Austria. In absolute and relative terms, most FDIs during this period come from Serbia due to investments in the telecommunication industry. Slovenia ranked first in terms of FDIs for 2005 and 2008 (Tables 5 and 6).

Table 5: FDI inflows by country 2005-2007

2005				2006			
Country	**Value (000)**	**%**	**No. pr.**	**Country**	**Value (000)**	**%**	**No. pr.**
Slovenia	52,959	33.6	7	Serbia	14,897	21.7	11
Austria	36,865	23.4	6	Austria	14,588	21.2	3
Serbia	15,031	9.5	13	Slovenia	13,771	20	8
Denmark	13,510	8.6	3	Germany	7,732	11.2	4
USA	7,446	4.7	4	Italy	4,938	7.2	3

2007			
Country	**Value (000)**	**%**	**No. pr.**
Serbia	656,877	65.8	16
Russia	264,841	26.5	4
Cayman	22,068	2.2	1
Austria	11,943	1.2	6
Croatia	7,706	0.7	7

Source: The Republic of Srpska, Institute of Statistics, 2011.

Table 6: FDI inflows by country 2008-2010

2008				2009			
Country	**Value (000)**	**%**	**No. of pr.**	**Country**	**Value (000)**	**%**	**No. pr.**
Slovenia	40,129	25.9	11	Serbia	26,357	42.1	23
Serbia	30,576	19.8	26	Slovenia	13,561	21.6	8
Austria	29,850	19.3	13	Italy	6,578	10.5	4
Italy	18,319	11.8	14	Croatia	3,473	5.5	1
Croatia	8,930	5.7	8	Austria	2,595	4.1	3

2010			
Country	**Value (000)**	**%**	**No. pr.**
Serbia	8,873	51.6	13
Austria	3,092	18.0	3
Cyprus	1,603	9.3	2
Croatia	1,061	6.1	3
Switzerland	683	3.9	2

Source: The Republic of Srpska, Institute of Statistics, 2011.

1.4.5 Business environment

The quality of the business environment in Bosnia and Herzegovina lags behind other countries in South-Eastern Europe. According to the World Bank's 2010 Doing Business Report, Bosnia ranks 116 out of 183 countries on overall quality of the business environment. In the latest Business Environment and Enterprise Performance Survey (BEEPS IV), more than one-quarter of the firms identified political instability, as the main problem affecting their operations. Tax rates were considered a serious obstacle, as well as competition from the informal sector and access to finance. Many businesses also cite corruption as a problem in their day-to-day operations. Bosnia and Herzegovina ranks 99th in Transparency International's

corruption perceptions index, again putting the country last in the South-Eastern European region.

The Republic of Srpska parliament recently adopted 34 laws that aim to improve the business environment and restrict the informal economic activities. These are part of the so-called "regulatory guillotine" project. The Republic of Srpska removed 58 percent of unnecessary regulations. It is estimated that this reform will bring more than 10 million EUR of savings annually for businesses. The introduction of a new Companies Law in Republic of Srpska, effective July 2009, aims to simplify the registration of new companies and bring the law closer to EU standards (EBRD, 2009).

According to the World Economic Forum's 2009 Competitiveness Report, key factors impeding private sector growth in BiH include complicated and expensive bureaucracy, corruption, and weak legislative framework. Delays for business licensing are significant and the number of different tax payments is high (WEF, 2009).

Furthermore, more than half of all enterprises report access to financing as an obstacle to their development (OECD, 2010). The financial sector is dominated by banks, the vast majority of which are foreign-owned. The global financial crisis stopped rapid growth of credit in recent years. Faced with worsening financial health of enterprises and households, banks cut back their loan portfolios, and raised interest rates to shore-up flagging profitability (World Bank, 2010a).

In addition, the nonbank financial sector is relatively underdeveloped. Stock exchanges have limited potential for raising new funds for companies. While the legal framework for leasing is currently developed and the market is expanding rapidly, no specific regulation covers factoring, which remains

underdeveloped. Efforts at the entity level to extend credit guarantees to private sector enterprises are in their infancy. As a positive example, however, the Republic of Srpska Investment Development Bank extends credits to commercial banks for lending at below-market interest rates to individuals (mortgage financing) and companies in the agriculture and export sectors (OECD, 2011).

The slow progress in restructuring underperforming state-owned companies was noted by the World Bank in the 2008 Investment Climate Assessment and the 2009 European Commission Progress Report. About 600 enterprises in the Republic of Srpska, holding around one-quarter of the total assets of state-owned enterprises, were privatized under a voucher privatization scheme in 2000–2001 (IMF, 2005). Follow-up privatization of strategic enterprises has been slow. The Republic of Srpska privatized its largest and most attractive industrial assets in 2004–2006. However, there are still a number of loss-making medium enterprises that will be hard to sell (World Bank, 2008). Furthermore, many state-owned and voucher-privatized enterprises suffer from poor corporate governance, are heavily indebted and need rationalization of a number of workers (World Bank, 2005).

Another serious obstacle for future development is infrastructure. Road, railroad and air infrastructure are in poor condition and limit future development opportunities.

1.4.6 Banking sector

Stabilization of the economy was followed by the development of the banking sector in Republic of Srpska. In 2010, there were a total of 10 banks in the Republic of Srpska with a majority of private capital, where foreign private capital dominated. The number of banks has not changed since 2007. Considering the ownership structure, 98 percent of banks are private, and 2 percent are state-owned. The private capital structure consists of 84 percent foreign capital, and 16 percent domestic capital. Austria has a share of 46.7 percent, followed by Serbia with share of 11 percent. Slovenia, Serbia, Lithuania, the Netherlands, and the US each own one bank and have shares of less than 10 percent. In year 2010, seven microcredit organizations were operating in the Republic of Srpska, three of which are for-profit and four of which are non-profit.

As we can see from Table 3, the growth of loans for households and enterprises, as well as deposits, were high from 2004 to 2009. The average interest rates in the observed period were 8 to 9 percent.

Table 7: Banking sector outlook 2004-2010

	2004	2005	2006	2007	2008	2009	2010
Loans to households (in million of EUR)	351	464	640	882	1,096	1,023	1,032
Loans to households (growth rate %)	68.00	32.20	37.90	37.80	24.20	-6.60	0.90
Loans to households, per capita (in million of EUR)	239	321	443	613	762	713	720
Loans to enterprises (in million of EUR)	307	449	586	725	1,082	1,095	1,195
Loans to enterprises (growth rate %)	44.60	46.10	30.60	23.60	49.30	1.20	9.10
Loans to enterprises (% of GDP)	11.70	15.20	17.50	19.30	24.90	26.00	28.10
Total deposits (in million of EUR)	744	1,064	1,456	2,509	2,650	2,363	2,175
Total deposits (growth rate %)	n/a	42.90	36.80	72.40	5.60	-10.80	-8.00
Banking sector - average interest rate on loans (%)	9.65	9.39	8.57	8.26	8.40	8.58	8.27
Banking sector - average interest rate on deposits (%)	2.58	2.76	2.94	3.52	4.03	3.29	2.96

Source: IRBRS, 2011.

Due to the financial crisis, the banking sector was manifested through decrease of credit placements, similar to the rest of the world. This is a major obstacle for future economic development and growth.

A very important event for the banking sector in the Republic of Srpska was signing the Memorandum of Understanding with parent banks in EU countries, which have an equity share in banks from the Republic of Srpska and BiH ("Vienna Initiative"). This obligated those parent banks to keep exposure related to capital funding and level of loans from 2008, by which those banks had expressed their readiness for further capital strengthening of Republic of Srpska banks (ABRS, 2011).

IMF and World Bank evaluate measures taken to decrease the impact of the financial crisis as satisfactory. However, they point out that poor climate in the business environment and lowered credit activity has a negative impact on the economy (IMF, 2011; World Bank, 2011).

1.5. Conclusion

The future development of Republic of Srpska will depend on world trends as well as an ability to finalise and speed up the implementation of the structural reforms. Priority should be given to the following areas:

Infrastructural development: Full implementation of planned large infrastructure projects can support growth through a boost in investment spending. Reconstruction of roads and railroads should be priority (EBRD, 2010).

Privatization: Privatization of large strategic enterprises and medium-size public companies needs to be accelerated. A speeding-up of the process would bring much-needed investment, along with new skills and technology, and could provide economy growth. However, it will require some politically difficult decisions.

Restructuring underperforming voucher-privatized enterprises (VPEs): Many VPEs suffer from hidden losses, pension and tax debt arrears, and salary payment delays. The government should use its status to effectuate their restructuring.

Improving business environment and attracting foreign investors: Increasing the efficiency of the regulatory system by streamlining regulations would allow quicker business start-ups, fewer authorizations for business operations (in particular, simplification of licenses and permits), reduction in

the number of different tax payments and mechanisms for business closure to facilitate restructuring (World Bank, 2010), and continued implementation of the "regulatory guillotine" project.

Advancing the EU process: Bosnia and Herzegovina risks being left behind unless progress is made to prepare the country for a possible application for EU membership. This will require stabilisation of the political situation and agreement on constitutional reforms (EBRD, 2010).

References

Central Bank of Bosna and Herzegovina. (1996). General Economist Report. URL: http://www.cbbh.ba/?lang=en.

Central Bank of Bosna and Herzegovina. (2011). General Economist Report. URL: http://www.cbbh.ba/?lang=en.

Center for European Studies. (2011). The Future of Foreign Aid to the Balkans. Country Report No. 05/198.

EBRD. (2008). Transition Report, European Bank for Reconstruction and Development. URL: http://www.ebrd.com/pages/research/publications/flagships/transition.shtml.

EBRD. (2009). Transition Report, European Bank for Reconstruction and Development. URL: http://www.ebrd.com/pages/research/publications/flagships/transition.shtml.

EBRD. (2010). Transition Report, European Bank for Reconstruction and Development. URL: http://www.ebrd.com/pages/research/publications/flagships/transition.shtml.

EBRD. (2011). Transition Report, European Bank for Reconstruction and Development. URL: http://www.ebrd.com/pages/research/publications/flagships/transition.shtml.

ETF. (2007). Labour Markets in the Western Balkans. Challenges for the Future. URL: http://www.etf.europa.eu/web.nsf/(RSS)/C125782B0048D6F6C125728F002FFCF0?OpenDocument&LAN=EN.

EU Comission. (2007). EU Commition Enlargement Country Profile: Bosna and Herzegovina. URL: http://ec.europa.eu/enlargement/potential-candidates/bosnia_and_herzegovina/ipa_en.htm.

Federal Office of Statistics Bosnia and Herzegovina. (1998). Statistical Year Book BiH. URL: http://www.fzs.ba/Eng/index.htm.

Federal Office of Statistics Bosnia and Herzegovina. (2011). Statistical Year Book BiH. URL: http://www.fzs.ba/Eng/index.htm.

ILO and Council of Europe. (2009). Bosnia and Herzegovina—Employment Policy Review. URL: http://www.ilo.org/wcmsp5/groups/public/---europe/---ro-geneva/---sro-budapest/documents/publication/wcms_169176.pdf.

IMF. (2005). Bosnia and Herzegovina: Selected Issues— The Corporate Sector. URL: http://www.imf.org/external/pubs/ft/scr/2005/cr05198.pdf.

IMF. (2007). Bosnia and Herzegovina: Selected Issues—Unemployment and Labor Market. URL: http://www.imf.org/external/pubs/ft/scr/2008/cr08326.pdf.

IMF. (2009). What's the Damage? Medium-Term Output Dynamics after Financial Crises. URL: http://www.imf.org/external/pubs/ft/wp/2009/wp09245.pdf.

IMF. (2011). BiH Special Issues Report. URL http://www.imf.org/external/country/BIH/rr/2011/071911.pdf.

OECD. (2010). Bosnia and Herzegovina Highlights of 2010. URL: http://www.oecd-ilibrary.org/finance-and-investment/investment-reform-index-2010/bosnia-and-herzegovina_9789264079588-16-en.

Prašnikar J., Jazbec B., Mrak M., Domadenik P., and Gregorič A. (2000). Bosnia and Herzegovina Country Study for GDN.

Republic of Srpska Institute of Statistics. (2011). External Trade. URL: http://www.rzs.rs.ba/English.htm.

Standard and Poor. (2011). Standard & Poor's Credit Rating for each country. URL: http://www.standardandpoors.com/ratings/en/us.

Trensparancy International. (2011). Global ratings in Coruption. URL: http://www.transparency.org/.

UN. (2011). Briefing Security Council, Bosnia and Herzegovina High Representative. URL: http://www.un.org/News/Press/docs/2011/sc10243.doc.htm.

USAID. (2011). Bosnia and Herzegovina Gap Analysis Europe and Eurasia Bureau, Strategic Planning and Analysis Division.

WEF - World Economic Forum. (2008). Global Competitiveness Report, 2009–2010.URL: www.weforum.org/pdf/GCR08/GCR08.pdf.

World Bank. , (2009). World Bank study entitled Bosnia and Herzegovina: From Reconstruction to European Integration.

World Bank. , (2005). Bosnia and Herzegovina: Labor Market Update: The Role of Industrial Relations. Report No. 32650-BA (Washington: World Bank).

World Bank. (2007). Bosnia and Herzegovina: Pension System Note. Report No. 36458-BA (Washington: World Bank).

World Bank. (2008). Bosnia and Herzegovina: Investment Climate Assessment. Report No.48632–BA (Washington: World Bank).

World Bank. (2009a). Protecting the Poor during the Global Crisis: 2009 Bosnia and Herzegovina Poverty Update. Report No: 51847–BA (Washington: World Bank).

World Bank. (2009b). Are skills constraining growth in Bosnia and Herzegovina?. Report No. 54901–BA, Washington: World Bank.

Janez Prašnikar, Tjaša Redek

2. *INTANGIBLE CAPITAL IN THE REPUBLIC OF SRPSKA: OVERVIEW OF RESEARCH METHODOLOGY*

2.1. Intangible capital

Today, economic value is often created by intangible capital, both in developing and developed countries. Therefore, the role of intangible capital and investment in intangibles is gaining attention in various fields of economic and business science. Both macroeconomic and microeconomic research confirms that intangible capital increases value added, productivity and growth (see e.g. Corrado et al., 2006, VanArk et al., 2002, Fukao et al., 2007, Miyagawa et al., 2010, VanArk et al., 2009 and other). Classification of intangible assets is presented in Table 1.

Table 1: Intangible assets classification

Type of intangible asset	Further classification
Computerized information	Software
	Databases
Innovative property	R&D, including social sciences and humanities
	Mineral exploration and evaluation
	Copyright and license cost
	Development costs in financial industry
	New architectural and engineering designs
Economic competencies	Brand equity (advertising expenditure, market research)
	Firm specific human capital (continuing vocational training, apprentice training)
	Organizational structure (purchased, own account)

Source: Corrado et al., 2006.

The study of intangible capital in the Republic of Srpska was based on the prevailing definition of intangible capital and the authors' own extensions of the definition reflecting the current situation in these developing economies as well as global trends. The concept of intangible capital has been defined similarly by many authors (e.g. Buguise et al., 2000, Fernandez et al., 2000), differing depending on the focus of the analysis. The line of research focusing on the role of intangible capital in the process of economic growth and its link with productivity relies mainly on the seminal work by Corrado et al. (2006), which divides intangible capital into three types: computerized information, innovative property and economic competencies (Table 1).

This study of intangible capital, which focuses on the Republic of Srpska, extends the definition of intangible capital with relational, informational capital and social capital. All three types represent both theoretical and methodological innovations in the intangible capital literature.

Informational capital refers to a firm's knowledge about its products, production processes, customers, and resources. It also includes knowledge about competitors' products, production processes, customers, and resources. On the other hand, relational capital includes the stock of relationship with customers, suppliers, competitors, government agencies, and unions (Hunt, 2000). Both types of capital are extremely important in building and sustaining quality and stability in the production and distribution chain. For firms in developing countries, they are crucial in finding ways to internationalize (Palley, 2011).

Firm behaviour is examined by the bargaining model, focusing on the relationships between workers, management and owners (i.e., interest groups) and the impact of their relative power on firm behaviour and

strategy. Social capital is especially important in the former transition economies, since it provides information on the direction of privatization and its strategic consequences. It also reflects the characteristics of labour markets and the ways in which the country is building its human capital.

The study of intangible capital in Republic of Srpska therefore focuses on the following aspects of intangible capital: (1) informational and relationship capital, (2) information technology (IT), (3) branding and brand capital,(4) innovation, (5) interest groups in the firm (social capital), and (6) human capital characteristics and organizational characteristics. Underdeveloped financial markets in the Republic of Srpska also play a major role in financing different types of investments, including intangibles. Hence, special focus is given in our work to test the pecking order hypothesis and different methods of capital budgeting procedures.

First, a methodological overview is provided, and intangible capital is briefly defined. Then, the questionnaire is described, followed by a description of the sample and survey in the Republic of Srpska.

2.2. Research design

2.2.1. Questionnaire structure

The questionnaire for the study of intangible capital in the Republic of Srpska comprised seven sections focusing on different aspects of intangible capital: information technology, informational and relationship capital, innovation and R&D, branding and brand capital, interest groups in the company (social capital), HRM and organization, and finance. A final section focused on general company data, primarily financial. We provide a brief overview of each sub-section of the questionnaire. Detailed

presentation will be provided separately in each subsequent chapter dealing with a specific topic.

Information and communication technology. ICT was examined in three sub-sections. First, the size of ICT in 2009 was examined; firms with more ICT were expected to be more productive. Then, the importance of ICT in the firm was examined via the hierarchical level of IT manager in the firm. The higher the position of the IT manager in the firm, the more productive the firm should be. Lastly, the strategic importance of ICT in company documents and implementation of IT plan were analyzed.

Relational and informational capital. A three-part questionnaire focused on customers, competition and suppliers. First, export orientation of the firm was examined as a major part of informational capital. Second, we examined how the companies cooperate with customers and involve them in product development. Third, we examined the firm's business environment, primarily the intensity and consequences of competition, as this can either enhance or reduce innovation activity. Lastly, we focused on the suppliers and their origin, since a link between supplier and company performance in terms of innovation was expected.

Research and development. The questionnaire on R&D comprised ten questions focusing on four major elements: product and process innovation, sources of information, organization of R&D activity and competences and capabilities. The analysis of R&D was based on the premise that companies differ significantly both in terms of their origin (developed or developing country) and target market (home-based or exporter),. Those from developed countries or selling to developed markets were expected to be more innovative. Regarding product innovation, we focused on company

performance in terms types of product innovation, the share of revenue dedicated to R&D and the organization of R&D. Companies were asked to share information on process innovation. Next, both internal and external sources of innovation ideas and information relevant for innovation were examined. The last set of questions refers to competences: technological, marketing and complementary.

Branding and brand capital. Intangible capital is largely dependent on activities of the marketing sector. First, the presence of brands, their relevance in terms of sales, brand development and brand protection were examined; these are conditional on the target market. The company was also asked whether it was a B2B or B2C company, given that the nature of branding and marketing differs based on this. Lastly, the nature of competitors and suppliers was examined to find the impact of the competition on the company from marketing/branding perspective and the impact of the origin of the suppliers on the company performance.

Interest groups in the company. These are especially interesting from the transitional perspective, given that the behaviour and strategies of firms can be linked to ownership structure and consequently in transition countries to the privatization process. In addition, characteristics of labour markets also determine corporate governance. The sub-section could be roughly divided into three parts. The first focuses on owners, worker and management relations. The ownership structure was analyzed, followed by an analysis of employment characteristics in firms, the nature of wages, and presence of worker unionization. Lastly, decision making and risk sharing were examined.

HRM and organization. Three important aspects were analyzed here: human capital and motivation, organizational climate and organizational structure. In particular, the questions focused on the organization of training in the company, the extent of such activities, transfer of knowledge, dealing with key employees, and measuring the performance of workers. Employee satisfaction and motivation were also examined along with the flexibility of the organization.

Finance and investment. The analysis also stretched beyond the intangible capital to capture the nature of finance and resources devoted to both tangible and intangible investment. The questionnaire focused on the share of investment in terms of revenue and sources of finance. Also, the criteria used in financing decisions as well as the company capital structure were examined.

In addition, the questionnaire also asked for some specific data referring to the company, sales, employment, wages and other costs. The data were needed to analyse the impact of intangible capital on productivity.

In total, the questionnaire comprised of 46 questions, the majority of which were structured.

2.2.2. Questionnaire methodology

The questionnaire was carefully designed using three types of questions: cascading, Likert scale and standard questions asking for specific pieces of information (expenditure, etc.).

The majority of questions were based on the cascading type following Miyagawa et al. (2010). This is a set of three simple 'yes/no' statements. Each statement was carefully designed so that yes means that the company is

at a higher level of development in some aspect (see Table 2 for an example). Such an approach to building survey questions enables the creation of a measurement scale from 1 to 4, which allows empirical testing. If the first answer is 'no', the company is awarded '1'. If the first answer is 'yes', it is awarded '2'. If the answer to the second sub-statement is 'no', the value remains at '2'; if the answer is 'yes', it rises to '3'. If all sub-statements receive affirmative answers, the total value amounts 4, indicating the highest possible attainment in a specific field. For example, in the question in Table 2, if the company answered 'yes'to all statements, this means that it globally introduced new products, indicating its high potential in introducing new products.[1] Such an answer was translated into a numeric value of 4.

Table 2: Example of cascading question on innovation

2	**Introducing new products**	NO	YES
	The company introduced a significant number of new products in a relevant market in the past few years.		
	The majority of those products were not only new for the company but also to the market.		
	We also introduced products that were a novelty in the global markets.		

Source: Intangibles questionnaire for RS, 2011.

The use of the cascading technique was an important innovation. Testing of the questionnaire before the actual study revealed that companies often have insufficient data, especially when it comes to hard data. Also, the testing clearly showed that the smaller, more diversified or less advanced the company was, the more difficult it was to obtain a reliable answer. Personal

[1] But it must be noted that all questions from R&D referred to the company's relevant market, that is, the market in which the company sold its major share. Consequently, the questions could also refer to domestic or regional markets. Nonetheless, it indicates the potential of the company to stretch beyond its current borders.

interviews using the questionnaire revealed how important it is not to pose questions that are too specific, long, complicated or detailed, because the answers might be completely different from what was asked (or what was expected). Therefore, the simple yes/no cascades allowed full capture of the problem while ensuring quality and reliability of data.

The questionnaire also comprised some Likert scale questions, using a 1 to 5 scale or a 1 to 3 scale depending on the focus of the question (Table 3).

Table 3: Example of a Likert scale question from innovation

7	**Technological competences**	1	2	3	4	5
1	Research and development in the firm is advanced.					
2	The number of available technological capabilities inside the firm or through strategic partnership is quite large.					
3	We are good at predicting technological trends.					

Source: Intangibles questionnaire for RS, 2011.

