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Vladimir Njegomir,*
*Boris Marović***
*and Rado Maksimović****

THE ECONOMIC CRISIS AND THE INSURANCE INDUSTRY: THE EVIDENCE FROM THE EX-YUGOSLAVIA REGION

ABSTRACT: *The paper analyses the impact of the economic crisis on the insurance industries of the ex-Yugoslavia region. The analysis encompasses five countries: Slovenia, Croatia, Serbia, Bosnia and Herzegovina, and FYR Macedonia. We examine insurance industry specifics separately for each country for the period 2004-2008 and for the first six months of 2009. While the impact of the crisis varies between countries, the research results indicate that the global financial crisis has had limited overall impact on the regional insurance industry. However the current recession resulted in negative premium growth in Serbia, Croatia and FYR Macedonia while the growth in Slovenia and Bosnia and Herzegovina declined. At the same time investment returns have declined and claims have risen in all countries. The crisis had more pronounced impact on non-life insurance premium growth in less developed insurance markets. In developed markets, namely Slovenia and Croatia, the crisis had greater impact on life insurance premium growth.*

KEY WORDS: *economic crisis, insurance, ex-Yugoslavia region*

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* Assistant professor, Faculty of Legal and Business Studies, Novi Sad; njega@eunet.rs
** Professor emeritus, Independent University, Banja Luka.
*** Profesor, Faculty of Technical Sciences, Novi Sad.

1. INTRODUCTION

Cyclical movements, represented in expansions and contractions in the economy, are typical of market economies. During the period 1960-2007 21 OECD countries experienced 122 recessions, 112 credit contraction episodes, 114 episodes of house price declines, 234 episodes of equity price declines, and their various overlaps (Claessens, Kose, & Terrones, 2008)). Thus one of the most important lessons of financial history is that eventually every bubble bursts (Ferguson, 2008). However over the last two years we have witnessed a financial and economic crisis that is unparalleled since the Great Depression. The present crisis resulted from the complex interaction of market failures, global financial and monetary imbalances, inappropriate regulation, weak supervision and poor macro-prudential oversight (Larosiere et al., 2009, p. 14).

As the origin of the current crisis was in the banking sector its direct impact on the insurance industry has been less prominent than on the banking industry. For example, according to International Monetary Fund estimates, global losses from actual and potential writedowns on bank holdings of both loans and securities will be $2.8 trillion, while the total amount of estimated writedowns for all financial institutions, including banks and insurance companies, will be $3.4 trillion (IMF, 2009a). However, despite the fact that insurance industry cycles do not necessarily follow cycles in the economy (Njegomir, 2006a), the current financial crisis has affected the insurance industry's underwriting and investment activities. On the underwriting side the most affected are insurers who underwrote policies linked to the banking crisis, in particular credit default swaps, as was the case with AIG and Swiss Re. Insurers can protect themselves from deviations by raising additional equity or debt capital and/or by applying mechanisms for transferring risks to other carriers (Njegomir & Maksimović, 2009). However these possibilities have become more limited due to the financial crisis. Although marginal for the insurance industry as a whole, the crisis also affected monoline insurers in the U.S. and has the potential to negatively influence insurers who underwrote directors and officers liability insurance (D&O) and errors and omissions professional liability insurance (E&O). The losses of monoline insurers are estimated to be around $50 billion (Hess, Karl and Wong, 2008, p. 6) while total estimated losses for D&O range between $4.4 billion and $7.4 billion (Bradford, 2008a) and for E&O between $2.4 billion and $4.9 billion (Bradford, 2008b).

Historically insurers' investment results have been positive. They provided additional revenues that insurers used to offset negative results in underwriting operations, to provide insureds with more competitive premiums, and to achieve higher profits for investors (Njegomir, 2006b). However the situation changed with the financial crisis (Marovic, Njegomir & Maksimovic, 2010). It has caused a significant decline in global equity markets that in turn has impaired the investment returns of the global insurance industry.