Cascading questions were supplemented by standard questions asking for a specific piece of information (see Table 4). This type of question was used primarily in the last section, which asked for specific company data needed to study the link with productivity.

Table 4: Example of a question with specific data on branding/marketing

Please estimate the percentage of sales in a certain area for each of the following years		
	2009	**2008**
Republic of Srpska		
Other countries of former Yugoslavia		
EU-15		
Countries of former Soviet Union		
Rest of the world		

Source: Intangibles questionnaire for Albania, 2011.

The questionnaire presented differs from existing standardized questionnaires in three major aspects. First, it focuses more on developing countries to further understand the development gap within and between countries. Second, the questionnaire primarily uses the cascading technique, which adds to the quality and reliability of data and does not limit the potential for statistical analysis. The questionnaire captures the entire intangible capital structure while keeping the questions simple. We supplement the descriptive data with some hard data.

Third, the questionnaire allows us to obtain data on which types of intangible capital companies have, how processes are conducted, and what the results related to these processes are (that is, whether intangible capital is also being used in an appropriate manner). The questionnaire was carefully designed to capture these aspects, which are important for analyzing the developmental problems on a firm level.

Lastly, given many similarities with standardized questionnaires in selected aspects of intangible capital, the applied methodology allows many comparisons, which is important for future comparative analysis with developed countries.

2.3. Survey description

The survey was conducted in the spring of 2011 on a sample of 58 firms from the Republic of Srpska. The sample of firms was not chosen randomly and consisted of 34.48 percent joint stock companies, 56.90 percent companies with limited liability, and 8.62 percent independent enterprises. It included companies from the construction industry (7.02 percent), the

manufacturing sector (54.38 percent), trade (19.30 percent), and other service areas (19.30 percent).

The companies first received the questionnaire by mail to get acquainted with it. The questionnaire was then answered during an interview with one of the Republic of Srpska research team members; thus, the quality of input data could be directly controlled. The questionnaire was answered by CEOs, financial or HR managers, and, in some cases, a combination of two, primarily when specific data (e.g. financial) was requested.

It should be noted that this type of research is the first of its kind in the Republic of Srpska and required great efforts from both researchers and companies. Because the questionnaire was long and demanding, their cooperation is strongly appreciated. As a result of the joint efforts, the following chapters present an in-depth picture of the Republic of Srpska economy which was unavailable until now.

2.4. Conclusion

The study of intangible capital in Republic of Srpska is the first of its kind and provides valuable information about the Srpska economy based on firm level data. The survey methodology applied was developed by the research team in light of the specifics of developing markets. The survey comprised subsections analyzing each component of intangible capital separately, adding two new components to the standard intangible capital definition: informational and relational capital and social capital. The results provide an interesting and consistent explanation of a domestically-oriented economy striving to become more export-oriented. The analysis begins with the study of social capital ending with research and development.

References

Ark, B., Inklaar, R., and McGuckin, R. (2002). *Changing Gear: productivity, ICT and services: Europe and the United States*. Groningen Growth and Development Centre. Research Memorandum GD-60.

Buguise P., Jacquemin, A., and Marchipont, J. F. (2000). *Competitiveness and the value of intangible assets*. Edward Elgar: Cheltenham

Corrado, C., Hulten, C., and Sichel, D. (2009). Intangible Capital and U.S. Economic Growth. *Review of Income and Wealth, 55*, 661-685.

Fernandez, E., Montes J., and Vazquez, C, J. (2000). Typology and strategic analysis of intangible resources: A resource-based approach. *Technovation, 20 (2)*, 81-92.

Fukao, K., Miyagawa, T., Mukai, K., Shinoda, Y., and Tonogi, K. (2009). Intangible Investment in Japan: Measurement and Contribution to Economic Growth. *Review of Income and Wealth, 55*, 717–736.

Hunt, S. D. (2000). *A general theory of competition*. Thousand Oaks, CA: Sage.

Miyagawa, T., Lee, K., Kabe, S., Lee, J., Kim, H., Kim, Y., and Edamura, K. (2010). *Management Practices and Firm Performance in Japanese and Korean Firms - An Empirical Study Using Interview Surveys*. RIETI Discussion Paper Series 10-E-013.

Paley, T. (2011). *The Rise and Fall of Export-led Growth*. Levy Economic Institute, Working Paper No. 675.

Van Ark B., Hao, J.X., Corrado, C., and Hulten, C. (2009). *Measuring intangible capital and its contribution to economic growth in Europe.* European Investment Bank Papers 14-1.

Janez Prašnikar, Dragan Mikerević, Novak Kondić, Damjan Voje

3. SOCIAL CAPITAL AND CORPORATE GOVERNANCE

3.1. Introduction

In this chapter, social capital as a part of intangible capital in the firm was analysed. More precisely, the relationship between internal cohesion among main stakeholders in the firm and connect it to firm productivity was analysed. The main stakeholders are workers, owners and managers, where managers play the role of an intermediary between the interests of workers and owners. Each group has a different role in the firm as well as different goals and expectations. Having goals is not enough. A group also has to have the power to achieve its goals. Common goals are not disputable. The challenge is to find a joint solution when goals diverge. Each group tries to achieve its goals over other groups, but to what extent it can achieve them is up to their bargaining power. By understanding the goals and bargaining power of the three main interest groups, we can understand the behaviour of the firm.

This chapter consists of three sections. First, we elaborate on social capital and how to measure it. Next, we interpret the results of the analysis. The last section presents our conclusion.

3.2. Measuring the social capital

A cooperative game of internal bargaining (Aoki, 1984, 2010) allows workers, managers and owners to determine the goals of a firm together and therefore achieve higher productivity, efficiency and organisational rent than

would be achieved in a competitive market. Cooperation can only be reached when stakeholders mutually reveal their interests to each other. Internal cohesion can be understood as a fundamental principle of social capital theory. Social capital is defined by norms, trust and networks that help achieve higher firm efficiency (Putnam, 1993). If workers want to actively participate in the bargaining game, they must also be prepared to accept a part of the business risk (Williamson, 1975, Ricketts, 2002). The main hypothesis of this chapter is that building a cooperative game between the main constituencies of a firm (i.e. building social capital) is positively correlated to firm productivity.

Our research was performed with the help of questionnair developed to examine features of intangible capital in Republic of Srpska firms. The questionnaire consists of eight cascading question sets, each containing three statements to which managers responded with "yes"or "no" answers. Each statement in a question set represents the status on a particular item in the firm of a greater complexity. We selected 58 firms from different industries, sizes, export orientation, product orientation (B2B and B2C) and varying ownership structures. We were able to obtain responses from the firms' top managers.

The first question set focuses on the decision making process in the firm and therefore on the fundamental division between owners (control rights, residual rights) and managers (decision rights). Strategic function is usually in the hands of top management, while everyday operational function is given to middle and lower management. Their separation is in the hands of corporate owners (Wheelen and Hunger, 2010). Top managers are also indirectly responsible for the consolidation of owners' and managers'

interests. They influence cooperative behaviour through building trust between main stakeholders of the firm: owners, managers and workers (Aoki, 1984, Essen et al., 2012)

In the second question set, dynamic firm behaviour was taken into consideration by constructing questions pertaining to labour adjustment. Firms are able to restructure employment defensively in the short term (employing through agencies, hiring part-time workers, hiring students, using overtime, etc.), or strategically in the long term (adjusting the number of full-time employees). Firms which base their competitive advantages on human capital develop so-called core-periphery employment relationships (Lepak, Takeouchi and Snell, 2003, Aoki, 2010, Zupan et al., 2010).

An important element of bargaining is determining wages, which is the topic of the third question set. The Republic of Srpska has a mixed economy, where wage size is associated with collective bargaining processes at different levels.[2] An answer of "no" to the first question on wages leads to the conclusion that workers are paid at the reservation wage.[3] Furthermore, answering to the second question implies a deviation from the earnings assured by collective agreements. This either means higher bargaining power of unions, if they exist, or that firms are building their compensation policies on the efficiency wage philosophy. When wages are among the highest in the country, either the first or second strategy is escalated.

---

[2] Determining wages in the Republic of Srpska is subject to a layered system of agreements. A so so-called initial wage is determined first, which is then multiplied by coefficients to derive basic wages. Simplest work tasks are graded with lower coefficients; more demanding tasks, with higher coefficients. Minimal wage is also set by the general collective agreement. Industry-specific agreements, based on the general agreement, transform basic wages on the level of (groups of) industries.

[3] The reservation wage is defined as the second best alternative, under which workers would be not willing to work.

In order to achieve higher bargaining power, workers can choose to concentrate their efforts in the form of unions. How unions influence firm productivity is an ongoing debate. This question set tested the cooperative behaviour of unions. The first question inquires about the existence of unions in the firm; the second, the number of unions organized in the firm; and the third, union's concern for the firm's success.[4] If there exist several unions, collaboration among them may be lowered due to competition for membership (Ferner and Hyman, 1998).

There is a lot of literature on the contribution of workers' participation to firm success, both in neglecting it (property rights theory, agency theory, transaction cost theory) and in supporting it ((better exchange of information between employees and employers, reduced monitoring costs, improved efficiency of resource allocation, Allen and Gale, 2002), (fostering a culture of consensus and cooperation, Freeman and Lazear, 1995, Aoki, 2010)). If workers want to play a role in a firm's decision making process, they must accept a part of the business risk (Williamson, 1982).

The fifth question set deals with employees' inclination toward corporate risk sharing. First, we asked if most of the workers are prepared to do something more for the firm. Something more is a broad concept that entails deeds and actions by employees which they choose to do willingly, not forcefully (physically or psychologically), in the benefit of the firm. Second, we posed the following question: "Do you believe that most workers would stay with the firm even if they were offered better

[4] The Association of Unions of the Republic of Srpska is the official representative of individual unions in the Republic of Srpska. There are also a few smaller enterprise unions in some companies, which are sometimes founded, if employees are dissatisfied with the official association, but they do not have a big influence.

employment somewhere else?" This signals long-term planning and affiliation to the firm. The third question relates to workers' inclination toward accepting a part of financial risk.

The sixth question set examines worker's participation in decision making. Bernstein (1982) distinguishes between four degrees of workers' control: 1) employee consultation, 2) employee coinfluence, 3) co-determination, and 4) self-management. Since legal acts in the Republic of Srpska do not support workers' participation, questions focus on the first two forms. Employee consultation is covered by asking if workers are informed about key decisions for the firm. Employee coinflunce is expressed in the second question regarding if there is an established open dialog with the workers about key decisions for the firm. The third question is informative and inquires if workers are members of governing bodies.

As a part of human resources theory, internal training is the topic of the seventh question set. Investment in human capital was described by Lucas (1988) as a driving force of the endogenous growth theory. It was later recognized as an important source of competitive advantage (Barney, 1991). Firm-specific human and structural resources were later identified as the largest subpart of a firms' intangible investment (Corrado et al., 2009, for US and UK; Fukao et al., 2009, for Japan). Bloom and Van Reenen (2010) derived similar conclusions. With the first question in this set, we can identify a company's collaborative efforts. Through the second question, we can learn about the share of employee involvement in training. With the third question, we can determine the level of complexity of a firm's measurement system for training effectiveness.

The eight question set also deals with firm-specific human resource practices. More precisely, it focuses on on-job training, where its presence is identified by the first question. The second question reveals the level of a firm's involvement in spreading knowledge in the firm. The third question shows the readiness of a firm to replace key employees quickly, if needed.

3.3. Primary data analysis

In the previous section, we explained the theory behind each question set to show how we measure social capital in the firm. Here we interpret the results analysing 58 firms which participated in our study (Table 1). We can observe the share of positive answers and standard deviations for the total sample. We tested the differences between higher and lower productive firms with Chi square and corresponding P-value.

Table 1: Firms in the Republic of Srpska: Social capital by productivity

	Total (N=58)		More productive (N=29)		Less productive (N=29)			
	% of firms	sd	% of firms	sd	% of firms	sd	Chi²	P-value
1. DESISION MAKING								
operation/strategic management separation	**79.3**	40.9	**100.0**	00.0	**58.6**	50.1	15.130	**0.000**
managers and owners act unanimously	**74.1**	44.2	**100.0**	00.0	**48.3**	50.9	20.233	**0.000**
owners, managers and workers coord	**55.2**	50.2	**69.0**	47.1	**41.4**	50.1	4.462	**0.035**
2. ADJUSTING EMPLOYMENT								
short term adjust. to shocks	**87.9**	32.9	**93.1**	25.8	**82.8**	38.4	1.462	0.227
achieving target level of employment	**65.5**	47.9	**72.4**	45.5	**58.6**	50.1	1.221	0.269
core group of employees	**48.3**	50.4	**58.6**	50.1	**37.9**	49.4	2.486	0.115
3. DETERMINING WAGES								
higher than alternative wages	**65.5**	47.9	**75.9**	43.5	**55.2**	50.6	2.747	**0.097**
wages higher than collective agreement	**39.7**	49.3	**62.1**	49.4	**17.2**	38.4	12.176	**0.000**
wages among the highest in the country	**32.8**	47.3	**55.2**	50.6	**10.3**	31.0	13.228	**0.000**
4. UNION ROLE								
workers organized in unions	**41.4**	49.7	**37.9**	49.4	**44.8**	50.6	0.284	0.594
one union organization	**39.7**	49.3	**37.9**	49.4	**41.4**	50.1	0.072	0.788
unions concerned with a firm's success	**17.2**	38.1	**10.3**	31.0	**24.1**	43.5	1.933	0.164
5. WORKERS' RISK AVERSION								
prepared to do "more" for the firm	**84.5**	36.5	**96.6**	18.6	**72.4**	45.5	6.444	**0.011**
would stay with the firm in bad times	**56.9**	50.0	**69.0**	47.1	**44.8**	50.6	3.445	**0.063**
willing to make finan. Invest. in a firm	**31.0**	46.7	**34.5**	48.4	**27.6**	45.5	0.322	0.570
6. WORKERS PARTICIPATION								
workers are informed	**70.7**	45.9	**82.8**	38.4	**58.6**	50.1	4.078	**0.043**
open dialog with managers	**67.2**	47.3	**79.3**	41.2	**55.2**	50.6	3.835	**0.050**
workers are members of gov. bodies	**32.8**	47.3	**34.5**	48.4	**31.0**	47.1	0.078	0.780
7. INTERNAL TRAINING								
existance of organized forms in the firm	**84.5**	36.5	**93.1**	25.8	**75.9**	43.5	3.288	**0.070**
more than 50% of workers participate	**41.4**	49.7	**55.2**	50.6	**27.6**	45.5	4.549	**0.033**
other methods of evaluation than survey	**19.0**	39.5	**27.6**	45.5	**10.3**	31.0	2.805	**0.094**
8. ON-THE-JOB TRAINING								
existance of organized forms in the firm	**70.7**	45.9	**79.3**	41.2	**62.1**	49.4	2.080	0.149
knowledge transfer among employess	**86.2**	34.8	**86.2**	35.1	**86.2**	35.1	0.000	1.000
successors for most of key employees	**72.4**	45.1	**79.3**	41.2	**65.5**	48.4	1.381	0.240
ADDITIONAL INFORMATION								
more than 25% of export	**34.5**	47.9	**13.8**	35.1	**55.2**	50.6	10.990	**0.001**
more than 100 employees	**37.9**	48.9	**37.9**	49.4	**37.9**	49.4	0.000	1.000
services vs. Manufacturing	**38.6**[a]	49.1	**44.8**	50.6	**32.1**[b]	47.6	0.967	0.325
State ownership	**22.4**	42.1	**31.0**	47.1	**13.8**	35.1	2.479	0.115
Blockholdings	**94.8**	22.3	**96.6**	18.6	**93.1**	25.8	0.352	0.553

Source: own calculations.

Decision making: Answers to questions in the first set are clearly differentiable between more and less productive firms. All higher productive firms answered yes to the first and second questions, whereas only 59 percent of less productive firms answered yes to the first question and 48 percent to the second. The third question was answered yes by 69 percent of more productive firms versus 41 percent of less productive firms. Differences in the shares of positive answers between the groups significantly differ in all three cases.

Adjusting employment: Over the last five years, 88 percent of all firms adjusted short-term employment to fluctuations in demand. Sixty-six percent approached to the desired number of workers. Forty-eight percent recognize core group of employees as their competitive advantage. Moreover, 93 percent of more productive firms used short-term adjustment of employment versus 83 percent of less productive firms; 72 percent of the former and 59 percent of the latter approached to the desired number of workers; 59 percent and 38 percent, respectively distinguish core group of employees as their competitive advantage. Although we can clearly see that more productive firms gave more positive answers, decisions on employment do not differentiate statistically significantly between less and more productive firms.

Determining wages: Seventy-six percent of more productive firms pay higher than the reservation wage. The share for lower productive firms is 55 percent. Workers in 62 percent of more productive firms also receive payment noticeably higher than what is required by the collective agreement contract for the industry, compared to only 17 percent of less productive firms. Additionally, 55 percent of more productive firms claim that wages

are among the highest in the country. This is true only for 10 percent of workers in less productive firms.

Union role: In this question set, less productive firms responded with more positive answers. Only 38 percent of more productive firm have workers organised in unions compared to 45 percent of less productive firms. The same percentage of more productive firms have workers organised in one union versus 41 percent of less productive firms. In other words, all productive firms which have workers organised in a union have them organised in only one union, while this is not the case for less productive firms. In 10 percent of more productive firms, the union leadership is concerned with increasing productivity and therefore the firm's competitive position. Twenty-four percent of less productive firms have workers in unions concerned with increasing productivity. Although less productive firms gave more positive answers, the results between groups are not statistically significant.

On average, 41 percent of workers are organised in a union; almost every firm has only one operating union, and half of the unions are concerned about productivity. In Slovenia, 94 percent of firms have an organised union, two-thirds of which have only one union; one-fifth are also interested in firm productivity (Prašnikar et al, 2010).

Workers' risk aversion: Workers in the Republic of Srpska seem to be very motivated to do something more for the firm. This is true for 97 percent of firms with higher productivity and for 72 percent of firms with lower productivity. Sixty-nine percent of more productive firms have employees that would stay with the company even if they were offered better employment somewhere else. Among lower productive firms, this share falls

to 45 percent. These two differences are statistically significant. The last question asked whether most workers would be willing to accept a part of the business risk; workers were not supportive of this notion in either group. Thirty-five percent of more productive firms have workers that would be willing to accept this type of preposition compared to 28 percent of less productive firms. The difference is not significant.

Workers' participation: Seventy-one percent of firms inform workers about key decisions for the firm. Sixty-seven percent have an established open dialogue with workers about key decisions for the firm, and 33 percent have worker's representatives as members of governing bodies. These percentages are lower than in Slovenian firms, where 94 percent regularly inform workers, 83 percent claim to have an established open dialogue with workers and almost 60 percent of firms have worker representatives in governing bodies.

As with the *decision making*, *determining wages* and *workers' risk aversion* question sets, this case also shows significant differences between firms with more and less productivity. Splitting the sample of Bosnian firms, 83 percent of more productive firms and 59 percent of less productive firms inform workers; 79 percent and 55 percent, respectively, have an open dialogue with managers; and 35 percent and 31 percent, respectively, have workers indirectly participating in governing bodies, but there is no significant difference in this last case.

Internal training: Almost 85 percent of all firms claim to provide organised training to their employees based on identified needs of the company. Higher productivity firms claim to be doing so in 93 percent of cases. It is also very common among less productive firms (76 percent). In addition, 55 percent of more productive firms and 28 percent of less productive firms

involve more than half of employees in training programs annually. Few firms measure training effectiveness with methods other than conducting a survey at the end of a training program (on average, only every fifth firm does so). There are differences here as well between more productive firms (28 percent) and less productive firms (10 percent). In fact, all differences between groups on the topic of internal training are statistically significant.

On-the-job training: In accordance with the previous question set, the share of firms that support on-the-job training is high. Seventy-one percent of firms in the whole sample provide regular on-the-job training (apprenticeship, mentorship, job rotation, etc.). There are again differences between groups of firms (79 percent of more productive firms and 62 percent of less productive firms). Both groups stated that knowledge transfer is systematically induced among employees in 86 percent of cases. Among all firms surveyed, 72 percent have successors for most key employees who could effectively replace positions in a short period of time (79 percent for high firms and 66 percent for low firms). These differences are not statistically significant.

By observing additional information in Table 1, we can see some differences in the export orientation of the firms, where more productive firms export less. Only 14 percent of higher productive firms earn more than 25 percent of total revenues from exports. On the other hand, 55 percent of less productive firms make at least 25 percent revenue from exports. In addition, the more productive firms seem to be much more diversified in terms of sectoral composition and ownership structure. Forty-five percent of firms in this group belong to the service industry, and almost one-third is state-

owned. Among less productive firms, 32 percent operate in the service industry, and 14 percent are state-owned.

3.4. Conclusion

We divided firms in a group with higher productivity and a group with lower productivity. Less competition for companies operating mostly in the domestic market may be one reason why the first group shows higher productivity. If this is true, then higher wages may be the result of favorable relative prices and greater bargaining power of employees. Due to potential rent-seeking behaviour, a firm's investment in specific human capital could be explained as a lack of differentiation between investments in firm-specific human capital, which is expected to be value-enhancing from investments in firm-specific human capital, for which this is not the case (Micco and Pages, 2004, Essen et al., 2012). Given the considerable level of state owned companies with strong trade unions, this could be the case.

However, the group of firms with higher productivity also consists from firms in the service industry. Firms in the service sector generally do not have strong unions. As noted by Prašnikar et al. (2012), conditions for reciprocal essentials (RE) mode of firms in the service sector have developed. After opening opportunities for the establishment of new enterprises in the Republic of Srpska, a significant market niche was created for new entrants. It attracted educated entrepreneurs (managers) that employed a skilled workforce. Enterprenuers and workers have developed complementary capabilities in conjunction with the use of modern information technology. Participative management is a cornerstone of organizational architecture of this business segment. In this case, social

capital could serve as a factor for higher productivity and higher wages. A more detailed analysis is therefore needed to clarify the relationship between a firm's productivity and the level of social capital in the Republic of Srpska.

References

Aoki, M. (1984). *The co-operative game theory of the firm*. Oxford: Claredon Press.

Aoki, M. (2010). *Corporations in Evolving Diversity*. Oxford University Press.

Allen, F. andGale, D. (2002). *Asset Price Bubbles and Stock Market Interlinkages.* Center for Financial Institutions Working Papers 02-22, Wharton Financial Institutions Center Working Paper No. 03-27.

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management* 17(1), 99-120.

Bernstein, P. (1982). *Necessary Elements for Effective Worker Participation in Decision-Making.* Workplace Democracy and Social Change. Boston: Porter Sargeant Publishers Inc.

Bloom, N., and Van Rennen, J. (2010). Why do management practices differ across firms and countries. *Journal of Economic Perspective* 1, 203-224.