It must be emphasised that the industry as a whole has been relatively untouched by the financial crisis. The most affected companies are those whose risk management practices failed to identify overall risk exposures, who underwrote policies linked to the banking crisis, and used aggressive investment strategies that produced investment portfolios with a considerable share of riskier assets. The current recession has the potential to increase cancelation and reduction in scope of insurance policies as people choose to save money in difficult economic conditions. Additionally the crisis has the potential to increase fraudulent and inflated claims. For example, according to the Association of British Insurers (ABI, 2009) the sum of detected and prevented fraudulent claims related to general insurance has increased by 30% since 2007.

Due to the globalisation of economic activities the financial crisis that originated in the U.S. has transferred to the economies of the ex-Yugoslavia region. The direct impact of the financial crisis on these economies is most visible in the reduction of real GDP growth, value of stock market indices and volume of foreign direct investments. According to EBRD's (2009) estimates, the volume of foreign direct investments in 2008, in relation to 2007, in Croatia was reduced by 11.76%, in Bosnia and Herzegovina by 40.67% and in FYR Macedonia by 12.59%. However, it increased in Montenegro by 9.15%, in Serbia by 13.3% and in Slovenia from $-353 million to $280 million. As the global economic crisis has had a delayed impact on the regional economies compared to the developed western economies, the analysis of the effects of the crisis on the insurance industry of the ex-Yugoslavia countries in the previous literature is nonexistent. Thus the aim of this paper is to determine the impact of the crisis on the regional insurance industry by examining the development of business activities of the regional insurance industries for the period 2004-2008 and for the first six months of 2009.

The region of ex-Yugoslavia encompasses six countries: Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Serbia, and Former Yugoslav Republic of Macedonia (FYR Macedonia). We analyse the insurance industry specifics separately for each of these countries. However due to the lack of relevant data we exclude the Montenegrin insurance industry from our examination. We analyse changes in the underwriting performance of each country's insurance industry by examining premium growth (separately for life and non-life insurance) and combined ratio (the sum of loss and expense ratios) trends, depending on data availability. Additionally, following previous literature that indicated that non-life (e.g. Beenstock, Dickinson & Khajuria, 1986; Outreville, 1990; and Browne, Chung & Frees, 2000) and life insurance demand (Browne & Kim, 1993; and Outreville, 1996) is positively associated with the level of GDP, for the analysis of the financial crisis impact on underwriting performance we use trends in GDP and GDP per capita growth and changes in insurance density and penetration. As overall profitability and capital position of insurance companies also depends on investment performance (e.g. Caroll, 1993, Calandro & Lane, 2002, Pope & Ma, 2008 and Dorfman, 2008), a fact that is emphasised during the financial crisis in developed countries, we also examine investment returns. Additionally we analyse the structure of invested assets, which governments restrict by limiting the total amount of assets that insurers can invest in one class of investment. Where relevant data are not available we examine changes in leading regional stock market indices and use the difference between the money market interest rate and inflation rate as a proxy for investment performance. In order to determine the summary impact of the financial crisis on regional insurance industries we use data that depicts trends in the level of profitability, technical provisions, and capital. The level of capital available, as a cushion against poor underwriting and investment results, is particularly important for determining financial crisis impact and for predicting the resilience of the regional insurance industry to impairment and insolvency issues during the recession. Finally, following prior literature (e.g. Greene & Segal, 2004 and Elango, Ma & Pope, 2008), as a measure of financial performance we use both return on assets and return on equity.

The remainder of this article is organised as follows. The next five sections present the analysis of the crisis influences on the insurance industry in each of the five countries within the region of ex-Yugoslavia. The article concludes with the summary of the results for the region as a whole.