Corrado, C., Hulten, C. and Sichel., D. (2009). Intangible Capital and U.S. Economic Growth. *Review of Income and Wealth* 55, 661-685.

Essen, M., Oosterhout, J. and Heugens, P. (2012). *Competition and cooperation in corporate governance: the effects of labor insitutions on blockholder effectiveness in 23 European countries*. (forthcoming in Organization Science).

Ferner, A., and Hyman., R. (1998). *Changing industrial relations in Europe*. Wiley-Blackwell, pg. 550.

Freeman, R., and Lazear, E. (1995). *An Economic Analysis of Works Councils*. NBER Chapters, In: Works Councils: Consultation, Representation, and Cooperation in Industrial Relations. Pg. 27-52 National Bureau of Economic Research, Inc.

Fukao, K., Miyagawa, T., Mukai, K., Shinoda, Y. and Tonogi, K. (2009). Intangible Investment in Japan: Measurement and Contribution to Economic Growth. *Review of Income and Wealth* 55, 717-736.

Lepak, D.P., Takeuchi, R., and Snell, S. A. (2003). Employment Flexibility and Firm Performance: Examining the Interaction Effects of Employment Mode, Environmental Dynamism, and Technological Intensity. *Journal of Management* 29(5), 681-703.

Lucas, R. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics* 22, 3-42.

Prašnikar, J., Voje, D., Lesjak, J. D., Gjibexhi, L. and Raičević, M. (2010). *Social Capital as Intangibles in Slovenian Firms*. In Prašnikar, J. (ed.): The role of intangible assets to exit the crisis. Ljubljana: Časnik Finance, 215-234.

Putnam, R. D., Leonardi, R. and Nanetti, R. Y. (1993). *Making democracy work: Civic Tradition in Modern Italy*. Princeton University Press.

Ricketts, M. (2002). *The Economics of Business Enterprise: An Introduction to Economic Organisation and the Theory of the Firm*. New York: Edward Elgar Publishing.

Wheelen, T. L., and Hunger, D. L. (2010). Strategic management and business policy. New Jersey: Prentice Hall.

Williamson, E. O. (1975). *Markets and Hierarchies, Analysis and Antitrust Implications: A Study in the Economics of Internal Organization*. New York: Free Press.

Williamson, E. O. (1982). *Efficient Labor Organizations*. Mimeographed.

Zupan, N., Farčnik, D., Fišer, J., Stančič Kodarin, L., and Valenčič, G. (2010). *Investment in people and organizational Flexibility in Slovenian Manufacturing Firms in 2006-2009*. In Prašnikar, J. (ed.): The role of intangible assets to exit the crisis. Ljubljana: Časnik Finance, 173-186.

Saša Petković, Nada Zupan

4. HRM AND ORGANIZATION

4.1. Introduction

Since early debates on the importance of human capital for the development at either the macro (country) or micro (firm) level, the quality of human resources and its management have remained among the most researched topics. Recent studies have shown that investment in human capital (i.e. employee knowledge, skills and abilities) is most effective when supported by relevant human resource management practices (Fukao et al, 2009) aimed at improving employee motivation, which is an important pre-condition for high performance as described in the frequently used Ability x Motivation x Opportunity (AMO) Model (Boxall & Purcell, 2008). Performance management, pay and rewarding systems, leadership style and quality of relationships are among those practices that could contribute to employee motivation as well as to loyalty and satisfaction at work. Through this, companies are not only able to develop but also to attract and retain highly capable employees. Research also shows that organizational flexibility allows employees to use their human capital to the fullest potential, while rigid (mechanistic) organizational characteristics can present a serious obstacle for introducing needed changes (Bloom & VanRennen, 2007).

This chapter presents the state of current development and challenges regarding HRM and organization in the Republic of Srpska. The topic is highly relevant due to the lack of empirical evidence and the importance of human resources for future development. Because the Republic of Srpska is a transitional countries which requires understanding the human resource

management (HRM) context (Zupan & Kaše, 2005), we first describe some of the most important issues related to labor legislation, labor market and the general state of HRM development in the Republic of Srpska. Then, we present results from our research on investment in HRM and organization, followed by discussion and conclusions.

4.2. The Context of Human Resource Management in the Republic of Srpska

Human resource management (HRM) has not been one of the prime management activities in the Republic of Srpska, with mostly administrative personnel function before and through the first years of transition to the market economy. The entry of foreign companies after the Dayton Agreement of 1995, predominantly in the banking sector, have influenced local companies to more seriously engage in HRM (Ilić & Poljašević, 2011). As far as the development of the professional body of knowledge goes, there has been very limited research of HRM topics in BiH and even more so in the Republic of Srpska; only a few rather general discussions can be found on the subject (Rahimić & Ćar, 2004).

In the Republic of Srpska, irregular transition and economic reforms wiped out most of the manufacturing sector dominated by large firms. Thus, entrepreneurship and SME development are seen as key venues for economic recovery. The situation is reflected by a relatively high level of poverty, as an estimated 18% of the population lives below the poverty line (HR Development Report, 2009). Moreover, general levels of participation in labor force remain low (44% of the total working age population according to the 2011 Employment Survey Report), and there is high

unemployment and relatively low salaries. When analyzing the Republic of Srpska labor market in more detail, the first problem relates to structural unemployment. Many of the unemployed are unskilled and older and have been registered at the employment agency for at least five years (Labor market report, 2011). The official unemployment rate reported by the Republic of Srpska Statistical Office was 39.2 percent in 2001 and 35.5 percent in 2010. However, the real unemployment rate is much lower. The Economic and Social Council of the Republic of Srpska concluded that the rate of illegal employment in the Republic of Srpska increased in the first half of 2011 from 4.5 percent to 6.5 percent and that there are around 80,000 people who are working off the books. All of these issues point to a real challenge for companies to find professional and skilled employees also according to the Employers' Survey conducted by the Employment Bureau of B&H in 2007.

Labor legislation in B&H is entity-specific (Republic of Srpska, Federation of B&H, and Brcko District) but relatively harmonized, adjusted to ILO conventions, and quite liberal, comparable even with developed market economies.[5] The most important legislative provisions related to HRM are stipulated in the revised Labor Law and in the Labor Relations Act (both adopted in 2000), the new General Collective Agreement (adopted in 2010) and other supporting acts. The Republic of Srpska Labour and Occupatiomal Health & Safety Inspection is also significantly contributing to the creation of appropriate working environments. Although the Republic of Srpska has a rather solid and progressive legislation, many problems with

[5] For descriptiona of main characeterics and comparison with other countries see Kuddo, 2009.

mobbing, safety at work, and difficult working conditions are reported (Eurofund Working Conditions Survey, 2010). Workers are organized in trade unions, and their influence on policy makers in Republic of Srpska and B&H are not without visible effects. However, they are still relatively weak compared to EU standards. There are two main labor unions and several sectoral unions in the Republic of Srpska which are often on opposite tracks. The quality of labor-employer relations in B&H is rather weak and contributes to the low levels of competitiveness.

One view of the quality of human capital and related HRM activities is presented in The Global Competitiveness Report 2011-2012, which ranks B&H 102 of 139 evaluated countries (World Economic Forum, 2011). Among factors relevant for our study, low rankings can be found especially with local availability of research and training services (128th), staff training (136th), co-operation in labor-employer relation (109th), pay and productivity (129th), relying on professional management (126th), and brain drain (138th). On the other hand, hiring and firing practices (10th ank) and flexibility of wage determination (40th) seem to be creating a competitive environment.

4.3. Investment in HRM and Organization in the Republic of Srpska

We obtained qualitative data for 58 cases and quantitative data for 41 cases. The reasons for the rather low response rate can be traced to poor HR information systems and unwillingness to disclose real data. We performed descriptive statistics and crosstabs Chi-square for testing significant differences between independent variables (such as legal status, ownership type, industry, dominant market, company size according to the number of

employees and presence of a trade union) and dependent variables describing human capital, HRM and management practices and organizational flexibility. In the following sections, we present the data and report significant differences.

4.4. Human capital

Of the 41 companies providing us with the number of employees in the period from 2003 to 2010, 24 companies report employment growth; 14 are relatively stable; and 3 cases are downsizing. Both, the highest growth of employment (over 50%) and downsizing happens in small companies. Among 58 companies answering qualitative questions, 41 companies use flexible employment arrangements, mostly in energy production and services. Companies with limited liability use them more than joint stock companies and larger companies more than smaller (when size is measured by the the number of employees. The most widely used form of flexible employment arrangements are fixed term employments (37 companies) followed by employment through agencies and students (24 companies). With the help of flexible employment measures, 39 companies claim that they have achieved the targeted number of employees, while 16 believe that they are overstaffed (4 did not provide an answer). Of the 53 companies reporting, the majority (39) use the core employee model.

Rather than observing the growth of human capital only through the increased number of employees, it is also important to analyze investment in employee training, which is the only means of assuring the long-term competitiveness of a company. Training provided by employers is especially

important in a country like the Republic of Srpska due to the lack of professional and skilled labor.[6]

This is probably the reason why the majority of companies in our sample understand the importance of training, but it seems that they focus more on internal transfer of knowledge than organized training activities (Table 1). Forty companies report that employees are willing to invest in their own training. Overall, 50 companies organize training activities according to identified training needs. Surprisingly, companies with foreign ownership report less organized training activity than domestic companies. One possible explanation could be that foreign-owned companies are perceived as very attractive to employers and thus are able to employ the most skilled employees using more sophisticated recruitment and selection methods.

When assessing the involvement of employees in training programs organized by firms, only 21 companies report that they involve more than half of their employees in various training activities. Although there are no statistically significant differences regarding industry, it seems that production companies are least likely to provide training to their employees, while service companies are most likely. From the reported information, we can conclude that companies do not pay much attention to measuring training effects, as only 16 companies measure efficiency, mostly through testing and assessing efficiency at work after employees have received training.

[6] For an in-depth analysis of skills shortage, see: Are skills constraining growth in Bosnia and Hezegovina, The World Bank Report, 2009.

Table 1: Investment in employee training and knowledge transfer

Type of investment activity	Percentage of companies answering No	Percentage of companies answering Yes	Total
Organized training based on company needs (n=59)	15	85	100
More than 50% of employees participate in training programs (n=59)	64	36	100
Measuring effectiveness of training programs (n=59)	73	27	100
On the job training (n=59)	29	71	100
Stimulating planned knowledge transfer among employees (n=59)	14	86	100
Having competent successors for most key employees (n=59)	27	73	100

Source: own calculations.

With regard to on-the-job training, 42 companies report formal programs, while 51 claim to support formal transfer of knowledge, mostly through mentorship, instructions and teamwork. A high number of companies (43) believe that they have competent successors for their key positions, which is obviously achieved through internal transfer of knowledge. The latter two claims suggest that either some companies use methods other than on-the-job training to transfer knowledge and develop successors or that their assessment was not critical enough.

4.5. HR and management practices

As previously mentioned, investments in human capital will have a stronger impact on company performance if they are supported through relevant HRM and management practices. Employer willingness to pay relatively high salaries based on employee performance is considered one of the best HRM practices (Pfeffer, 1998). Among companies in our sample, about half claim

to follow this practice (Table 2) so that their employees are among the best paid employees in the Republic of Srpska (here, there is no statistically significant difference according to the legal status of the company). Furthermore, one-third reports wages higher than the collective agreement. It is interesting that companies with trade unions report significantly less often that levels of salaries are above collective agreement, which could suggest that employers just follow collective agreement provisions. However, this does not mean that trade unions are not successful in the bargaining process, as there are no significant differences regarding the companies which report their employees being among the best paid and trade union presence. Moreover, results suggest that micro companies pay their employees better than small and medium sized companies, while half of large companies reported that their employees are among the best paid.

Table 2: Salaries and performance management

Type of investment activity	Percentage of companies answering No	Percentage of companies answering Yes	Total
Employees are among the best paid in RS (n=58)	53	47	100
Performance evaluation to be able to distinguish between high and poor performers (n=58)	9	91	100
Rewarding high performance (n=58)	10	90	100
Using other measures than oral notice for poor performers (n=58)	28	72	100

Source: own calculations.

The majority of companies (53) report that they evaluate employee performance and are able to differentiate between high and poor performers; employees are rewarded for their high performance in 52 companies, while poor performers receive measures other than just an oral

notice for their poor performance in 42 companies. Here, joint stock companies are more active than limited liability ones. With regard to the ownership structure, all companies reporting the majority of ownership to be private use these methods (fewer use measures for poor performers). It is interesting that unionized companies use performance evaluation, rewarding high performance and corrective measure less often than non-unionized companies. Furthermore, all micro and almost all small companies use these methods, while one-third of medium-sized firms and about half of large companies also do so. Results suggest that effective performance management is much more difficult to establish in larger companies where direct interaction between employees and their supervisors is weaker.

With regard to loyalty, about two-thirds of companies perceive that employees would be willing to do something more for their organization, for instance, work longer hours or on free days, working harder, providing better quality of work, sharing risk with the employer, and agreeing to unpopular measures such as cutting salaries or downsizing. About a half of companies believe that employee loyalty is high and that employees would stay even if they received a better employment opportunity (e.g. better paid job). Also, 45 companies claim that the level of satisfaction among their employees is about the same as in comparable companies. Although there are no statistically significant differences, loyalty and satisfaction seem to be least present in production and trade companies. There are significant differences regarding firm size, since the most loyal employees are in micro companies, followed by large and medium firms, while the lowest levels were reported in small companies of 11 to 50 employees.

Two-thirds of firms claim to use a participative style of leadership where employees have the right to voice their opinions, which are taken into account when making managerial decisions. One aspect of participative leadership is the presence of a trade union, which exists in 34 companies, 24 of which reported good relations with the union(s).

4.6. Organizational flexibility

One way to look at investments in organizational flexibility is through changes in organizational structure characteristics (Table 3). There were not many changes in organizational characteristics over the last five years, as the majority of companies report status quo in terms of levels of hierarchy, number of managers and autonomy of employees.

Table 3: Changes in organizational characteristics related to organizational flexibility

Organizational characteristic	Percentage of companies answering			
	Lower/less	The same	Higher/more	Total
Hierarchy (n=51)	8	69	23	100
Number of managers (n=53)	10	59	31	100
Specialization (n=53)	8	47	45	100
Number of rules (n=54)	4	33	63	100
Number of tasks specified in job description (n=54)	2	33	65	100
Autonomy (n=54)	9	63	28	100

Source: own calculations.

More frequently reported were changes regarding the number of rules, the number of specified tasks in job description and the level of specialization,

all of which have increased in more than half of companies. This suggests that the level of organizational flexibility is decreasing and may pose a threat to companies' ability to adapt to changes in the environment and to the effective use of human capital. The only statistically significant difference is the level of autonomy, which has mostly increased in micro and to some extent in small companies while mostly remaining the same in medium and large companies.

4.7. Productivity and investment in human capital and HRM practices

In the last part of the analysis, we explored the link between productivity and investments in human resources. Due to the small number of cases, we classified companies based on median productivity. Then we performed crosstabs and correlation analysis. The relationship between HRM and organizational performance is one of the most frequently studied. Companies with more advanced HRM systems also report higher productivity (Combs et al., 2006). In Table 4, only four items (shaded in gray) show significant differences when comparing companies with above or below median productivity for 2009 and 2010; even for these firms, the correlation is relatively weak except for job satisfaction. Namely, more companies with higher productivity report organized training based on company needs, having employees who are among the best paid in the Republic of Srpska and higher levels of employee satisfaction. Surprisingly, companies with lower productivity more frequently reward high performance with higher pay. One possible explanation could be that higher productivity companies already pay their employees well with regard to base

salaries and have less need to add financial rewards. On the other hand, companies with lower productivity have fewer financial resources and thus allocate rewards more carefully. Although employees in more productive companies are better paid and more satisfied, they are not necessarily more motivated or loyal to the company.

Table 4: Productivity and investment in human resources

Type of investment activity		Productivity 2009			Productivity 2010		
		Above Median	Below Median	Sign.	Above Median	Below Median	Sign.
Employment growth or decline (n=42)	Growth	13	12	0,427	12	13	0,270
	Stable	8	6		9	5	
	Decline	0	3		0	3	
Achieved targeted number of employees (n=55)	Yes	20	19	0,583	20	19	0,583
	No	8	8		8	8	
Organized training based on company needs (n=59)	Yes	28	22	0,065	28	22	0,065
	No	2	7		2	7	
More than 50% of employees in training programs (n=59)	Yes	13	8	0,161	12	9	0,328
	No	17	21		18	20	
Measuring effectiveness of training programs (n=59)	Yes	8	8	0,584	8	8	0,584
	No	22	21		22	21	
On the job training (n=59)	Yes	24	18	0,109	23	19	0,256
	No	6	11		7	10	
Stimulating planned knowledge transfer among employees (n=59)	Yes	26	25	0,627	26	25	0,627
	No	4	4		4	4	
Having competent successors for most key employees (n=59)	Yes	23	20	0,355	22	21	0,584
	No	7	9		8	8	
Performance evaluation to be able to distinguish between high and poor performers (n=58)	Yes	25	28	0,176	25	28	0,176
	No	4	1		4	1	
Rewarding high performance (n=58)	Yes	24	28	0,097	24	28	0,097
	No	5	1		5	1	
Using other measures than	Yes	21	21	0,615	21	21	0,615

oral notice for poor performers (n=58)	No	8	8		8	8	
Employees among the best paid in RS (n=58)	Yes	20	7	0,002	20	7	0,002
	No	10	21		10	21	
Job satisfaction (n=59)	Yes	26	19	0,054	26	19	0,054
	No	4	10		4	10	
Willingness to do something more (n=58)	Yes	21	19	0,642	22	18	0,323
	No	9	9		8	10	
Not leaving the company for a better paid job (n=58)	Yes	17	14	0,403	18	13	0,220
	No	13	14		12	15	

Source: own calculations.

Our results confirm that a causal relationship between HRM and company performance needs to be further explored (Guest, 2011). It could easily be the case that companies' high performance contributes to employee satisfaction and that HRM serves as a moderator of this relationship, as suggested by Chin-Ju, Edwards and Sangupta (2010).

4.8. Conclusions

Human resource management research in Bosnia and Herzegovina in general and in the Republic of Srpska in particular has not been extensive; in this respect, our study can bring fresh insight. Compared to previous studies (Ilić & Zolak Poljašević, 2011; Rahimić & Bičo, 2004), we can observe some progress. However, our sample is comprised mostly of companies which are among the best in their branch, as seen by the high number of companies claiming that their employees are among the best paid in the Republic of Srpska. Thus, we expect that those companies use more advanced HRM and management practices and have more resources to invest in human capital. Also, there is a fair share of micro and small companies, which usually report higher employee satisfaction and loyalty, as confirmed in our study.

With regard to human capital investment, most companies report organized training based on company needs, which is also linked to higher productivity. However, training participation levels exceed 50 percent of employees in only one-third of the companies, which may show weakness regarding staff training as reported in the Global Competitiveness Report (World Economic Forum, 2011). The lack of a true strategic approach to HRM can be also observed through the lack of effectiveness of measurements for training programs. Informality as an important feature of current HRM practices can be depicted from our results, which can be attributed to both lack of professional knowledge as well as the small size of some participating companies. For example, despite fewer employees in organized training and fewer on-the-job training programs, companies report having successors for most key positions. We need more information to assess the quality of practices, as we have focused solely on their presence. It may be the case that although employers believe to have certain HRM/management practices in place, these do not contribute to higher productivity; thus, we may doubt their effectiveness. For example, companies report rewarding employees for high performance, but this practice does not seem to contribute to increased productivity. Therefore, recommendations for macro policies or micro level measures should emphasize the need for professionalization and development of HRM at all levels, especially with regard to effective employee training and motivation practices (including performance management and pay for performance). Also, increasing organizational flexibility, for which we discovered a negative trend, would create opportunities for more effective use of human capital,

especially with regard to autonomy at work, which is an important motivational factor for skilled employees.

References

Bloom, N., and Van Reenen, J. (2007). Measuring and Explaining Management Practices Across Firms and Countries. *The Quarterly Journal of Economics*, 122(4), 1351–1408.

Boxall, P., and Purcell, J. (2008). *Strategy and Human Resource Management*. New York: Palgrave Macmillan.

Chin-Ju, T., Edwards, P., and Sangupta, S. (2010). The association between organizational performance, employee attitudes and human resource management practices. *Journal of General Management*, 36(1), 1-20.

Combs, C., Liu, Y., Hall, A., and Ketchen, D. (2006). How much do high performance work systems matter? A meta analysis of their effects on organizational performance. *Personnel Psychology*, 59(3), 501-528.

Employers' survey. (2007). Sarajevo: Employment Bureau of Bosnia and Herzegovina.

Eurofund Working Conditions Survey. (2010). Found on 7. October 2011 on http://www.eurofound.europa.eu/surveys/ewcs/2010/.

Fukao, K., Miyagawa, T., Mukai, K., Shinoda, Y. and Tonogi, K.. (2009). Intangible Investment in Japan: Measurement and Contribution to Economic Growth. *Review of Income and Wealth*, 55, 717–736.

Guest, D. (2011). Human resource management and performance: still looking for some answers. *Human Resource Management Journal*, 2(1), 3-13.

Ilić, G., and Zolak-Poljašević, B. (2011). Models of Human Resources Management in Banking Sector of Republica Srpska and Their Impact on Company Performance. *Acta Economica*, 9/15, pp. 21-49.

Kuddo, A. (2009). *Labour Laws in Eastern European and Central Asian Countries*. SP Discussion Paper No. 0920. Washington: The World Bank.

Labour force survey 2010. (2011). Agency for Statistics of Bosnia and Herzegovina.

Pfeffer, J. (1998). *The Human Equation: Building Profits by Putting People First*. Boston: Harvard Business School Press.

Rahimić, Z., and Bičo, M. (2004). *The Quality of HR Management and Competitive Advantage of SMEs in BiH*. Zagreb: Graduate School of Economics and Business, University of Zagreb,

Croatia, International Conference "An Enterprise Odyssey: Building Competitive Advantage", 17-19th June, 2004, pp. 1463-1473

Zupan, N., and Kaše, R. (2005). Strategic Human Resource Management in European Transition Economies: Building a Conceptual Model on the Case of Slovenia. *International Journal of Human Resource Management*, 16/6, pp. 885-909.

World Economic Forum. (2011). The Global Competitivness Report 2010-2011. October 18th 2011.URL: http://www.weforum.org/reports/global-competitiveness-report-2011-2012

Workforce Development: Bosnia and Herzegovina. (2009). US Aid Regional Overview.

World Bank Report. (2009). *Are Skills Constraining Growth in Bosnia and Herzegovina*. Washington: The World Bank.