2. THE SLOVENIAN INSURANCE INDUSTRY

Slovenia introduced the market system at the beginning of the nineties and was the only country of former Socialist Federal Republic of Yugoslavia that became a member of the European Union in 2004. It was the most developed economy in the former federal country and remained so because of the absence of war activities on its territory. According to the World Bank's country classification, Slovenia, together with Croatia, belongs to the high-income group, while other regional countries belong to the upper middle-income group of countries (World Bank, 2009). As is shown in Table 1, Slovenia achieved constant growth of GDP in the period 2004-2008, although the pace of growth decelerated in 2008 due to the financial crisis. It is estimated (IMF, 2009b) that the real GDP growth will recover in 2010 and will reach 0.6%.

The developments in the social and economic environment have left their mark on the development of the insurance industry in Slovenia. It must be emphasised that the first insurance companies in the region of ex-Yugoslavia were established as branches of foreign companies or as domestic companies but with a majority stake of foreign capital. The first companies were established in those areas of the region that were part of the Austro-Hungarian Empire: Slovenia and Croatia. Although nowadays, under freedom of flow of services within the EU many companies from other member countries offer insurance services without establishing offices in Slovenia and 345 foreign companies from EU countries ran insurance businesses directly in 2008, the majority of companies that have established offices in Slovenia are domestically owned. Only five companies have majority foreign ownership and newly established companies in 2008 had majority domestic ownership. The majority of companies are composite in terms of their engagement in different classes of insurance. During 2008 there were 10 companies engaged in both non-life and life insurance, 4 companies engaged in non-life insurance only, while 7 companies specialised in life insurance. Since 2006 there has been a trend of increased interest in life insurance in Slovenia, which is emphasised by the fact that in 2008 two new companies were established that specialised in life insurance only.

Favourable conditions in the general economic environment had a positive impact on the development of the insurance industry, as is shown in Table 1. Measured by the share of life insurance in gross premiums written, insurance density, and penetration, the insurance industry in Slovenia is the most developed in the region. During the period 2004-2008 the insurance industry achieved constant growth in terms of gross written premiums for both life and non-life insurance. However, with the first signs of the crisis in 2008 premium growth decelerated, while claims have increased in both life and non-life insurance.

As is shown in Table 2 the impact of the financial crisis on different classes of insurance was different in the Slovenian insurance market. There was a marked increase in gross written premiums in each insurance class except ordinary life insurance. Even unit-linked life insurance increased by more than 5%. However the most significant increase has been in other property insurance, insurance of land motor vehicles, and general liability. As insurance of land motor vehicles has increased faster than motor vehicle liability insurance we could assume that people are feeling less secure. The increase in general liability insurance premiums could reflect the increased need for liability protection caused by the crisis, but the only slight increase in credit insurance premiums could signal either that significant shocks in Slovenia's financial system are not to be expected or the absence of insurers' willingness to insure credit risk exposures.

In addition to the aforementioned differences, decrease in growth of gross premiums written has been more significant for life (from 12.69% in 2007 to 5.48% in 2008) than for non-life insurance (from 8.45% in 2007 to 7.13% in 2008). Although these developments resulted in a decrease of the combined ratio, in 2008 the insurance industry achieved underwriting profit. The relatively insignificant influence of the crisis on the underwriting result is due to he fact that insurers have not been involved in the insurance classes that impaired the underwriting results of insurance companies in Western Europe and the U.S. Additionally the share in gross written premiums of the "crisis sensitive" insurance classes, such as credit insurance, was less than 3%, as is shown in Table 2.