Vesna Žabkar, Tajana Serdar

5. BRANDING AND BRAND CAPITAL

5.1. Introduction

This chapter presents branding and brand capital as part of intangible investments and discusses specifics for companies in the Republic of Srpska. It offers an overview of the state of brand-related marketing activities, including activities related to brand capital, brand development and brand value. Additionally, marketing activities to sustain branding activities and ensure company future are examined. The analysis reviews the current situation of companies in the Republic of Srpska and offers future perspectives for brand development and market position. We start with a brief explanation of branding and brand capital, brand development and brand value. Hypotheses about differences in branding and brand capital among companies with different value added are developed and tested on a sample of companies from the Republic of Srpska. Furthermore, the effects of industry, legal form, export orientation and company size on branding are examined. Empirical results are discussed, and conclusions are made from the findings.

5.2. Theoretical background

Branding is an essential tool for companies to develop strong marketing strategies. Strong brands enable companies to achieve a price premium in the market, a leading market position, market penetration, or to maintain a market share larger than an undifferentiated product or service could reach

(Kapferer, 2008). Unlike other assets such as stocks or real estate, there is no active market in brands that would provide comparable values. This makes brands special intangible assets (Interbrand, 2004). In many businesses, brands influence the choices of customers, employees, investors, and government authorities. Such influence is crucial for company performance and the creation of shareholder value (Morgan, Rego, 2009). The development of strong brands is related to the recognition of what is important for customers and the main functional and emotional benefits of brands. Branding includes a number of decisions related to participation in trade brands, brand expansion, co-branding, and overall brand architecture. Also, it includes understanding of the consumer mindset and thus various aspects of brand awareness, perceived quality, and level of loyalty (Keller, 2003).

Brand management strategy includes brand development, brand measurement and control as well as concern for brand value. In order to understand brand development, we need to understand several aspects of brand management activities:

- whether the company develops its own brands,
- whether they develop a corporate brand in addition to the separate brands for products/services, and
- whether they have developed brand architecture.

In order to understand how companies build brand value, we need to investigate the following:

- whether they have legally protected company brands (e.g. patents, trademarks),
- whether they finance activities to increase brand value, and

- whether they measure brand value.

Brand investments relate to share of sales for activities to increase the value of brands; such activities include external costs of advertising and marketing activities of advertising agencies and media.

Brands should communicate a clear customer promise, build trust by delivering on that promise, continuously improve, and innovate beyond the familiar (Barwise & Meehan, 2010). Innovation is an important driver of company growth and success (Tellis et al., 2009). There is evidence of higher productivity in R&D and skill intensive companies/industries (O'Mahony, Vecchi, 2009). Relevant variables for marketing innovation in the questionnaire include:

- the introduction of new media or techniques for promoting products,
- important changes in design or packaging of products/services,
- new methods of product placement or marketing channels, and
- new forms of pricing.

Regarding marketing innovation, companies that rank higher on branding and brand-related activities should also implement more innovation within their marketing mix.

Finally, marketers must manage different channels and media to maximize their sales and brand equity effects (Keller, 2010). When talking about marketing future of companies, we consider the following:

- future strategy/development plans for company brand(s)
- possibilities for future development of company brand(s) in new markets, and

- possibilities for future leading/influential market positions for company brand(s).

5.3. Data analysis of branding and brand capital in the Republic of Srpska

To measure branding and brand capital in companies in the Republic of Srpska, we pose questions to managers regarding their brand management activities. The questionnaire consisted of five sets of questions, each covering one field of study: brand development, brand value, brand investment, marketing innovation and future orientation. After testing the questionnaire, 58 companies of different size, ownership structure and industries were selected for interviews. We believe that the selected companies comprise a good representation of the Republic of Srpska economy. Responses about branding and brand capital were received from 54 of the selected companies.

Brand development was measured through several aspects of brand management activities. Based on the answers provided, there are two distinct clusters: companies with at least two of the three aspects rank higher in brand development (40 percent, see Table 1), while others rank lower on brand development (59 percent).

Table 1: Brand development marketing activities for companies in the Republic of Srpska

	Clusters	Frequency	Percent
Brand development activities	Lower	32	59.3
	Higher	22	40.7
	Total	54	100.0

Source: own calculations.

Brand management activities related to brand value were estimated next. Again, companies with at least two of the three activities related to brand value were classified as high on brand value measurement (40 percent , see Table 2), while companies with one or no brand management activity related to brand value were classified as low on brand value measurement (59 percent). Brand development and brand value activities are correlated (symmetric measure phi has a value of 0.616). Only 6 percent of companies are high on brand development and low on brand value, while 13.7 percent are high on brand value and low on brand development. For all other companies, there is a congruency between both dimensions of brand management (both brand development and brand value are low for 43% of companies and high for 37% of companies).

Table 2: Brand value marketing activities for companies in the Republic of Srpska

	Clusters	Frequency	Percent
Brand value activities	Lower	32	59.3
	Higher	22	40.7
	Total	54	100.0

Source: own calculations.

Brand investment or share of sales for activities to increase the value of brands (including external costs of advertising and marketing activities of advertising agencies and media) was examined. Only a fraction of companies responded (see Table 3). The reported investments are low.

Table 3: Brand investments for companies in the RS (as %e of sales)

Year	N	Mean	Std. Deviation
2006	13	.077	.175
2007	13	.100	.197
2008	13	.092	.193
2009	13	.112	.198

Source: own calculations.

In terms of marketing innovations, 52 percent of companies reported innovations in terms of marketing communications, 46 percent in product design or packaging, 46 percent in marketing channels, and 54 percent in new forms of pricing; 28 percent reported no marketing innovation. Regarding marketing innovation, clusters of companies according to brand development activities and brand value activities were compared. Companies with more developed brand development activities reported significantly more areas of innovation. Companies with more brand value activities also reported significantly more areas of innovation (see Table 4 for reported mean values and t-test statistics).

Table 4: Marketing innovations for companies in the Republic of Srpska

	Cluster	N	Mean	Std. Deviation	Std. Error Mean	T	Sig. (2-tailed)
Brand development activities	Lower	30	1.60	1.589	.290	-2.592	.013
	Higher	21	2.71	1.454	.317		
Brand value activities	Lower	23	1.39	1.530	.319	-3.102	.003
	Higher	25	2.72	1.429	.286		

Scale for marketing innovations: number of areas for reported innovations (for four 4Ps).

Source: own calculations.

Preparations for future marketing seem to differ significantly in the Republic of Srpska: 39 percent of companies reported that they have a strategy for further development of brands; 59 percent of companies see possibilities for expanding their brands to new markets; 44 percent see possibilities for establishing a leading market position with their brands in the future; and 35 percent report no such activities. Regarding preparations for future marketing, clusters of companies were compared according to brand development and brand value activities. Again, companies with more developed brand development activities and more brand value activities reported significantly better preparation for future marketing (see Table 5 for reported mean values and t-test statistics).

Table 5: Preparation for future marketing among companies in the Republic of Srpska

	Cluster	N	Mean	Std. Deviation	Std. Error Mean	t	Sig. (2-tailed)
Brand development activities	Lower	29	1.10	1.291	.240	-3.338	.002
	Higher	21	2.14	.910	.199		
Brand value activities	Lower	23	1.17	1.337	.279	-1.968	.056
	Higher	25	1.88	1.130	.226		

The scale for future marketing preparation includes brand development strategy, new market planning and leading market position (0-3).

Source: own calculations.

Furthermore, differences in branding and brand capital are analysed for companies according to their value added. As a measure for company added value, a dummy variable in a selected year (2009) was taken, where the

median value added per employee was taken as a cut-off value (0=below median, 1= median and above). When comparing clusters of companies according to their brand development activities (Table 6), the analysis did not show any significant correlation between the brand development cluster and value added per employee (Phi=-.100, sign.=0.465). Comparison of value added to brand value activities (see Table 7) revealed the following: two clusters of companies according to their brand value activities do not differ significantly in terms of value added (Phi=-.097, sign.=0.488).

Table 6: Brand development marketing activities and value added per employee for companies in the Republic of Srpska

			Value added		
			lower	higher	Total
Brand development activities	lower	Count	15	17	32
		% of Total	28.3%	32.1%	60.4%
	higher	Count	12	9	21
		% of Total	22.6%	17.0%	39.6%
Total		Count	27	26	53
		% of Total	50.9%	49.1%	100.0%

Source: own calculations.

Table 7: Brand value marketing activities and value added per employee for companies in the Republic of Srpska

			Value added		
			lower	higher	Total
Brand value activities	lower	Count	12	13	25
		% of Total	23.5%	25.5%	49.0%
	higher	Count	15	11	26
		% of Total	29.4%	21.6%	51.0%
Total		Count	27	24	51
		% of Total	52.9%	47.1%	100.0%

Source: own calculations.

Similarly, comparison of marketing innovations and preparation for the future in terms of branding and brand capital reveals that the differences between companies with lower and higher value added are not significant (see Table 8).

Table 8: Marketing innovations and future preparation for companies with different value added per employee,The Republic of Srpska

	Value added	N	Mean	Std. Deviation	Std. Error Mean	t	Sig. (2-tailed)
Marketing innovations	Lower	26	2.19	1.721	.337	.602	.550
	Higher	26	1.92	1.495	.293		
Preparation for marketing future	Lower	25	1.60	1.225	.245	.500	.619
	Higher	26	1.42	1.301	.255		

Source: own calculations.

Finally, the effects of industry, company legal form, export orientation and size on branding and brand capital were examined. Due to the small sample size, companies were divided into two industry groups: manufacturing and services companies. The analysis did not reveal significant differences in terms of industry structure for companies with lower and higher brand development and brand value activities in terms of their marketing innovations or preparation for future marketing. Although services companies seem to report more marketing innovations (mean for manufacturing = 1.8, for services 2.5), the t-test for means did not report significant differences (t=1.61, sig. (2-tailed) =.115).

In addition, limited companies were compared to joint stock companies. While differences in legal form structure were not significant for companies with lower and higher brand development and brand value activities, limited

companies reported significantly more innovations (2.4, compared to 1.4 for joint stock companies, t=2.23, sig. (2-tailed) =.03).

For export orientation, companies with revenues from exporting were compared to companies that earned their revenues only on the domestic market. Again, the differences were not significant for companies with lower and higher brand development and brand value activities. However, in tendency there seem to be more export-oriented companies among companies with higher brand development activities (Pearson Chi-Square=2.67, sign. 0.102). Although there were no significant differences among exporters and non-exporters in terms of their marketing innovations, export companies revealed significantly more preparation for marketing future (mean in preparation is 1 for non-exporters and 2 for exporters, t=3.07, sig. (2-tailed) =.003).

Finally, the impact of company size on branding and brand capital was analysed. Two groups of companies emerged: those with fewer than 50 employees and those with more than 50. The analysis revealed no significant correlations between measures of branding and brand capital and company size.

5.4. Conclusion

In light of the primary data analysis, the following conclusions can be made about branding and brand capital in the Republic of Srpska. First, the majority of companies still lack activities related to brand development. This means that even if they report having their own brand, they have not developed corporate brands in addition to brands of product/services and have not developed brand architecture as a system of organizing company

brands. Furthermore, most companies report only a limited amount of activities related to brand value. This means that they lack legal protection of their brand, do not finance activities to increase brand value, or have no measurement of brand value as such. Based on their answers, companies were divided into high and low clusters of brand development and brand value).

In terms of brand capital, investments in activities to increase the value of brands were examined. Unfortunately, the majority of responses were missing. For the missing variable, it is not possible to say whether the right response would be 0 or some other value. Based on the data, it is not possible to draw serious conclusions about external costs of advertising and marketing activities as a percentage of sales in The Republic of Srpska.

Not surprisingly, the classification of companies to clusters according to brand development and brand value is related: the majority of companies are either lower or higher on both constructs. Furthermore, companies in higher clusters report significantly more areas of marketing innovation and better preparation for future marketing. This is not surprising, since it was expected that brand management activities would be related to continuous improvement and innovation. However, in terms of company added value, the analysis did not show any significant correlation between brand development and value added per employee. A comparison of value added to brand value activities does not reveal a clear picture. It seems that value added per employee as a measure of output does not differentiate between companies with more or less brand management activities. Also, this measure does not differentiate between companies with different level of marketing innovations and preparation for the future in terms of branding

and brand capital, although we would expect evidence for higher productivity in innovation intensive companies.

Furthermore, the effects of industry, company legal form, export orientation and size on branding and brand capital were examined. It seems that there are companies with or without brand management activities in manufacturing and services, larger and smaller companies, joint stock and limited companies, although limited companies do seem to have more marketing innovations. Interestingly, no significant differences in terms of branding were found among exporting and non-exporting companies; however, this lack of difference could be attributed to the sample structure (exporters included companies with any exports whatsoever, therefore contributing to higher heterogeneity in this group). Exporters did report significantly more preparation for future marketing compared to non-exporting companies in the Republic of Srpska.

Overall, our research synthesizes and tests branding and brand capital for the Republic of Srpska. Although marketers facilitate brand management, including brand development, brand value and control, it is the consumer who interprets meanings of brands and their characteristics. Therefore, it is important for companies to measure brand management effects and to assess consumer perceptions related to the meanings of brands in order to ensure the success of their brand management efforts. Global companies possess the advantages of developed and well managed brands, which can be a serious threat to companies in developing countries that are used to less intense competition (Strizhakova et al., 2008).

References

Ambler, T., Carpenter, G. S., Kumar, V., Rust, R.T., and Srivastava. R. K.. (2004). Measuring Marketing Productivity: Current Knowledge and Future Directions. Journal of Marketing, Vol. 68, No.4, pp. 76-89

Barwise, P., and Meehan, S. (2010). The One Thing You Must Get Right When building a Brand. *Harvard Business Review*, 88(12), 80-84.

Berthon, P., Ewing, M. T., and Napoli, J. (2008). Brand Management in Small to Medium-Sized Enterprises. *Journal of Small Business Management*, Vol. 46, Issue 1, pp. 27-45

Fill, C., and Fill, K. (2005). *Business-to-business marketing: relationships, systems and communications*. Harlow: Pearson Education Limited.

Interbrand. (2004). *Brand valuation*. In An Economist Book, brands and branding (pp. 1-12). New York: Interbrand.

Kapferer, J. N. (2008). *The new strategic brand management: creating and sustaining brand equity long term*. Kogan Page Ltd.

Keller, K. L. (2003). *Building, measuring and managing brand equity*. New Jersey: Person education, Inc.

Keller, K. (2010). Brand Equity Management in a Multichannel, Multimedia Retail Environment. *Journal of Interactive Marketing*, 24(2), 58.

Morgan, N. A., and Rego, L. L. (2009). Brand Portfolio Strategy and Firm Performance. *Journal of Marketing*, 73(1), 59-74.

O'Mahony, M., and Vecchi, M. (2009). R&D, knowledge spillovers and company productivity performance. *Research Policy*, 38(1), 35-44.

Petromilli, M., Morrison, D., and Million, M. (2002). Brand architecture: building brand portfolio value. *Strategy & Leadership*,30 , 22-28.

Sabate, J. M. d. l. F., and Puente, E. d. Q. (2003). Empirical Analysis of the Relationship between Corporate Reputation and Financial Performance: A Survey of the Literature. *Corporate Reputation Review*, 6(2), 161-177.

Siguaw, J. A., Simpson, P. M., and Enz, C. A. (2006). Conceptualizing Innovation Orientation: A Framework for Study and Integration of Innovation Research. The *Journal of Product Innovation Management* , 556-574.

Strizhakova, Y., Coulter, R. A., and Price, L. L. (2008). The meanings of branded products: A cross-national scale development and meaning assessment. International *Journal of Research in Marketing*, 25(2), 82-93.

Tellis, G. J., Prabhu, J. C., and Chandy, R. K. (2009). Radical Innovation across Nations: The Preeminence of Corporate Culture. *Journal of Marketing*, 73(1), 3-23.

Matjaž Koman, Gordana Lalović, Marijana Močić

6. RELATIONAL, INFORMATIONAL AND IT CAPITAL IN REPUBLIC OF SRPSKA FIRMS

6.1. Introduction

As firms compete in increasingly diverse global markets, the role of tangible and mainly intangible capital is becoming more important for achieving competitive advantage. As such, it becomes critical to understand how intangible firm capital affects firm performance.

According to the resource-advantage theory (Hunt, 2000), a firm's resources are leveraged to provide competitive advantage. Although a firm's resources are tangible and intangible, Griffin et al. (2010) argue that competitive advantage is founded on intangible resources, especially human, organizational, relational, and informational capital. Organizational capital covers a firm's policies and norms, while human capital covers business skills and the knowledge of a firm's employees. Informational capital constitutes a firm's knowledge about its own products, production processes, customers, and resources as well as those of its competitors. Relational capital includes a firm's relationships with customers, suppliers, competitors, government agencies, and unions (Hunt, 2000). Also important is the ability to effectively manage information within the firm while successfully gathering new information about the environment, customers, and competitors. This is critically important, since it may provide a basis for

gaining a competitive advantage similar to other invisible assets possessed by firms (Sampler, 1998). The ability to obtain information about markets and customers helps to ensure that firms are more attuned to changes in the environment and can result in a competitive advantage over slower, ill-informed competitors (Barney et al., 2001).

In this chapter, we focus on the role of informational and relational capital and ITC in Republic of Srpska firms. More precisely, we investigate how this capital affects firm's productivity.

The chapter is structured as follows: We first briefly describe relational, informational capital and capital connected with the investment in information and communication technology (ITC), emphasing the measurement of each. Next, we present the size of all types of capital in the Republic of Srpska and their effects on productivity. In the last section, we present our conclusion.

6.2. Measuring relational, informational and ITC capital

Our main hypothesis is that informational capital, relational capital and ITC capital positively affect a firm's performance, which is measured by productivity. As shown by Griffith et al. (2010), higher levels of relational and informational capital positively influence marketing capabilities (abilities in selling/marketing, product development/research, and the art of distribution), which in turn positively affects firm performance. Regarding investment in information and communication technology, a number of studies show that at the macro level ITC is an important factor in productivity growth (VanArk et al., 2002; VanArk, 2004). However, micro economic studies present no conclusive evidence (Tippins and Ravipreet,

2003; Huang et al., 2009). According to resource-based view, ITC per se may not generate a sustainable advantage, because the same technology could be adopted by competing firms (Clemons and Row, 1991). However, the advantages of ITC can be protected by embedding it in an organization through complementarity and cospecialization (Powell and Dent-Micallef, 1997). In this respect, knowledge represents an important intangible resource for the firm. The mixed results about the effect of information technology on firm performance can be attributed to the fact that most studies examined IT as a stand-alone resource, neglecting the role of complementarity and cospecialization.

We measure relational and informational capital in firms using a three-part questionnaire. The first part presents questions about the firm's customers; the second part deals with competitors; and the third section addresses suppliers. Each question (factor) consists of three sub-questions, to which managers gave either a "yes" or "no" answer. We briefly describe each factor, while sub-questions of each factor are shown in Table 2 and described in the Results section.

First, let us focus on the factors dealing with informational and relational capital. The first factor deals with export orientation and is the only factor not measured by "yes" or "no" answers. Instead, we measure the share of sales to different regions (Table 1). Export orientation belongs to a firm's informational capital. Based on the literature on exports and productivity, firms that export more are also more productive (Wagner, 2007), as are firms that export to more destinations (Anderson et al., 2008). The second factor, monitoring customers, is also a part of a firm's informational capital, since it measures how closely a firm monitors its customers and whether it

engages them in the development of new products. More precisely, we asked firms if they meet regularly to exchange views and observations about relationships with their customers and, if so, whether they meet with their customers to determine their needs. Finally, we asked firms if they engage their customers in the process of new product development.

The next factor is concerned with the business environment in which a firm operates. Does competition enhance productivity? In the economic literature, both positive and negative effects from competition on innovation have been found (Cohen et al., 1989). As argued by Aghion et al. (2006), there is an inverse U-relationship between competition and innovation. Increasing competition can either enhance or reduce innovation depending on the initial level of competition.

The last factor in relational and informational capital deals with a firm's suppliers, more precisely, the origin of suppliers. There is an increasing amount of empirical literature that focuses on the effects of imported inputs on productivity. Kasahara and Rodrigue (2008) as well as Halpern et al. (2009) show that imported intermediates improve a firm's productivity. Intermediate imports allow firms to adapt to technology from abroad (especially if they come from developed markets) and thus benefit from foreign research and development. This also allows a firm to focus its resources and specialize in activities where it has particular strengths (Anderson et al., 2008). We asked firms about the origin of their suppliers (local markets, the Republic of Srpska, or developed markets). If more than 50 percent of a firm's suppliers are from developed markets (based on the value of total material costs), then the firm should be more productive.

We analyzed the effect of ITC capital on firm's productivity using four factors. Each factor focuses on the particular determinant of ITC system in the firms. We briefly describe each factor, while sub-questions of each factor are shown in Table 3 and described in the Results section.

The first factor analyzes the share of revenues invested in ITC during 2009. Firms that invest more in ITC should generally be more productive. The second factor investigates the hierarchical level of IT managers in the firm. The higher the position of the IT manager, the more productive the firm should be. With the next factor, we investigate if the firm has a strategic plan for IT development and how this plan is implemented. More active implementation of IT plan should result in higher productivity. The last factor deals with the role of informatics in current activities, business reorganization, or achieving competitive advantage.

6.3. Primary results based on descriptive statistics and contingency tables

Our analysis is based on 54 questionnaires. However, it must be noted that the rate of response differs between questions. Due to trust issues, managers were less inclined to provide answers to quantitative questions.

Table 1 shows the mean value of share of sales by different regions in 2008 and 2009 for the entire sample of firms and for two sub-samples (i.e., more and less productive firms). The mean firm from the Republic of Srpska exports around one-third of its revenues; i.e. two-thirds of its revenues are created from domestic market. In comparison with Slovenia, the mean firm from Republic of Srpska exports much less, since the mean Slovene manufacturing firm exported around two-thirds of revenues in 2009

(Koman et al., 2010) compared to one-third for the mean firm in the Republic of Srpska. Comparing the export orientation between less productive and more productive firms, on average the former created around half of its revenues from exports, which is statistically significantly more than the latter, which on average exports only 22 percent of its revenues. This result is a bit surprising and indicates that exports in less productive firms are mainly due to "loan" deals. In Slovenia and in other developed countries, firms that export more are generally more productive. For example, in Slovenia, most productive manufacturing firms export on average 74 percent of their revenues, less productive firms, only around 62 percent (Koman et al., 2010). Both more and less productive firms in the Republic of Srpska, create most of their export revenues from countries of former Yugoslavia. In 2009, less productive firms obtained on average 22.5 percent of its total revenues from exports to former Yugoslavian countries compared to 16.7 percent of more productive firms. Interestingly, less productive firms export statistically significantly more to EU15 markets (20 percent of its total revenues), compared to only 5 percent for more productive firms). This again suggests that exports to developed markets created by less productive firms are mainly the result of "loan" deals. For example, in Slovenia, more productive manufacturing firms export on average more to EU15 markets than less productive firms (42 percent versus 37 percent, respectively).