Investment strategies of insurance companies in Slovenia have been conservative as is shown in Table 1. Althouth it might be expected that the reason for this cautiousness is stringency of Slovenian Insurance Act (2009), we assume that the reasone is high-quality risk management. According to Article 121 of Slovenian Insurance Act (2009) insurance companies in Slovenia can invest their technical reserves in 1) securities issued or guaranteed by Republic of Slovenia, the Bank of Slovenia, a Member State of the EU or OECD or international financial organisation, 2) bonds traded on an organised securities exchange, 3) bonds not traded on an organised securities exchange, 4) shares traded on an organised securities exchange, 5) shares not traded on an organised securities exchange, 6) investment coupons of mutual funds or shares of investment companies, 7) claims arising from loans collateralised by mortgage on real estate, 8) claims from loans given to banks whose head office is in Republic of Slovenia or member country of the EU or OECD, 9) claims arising from loans collateralised by lien on securities, 10) claims arising from other loans collateralised appropriately, 11) advance payments with regard to the surrender value on the basis of insurance policies and loans collateralised by surrender value of the insurance policy, 12) immovable property and other real rights to immovable property, 13) investments in deposits in banks whose head office is in Republic of Slovenia or member country of the EU or OECD, 14) cash in hand or sight deposits and other investments. Article 122 limits total amounts that insurance companies may invest, which can be considered conservative. The territorial restrictions are determined by Article 123, which specifies that Slovenian insurers in addition to their investments in Slovenia, member countries of the EU and OECD can invest in other countries but in connection with insurance concluded to cover risks in particular country.

The largest share of assets covering both mathematical provisions and other technical provisions during the period 2004-2008 was invested in government and debt securities. During the period 2004-2007 the trend of constant growth of equity investment's share in total investments was marked. However the financial crisis blocked this trend. Among the other invested assets in 2007 investments in structured financial products held by insurance companies amounted to EUR 230.7 million, or 6.46% of total assets covering mathematical and other technical provisions, but at the end of 2008 insurers stopped buying these securities. Due to conservative investment strategies the Slovenian insurance industry was making relatively modest but constantly increasing investment returns until 2008. During 2008 the situation in the Slovenian capital market changed. The capital market is represented by transactions executed on the Ljubljana Stock Exchange where the most traded long-term securities are equities, bonds and securities of investment funds. The main indicator that serves as a proxy for Slovenian insurance market investment performance is SBI20. SBI20 is the Ljubljana Stock Exchange benchmark index, which measures the performance of the entire Slovene regulated securities market. As is shown in Table 1, the rate of return on this index suffered strong relative decline in 2008 in comparison with 2007. The capital market developments affected investment results. As is shown in Table 1, the investment results of non-life insurance companies significantly decreased while life insurers marked a loss from investment activities.

As the combined result of impaired underwriting and investment results, all financial indicators of the Slovenian insurance industry marked a significant decline in 2008 in comparison with 2007. Profitability and capital of non-life insurers decreased by 98.55% and 21.84% respectively, while the return on assets decreased from 3.07% to 0.04%. Profitability and capital of life insurers decreased by 91.35% and 19.61% respectively, while the return on assets decreased from 0.90% to 0.08%. Return on equity for the industry as a whole decreased from 12% to 0.40%.

As the Slovenian economy became recession-stricken during 2009 the situation for the insurance industry worsened. According to the data of the Slovenian Insurance Association (2009) for the first six months of 2009, the growth of gross premiums written was 2.8% while the value of claims for the industry as a whole grew by 16.94%. Life insurance has been more severely influenced by the crisis than non-life insurance. Non-life insurance premiums and claims grew by 5.15% and 16.44% respectively, while life insurance premiums decreased by 2.6% and claims increased by 19.58%.

3. THE CROATIAN INSURANCE INDUSTRY

After the breakup of former Yugoslavia in 1991 Croatia introduced the market system and during 2004 received candidate country status from the European Council. Despite the war activities on its territory during the period 1991-1995 Croatia became the second most developed country in the region of ex-Yugoslavia. It achieved continued GDP growth during the period 2004-2008, with a slight decrease in its pace in 2008. According to International Monetary Fund projections (IMF, 2009b), in 2010 Croatian economy will recover and achieve GDP growth of 0.4%.

Croatian insurance industry development showed strong correlation with economic development in general. Unlike the development of insurance in Slovenia the development of insurance in Croatia was facilitated by a strong presence of foreign insurers. The majority of companies that have established offices in Croatia are foreign owned (see Table 3). Sixteen companies out of twenty seven are majority foreign owned and two of the newly established companies in 2008 were majority foreign owned. The majority of companies are composite in terms of their engagement in different classes of insurance. During 2008 there were ten companies engaged in both non-life and life insurance, nine companies engaged in non-life insurance only, while eight companies specialised in life insurance. As in Slovenia, since 2006 there has been a marked trend of increased interest in life insurance, which is emphasised by the fact that three new companies were established in 2008 that specialised in life insurance only. However in the same period interest in specialisation in non-life insurance has also been marked.

As Table 3 shows, the growth rate of gross premiums written outpaced GDP growth during the period 2004-2008. Although life insurance premium growth decreased in 2008, gross premiums written continued to grow even during the financial crisis. This was primarily because the share of non-life insurance premiums, whose growth continued unchecked, in gross written premiums is almost three times bigger than the share of life insurance premiums.

As is shown in Table 2, the impact of the financial crisis on different classes of insurance was different in the Croatian insurance market. Similar effects of the crisis to those in Slovenia have been marked. An increase in gross written premiums in each insurance class except unit-linked and other life insurance is evident. However the most significant increase has been marked in goods in transit, property insurance from fire and natural forces, other property insurance, and credit insurance. The decrease in the volume of unit-linked life insurance premiums and other life insurance and the very low increase of life and supplementary life insurance premiums shows the impact of the financial crisis on the demand for insurance: as people feel less secure they are less inclined to invest long term. Additionally the increase in goods in transit, property, and credit insurance premiums reflects the increased need of businesses for property and liability protection, which is caused by the crisis.

The Croatian insurance industry generated underwriting losses during the period 2004-2007, but during 2008 the underwriting loss decelerated. Thus we can conclude that although the financial crisis affected life insurance growth it has not significantly impaired the underwriting result of the Croatian insurance industry as a whole. Such developments are the result of an insignificant share of "crisis sensitive" insurance classes (less than 3% of gross written premiums) and the fact that insurers had not underwritten policies linked to the credit crisis.

Croatian financial market transactions are executed at the country's only stock exchange located in Zagreb, the capital city. The securities traded at the Zagreb Stock Exchange are shares, bonds, rights and commercial bills. Investment activities of insurance companies are regulated by Croatian Insurance Act (2005). Article 122 of Croatian Insurance Act (2005) specify types of investments that assets covering mathematical provisions may be invested while Article 123 specifies limitations of these investments. Article 115 of Croatian Insurance Act (2005) specifies types of investments assets covering technical provisions other than mathematical provisions and Article 116 specifies limitations on these investments. We considere the limitations regarding investments specified in aformentioned articles restrictive. It is evident that Croatian insurers' could not invested in riskier assets like securitised securities.

Investment strategies for assets covering mathematical provisions of Croatian insurance companies were extremely conservative during the period 2004-2008. The implementation of such strategies is the consequence of the fact that pursuant to the Insurance Act insurance companies in Croatia are obliged to invest at least 50% of assets covering mathematical provisions in securities issued by the Republic of Croatia, the Croatian National Bank, the Croatian Bank for Reconstruction and Development, and in bonds and other debt securities guaranteed by the Republic of Croatia. As is shown in Table 3, the share of investments of assets covering mathematical provisions in bank deposits and securities issued or guaranteed by the government was 88.6% in 2008. Although investments of assets covering other technical provisions have been distributed more evenly they have also been conservative as the largest share of these assets was invested in government securities, bank deposits and real estate. The share of assets covering both mathematical and other technical provisions in units and shares of investment funds significantly decreased in 2008 because of the financial crisis. This conservative investment approach has helped the Croatian insurance industry to realise investment profit during the financial crisis despite the adverse changes in CROBEX and CROBIX indices. CROBEX is the official Zagreb Stock Exchange share index while CROBIX is the official bond index of this exchange. Their relative year-on-year changes are shown in Table 3.