Table 1: Mean values of sales between more and less productive firms

	All firms		More productive firms		Less productive firms			
	N	Mean	N	Mean	N	Mean	T-test	P-value
2008								
Republic of Srpska	49	0.644	24	0.779	25	0.515	2.571	0.013*
other countries of former Yugoslavia	50	0.187	25	0.160	25	0.214	0.705	0.484
EU-15	50	0.126	25	0.046	25	0.206	2.237	0.030*
countries of former Soviet Union	50	0.000	25	0.000	25	0.000		
rest of the world	51	0.005	25	0.006	26	0.004	0.283	0.779
2009								
Republic of Srpska	52	0.661	26	0.774	26	0.547	2.302	0.026*
other countries of former Yugoslavia	52	0.196	26	0.167	26	0.225	0.778	0.440
EU-15	52	0.126	26	0.048	26	0.203	2.264	0.028*
countries of former Soviet Union	52	0.000	26	0.000	26	0.000	1.000	0.322
rest of the world	52	0.005	26	0.005	26	0.004	0.233	0.816

Source: own calculations.

* significant at 5 percent.

Table 2 shows the results of the remaining three factors (monitoring customers, business environment and origin of suppliers), which measure relational and informational capital in Republic of Srpska firms. We show the percentage of positive answers for each sub-question in the factor for more and less productive firms.

The factor monitoring customers consists of three sub-questions that measure how closely firms monitor and engage their customers in business decisions. Among the entire sample, 74 percent of firms regularly exchange views and observations on customers, while 85 percent plan changes in their supplies. Fifty-five percent of firms engage their buyers in new product

development. The value of this factor is smaller for the more productive group, although the differences are not statistically significant. A smaller share of the more productive firms (84 percent versus 86 percent) meets with their customers to determine their customers' needs. Also, a smaller proportion of more productive firms engage their customers in new product development (50 percent versus 61 percent). There are many possible explanations. One is that less productive firms offer products that are used by upstream firms. For them, a closer relationship with customers and involvement in product development is quite common. This explanation is consistent with previous observations of export orientations, since on average less productive firms in the Republic of Srpska export significantly more to EU-15.

With respect to all three sub-questions which measure business environment, there are no statistically significant differences between less and more productive firms. In 69 percent of the firms in the sample, the activities of a firm's major competitors had an impact on its business, while 49 percent of firms in the sample respond to aggressive moves of their major competitors. For Slovenian manufacturing firms, this number is substantially higher (activities of major competitors had an impact on the business in 87 percent of Slovenian manufacturing firms, while 57 percent reacts to aggressive moves of their competitors; Koman et al., 2010). Although the business environment for less productive firms is not statistically significantly different from that of more productive firms, a higher share of less productive firms (71 percent versus 66 percent) is affected by the activities of their major competitors. Also, a higher share of less productive firms reacts to strategic moves by competitors (57 percent

versus 40 percent). More productive firms thus operate in a less competitive business environment. This is consistent with previous observations, since more productive firms generate statistically significant more revenue in domestic markets. In Slovenia, the results were reversed: more productive Slovene manufacturing firms operate in a more competitive business environment. Most of their revenues are created in EU-15 markets (Koman et al., 2010).

The last three sub-questions measure the origin of suppliers. In 42 percent of all firms in the sample, more than 50 percent of suppliers (based on the value of total material costs) are from developed markets. This is substantially less than in Slovene manufacturing firms (73 percent). Table 2 shows no statistically significant differences between more and less productive firms in all three sub-questions that measure the origin of suppliers. However, in the less productive group, the share of firms that have more than 50 percent of suppliers (based on the value of total material costs) from developed markets is larger (44 percent versus 39 percent). Again, this is consistent with the hypothesis that less productive firms are engaged in loan operations with EU-15 firms due to lower labor costs.

Table 2: Percentage of positive answers for each sub-question in more and less productive firms regarding relational and informational capital

	All firms		More productive firms		less productive firms		Chi-square	P-value
	N	Share	N	Share	N	Share		
Monitoring customers (Customers)								
People from different functional areas of our company meet regularly to exchange views and observations about our customers.	54	74	26	65	28	82	1.972	0.160
We regularly meet with our customers to determine their needs.	54	85	26	84	28	86	0.013	0.910
Consumer representatives of our products are engaged in the process of developing new products.	54	55	26	50	28	61	0.627	0.429
Business Environment (Competitors)								
The activities of our major competitors have an impact on our business.	55	69	27	66	28	71	0.146	0.702
Our company aggressively responds to the strategic moves of our main competitors.	55	49	27	40	28	57	1.480	0.224
At least one company in our core business has more than 20% market share.	55	60	27	59	28	61	0.012	0.912
Origin of suppliers (Suppliers)								
Most of our suppliers are not local.	55	51	28	46	27	55	0.458	0.498
More than 50% of suppliers (based on the value of total material costs) are not from the Republic of Srpska.	55	49	28	43	27	55	0.887	0.346
More than 50% of suppliers (based on the value of total material costs) are from developed markets.	55	42	28	39	27	44	0.150	0.698

Source: own calculations.

The results in Table 3 indicate the relative position of informatics within the firms tested by different qualitative measures. In our sample, only 68 percent of firms invest at least 1 percent of its revenue in IT. This implies that 32 percent of firms in our sample invest less than 1 percent of its revenues in IT. Also, only 15 percent of firms in our sample invest at least 3 percent of its revenues in IT. These numbers are substantially low compared to more developed countries like Slovenia (Domadenik et al., 2010). Interestingly, less productive firms invest slightly more in IT; however, the differences are not statistically significant. Also, in less productive firms, the IT manager is positioned higher within the company. The position of IT manager is in 50 percent of less productive firms higher than on 4th hierarchical level compared to 15 percent of more productive firms. Also, in 20 percent of less productive firms, the IT manager is a member of the board of directors, while this is true for only 5 percent of more productive firms. Interestingly, in 57 percent of less productive firms, the IT strategic plan is being updated every second year, which is statistically significantly more often than in more productive firms (30 percent). When we asked firms if IT is a source of competitive advantages for the company, 74 percent of the whole sample said yes. We believe that this is not correct, especially if we compare it with the amount of money invested in IT, the position of IT manager and the answers within the IT strategic plan.

Table 3: Percentage of positive answers for each sub-question in more and less productive firms regarding ITC capital

	all firms		more productive firms		less productive firms		Chi-square	P-value
	n	Share	n	Share	N	Share		
Investment in IT								
At least 1% revenue.	51	68	27	63	24	75	0.855	0.355
At least 2% revenue.	51	19	27	18	24	21	0.043	0.835
At least 3% revenue.	51	15	27	15	24	17	0.033	0.856
Position of the IT manager								
IT manager is within the company hierarchical structure ranked higher than on the 4th hierarchical level.	40	32	20	15	20	50	5.584	0.018*
IT manager is within the company hierarchical structure ranked higher than on the 3rd hierarchical level.	40	25	20	15	20	35	2.133	0.144
IT manager is a member of the board of directors (highest management level).	40	12	20	5	20	20	2.057	0.151
The IT strategic plan in the company								
Exists.	44	48	23	43	21	52	0.349	0.555
Is being implemented.	44	59	23	56	21	62	0.132	0.717
Is being updated at least every second year.	44	43	23	30	21	57	3.192	0.074**
The role of IT in the company								
IT is NOT considered as only a supporting business service.	46	72	25	72	21	71	0.002	0.966
IT stimulates business processes reengineering.	46	76	25	68	21	86	1.968	0.161
IT is a source of competitive advantages for the company.	46	74	25	68	21	81	0.993	0.319

Source: own calculations.

* significant at 5 percent, ** significant at 10 percent

6.4. Conclusion

Despite the small number of observations, our results indicate that the level of relational, informational, and ITC capital in Republic of Srpskan firms affects firm productivity. The results show that share of exports to EU-15 have a statistically significant negative effect on productivity. More productive firms export less, and their share of revenues created from EU-

15 markets is smaller. We believe that this can be partly explained by loan operations. Due to low labor costs, firms from EU-15 markets hire firms from the Republic of Srpska to produce basic products in their name. They provide them with the materials and monitor their operations. Additional support for above observations also is found in the sub-questions, which investigate customer monitoring, business environment, and origin of suppliers. However, to support the above hypothesis, we need additional data.

References

Aghion, P., Griffith, R., and Howitt, P. (2006). U-shaped relationship between vertical integration and competition: Theory and evidence. *International Journal of Economic Theory* 2(3-4): 351–363.

Andersson, M., Lööf, H. and Johansson, S. (2008). Productivity and International Trade: Firm Level Evidence from a Small Open Economy. *Review of World Economics/Weltwirtschaftliches Archiv* 144 (4): 774–801.

Barney, J. B., Wright, M., Ketchen, D. J. Jr. (2001). The resource-based view of the firm: ten years after 1991. *Journal of Management* 27(6): 625–641.

Clemons, E. K., and Row, M. C. (1991). Sustaining IT advantage: the role of structural differences. *MIS Quarterly* 15(3): 275–294.

Cohen, W. M., and Levinthal, D. (1989). Innovation and Learning: The Two Faces of R&D. *Economic Journal* 99(397): 569-596.

Domadenik, P., Farčnik, D., and Koman, M. (2010). *Intangible investment in ITC in Slovenian manufacturing firms 2006-2009*. In Prašnikar, J. (ed.): The role of intangible assets in exiting the crisis. Ljubljana: Časnik Finance, 141-148.

Griffith, D. A., Yalcinkaya, G., and Calantone, R. J. (2010). Do marketing capabilities consistently mediate effects of firm intangible capital on performance across institutional environments?« *Journal of World Business* 45(3): 217–227.

Halpern, L., Koren, M., and Szeidl, A. (2009*). Imported Inputs and Productivity*. Center for Firms in the Global Economy (CeFiG) Working Papers No. 8.

Huang, Y., Li, E. Y., and Chen, J. S. (2009). Information synergy as the catalyst between information technology capability and innovativeness: empirical evidence from the financial service sector. *Information Research* 4(3-4): 351–363.

Hunt, S. D. (2000). *A general theory of competition*. Thousand Oaks, CA: Sage.

Kasahara, H., and Rodrigue, J. (2008). Does the use of imported intermediates increase productivity? Plant-level evidence. *Journal of Development Economics* 87(1): 106-118.

Koman, M, Filić, R., Flerin, M., and Jurišević, Ž. (2010). *Relational and informational capital in Slovene manufacturing firms*. In Prašnikar, J. (ed.): The role of intangible assets in exiting the crisis. Ljubljana: Časnik Finance, 187-202.

Powell, T. C., and Dent-Micallef, A. (1997). Information technology as competitive advantage: the role of human, business, and technology resources. *Strategic Management Journal* 18(5): 375 405.

Sampler, J. L. (1998). Redefining industry structure for the information age. *Strategic Management Journal* 19(4): 343–355.

Tippins, M. J., and Ravipreet, S. S. (2003). IT Competency And Firm Performance: Is Organizational Learning A Missing Link? *Strategic Management Journal* 24(8): 745–761.

Wagner, J. (2007). Exports and Productivity: A Survey of the Evidence from Firm-Level Data. *The World Economy* 30 (1): 60–82.

VanArk, B. (2004). *The Measurement of Productivity: What Do the Numbers Mean?*. In Gelauff, G., Klomp, L., Raes, S., and Roelandt. T. (eds.): Fostering Productivity Patterns, Determinants and Policy Implications. Elsevier.

VanArk, B., Inklaar, R., and McGuckin, R. (2002). *Changing Gear: productivity, ICT and services: Europe and the United States*. Groningen Growth and Development Centre, Research Memorandum GD-60.

Polona Domadenik, Tjaša Redek, Goran Radivojac

7. R&D IN THE REPUBLIC OF SRPSKA

7.1. Introduction

Although the nature and purpose of R&D activity can differ, innovation is an important source of economic growth in both developed and developing countries. Innovation represents a major source of intangible capital, which can contribute up to one-third to productivity growth (Corrado et al. 2005). According to Forbes and Wield (2000), successful innovation in developed countries requires defining and reaching the frontier; in developing countries, "the future is already shaped" (Forbes and Wield, 2000, p. 1098). However, this does not lessen the importance of R&D and innovation in developing countries, which focus more on minor or incremental innovation, process innovation, shop-floor innovation, as well as organizational, cultural and managerial innovation. Together, this gradually helps the economy increase its leadership potential (Forbes and Wield, 2000).

Innovation activity in Republic of Srpska is weak: only 29.8 percent of enterprises are innovation-active. The most important obstacles to innovation were according to the opinion of companies the lack of funds and high innovation costs, closely followed by legislative problems (Statistical Office of RS, 2011c).

The goals of this chapter are: (1) to further examine the characteristics of R&D and innovation in the Republic of Srpska in order to understand the survey's results in more detail; (2) to analyze innovation activity as a part of intangible capital and examine innovation activity within that context; and (3) to relate innovation activity with firm results. The study is based on a detailed survey of 58 companies. The research applies new methodology based on the analysis of intangible assets, employing cascading techniques to modified standardized international questionnaires adapted for developing countries.

The structure of the chapter is as follows. First, the theoretical background for innovation and intangible capital is provided, followed by a short overview of innovation activity in the Republic of Srpska. In the third part, methodology is presented, followed by results and conclusion.

7.2. Theoretical introduction to innovation and R&D

The standard measure of macro, industry and firm-level innovation is Research and Development (R&D) activities. R&D generates knowledge that enables firms to develop superior products or to organize more efficient production processes (Ramirez and Hachiya, 2008). Product innovation is defined as the introduction of new or significantly improved goods or services. Process innovation, on the other hand, consists of implementation of a new or significantly improved production process, distribution method, or support activity for goods or services (OECD, 2002). Innovation is based on the results of new technological development, new combinations of existing technologies, or the use of other knowledge by the enterprise (Redek et al., 2010).

Innovative property is a part of intangible capital (Table 1). Intangible capital is an important source of long-run growth and of competitive advantages for firms and countries (Corrado et al., 2005, Fukao et al., 2007, Van Ark et al., 2009, and others). New endogenous growth theory acknowledges the importance of knowledge, human capital and R&D for economic growth of countries, especially developed countries, that helps create new technology and thereby creates competitive advantages for firms and consequently the economy (e.g. Romer, 1990, Aghion and Howitt, 1998). Increased R&D expenditure will lead to increased innovation activity and thus higher economic rent, to the spillover effect of R&D knowledge across the economy and enhanced absorption capacity for acquiring knowledge from the environment (Griffith et al., 2003).

Intangible investment in activities that drive innovation includes R&D, mineral exploration and evaluation, copyright and license costs, development costs in the financial industry, and new architectural and engineering designs (Corrado et al. 2005). Innovation that is achieved by investment in intangibles is a major change-driver, as innovation primarily stimulates productivity (Griffith et al., 2003).

Table 1: Intangible assets classification

Type of intangible asset	Further classification
Computerized information	Software
	Databases
Innovative property	R&D, including social sciences and humanities
	Mineral exploration and evaluation
	Copyright and license cost
	Development costs in financial industry
	New architectural and engineering designs
Economic competencies	Brand equity (advertising expenditure, market research)
	Firm specific human capital (continuing vocational training, apprentice training)
	Organizational structure (purchased, own account)

Source: Corrado et al., 2005.

The survey methodology developed by the research group uses this definition of intangible assets to identify the core elements. Each component is carefully examined, including R&D. And methodology is adapted in such a manner to incorporate the characteristics of intangible capital in a developing (transition) economy.

7.3. Innovation in the Republic of Srpska: An overview

In 2010, gross domestic expenditure on R&D in the Republic of Srpska was close to 21 million KM, which represents roughly 0.25 percent of the GDP. Investment expenditure in R&D was 3.8 million KM and 11 million were labour costs related to R&D (Statistical office of RS, 2011a). The majority of all funds (38.4 percent) were spent in the engineering and technology field (Statistical institute of RS, 2011b).

The difference was used for higher education (48 percent), business (41 percent), industrial development (23.4 percent agriculture, forestry and fishery (22.5 percent) and social development and services (18.8 percent). There were 49 R&D units in the Republic of Srpska in 2010, 28 of which were part of the higher education, four in government, and one in the non-profit sector. In total, 1053 employees were either full-time or part-time employees in R&D in 2010 (791.8 FTE); 43.1 percent were women. The majority of employees were researchers (64.8 percent), followed by technicians (19 percent), research associates (9.6 percent) and other supporting personnel (3.8 percent) and management (2.8 percent). Researchers were employed primarily in the higher education (almost 83 percent), followed by business (11.3 percent) and government (5.9 percent).

The majority of researchers (37.2 percent) were from the engineering and technology field (Statistical Office of RS, 2011b).

The Statistical Institute conducted a survey of innovation activity among enterprises in the Republic of Srpska for 2006 to 2008 and 2008 to 2010. The results of the last biannual survey show that only 29.8 percent of companies were active in innovation. Size is an important determinant of innovation, since 60.6 percent were large companies. The companies that did invest in R&D and innovation primarily purchased machines, equipment and software (75.7 percent), while some enterprises used external R&D services (29.2 percent) (Statistical Office of RS, 2011c). Companies were also asked to list the most important obstacles to innovation. Lack of funds was the most common cause, listed as very important by 38.5 percent of firms, followed by high innovation cost (35.9 percent) and legislative obstacles (32.5 percent).

The analysis of innovation and R&D in this chapter focuses on the nature of R&D, the causes and consequences of R&D on a firm level and the linking between R&D and productivity.

7.4. Methodology

The analysis of R&D in the Republic of Srpska is based on methodology developed by the team for the study of intangible capital (for details see Prašnikar et al., 2011). This method was carried out across the Balkan region to determine the characteristics of intangible investment, which also comprises R&D, in the region. In the following sections, the methodology is first described, followed by a description of the sample.

7.4.1. Description of the questionnaire

Based on previous experiences with collecting data on firm behaviour, we carefully selected a few questions to measure R&D and innovation activity within the firm. Our questionnaire consisted of ten question sets. Eight of them contained statements to which managers responded with either "yes" or "no" answers or appointed relevance on a scale of 1 to 5. Each question set covered one field of interest. A combination of closed questions directed respondents to a systematic way of thinking about the actual situation in his/her own organization. Such an approach is very important in developing countries, as managers are bombarded with too many divergent issues (Prašnikar et al., 2011).

The first question set involved sales distribution, as firms oriented to the domestic market behave differently than firms selling mostly in foreign markets. The next set of questions concerned the introduction of new products. Respondents evaluated whether they were as successful or more successful as their competitors or among the industry leaders. In order to capture the innovation activity in absolute terms, we asked firm managers whether they invest 1 percent or more of total revenues in R&D, 2 percent or more, or 3 percent or more.

The following two sets of questions addressed the issues of product and process innovation in order to disentangle radical and incremental innovations. Question 6 concerned the position of the R&D department within the firm's organisational structure, starting with its existence, followed by examining its ability to support problem solving, build absorptive capacity and create independent industrial designs. Questions 7, 8 and 9 inquired about assessing technological, marketing and complementary

competencies with respect to competitors, while the last question asked for sources of information (internal, market and institutional). Among other sources, firms could choose among conferences and fairs, scientific or commercial publications, and professional chambers. The respondents were asked to assess the importance of each potential source of information.

7.4.2. Description of the sample

After testing the questionnaire on a few firms, we selected 58 companies of different size, ownership structure and industries which we believe make a good representation of the Republic of Srpska economy. We asked the CEO of each company for collaboration and sent them the questionnaire. In 2011 analyzed firms generated 8.74 percent of total income and employed 5.39 percent of all employees among the firms registered in The Republic of Srpska. The majority of companies (25.4) operate in manufacturing, followed by trade (20.3), and services (13.9 percent). If only mining, energy, manufacturing, construction, trade and other services are considered (industries from which firms under survey were selected), the sampled firms generated 20.9 percent of the total income in these industries.

7.5. R&D in the Republic of Srpska

The analysis of innovation activity as part of intangible capital in the Republic of Srpska focused on the following aspects: product and process innovation, characteristics of R&D in the company, company competences and capabilities. We first provide a general overview, followed by sub-sample characteristics.

7.5.1. Descriptive statistics

Researchers (e.g. Arnold and Thuriaux, 1997) show that innovation drive depends largely on the characteristics of the competition the company faces; the fiercer the competition, the more likely is the firm to innovate in order to remain its competitive edge. Therefore, our initial focus was the company's target market.

Table 2: Target market

Target market	Please, mark in which of the following markets did your company sell products/services in 2009? (percent of companies)	Average sales in a specific market (percent of total sales)
Local/regional market in RS	89.8	63.8
National market	50.8	14.7
Other European markets (excluding countries of Western Balkan)	33.9	11.8
Western Balkan markets	27.1	5.8
Other markets	15.3	1.7

Source: own calculations.

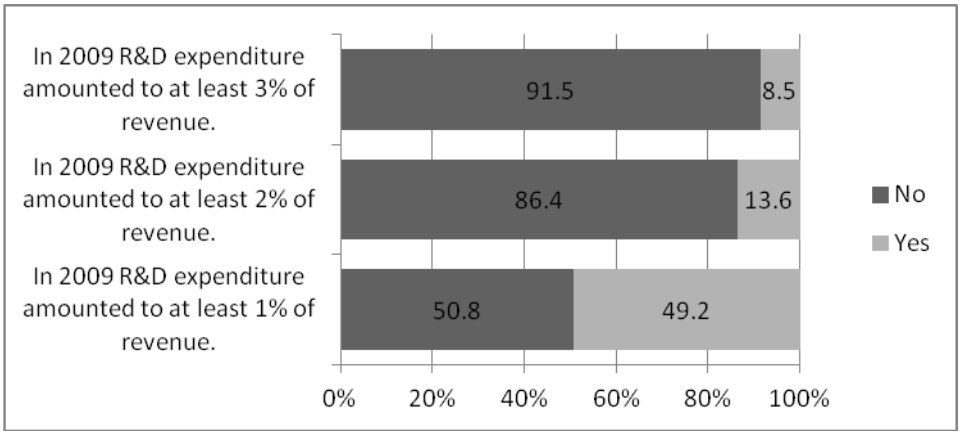
On average the companies were active in the following markets: domestic market, national market, European markets, Western Balkan markets, and other markets (Table 2). Of the companies analyzed, 10 percent of companies do not sell any products or services in the domestic market, while more than one-third sell products and services in European markets that do not include Western European countries; fewer firms (27 percent), in Western Balkan markets. Moreover, 72.4 percent of all firms in the sample list the domestic market as most important for their products and services, while almost 14 percent list European markets. On average, firms that sell in local markets generate 64 percent of the total revenues in those markets. Firms operating in European markets, on the other hand, generate 12 percent of the total revenues in these markets. Firms in the service sector

on average generate 71.8 percent of their revenues in the local market and slightly less than 9 percent in European markets. Only 2 of 22 firms operating in the service sector note European markets as the most important.