The Croatian insurance industry generated profit despite underwriting losses and decreased investment results. Although profitability decreased by 97.01% in 2008 the capital position remained stable as the aggregate capital volume decreased by only 3.43%. As Table 3 shows, despite the fact that the Croatian insurance industry generated positive returns on equity and returns on assets, they have significantly declined during 2008.

The general economic conditions worsened in 2009. The financial performance of the Croatian insurance industry during the first six months of 2009 was affected more significantly by economic recession than it had been by the direct impact of the financial crisis. Although the decline of non-life insurance premiums by 0.45% in the first six months of 2009 was not significant, the decline of life insurance premiums by 3.48% in the same period (Croatian Insurance Bureau, 2009) generated negative growth of gross premiums written for the industry as a whole, for the first time since 2004. Simultaneously with the decrease of premiums written, the volume of claims increased for both non-life and life insurance by 4.10% and 24.34% respectively. Thus we can conclude that life insurance has been worse impacted by the recession than non-life insurance.

4. THE SERBIAN INSURANCE INDUSTRY

After the separation of the other republics of the Socialist Federal Republic of Yugoslavia, Serbia together with Montenegro constituted the Federal Republic of Yugoslavian in 1992, and 14 years later became an independent state. Although it introduced a market economy and democratic political system in 1991 its economy suffered the severe negative economic consequences of international economic sanctions in the period 1992-1996, hyperinflation in 1993, and war activities on its territory during 1999. We consider that the hyperinflation, which reached 3.512542E+14% in December of 1993, had the most devastating impact on the Serbian economy. However during the last decade the Serbian economy has recovered and showed a continued growth of GDP during the period 2004-2008, even though its pace significantly decreased in 2008, as is shown in Table 4. The IMF (2009b) estimated that the real GDP growth would reach 1.5% in 2010.

The development of the Serbian insurance industry followed the country's economic development. The hyperinflation of 1993 had the most devastating influence on the insurance industry as it virtually eliminated all insurance companies' accumulated funds. I*n a*ddition until the introduction of the Insurance Act of 2004 the Serbian insurance market was poorly regulated. Many insurance companies offered only obligatory motor liability insurance. Many claims, although justified, were never paid. As a combined result public confidence in insurance was low. However after the introduction of the new regulations and by assigning the supervision authority to the National Bank of Serbia, all insolvent companies were liquidated.

The majority of companies that have a presence in Serbia are majority foreign owned. In 2008 there were 21 insurance companies in the Serbian insurance market. Fifteen out of the twenty one companies were majority foreign owned, while in the same year only one of three newly established companies was majority foreign owned. Unlike in Slovenia and Croatia the majority of companies in Serbia are not composite but specialise in non-life insurance business. In 2008 there were six companies engaged in both non-life and life insurance, 9 companies engaged in non-life insurance only, while 6 companies specialised in life insurance. Since the introduction of the new insurance law in 2004 and especially since 2006 there is a marked trend of increased interest in life insurance, a fact that is emphasised by the growth of insurance companies specialising in life insurance. However in the same period interest in specialisation in non-life insurance has also been marked while the number of composite companies has decreased. In addition to purely economic reasons the rationale behind this trend is the need for the separation of life and non-life insurance business according to the Insurance Law.

As general economic conditions and public confidence in the insurance industry improved, the insurance industry showed a continued growth of gross written premiums during the period 2004-2008 (see Table 4). However its relative growth declined during 2008, primarily because of a significant decline in non-life insurance premium growth. Although the pace of life insurance premium growth has been almost cut in half, non-life insurance premium growth has declined by almost five times during the financial crisis. With the increase of expenses and claims, underwriting results became negative. However a significant impact of the financial crisis on underwriting results has been avoided. The reason for this has been the structure of risks that Serbian insurance companies underwrote. The largest share in gross written premiums has been motor liability insurance, while the share of "crisis sensitive" insurance classes, such as credit, general liability insurance, and professional liability insurance, was less than 2% of gross written premiums.