In continuing, the research was focused on the "relevant market", which refers to the largest, most important market for the firm. The companies were asked to evaluate their position compared with others in their relevant market. For the majority, this is the local and domestic market.

As mentioned, the characteristics of the competition are one of the most important innovation drivers. For the analyzed companies, competition is largely determined by the characteristics of domestic (even local) competition. We asked the firm how their innovative success compares to the performance of other firms. The main characteristics of the activities driving innovation in the companies analyzed are summarized in continuing. Half of the companies in our sample report that they spent more than 1 percent of total revenue on R&D investment, while only 8 percent of sampled firms spent more than 3 percent (Figure 1). Interestingly more companies in service sector spent more than 1 percent and more than 3 percent of total revenue on R&D investment compared to the average for the sampled firms.

Figure 1: R&D expenditure as percentage of total revenues



Source: own calculations.

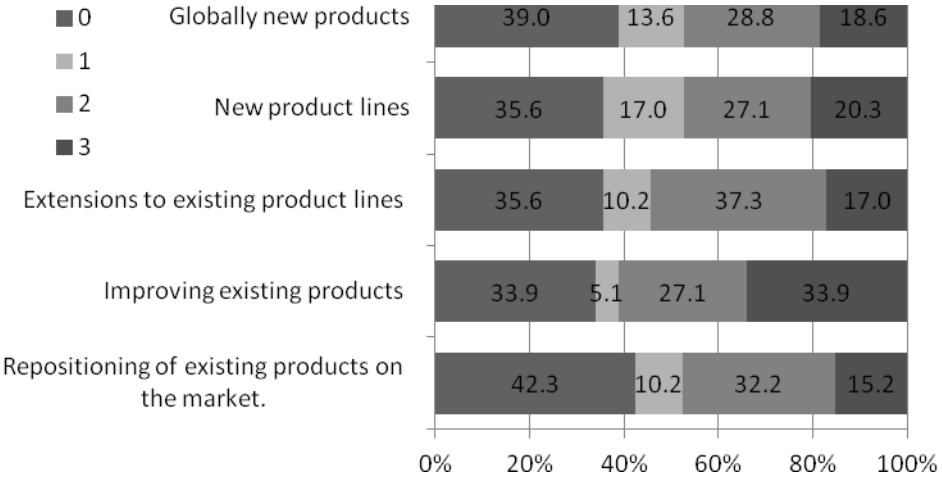
The results show that over 73 percent of companies feel that they were at least as successful in their innovation as competitors; almost 40 percent, more successful. Additionally, 25 percent of companies believe to have been one of the leaders in introducing new products in the past five years (Table 3). Combining these results with sales proportions in different market, one might say that relevant competition for analyzed companies is in the domestic market.

Table 3: Introducing new products: Comparison with competitors

Introducing new products and competitors	NO	YES
We were as successful as our competitors on average in introducing new products in last five years.	27.1	72.9
We were more successful than our competitors on average in introducing new products in last five years.	61.0	39.0
We were one of the leading companies in the industry in introducing new product in last five years.	74.6	25.4

Source: own calculations.

Figure 2: Types of innovation in sampled firms



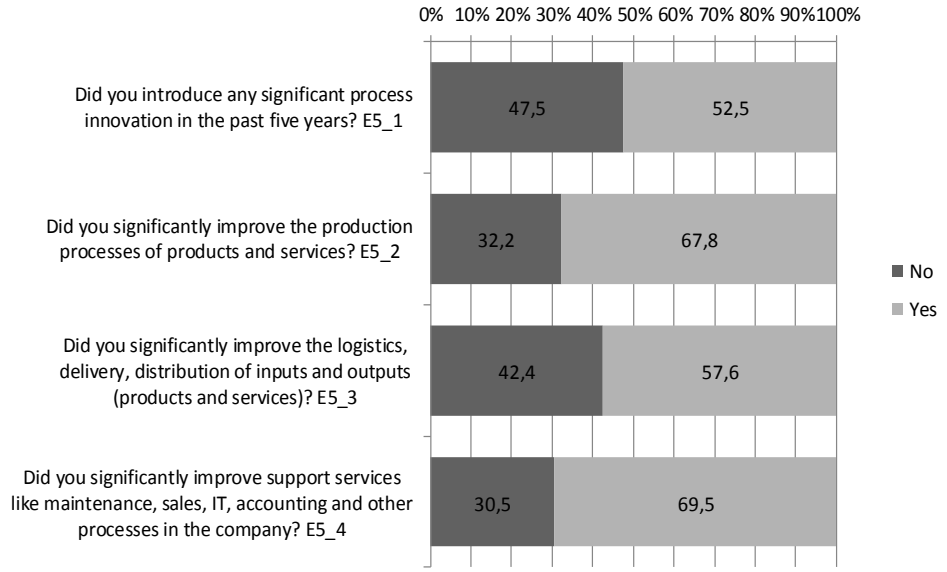
Answers on a scale 0-3: 0 denotes 'not used', while 1-3 denote low (1), medium (2) and (3) high relevance.
Source: own calculations.

There are several different types of innovation, from repositioning to globally introducing new products (Figure 2). The latter is very important for more than half of responding companies, which indicates ambition. The two most important types of innovation are improving existing products and extension of existing product lines, with 61percent of companies feeling that the former is important or very important.

If we compare firms in the service sector with the firm average, we can observe an interesting finding. Firms in the service sector believe that the most important type of innovation represents implementation of existing products. Compared to the average sampled firm or average firm operating in European markets, firms in the service sector find all types of innovation to be more relevant. Globally introducing new products is of medium or high relevance for half of firms operating in the service industry. This might

signal the strategic behavior of firms from the Republic of Srpska in developed markets. If a firm operates in the domestic market, it innovates more, as there is higher probability that this investment will pay off. This is partly related to the threshold level of necessary R&D investment, which is lower in the domestic market (especially compared to the funds necessary to improve marketing capabilities).

Figure 3: Characteristics of process innovation (in percentage)



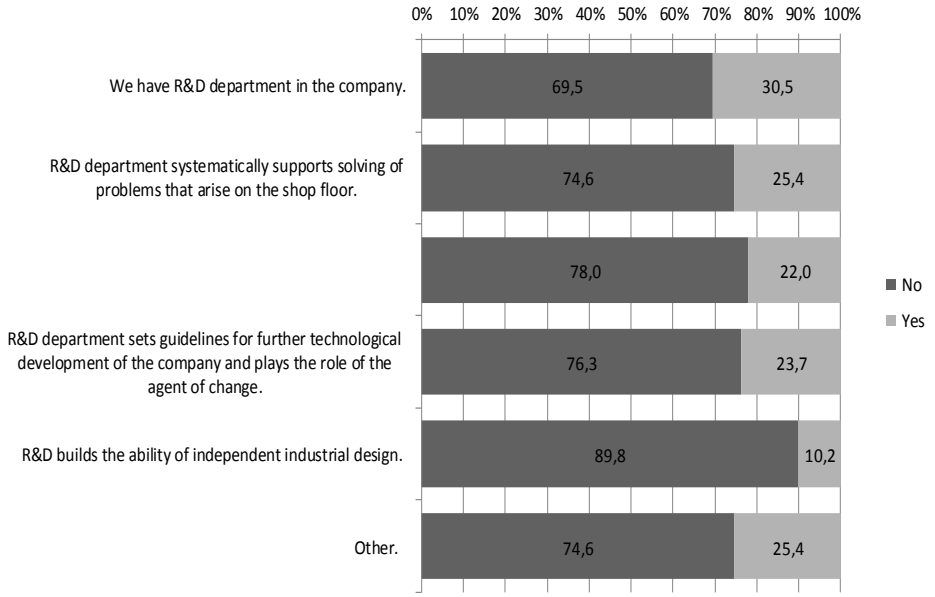
Source: own calculations.

Companies in Republika Srpska were very active over the past five years in improving their processes (Figure 3). More than 50 percent of companies report to have significantly improved their processes. The majority of companies improved support services (69.5 percent), followed closely by production improvements (67.8 percent). Logistics, delivery and distribution

fell slightly behind, but almost 60 percent of companies made improvements in these processes, too.

Close to one-third of companies have their own R&D departments, although the roles of the R&D departments in those companies differ (Figure 4). In 25 percent of companies, these RD departments systematically support problem solving. In nearly 22 percent of cases, the departments build absorption capacity (collecting technological information, storing and spreading information). In almost 24 percent of companies, the R&D departments also set guidelines for technological development and are key agents of change. In 10 percent of companies, these departments have the ability to design in-house processes.

Figure 4: Organization of R&D department*



Source: own calculations.

Companies can get information and ideas for innovation from many different sources (Table 4). These can be divided into internal sources (e.g. suggestions from employees, the company's own research activities, etc.) and external (market, institutional, and other sources). The results show that ideas and information for innovative activities comes from both internal and external sources, including strategic partnerships. Almost 60 percent of companies report that suppliers, clients, and external sources of knowledge contribute to their innovation.

Table 4: Sources of innovation ideas

Please mark the relevant sources of information, and evaluate their importance		Not used	Low	Medium	High
		0	1	2	3
Internal sources	Inside the company	0	0	55.9	42.4
Market sources	Suppliers of equipment	3.4	5.1	52.5	39.0
	Suppliers of materials, components and programme equipment	0	3.4	54.2	42.4
	Buyers	1.7	10.2	39.0	49.1
	Competitors and other companies in the field *	5.1	22.0	45.8	27.1
	Consultants, private research or R&D facilities *	33.0	25.4	25.4	15.2
Institutional sources	Universities or other higher education institutions	32.2	28.8	23.7	15,2
	Government or public research institutions	28.8	27.1	22.0	22.0
Other	Conferences, market fairs, exhibits	8.5	11.9	40.7	39.0
	Scientific, commercial and technical journals	11.9	15.2	54.2	18.6
	Industrial associations and chambers	13.6	27.1	33.9	25.4

Source: own calculations.

Innovation also depends largely on firm competence. Grant (1991) defines competencies as the ability to utilize resources that spread across multiple

functions, products and markets in a sustainable and synchronized manner. They are broader and not strictly industry specific. Competencies are also defined as a set of related abilities, commitments, knowledge, and skills that enable a person or an organization to act effectively in a job or situation (BusinessDictionary.com). In other words, one may have the general knowledge to do something but cannot necessarily perform the task (i.e., merge the information together correctly); capability means that one actually can perform a specific thing. Capabilities are part of competencies. Grant (1991) defines capabilities as repeatable patterns of actions in the use of assets to create, produce and/or offer products to a market. Simplified, competencies mean that one possesses the knowledge, while capabilities mean that the knowledge can be actually put together and used to create something. The surveyed companies were asked to evaluate their technological, marketing and complementary competences. On average, the companies seem to be most confident of their marketing competencies, followed by complementary competencies. Technological competencies are their weakness.

Table 5: Firm competencies

7	**Technological competencies**	1	2	3	4	5
1	Research and development in the firm is advanced.	30.5	27.1	27.1	11.8	3.4
2	The number of available technological capabilities inside the firm or through strategic partnership is quite large.	23.7	27.1	25.4	18.6	5.1
3	We are good at predicting technological trends.	18.6	23.7	39.0	13.6	5.1
8	**Marketing competencies**	1	2	3	4	5
1	Obtaining information about changes in customer preferences and needs	13.6	23.7	32.2	22.0	8.5
2	Acquiring real-time information about competitors	17.0	17.0	37.3	20.3	8.5
3	Establishing and managing long-term customer relations	11.9	10.2	22.0	25.4	30.5
4	Establishing and managing long-term relations with suppliers	10.2	11.9	27.1	22.0	28.8
9	**Complementary competencies**	1	2	3	4	5
1	Activities of the business units are clearly defined in the corporate strategy of our firm.	11.9	16.9	35.6	25.4	10.2
2	Good transfer of technological and marketing knowledge among businesses units.	16.9	15.2	39.0	20.3	8.5
3	The intensity, quality and extent of research and development knowledge transfer in cooperation with strategic partners	20.3	22.0	37.3	13.6	6.8
4	Product development is cost-efficient	16.7	23.8	30.5	16.7	11.9

Source: own calculations.

Comparing different aspects of technological competencies, we can see that about three-quarters of the analyzed companies admit that their technological competencies are on par with or lower than that of their competitors (Table 5). Approximately one-fourth of companies (27 percent) rank themselves on par with competitors when comparing R&D knowledge, while 15 percent believe that they are better than their competition. Furthermore, 23 percent of companies believe they are better than their competitors in possessing technological capabilities within the firm or within strategic alliances. Almost half of the companies (42 percent) contribute less than their competitors to setting new technological trends in the market,

while 39 percent believe that their contribution is similar to that of competitors. Regarding marketing or complementary competencies, companies are slightly more confident. Around 60 percent believe to be at least as complementary competent as the average company in the industry; at least 20 percent believe they have better complementary capabilities. Similar results hold for marketing capabilities: 30 percent or more firms believe they are more competent in marketing compared to competitors. At least 65 percent believe they are at least as competent in marketing. Firms are most confident in their abilities to establish and maintain long-term run relationships customers and suppliers, as 78 percent believe they this as well or better than competitors. The companies are less confident, on average, about obtaining information on consumer preferences. These results are understandable in the context of benchmarking. Most likely, companies lack understanding of term marketing as a basic business activity in a market economy.

7.5.2. Subsample characteristics

Innovation characteristics differ based on firm size, export orientation, firm position in the value chain, and intensity of market competition (Redek et al., 2010). The sample of 58 firms can be broken down by legal type, sector, size, and export orientation and the impact of the crisis.

First, the success of introducing new products compared with the competition was examined across different groups. The results indicate that companies that operate in the final market are more successful in introducing new products (significance 0.112). Legal type, sector, size and export orientation do not have a significant (or close to significant) impact on the introduction of new products.

Export orientation is related to R&D expenditure. Results show that companies operating only in the domestic market or exporting only a small share of production (25 percent or less) spend less on R&D than those that export more (significance 0.057). On average, 35 of these firms spend less than 2 percent of revenue on R&D (17 spend less than 1 percent). There is also a weak indication (significance 0.156) that the companies that were less hit with the crisis[7] invested less in R&D. The 27 companies that strongly disagreed with being hit hard by the crisis (answered 1 or 2) invested less that 1 percent of revenue in R&D (12 companies) or less than 2 percent (15 companies). Other elements did not have a significant relationship with R&D expenditure.

Interestingly, process innovation could not be linked significantly to any of the sample dividing variables. This can be explained by the fact that process innovation was implemented in the majority of surveyed companies (close to 70 percent).

Results also show that trade has a relationship with R&D intensity: those more involved in trade are more likely to have an R&D department (0.057). Similarly, firm size affects the likelihood of an independent R&D department (0.067). R&D department was also linked with firm success in handling the crisis. Namely, companies with an R&D department were less affected by the crisis (0.073). This could indicate that these companies have a stronger market position; consequently, the crisis was not as damaging.

Questions regarding technological, marketing and complementary competencies revealed some interesting results. Companies that trade more,

[7] Companies were asked to evaluate their agreement with the following statement on a scale of 1 (strongly disagree) to 6 (strongly agree): 'The crisis in 2008/09 had an important impact on our business (hit the business hard).'.

claim that R&D in the firm is more advanced than those firms in which trade is less important (0.056). Company size can be significantly linked to technological capabilities: small firms are much less confident in the number of available technological competencies in the firm (0.010). Manufacturing companies are less confident in their ability to predict technological trends compared to service companies (0.064). In addition, less export-oriented companies seem to be less confident in their ability to predict technological trends compared to service companies (0.092).

Marketing competencies also reveal some interesting patterns. Smaller companies are significantly less confident in their ability to obtain information about changes in customer preferences and needs (0.023). They are also less confident in their ability to establish and manage long-term relationships with suppliers (0.126). Trade is also related with marketing competencies. Less export-oriented companies are not as confident in their ability to acquire real-time information about competitors as export-oriented firms (25 percent or more of revenue, 0.016). Manufacturing companies evaluated their ability to establish and manage long-term relationships with customers higher as service companies (0.114).

In terms of complementary competencies, trade again seems to be an important determinant. Companies less involved in trade evaluated their ability to transfer technological and marketing knowledge between business units as lower than those with higher export share (25 percent or more, 0.086). Size is also related to this problem, as smaller firms are less confident (0.110). Moreover, companies that trade less are also less confident in the intensity, quality and extension of R&D knowledge transfer in cooperation with strategic partners (0.182).

Although, the statistical significance was not as high as desired in many cases, the results are nonetheless logical. First, it seems that trade is an important determinant of R&D, with companies more involved in trade reporting higher R&D expenditure, more likely to have an R&D department, and more confident in some competencies. Furthermore, size was also expected to be linked with R&D and innovation intensity, and the sample results indicate that larger firms are more likely to have an R&D department and to be more confident in some competencies.

7.6. R&D and company performance

Theory suggests that R&D and innovation are important for growth in productivity as well as value added (e.g. Grant, 2001, Arnold and Thuriaux, 1997 and others). Therefore, it is reasonable to expect that companies that were more productive were also more R&D-intense.

In order to investigate innovation activity in terms of firm-level characteristics, we split the complete sample of firms into two subsamples according to median level of productivity in 2009. Half of the firms were selected as more productive and the other half as less productive. We examine innovation and R&D characteristics in both groups in order to examine the links with productivity.

Table 6: Target market in subsamples of more and less productive firms

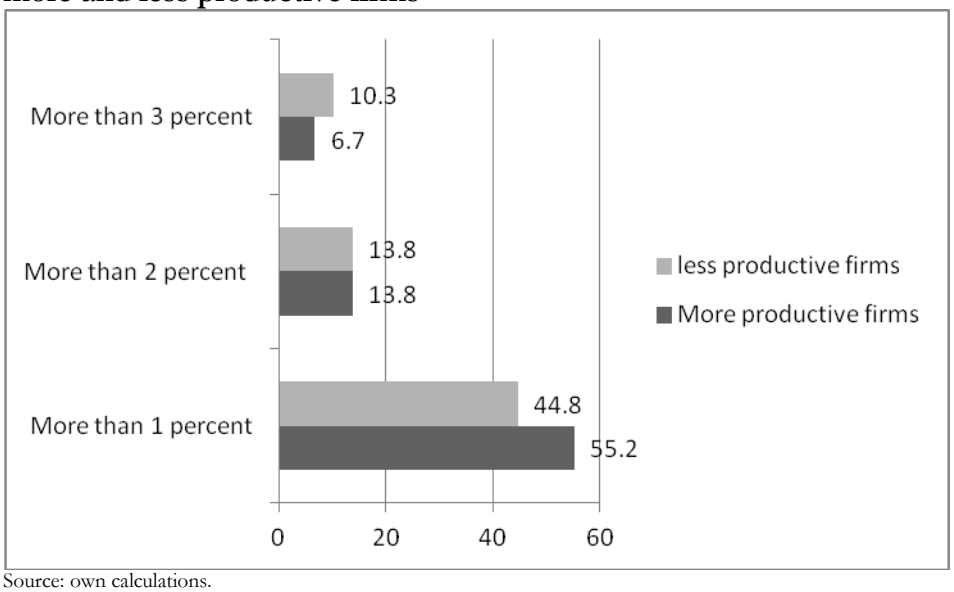
Target market	MORE PRODUCTIVE FIRMS		LESS PRODUCTIVE FIRMS	
	Please, mark in which of the following markets did your company sell products/services in 2009? (percent of companies)	Average sales (percent of total sales)	Please, mark in which of the following markets did your company sell products/services in 2009? (percent of companies)	Average sales (percent of total sales)
Local/regional market in the Republic of Srpska	93.1	72.0	86.2	54.8
National market	48.3	14.3	51.7	12.3
Other European markets (excluding countries of Western Balkan)	20.7	3.1	48.3	20.7
Western Balkan markets	24.1	5.4	31.0	6.3
Other markets	17.2	1.7	13.8	1.7

Source: own calculations.

If we observe target markets in both subsamples, we can conclude that more successful firms mostly operate in local/regional markets where they earned 72 percent of the total sales on average (Table 6). Obviously, economic rents are highest in the local market. This is also confirmed by comparing the two groups: those that trade less have larger productivity, a result that is highly statistically significant (0.01). Less productive firms are more likely to be exporting firms that earned almost one-fifth of total sales in demanding European markets. They are price takers competing in terms of decreasing costs rather than higher value for customers. More than 60 percent of more productive firms did not export any goods or services in 2009. This result is interesting in light of the fact that trade is positively related to R&D. It seems that companies are motivated by foreign competition to invest in

R&D but are not advanced enough to create larger value added than in domestic markets. This should not be considered as a foul strategy but rather as an investment in future growth.

Figure 4: Expenses on R&D as the percentage of total revenues in more and less productive firms



Source: own calculations.

Comparing expenses for R&D in more and less productive firms, more than half of the more productive firms spent at least 1 percent of total revenues on R&D in 2009 compared to more than 44 percent of less productive firms (Figure 4). However, 10 percent of less productive firms spent more than 3 percent of total income on R&D compared to only 7 percent of more productive firms. The division of firms by mean productivity in both 2009 and 2010 reveals that more productive invested more (significance is 0.091 for 2009 and 0.086 for 2010).

Table 7: Introducing new products: comparison with competitors (percent)

Introducing new products and competitors	More productive firms	Less productive firms
We were as successful as our competitors were on average in introducing new products in last five years.	69.0	75.9
We were more successful than our competitors were on average in introducing new products in last five years.	34.5	41.4
We were one of the leading companies in the industry in introducing new product in last five years.	20.7	31.0

Source: own calculations.

There are significant differences among more and less productive firms if we compare them according to their position to competitors (Table 7). Interestingly, three-quarters of less productive firms believe that they were as successful as their competitors in introducing new products to the market over last five years, while almost one-third of less successful firms believe that they were one of the leading companies in the industry. This confirms our results from the previous sections; i.e., less productive firms generate a higher percentage of revenue in foreign markets facing sharp competition. In order to survive in such an environment, firms should focus on improving their existing products and processes. This is again confirmed when we compare technological, marketing and complementary competencies.