As is shown in Table 2, the impact of the financial crisis on different classes of insurance was different in the Serbian insurance market. Generally it is evident that the impact of the crisis has been more pronounced in the Serbian insurance market than in Croatia and Slovenia. Although many insurance lines increased the pace of their increase was lower in Serbia than in other markets. A similar situation was recorded only in the FYR Macedonia. The most notable changes in 2008 in relation to 2007 were the decrease in credit insurance premiums by over 78%, an unexpected increase in life insurance premiums by more than 17%, and a more rapid increase of insurance of land motor vehicles than motor vehicle liability insurance premiums. Regarding life insurance, it must be emphasised that the other life insurance premium, which is in fact an annuity insurance premium, declined by almost 10%, which signals that people felt less secure and thus less inclined to invest long term. As insurance of land motor vehicles has increased faster than motor vehicle liability insurance we could assume that people are feeling less secure. The sharp decline of credit insurance premiums could signal that significant shocks in the Serbian financial system and economy are not to be expected, but with much more probability also could signal the absence of insurers' willingness to insure credit risk exposures.

Investment activities of insurance companies are regulated by Article 114 and 115 of Serbian Insurance Law (2007). Article 114 of Serbian Insurance Law (2007) determines types of investments insurance companies can invest and deposit their technical reserves assets. However, Article 115 of the Law specifies that National Bank of Serbia will determine limitation of specific types of deposits and investments. Detailed limitation of certain classes are given by Decision on restrictions on specific forms of depositing and investing technical reserve assets and on maximum levels of specific deposits and investments of guarantee reserves of insurance companies (2009). These regulations restrict insurance companies from investing not only in riskier assets such as securitised securities but also direct them to invest the most of their available resources to the safest securities.

Financial market transactions in Serbia are executed through the Belgrade Stock Exchange where the most traded financial market instruments are shares and bonds. Although the BELEXline index, the general index of the Belgrade Stock Exchange, underwent a strong decline because of the financial crisis in 2008 (see Table 4), Serbian insurance companies' investment returns recorded a significant increase. In 2008 investment returns were more than three times higher than in 2007. The reason behind such an extraordinary investment result during the crisis is a conservative investment approach. As Table 4 shows the largest share of assets covering life insurance technical provisions was invested in bank deposits (19%) and government securities (71%). It was a similar situation with investment of assets covering non-life insurance technical provisions. Among investments of these assets, the largest share was bank deposits (30%), cash (20%) and government securities (10%). Although the trend of increased investment of these assets in equity securities had been recorded in previous years, during 2008 insurance companies decreased the share of riskier investment classes in their investment portfolios.

Despite the financial crisis in 2008 the insurance industry in Serbia generated greater profits than in 2007. Additionally from 2007 return on equity and return on assets increased for the industry as a whole, although the level of capital decreased by 8.2%. However due to the expansion in the volume of life insurance contracts in 2008 companies operating predominantly in life insurance marked a negative profitability of -0.44%.

The situation for the insurance industry worsened with the economic recession. The gross premium written for the first six months of 2009 decreased by 0.73% (National Bank of Serbia, 2009). Similarly to the situation in 2008, non-insurance premium growth decreased by 3.77% while life insurance premium growth increased by 25.53%. The volume of claims for the industry as a whole increased by 13.21%, which might imply that the industry generated an underwriting loss. We estimate that the underwriting result for life insurance has decreased more than for non-life insurance, as claims related to this insurance class increased by 58.85% while claims related to non-life insurance increased by 10.19%.

5. THE INSURANCE INDUSTRY IN BOSNIA AND HERZEGOVINA

After the breakup of former Yugoslavia and declaration of independence in 1992, Bosnia and Herzegovina entered a civil war that lasted until 1995. In addition to many casualties and refugees the economy suffered heavily during the war. However during the period 2004-2008 a constant growth of GDP was recorded (see Table 5). The unchecked pace of GDP growth continued in 2008, despite the financial crisis. However the situation was expected to worsen in 2009. According to International Monetary Fund projections (IMF, 2009b), in 2010 the economy is expected to recover and achieve GDP growth of 0.5%.