Table 8: Firm competencies in more and less productive firms

		Productivity group	Mean	Std. Deviation	Sig.
Technological competences	Research and development in the firm is advanced.	Less	2,45	1,183	,304
		More	2,14	1,093	
	Number of available technological capabilities inside the firm or through strategic partnership is quite large.	Less	2,72	1,222	,233
		More	2,34	1,173	
	We are good at predicting technological trends.	Less	2,66	1,078	,722
		More	2,55	1,121	
Marketing competences	Obtaining information about changes of customer preferences and needs	Less	2,76	1,091	,502
		More	2,97	1,239	
	Acquiring real time information about competitors.	Less	2,69	1,072	,274
		More	3,03	1,295	
	Establishing and managing long-term customer relations.	Less	3,62	1,178	,565
		More	3,41	1,524	
	Establishing and managing long-term relations with suppliers.	Less	3,62	1,237	,429
		More	3,34	1,396	
Complementary competences	Activities of the business units are clearly defined in the corporate strategy of our firm.	Less	2,86	1,060	,217
		More	3,24	1,244	
	Good transfer of technological and marketing knowledge among businesses units.	Less	2,86	1,187	1,000
		More	2,86	1,187	
	The intensity, quality and extent of research and development knowledge transfer in co-operation with strategic partners.	Less	2,69	1,137	,739
		More	2,59	1,211	
	Product development is cost efficient.	Less	2,97	1,322	,409
		More	2,69	1,198	

Source: own calculations.

We also analyzed the differences in competencies among less and more productive firms (Table 8). Although the results are not significant, companies that are less productive report more confidence in their R&D and ability to predict trends as well as a greater number of available technological capabilities. Such behaviour would be expected from those more involved in trade and consequently global trends. These companies are also more confident in their ability to establish and manage long-term relationships (marketing competencies) and are more cost-efficient. Although all these results are insignificant, a larger and more diversified

sample would likely confirm them. Manufacturing firms operating in global markets innovate more and therefore have higher technological competencies. Involvement in international production chains also leads to long-term relationships. Given they are low on the value chain and competition is fierce, their productivity is lower. From the long-term perspective, this is an investment in the future.

7.7. R&D and company performance: Three clusters analysis

In order to investigate innovation activity by firm-level characteristics, we split the complete sample of firms into three subsamples: unionized firms, non-unionized manufacturing firms, and non-unionized service firms. Prašnikar and Voje (2012) summarize these characteristics as follows:

1. Unionized firms (first group) comprise larger companies, primarily manufacturing with higher export share. This group includes important firms for the Republic of Srpska: firms from the energy sector, food processing coal mining companies, metal production and others.
2. Smaller, non-unionized firms can be further divided into:
    a. Manufacturing firms of limited liability in primarily private ownership (second group). These are the least productive firms.
    b. Service sector companies (75 percent), with above-average productivity (higher than in the median firm in 77 percent of cases) (third group).

We examine innovation and R&D characteristics in the three groups in order to examine the links with productivity. First, we provide an overview of the relationship between the groups and the importance of trade (Table 9). The trade variable was created based on a cascading question analyzing whether the share of trade is larger than 0, 25 and 50 percent, assigning values 1 for 0, 2 for more than 0, 3 for over 25 and 4 for over 50 percent.

Table 9: Trade and group formation

			groups			
			1	2	3	Total
trade	1,00	Count	11	8	8	27
		percent within trade	40,7	29,6	29,6	100,0
		percent within groups	45,8	44,4	50,0	46,6
		percent of Total	19,0	13,8	13,8	46,6
	2,00	Count	3	3	5	11
		percent within trade	27,3	27,3	45,5	100,0
		percent within groups	12,5	16,7	31,3	19,0
		percent of Total	5,2	5,2	8,6	19,0
	3,00	Count	5	3	1	9
		percent within trade	55,6	33,3	11,1	100,0
		percent within groups	20,8	16,7	6,3	15,5
		percent of Total	8,6	5,2	1,7	15,5
	4,00	Count	5	4	2	11
		percent within trade	45,5	36,4	18,2	100,0
		percent within groups	20,8	22,2	12,5	19,0
		percent of Total	8,6	6,9	3,4	19,0
Total		Count	24	18	16	58
		percent within trade	41,4	31,0	27,6	100,0
		percent within groups	100,0	100,0	100,0	100,0
		percent of Total	41,4	31,0	27,6	100,0

Source: own calculations.

The results show that of the firms that trade most (over 50 percent), the majority are in the first group. The services group trades least, which is expected given the nature of service activity. This pattern is evident comparing companies where trade represents over 25 percent of sales. Interestingly, the first group is also the group of companies that basically do

not trade. However, this group comprises electric companies; consequently, such a result is expected.

Table 10: Introduction of new products by groups

	Group 1	**Group 2**	**Group 3**
We were NOT as successful as our competitors were on average in introducing new products in last five years.	16.7	11.1	18.8
We were as successful as our competitors were on average in introducing new products in last five years.	33.3	38.9	43.8
We were more successful than our competitors were on average in introducing new products in last five years.	12.5	33.3	6.3
We were one of the leading companies in the industry in introducing new product in last five years.	37.5	16.7	31.3

Source: own calculations.

We now examine some basic R&D characteristics based on this three-group division (Table 10). The results show that the first group of companies is the leading group in terms of their success in introducing new products. Moreover, 37.5 percent feel that they were one of the leaders in the industry in introducing new products. The services group is not far behind with 31.3 percent of companies having the same opinion. However, the differences among the groups are not significant. This result can be attributed in part to the sub-sample sizes. Also, the result reflects the fact that in all cases, one-third of companies was only on par with competition in terms of introduction of new products.

Table 11: R&D expenditure by group

	Group 1	Group 2	Group 3
In 2009, R&D expenditure was less than 1 percent of revenue.	41.7	50.0	31.3
In 2009, R&D expenditure was at least 1 percent of revenue.	33.3	44.4	43.8
In 2009, R&D expenditure was at least 2 percent of revenue.	20.8	5.6	12.5
In 2009, R&D expenditure was at least 3 percent of revenue.	4.2	.0	12.5

Source: own calculations.

The results show that on average, the number of firms that invest more in R&D is larger in Groups 1 and 3 (Table 11). In Group 1, 25 percent of firms invested at least 2 percent of revenue, some even more than 3 percent. The same percentage of Group 3 invested at least 2 percent of revenue. Only 5.6 percent of firms in Group 2 invested at least 2 percent. Given the low number of firms in the subgroups, broken further down answer categories, the results are not statistically significantly different among groups, although the difference between Groups 1 and 2 is close to significant at 0.092. Again, manufacturing and services firms stand out in a positive manner.

In terms of process innovation (Table 12), Groups 1 and 3 stand out, although Group 2 also made improvements; on average, over 50 percent of companies in this group report improvements.

Table 12: Process innovation by group

	Group 1	Group 2	Group 3
Did you introduce any significant process innovation in the past five years?	54,2	44,4	37,5
Did you significantly improve the production processes of products and services?	66,7	55,6	62,5
Did you significantly improve the logistics, delivery, distribution of inputs and outputs (products and services)?	50,0	55,6	62,5
Did you significantly improve support services like maintenance, sales, IT, accounting and other processes in the company?	62,5	55,6	75,0

Source: own calculations.

Lastly we evalute company competencies. On average, Group 3, consisting most of service companies, feels most confident in their competencies; Group 1 is close behind, while Group 2 is less confident. This is also confirmed by statistical analysis. The differences between Groups 2 and 3 are also statistically significant in predicting technological trends (technological competencies), obtaining information about customer

preferences and needs (marketing compentencies) and defining activities of business units and knowledge transfer between units (complementary compentencies, in the knowledge transfer case p=0.060). Comparison between Groups 1 and 2 show that the latter are statistically worse in defining activities of business units, while the significance of knowledge transfer between units is 0.149.

Table 13: Competencies across groups

		Group 1	Group 2	Group 3
Technological competencies	Research and development in the firm is advanced. E7_1	2,57	2,78	2,56
	The number of available technological capabilities inside the firm or through strategic partnership is quite large. E7_2	2,85	3,00	3,00
	We are good at predicting technological trends. E7_3	2,85	2,56	3,60
Marketing competencies	Obtaining information about changes of customer preferences and needs	3,29	2,70	3,69
	Acquiring real-time information about competitors.	3,21	3,10	3,71
	Establishing and managing long-term customer relations.	4,07	3,45	4,14
	Establishing and managing long-term relations with suppliers.	3,93	3,45	3,92
Complementary competencies	Activities of the business units are clearly defined in the corporate strategy of our firm.	3,60	2,60	3,91
	Good transfer of technological and marketing knowledge among businesses units.	3,40	2,70	3,70
	The intensity, quality and extent of research and development knowledge transfer in cooperation with strategic partners.	2,67	2,40	3,10
	Product development is cost efficient.	3,00	3,18	3,44

Source: own calculations.

Given the variability of the first group, we further split the group of large unionized companies according to their inclination toward international trade. In total, Group 1 consisted of 24 companies, 11 of which reported no trade activity; 10 (5 and 5) exported more than 25 percent or more than 50

percent of sales, respectively. The other 3 companies in the group were between 0 and 25 percent.

Table 14: Division of Group 1 companies by their intensity of exports*

trade			Introducing new products	R&D expenditure	Process innovation
0 percent	N	Valid	11	11	7
		Missing	0	0	4
	Mean		3.0909	2.0909	2.7143
< 25 percent	N	Valid	3	3	1
		Missing	0	0	2
	Mean		1.6667	1.6667	4.0000
25 to <50 percent	N	Valid	5	5	5
		Missing	0	0	0
	Mean		3.2000	2.4000	3.6000
>50 percent	N	Valid	5	5	4
		Missing	0	0	1
	Mean		2.0000	1.0000	3.2500

* Introducing new products refers to the comparative success of the company with competition in the relevant market. It is a cascade question, scaled 1-4. Question on R&D expenditure examined whether companies spent at least 1, 2, 3 percent of revenue for R&D, it was formed as a cascade question on a scale 1-4. Question on process innovation had 4 subquestions on types of process innovation, it was not a cascading question; companies were evaluated on a scale 0-4 (0 for no process innovation, 4 for implementing all types).
Source: own calculations.

Companies that trade less (0 percent) are more successful in introducing new products but invest less in R&D and are less prone to process innovation. Also, 40 percent of companies with no trade have an R&D department compared with 50 percent of those with more exports (25 percent). The results are in line with the productivity group analysis. Companies that are more inclined to trade also invest more in R&D, although they are less productive (probably due to low profit margins in international markets). Unfortunately, if group results are tested for significant differences, they are insignificant (probably due to sample size).

Overall, the results clearly indicate that out of the three groups the second group of companies, consisting of smaller manufacturing firms in private ownership, is handicapped in terms of R&D and innovation. Although there is no direct question analyzing the causes of R&D and innovation activity (like access to finance and access to market), it could be assumed that given that these companies do business primarily in the domestic market, they are privately owned in the vast majority of cases, are smaller, have limited access to finance and likely have less ambitious business strategies.

7.8. Conclusion

Innovation and R&D activity are an important element of growth also in developing countries like the Republic of Srpska. The leader-follower models of growth gives an impression that followers have an easier task than leaders, because they receive technology. However, this is not so. The learning process is just as demanding and challenging in follower countries. Innovation is more focused on incremental changes, process innovation and shop-floor innovation as well as organizational, cultural and managerial innovation.

Innovation activity in firms from the Republic of Srpska is in the intial stage. The country is still relatively poor, which is reflected in their economic structure and consequently innovation expenditure and activity. Overall, as expected, product innovation is less important or common than process innovation. Process innovation was implemented in more than two-thirds of firms, depending on different types.

Overall, innovation expenditure is low. Only 8.5 percent of analyzed firms spent more than 3 percent of revenues for R&D activities. This is in line

with their trade orientation. Three-quarters of sampled firms noted the domestic market as the most important; two-thirds of all revenues are earned in the domestic market. Interestingly, firms that are more productive according to financial criteria are more focused on the domestic market, while export-oriented firms are less productive. This indicates that firms earn economic rents in the domestic market and face high competition pressure in foreign markets. In this context, it is not surprising that less productive firms invest more in R&D activities and are more confident about their technological, marketing and complementary competencies. Given that innovation is expected to be linked positively to productivity, this is an important result that provides a plausible reflection of the economy.

Generally, technological, marketing and complementary competencies are still not as highly developed as desired. Primarily technological competencies present a problem, primarily in the manufacturing sector. However, the latter are quite confident in their marketing competencies, primarily in establishing and maintaining long-term relationships.

Innovation was expected to be linked to productivity. In this context, the most important result is seemingly illogical; however, given the economic structure, it is a very plausible link. The companies should consider R&D as an investment in the future, not as a cost. Opening the domestic economy further will increase competition and lower rents in the domestic market. Higher added value will be created only by more innovative and better products.

The analysis also revealed that two groups of companies stand out in terms of R&D: service companies and large, unionized companies. The group consisting of smaller primarily manufacturing private companies has been

handicapped in terms of R&D and innovation. The results, although in many cases insignificant, are highly plausible: the service sector has been developing fast and is consequently more dynamic in the field of innovation. Larger companies have the funds (or at least access to funds) required to invest in R&D; many of them are also driven by international competition.

Overall, the analysis gives many important conclusions. However, it was severely handicapped by the small sample, primarily the statistical reliability of the results. Hence, one of the primary challenges of future research is an increase in sample size.

References

Aghion, P. and Howitt, P. (1998). *Endogenous Growth Theory*. Cambridge, MA: MIT Press.

Arnold, E. and Thuriaux, B. (1997). Developing Firm's Technological Capabilities. Working paper, Technopolis, Bighton.

BusinessDictionary.com. (2012). Retreived January 10th from http://www.businessdictionary.com/definition/competence.html.

Corrado, C., Hulten, C., and Sichel, D. (2009). Intangible Capital and U.S. Economic Growth. *Review of Income and Wealth, 55*, 661-685.

Forbes, N., and Wield, D. (2000). Managing R&D in technology-followers. *Research Policy, 29*, 1095-1109.

Fukao, K., Miyagawa, T., Mukai, K., Shinoda, Y., and Tonogi, K. (2009). Intangible Investment in Japan: Measurement and Contribution to Economic Growth. *Review of Income and Wealth, 55*, 717–736.

Grant, R.M. (1991). The resource-based theory of competitive advantage: implications forstrategy formulation, *California Management Review*, *Spring*, 114-35.

Grant, R.M. (2001). Knowledge and Organisation. In Nonaka, I & Teece, DJ, (eds.), *Managing Industrial Knowledge: Creation, Transfer and Utilization*, (145-169). London: Sage.

Griffith, R., Redding, S. and Van Reenen, J. (2003). R&D and Absorptive Capacity: Theory and Empirical Evidence. *Scandinavian Journal of Economics, 105(1)*, 99-118.

OECD. (2002). *Frascati Manual, Proposed Standard Practice for Surveys on Research and Experimental Development*. Paris: Organization for Eeconomic Cooperation and Develeopment.

Prašnikar, J., Redek, T., and Drenkovska, M. (2011). *Methodological challenges of measuring intangible capital in developing countries: the case of innovation activity*. Paper presented at the 2011 International conference for entrepreneurship, innovation and regional development, Skopje, 5-7 May 2011.

Redek, T., Kopriva, G., Mihelič, N., and Simič, M. (2010). Investments in intangible activities : innovation in the Slovenian manufacturing sector. In Prašnikar, J. (ed.). *The role of intangible assets in exiting the crisis*. Ljubljana: Časnik Finance.

Romer, P. M. (1990). Endogenous Technological Change. *Journal of Political Economy, 98(5)*, 71-102.

Statistical office of Republika Srpska. (2011a.). Gross Domestic Product and Gross Value Added, production approach. January 17th 2012. URL: http://www.rzs.rs.ba/Saopstenja/NacionalniRacuni/Proizvodni_Pristup/BDP_Proizvodni_Pristup_2010_KONACNI.pdf.

Statistical office of Republika Srpska. (2011b). Research and development in 2010. January 17th 2012. URL: http://www.rzs.rs.ba/Saopstenja/IstrazivanjeRazvoj/Istrazivanje_I_Razvoj_2010.pdf

Statistical office of Republika Srpska. (2011c). Innovation activity of enterprises, 2008-2010. January 17th 2012. URL: http://www.rzs.rs.ba/Saopstenja/IstrazivanjeRazvoj/InovativneAktivnosti_2008_2010_KONACNI.pdf

VanArk B., Hao, J.X., Corrado, C., and Hulten, C. (2009). Measuring intangible capital and its contribution to economic growth in Europe. *European Investment Bank Papers* 14-1

Janez Prašnikar, Aljoša Valentinčič, Andraž Ušlakar

8. FINANCIAL POLICIES OF FIRMS IN THE REPUBLIC OF SRPSKA

8.1. Introduction

This chapter presents an analysis of financial policies of a sample of 58 firms in the Republic of Srpska characterized by market imperfections, which encompass concepts such as asymmetric information and imperfect capital markets that are widely present in developing and peripheral economies. The main elements studied were capital structure and capital budgeting. Using the analysis of financial policies, the goal of the study is to determine the level of development of financial markets in the Republic of Srpska and to explain the financial behavior of the observed firms.

The chapter is structured as follows. First, we search for evidence of financial hierarchy and pecking order hypothesis to observe the importance of capital budgeting methods used in financing decisions.

Next, we apply analysis of financial policies on all three clusters of firms that were previously identified by Prašnikar (2012a) using the same data set to determine whether the financial behavior of each cluster of firms diverges from the whole sample.

Then, we examine the development stage of Slovenian firms in terms of financial policies and financial behavior that can compare with that of firms in the Republic of Srpska. We aim to determine where the Republic of Srpska can place itself in terms of financial sophistication and development

of financial markets compared to the more economically developed former Yugoslav country of Slovenia, which underwent the transition to a market economy more than a decade ago.

8.2. Pecking order hypothesis and financial hierarchy

Until 1958, when modern theory began with Modigliani and Miller, capital structure theory consisted of loose assertions about investor behavior rather than constructed models that could be statistically tested (Brigham & Daves, 2004). In their study, Modigliani and Miller (1958) addressed capital structure in a rigorous and a scientific way and, under several simplifying assumptions,[8] proved that a firm's value is not affected by its capital structure.

Although both academicians and practitioners have addressed concerns over the validity of their models, Modigliani and Miller ignited a series of studies on capital structure. Recognizing factors disregarded by Modigliani and Miller, such as asymmetric information, bankruptcy costs, agency costs and imperfect capital markets, modern capital structure theory has developed into two categories: trade-off theory and pecking order hypothesis.

The trade-off theory implies trading off the benefits of debt financing (tax advantage) against the agency costs and risk of bankruptcy (Brigham & Daves, 2004), while the pecking order hypothesis implies financial hierarchy in the use of raising funds but does not explain a firm's optimal capital structure. The latter originated from Donaldson's (1961) description of

[8] Assumptions encompass the following: no taxes, no bankruptcy costs, perfect capital markets, symmetric information, riskless debt, firm's EBIT not affected by use of debt. After first study published in 1958, Modigliani and Miller have altered the original assumptions by incorporating corporate tax in their study published in 1963.

financial practices in which he observed that firms prefer internal financing and avoid issuing stock. The pecking order hypothesis has been theoretically justified by Myers (1984) and Myers and Majluf (1984) using concepts such as asymmetry of information. According to the hypothesis, a firm will follow a financial hierarchy due to information asymmetry, where internally generated financing is preferred to external financing; if external financing is needed to be obtained, debt is preferred to equity.

8.3. Evidence of financial hierarchy and pecking order hypothesis in the Republic of Srpska

Our purpose was to observe the financial hierarchy and evidence of pecking order hypothesis in the sample of 58 firms that returned questionnaires with a completed capital structure section. In this section, respondents were asked to evaluate the attractiveness of six long term financing sources for financing future investment projects on a 1 to 5 scale, with 5 being the most attractive. Results are presented in Table 1 and later compared to the previous study of Kester and Radivojac (2012).

Table 1: Financial hierarchy of sources for financing future investments in the Republic of Srpska

Sources of capital by order of preference (58 firms)	Average importance on a 1 to 5 scale
Internal equity (retained earnings)	4.00
Long term bank loans	2.64
External equity (issuance of new shares)	2.14
Convertible debt	1.93
Preferred shares	1.53
Conversable preferred shares	1.52

Source: own calculations.

On average, respondents ranked retained earnings (internal equity) as the most attractive long-term source for financing future investment projects, which is in accordance with the pecking order hypothesis (internal sources are preferred to external). Long-term bank loans, on average, ranked as the second most attractive source with an average importance significantly lagging behind internal equity; external equity ranked third, which is again in accordance with the hypothesis (external debt before external equity). Other remaining sources (convertible debt, preferred shares and conversable preferred shares) follow, each having a low average importance.

Results indicate the existence of financial hierarchy completely in accordance with the pecking order hypothesis whereas previous study of Kester and Radivojac (2012), who studied capital structure policy and financing decisions of 11 (out of 30) firms on the Banja Luka Stock Exchange[9], indicated that financial hierarchy is only generally in accordance with pecking order theory. The results of the study are presented in Table 2.

Table 2: Financial hierarchy of sources for financing future investments in firms on the Banja Luka Stock Exchange

Sources of capital by order of preference (11 firms)	Average importance on a 1 to 7 scale
Internal equity	5.44
Loans of interrelated firms	5.11
External equity (issuance of new shares)	5.00
Bank loans	3.89
Bonds	3.11
Financial guarantees	2.78
Preferred shares	2.67

Source: Kester and Radivojac, 2012.

[9] Banja Luka Stock Exchange is an organized securities market in the Republic of Srpska, a part of Bosnia and Herzegovina.

Internal equity was the most attractive source on average, followed by loans given by interrelated firms, which is in accordance with pecking order hypothesis. The third most important source was external equity (issuance of new shares) followed by bank loans, which is not in accordance with the hypothesis. The authors explain this inconsistency as a possible result of the difficult credit conditions and difficulties in obtaining funds through bank lending due to the crisis and the recession that was present at that time.

8.4. Evidence of financial hierarchy and pecking order hypothesis in the Republic of Srpska by company type

Using the same data sample of 58 firms in the Republic of Srpska, Prašnikar et al. (2012a) identified three main groups of firms with common characteristics. The first homogenous group is a cluster of 24 unionized firms, 92 percent of firms in the cluster have workers organized in unions. The group consists of larger and mainly manufacturing firms belonging to the most important sectors (such as energy, metal, coal, food production, and fabricated products) that on average have a larger proportion of exports, average productivity rates, high presence of workers in governing bodies, better access to financial markets and show low short-term adjustment of labor to shocks. A common characteristic of this cluster is very high coordination of basic strategic decisions among owners, managers and workers as well as rent-seeking behavior. Prevailing legal status is a joint-stock company; 40 percent of firms are state-owned.

The second homogenous group is a cluster of 34 non-unionized firms with union organization presented in only two cases. These firms are on average of smaller size than firms of the first cluster. This cluster is further divided

into two subgroups. The first subgroup group consists of 18 mainly manufacturing firms that on average have lower productivity rates, lower investment in human capital, lower wages, and show high short-term adjustment of labor to shocks. A common characteristic of this cluster is low coordination of basic strategic decisions among owners, managers and workers. Prevailing legal status is limited liability company. Ownership structure shows that most are privatized, formerly socially-owned firms.

The second subgroup group consisted of 16 service firms that on average have higher productivity rates, higher investment in human capital, higher wages, presence of workers in governing bodies and show high short-term adjustment of labor to shocks. A common characteristic of this cluster is high cooperative behavior among owners, managers and workers. Prevailing legal status is limited liability company. This subgroup of firms resembles the reciprocal essentialities (RE) model developed by Aoki (2010) in which the cognitive assets of management and those of workers are reciprocally essential.

We also aimed to observe whether there are differences in financial hierarchy among the clusters identified by Prašnikar et al. (2012a). The results are presented in Table 3 below.

Table 3: Financial hierarchy of sources for financing future investments in the Republic of Srpska by company type

Sources of capital by order of preference	Sample of 58 firms	Unionized 24 firms	Non-unionized 34 firms	Non-unionized firms	
				Manufac. 18 firms	Service 16 firms
Internal equity (retained earnings)	4.00	3.67	4.24	4.00	4.50
Long term bank loans	2.64	2.42	2.79	2.78	2.81
External equity (new shares)	2.14	2.54	1.85	1.78	1.94
Convertible debt	1.93	1.83	2.00	1.78	2.25
Preferred shares	1.53	1.58	1.50	1.17	1.88
Conversable preferred shares	1.52	1.54	1.50	1.28	1.75

Source: own calculations.

The sample of unionized firms differs slightly in terms of financial hierarchy compared to the whole sample and to the group of non-unionized firms. Unionized firms also prefer retained earnings to other types on average but rank the importance of external equity above long-term bank loans.

Non-unionized firms show equal financial hierarchy and presence of the pecking order hypothesis as the whole sample. In terms of contrasts in average importance, non-unionized firms give more importance to retained earnings and less to issuing new shares than the whole sample on average. A similar financial hierarchy is observed if we break non-unionized firms into subgroups. The subgroup of service firms does prefer convertible debt to external equity but still follows the pecking order hypothesis, meaning that internally generated financing is preferred to external financing and, if external financing is needed to be obtained, debt is preferred to equity.

Comparing clusters, the biggest discrepancy in average importance can be found for retained earnings. While service firms give retained earning an average importance of 4.50, manufacturing firms give it an average of 4.00 (same as for the sample of all 58 firms); unionized firms give it an average of

only 3.67. Conducting a t-test for equality of means, service firms give a statistically significant higher importance to retained earnings than unionized firms (0.039) and statistically insignificant higher importance to retained earnings than manufacturing firms (0.095). Non-uninized manufacturing firms give statistically insignificant higher importance to retained earnings than unionized firms (0.232).

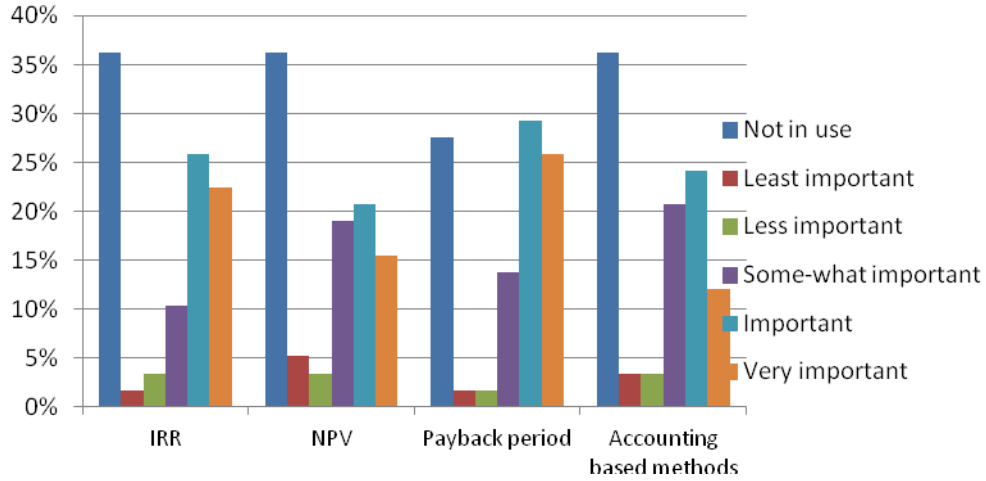
8.5. Capital budgeting procedures

Capital budgeting is an important tool in deciding which investments add to the firm's value and in choosing the right investment option given other alternatives. Capital budgeting is therefore the most important task for financial managers and their staff. Poor capital budgeting can have severe financial consequences: if a firm invests too much, it will incur unnecessarily high depreciation and other expenses; however, if it does not invest enough, inadequate capacity and out-of-date equipment can incur reduction in market share as well as loss of cosumers and competitiveness (Brigham & Daves, 2004). Therefore, it is of crucial importance that firms use appropriate methods to screen for projects that add value and to reject projects that undermine value.

Our purpose was to observe the importance of evaluation methods that were used in financing decisions in the sample of 58 firms. Respondents were asked to state which of the four evaluation methods (internal rate of return (IRR), net present value (NPV), payback period and accounting based methods) are used in their companies. If a particular method was used, respondents were asked to mark the importance of the method on a 1 to 5

scale, with 5 meaning the most important. Results are presented as a frequency distribution in Figure 1.

Figure 1: Frequency distribution of importance of evaluation methods used in financing decisions



Source: own calculations.

Using the frequency distribution data in Figure 1, we evaluated average importance for each evaluation method. The results are presented in Table 4.

Table 4: Average importance of evaluation methods used in financing decisions

Capital budgeting method (58 firms)	IRR	NPV	Payback period	Accounting based methods
Average importance of a method on a 1 to 5 scale	4.00	3.59	4.05	3.59
Percentage of firms using a method	63.8	63.8	72.4	63.8

Source: own calculations.

Results indicate that the most frequently used method is payback period with 72.4 percent of firms using the method. All other methods are used in

63.8 percent of firms in our sample. The payback period is also the most important method with an average importance of 4.05, followed by internal rate of return with an average of 4.00, and net present value and accounting based methods, both with an average importance of 3.59. Results also show that the correlation between the usage of internal rate of return and net present value is 1, measured as Pearson's correlation coefficient, meaning perfect, linear and positive correlation. In other words, all firms that used internal rate of return also used net present value, and vice versa.

Only three firms stated that they also use other types of evaluation methods when evaluating financing decisions. The results of our survey present two concerns. The first concern is the relatively low percentage of firms that use methods in general. Looking at similar recent studies of capital budgeting methods carried out in the countries of the Balkan region (Table 5), the Republic of Srpska is better than the economically less developed Albania but falls behind the more developed Slovenia. A study of 40 companies in Albania carried out by Prašnikar et al. (2012b) shows that only 40 percent to 52.5 percent of Albanian firms use evaluation methods. Evaluating 56 Slovenian manufacturing firms, Valentinčič et al. (2010) found a considerably higher percentage of evaluation methods[10]; internal rate of return and net present value were used by 87.2 percent of firms on average, and payback period was used by 94.4 percent of firms.

[10] Only relatively less important accounting methods have a relatively lower percentage (60.0 percent).

Table 5: Comparison of capital budgeting methods used in firms of the Balkan region

Percentage of companies using a method by country	IRR	NPV	Payback period	Accounting based methods
Albania	45.0	40.0	45.0	52.5
Bosnia (the Republic of Srpska)	63.8	63.8	72.4	63.8
Slovenia	87.2	87.2	94.4	60.0

Source: Prašnikar et al. (2012b); Valentinčič et al. (2010); own calculations.

Bierman's (1993) study of Fortune 500[11] industrial companies found a relatively high use of capital budgeting methods. According to the study, 84 percent of surveyed companies used a payback period; 85 percent, net present value; and 99 percent, internal rate of return. Furthermore, most companies gave greatest weight to the discounted cash flow methods (NPV and IRR). Similarly, in a multinational study of the Asia-Pacific region, Kester at al. (1998) found that internal rate of return and net present value were the most important and most popular capital budgeting methods for large firms in that region.

Another concern is the popularity of the payback period compared to internal rate of return and net present value in terms of average importance and percentage of companies using these methods. Payback period is not considered a superior evaluation method in neoclassical financial theory.[12] It provides an indication of risk and liquidity of a project but does not consider the time value of money; furthermore, it ignores cash flows that occur

[11] The Fortune 500 is a list that ranks the top 500 U.S. closely held and public corporations by their gross revenue after adjustments. The list is constructed and published by Fortune magazine annually; the first list was published in 1955.

[12] Neoclassical financial theory regards net present value as the best single measure, followed by internal rate of return, which many decision makers prefer. Literature nevertheless points out that firms should consider all of the measures, which an easily be obtained with the use of modern technology; each gives a different piece of important and relevant information.

beyond the payback period. Walker et al. (1993) found that smaller firms tend to use discounted cash flow methods (NPV and IRR) less often and payback period more often. That is, smaller firms are more preoccupied with liquidity, which is best indicated by payback period and lack of familiarity with discounted cash flow methods. Furthermore, small scale projects that smaller firms have make discounted cash flow methods not worth the effort. However, the authors conclude that as development in computer technology makes it more simple and less expensive for small firms to use discounted cash flow methods, and as more competitors start using these methods, they will become necessary for firm survival.

Examining 56 Slovenian manufacturing firms, Valentinčič et al. (2010) found that payback period was most used and most important method. In Slovenia, the popularity of this method was consistent with the short-term focus of management, which was precisely the problem that emerged in the current financial and economic crisis in Slovenia. Namely, investment projects that have lower payback period generate more cash flows in the near future and are therefore more attractive for management that is focused on short-term profit maximization.

Our study shows a relatively low percentage of firms that use evaluation methods in general. When using methods, firms give relative importance to payback period. Conclusions reflect the level of development of financial markets in the Republic of Srpska. Firms in the United States show relatively high usage of capital budgeting methods and emphasize the importance of discounted cash flow methods (Bierman 1993). This is attributed to the long period of a market economy that existed in the United States as early as 1993. The analysis of capital budgeting methods in the Republic of Srpska

suggests a level of financial market development that is closer to that of Slovenia in 2010, which showed a higher percentage of capital budgeting methods but still gave most importance to payback period. This indicates that Slovenia, even more than a decade after the privatization and transition to market economy, has not yet achieved the level of financial development of Western economies with longer market traditions. The use of short-term banking instruments in Republic of Srpska and Slovenia illustrates this, while the broad use of internal finance implies a high importance of the payback period in both countries.

8.6. Capital budgeting procedures in the Republic of Srpska by company type

Our additional purpose was to determine whether there are differences in usage and average importance of capital budgeting evaluation methods between the whole sample of 58 firms and each of the clusters identified by Prašnikar et al. (2012a). The results are presented in Tables 6 and 7.

Table 6: Percentage of firms using a particular evaluation method in financing decisions by company type

Percentage of firms using a method	Sample of 58 firms	Unionized 24 firms	Non-unionized 34 firms	Non-unionized firms	
				Manufac. 18 firms	Service 16 firms
IRR	63.8	66.7	61.8	44.4	81.3
NPV	63.8	66.7	61.8	44.4	81.3
Payback period	72.4	70.8	73.5	61.1	87.5
Acc. based methods	63.8	66.7	61.7	55.6	68.8

Source: own calculations.

Table 7: Average importance of evaluation methods used in financing decisions by company type

Average importance of a method (on a 1 to 5 scale)	Sample of 58 firms	Unionized 24 firms	Non-unionized 34 firms	Non-unionized firms	
				Manufac. 18 firms	Service 16 firms
IRR	4.00	4.19	3.86	3.50	4.08
NPV	3.59	3.69	3.52	3.00	3.85
Payback period	4.05	4.18	3.96	3.55	4.29
Acc. based methods	3.59	3.63	3.57	3.50	3.64

Source: own calculations.

The sample of unionized firms aligns with the whole sample of 58 firms in terms average importance of evaluation methods, though it is higher for each particular method. Exception for payback period, which is used less often, firms on average use internal rate of return, net present value and accounting-based methods more often. This can be explained by unionized firms having a better access to financial markets that lead to emphasized importance of evaluation methods. All firms in the sample, including unionized firms, give greater average importance to internal rate of return and payback period and less to net present value and accounting-based methods. Although unionized firms rate internal rate of return as the most important method (average importance is 4.19 compared to 4.18 for payback period), whereas the whole sample rate payback period as the most important method (is 4.05 compared to 4.00 for internal rate of return). However, differences in terms of average importance are small.

The results for the 34 non-unionized firms also reflect that of the whole sample of 58 firms in terms of ranking and use of evaluation methods by average importance. However, dividing non-unionized firms into two separate clusters provides a different perspective. The cluster of 18 non-unionized manufacturing firms differs in two ways: these firms give less

importance to all evaluation methods on average[13] (3.50 to 3.55 depending on the method), and the usage of evaluation methods is much lower. Following Prašnikar et al.'s (2012a) interpretation, both aspects can be attributed to firms' preoccupation with survival, which is an absolute priority due to poor performance.

The cluster of 16 non-unionized service firms also shows differences. Although these firms rank the average importance of evaluation methods in the same way, they give more importance to all methods, especially payback period and net present value[14]. They also report greater usage of all evaluation methods. Following the work of Prašnikar et al. (2012a), we can assume that firms in this cluster have more educated entrepreneurs, highly skilled workers and perform better than other clusters, all of which explain the greater importance and increased use of evaluation methods.

---

[13] Conducting t-test for equality of means, non-unnionized manufacturing firms give statistically insignificant lower importance to IRR than unionized firms with significance of 0.065 and statistically insignificant lower importance to IRR than service firms with significance of 0.178. Non-unionized manufacturing firms give statistically insignificant lower importance to NPV than unionized firms and service firms with significances of 0.112 and 0.078 respectively. Further manufacturing firms give statistically significant lower importance to payback period than unionized firms and service firms with significances of 0.049 and 0.043 respectively. Further, manufacturing firms give statistically highly insignificant lower importance to acc. based methods than unionized firms and service firms with significances of 0.387 and 0.590 respectively.

[14] Conducting t-test for equality of means, non-unionized service firms, compared to unionized firms gives statistically highly insignificant lower importance to IRR with significance of 0.363; statistically highly insignificant higher importance to NPV with significance of 0.353; statistically highly insignificant higher importance to payback period with significance of 0.368; and statistically highly insignificant higher importance to acc. based methods with significance of 0.490. For comparison with manufacturing firms, see Footnote 6.

8.7. Financial policies in the Republic of Srpska in comparison with Slovenia

Here, we compare financial policies of firms in the Republic of Srpska with firms of Slovenia. More importantly, we set the stage for development of the Slovenian financial market in terms of elements of financial policies and financial behavior of firms that can align with the current financial behavior of firms in the Republic of Srpska. The goal is to observe where the Republic of Srpska can place itself in terms of financial market development. Elements of financial policies (capital structure and capital budgeting) of firms in the Republic of Srpska today show close resemblance to financial policies of firms in Slovenia after the privatization period. In 1998, Mramor and Valentinčič (2001) analyzed data gathered on financial behavior of 51 of the 100 largest Slovenian firms. Firm completed questionnaires about investments and financing decisions. The survey showed that the average privatized Slovenian firm does not pursue the goal of maximizing shareholder value in its financial decisions. A comparison of Slovenian firms' financial policies to those of firms in the Republic of Srpska is presented in Tables 8 and 9.

Table 8: Comparison of financial hierarchy of sources for financing future investments by country

Sources of capital by order of preference (average importance on a 1 to 5 scale)	The Republic of Srpska	Slovenia
Internal equity (retained earnings)	4.00	3.50
Long term bank loans	2.64	2.50
External equity (new shares)	2.14	2.20
Convertible debt	1.93	1.50
Preferred shares	1.53	1.00
Conversable preferred shares	1.52	1.10

Source: Mramor, D., and Valentinčič, A. (2001); own calculations.

Table 8 compares the financial hierarchy of sources for financing future investments. Both samples showed equal financial hierarchy and the presence of pecking order hypothesis. Firms gave highest preference to internal equity and much less to long-term bank loans and external equity capital.

Table 9: Comparison of average importance of evaluation methods used in financing decisions

Average importance of a method (on a 1 to 5 scale)	The Republic of Srpska	Slovenia
IRR	4.00	3.50
NPV	3.59	3.30
Payback period	4.05	3.70
Acc. based methods	3.59	2.20

Source: Mramor, D., and Valentinčič, A. (2001); own calculations.

Table 9 compares the average importance of evaluation methods used in financing decisions. Firms in both samples gave equal importance to evaluation methods. Both samples gave highest average importance to payback period.

Both elements of financial policies (capital structure and capital budgeting) show close resemblance. Consequently, it can be concluded that the Republic of Srpska today experiences financial market development similar to that of Slovenia after privatization, characterized by market imperfections visible in the analyzed financial behavior of firms.

8.8. Conclusion

The analysis of financial policies for 58 firms in the Republic of Srpska shows that an average firm does not pursue the goal of maximization of shareholder value; rather, it shows the existence of market imperfections

that are widely present in developing and peripheral economies such as the Republic of Srpska. Two main elements imply such financial behavior.

Regarding capital structure, the average firm ranks internal equity (retained earnings) as the most attractive long-term financing source for future investment projects, followed by long-term bank loans and external equity (issuance of new shares). Other sources, convertible debt, preferred shares and conversable preferred shares follow, each having low average importance. Results indicate the existence of a financial hierarchy of sources and of the pecking order hypothesis. This contradicts the goal of maximization of shareholder value, because reliance on costly equity does not lead to minimal cost of equity but rather implies information asymmetry.

Regarding capital budgeting and the importance of the four evaluation methods that were used in financing decisions, the average firm ranks payback period as the most important and most frequently used method (72.4 percent of all firms use it). In terms of importance, internal rate of return ranked second, followed by net present value and accounting based methods. In terms of usage, all three remaining methods were used in 63.8 percent of firms in the sample. Our study indicates a relatively low percentage of firms that use methods in general. Overall, this reflects the level of financial market development in the Republic of Srpska.

We extended analysis on three clusters of firms identified using the same data set: unionized, non-unionized manufacturing and non-unionized service firms. The latter two form a united non-unionized cluster of firms. These clusters show discrepancies from the whole sample in terms of elements of financial policies.

Unionized firms differ slightly in terms of financial hierarchy. These firms all prefer retained earnings to others types but rank external equity as slightly more important than long-term bank loans. Non-unionized firms rank financial hierarchy and the presence of pecking order hypothesis in the same manner as the whole sample. A similar financial hierarchy is observed if we break non-unionized firms into subgroups. The subgroup of service firms prefers convertible debt to external equity but still follows pecking order hypothesis. Comparing clusters, the largest discrepancy in average importance can be found for retained earnings. Conducting a t-test for equality of means, non-unionized service firms give significantly greater importance to retained earnings than unionized firms but statistically insignificant greater importance to retained earnings than non-unionized manufacturing firms. Non-unionized manufacturing firms give statistically insignificant greater importance to retained earnings than unionized firms.

The sample of unionized firms aligns with the whole sample in terms of average importance of evaluation method, although it gives slightly higher average importance of all particular methods. Together with higher average usage of methods, both aspects can be attributed to better access to financial markets, which emphasize the importance of evaluation methods.

Non-unionized firms align to the whole sample in terms of ranking and use of evaluation methods by average importance; however, dividing non-unionized firms into two separate clusters shows a different perspective. The cluster of non-unionized manufacturing firm differs in two aspects. First, it gives less importance to all evaluation methods on average; secondly, usage of evaluation methods is relatively much lower. Both aspects can be

attributed to the preoccupation of firms with survival, which is an absolute priority due to the low performance of the firms in the cluster.

Although the cluster of non-unionized service firms shows equal rank of average importance for evaluation methods, it gives even more importance to all evaluation methods in general, especially to payback period and net present value. This cluster has a relatively higher average use of all evaluation methods. These firms have attracted educated entrepreneurs, highly skilled workers and on average performed better than other clusters, all of which explain the greater importance and increased use of evaluation methods.

Finally, the analyzed elements of financial policies for the whole sample of 58 firms in the Republic of Srpska today show close resemblance to those of firms in Slovenia after the privatization period, studied in 51 of the 100 largest Slovenian firms in 1998. Hence, it can be concluded that the Republic of Srpska is experiencing a similar level of financial market development as Slovenia after privatization, characterized by market imperfections visible in the analyzed financial behavior of firms.

References

Aoki, M. (2010). *Corporations in Evolving Diversity*. Oxford University Press.

Bierman, H. (1993). Capital Budgeting in 1993: A Survey. *Financial management*, 24.

Brigham, E. F., and Daves, P. R. (2004). *Intermediate Financial Management* (8th ed.). Thomson South Western.

Donaldson, G. (1961). Corporate Debt Capacity, Division of Research, Graduate School of Business Administration, Harvard University.

Kester, G. W., and Radivojac, G. (2011). A Survey of the Capital Budgeting Practices of companies Listed on the Banja Luka Stock Exchange, Financing,. 2(3), 30-34.

Kester, G. W., Chang, R. P., Echanis, E. S., Haikal, S., Isa, M. M., Skully, T. M., Tsui, K., and Wang, C. (1998). Capital Budgeting Practices in the Asia-Pacific Region: Australia, Hong, Kong, Indonesia, Malasia, Philippines, and Singapore. *Financial Practice and Education*,25- 33.

Modigliani, F., and Miller, M. H. (1958). The Cost of Capital, Corporation Finance, and the Theory of Investment. *American Economic Review*, 261-297.

Modigliani, F., and Miller, M. H. (1963). Corporate Income Taxes and the Cost of Capital: A correction. *American Economic Review*, 433-443.

Myers, S. (1984). The capital structure puzzle. *Journal of Finance*, 39, 575-592.

Myers, S., and Majluf, N. (1984). Corporate financing and information decisions whenfirms have information that investors do not have. *Journal of Financial Economics*, 13, 187-221.

Prašnikar, J., Kondić, N., Mikerević, D., and Voje, D. (2012a). Corporate governance and organizational transormation in devoloping countris: blockholding and organizational diversity in Republic of Srpska.

Prašnikar, J., Valentinčič, A., and Ušlakar, A. (2012b). Financial policies of firms in Albania.

Ryan, P. A., and Ryan, G. P. (2002). Capital Budgeting Practices of the Fortune 1000: How Have Things Changed?. *Journal of Business and Management*, 8(4).

Walker, J., Burns, R., and Denson, C. (1993). Why Small Manufacturing Firms Shun DCF. *Journal of Small Business Finance*, 233-249.

Valentinčič, A., Marinšek, D., Mally Buh, G., and Simoneti, N. (2010). *Financial policies of manufacturing firms in Slovenia in 2006-2009*. In Prašnikar, J. (ed.): The role of intangible assets in exiting the crisis. Ljubljana: Časnik Finance.