An unfavourable economic environment is the most important reason why the insurance industry in Bosnia and Herzegovina is lagging behind its counterparts in the region of ex-Yugoslavia. The other reason has been the fragmentation of the insurance market into two parts, which is because Bosnia and Herzegovina is constituted of two federal units, the Federation of Bosnia and Herzegovina and the Republic of Srpska. These federal units had different insurance regulations and until 2008 insurance companies from one federal unit did not do business in the other federal unit. Twenty six companies operated in Bosnia and Herzegovina as a whole in 2008. The majority of companies that have established offices in Bosnia and Herzegovina have majority domestic capital ownership. Ten companies out of twenty six are majority foreign owned. The only newly established company during 2008 was established with majority foreign ownership. The majority of companies specialise in non-life insurance, mainly because non-life insurance is the predominant class of insurance and because there are no composite companies in the Republic of Srpska. During 2008 there were eleven companies engaged in both non-life and life insurance, fourteen companies engaged in non-life insurance only, while only one company specialised in life insurance.

Despite the fact that a continued growth of gross written premiums was recorded in the period 2004-2008, the insurance industry in Bosnia and Herzegovina is still undeveloped. The facts that support this thesis are the low share of life insurance premiums in gross written premiums and low insurance density and penetration. This underdevelopment explains the relatively insignificant impact of the crisis on the insurance industry in Bosnia and Herzegovina. Although the growth of life insurance premiums in 2008 halved in comparison with 2007, the growth of non-life insurance premiums has accelerated (see Table 5). At the same time since 2007 the ratio of losses in gross written premiums has only marginally increased. Thus despite the absence of available data for the underwriting result we can conclude that it has not been significantly impaired by the financial crisis.

However as is shown in Table 2 the impact of the financial crisis on different classes of insurance was slightly different in the Bosnian and Herzegovinian insurance market. This market showed an increase in gross written premiums for all insurance classes. However the most significant increase was recorded for land motor vehicle insurance, goods in transit insurance, and credit insurance. As insurance of land motor vehicles has increased faster than motor vehicle liability insurance we could assume that people are feeling less secure. In addition the increase in goods in transit and credit insurance premiums reflects the increased need of businesses for property and liability protection, which is caused by the crisis. Regarding the notable increase of credit insurance premiums we must emphasise that it could signal that significant shocks in the financial system of Bosnia and Herzegovina are to be expected, but could also signal the absence of insurers' cautiousness to insure credit risk exposures. The general fact is that when people feel less secure during times of crisis they are less inclined to invest long term. As life insurance premiums increased by 21% during 2008 the assumption could be made that the financial crisis had insignificant impact. However we are of the opinion that the reason behind such a significant increase in life insurance premiums is the absence of a significant share of life insurance premiums in the total premium before the crisis.

Data for the investment structure of insurance companies in Bosnia and Herzegovina are not available. However, as predominant financial instruments traded at the country's only stock exchange are bonds and shares, we can draw some estimates based on previous years' results. Additionally, we can draw these estimates on the basis of investment restrictions determined by insurance laws of federal entities. Article 57 of FBIH Law on Insurance Companies in Private Insurance (2005) and Article 56 of RS Law on Insurance Companies (2006) determine that insurance companies can invest in Bosnia and Herzegovina and countries of the European Union but for investments outside of Bosnia and Herzegovina, they must obtain prior approval of the entity's insurance supervision agency. Detailed rules for insurance companies' investments are determined in FBIH Rulebook on the Level and Manner of Funds Investment (2006) for Federation of Bosnia and Herzegovina and in RS Rulebook on the Amount and Method of Investment of Insurance Companies' Funds (2006) for Republic of Srpska. As is the case with other countries of the region, insurance companies in Bosnia and Herzegovina are directed to invest the most of their available resources in the safest securities.

Relative year-on-year changes of rate of return on SASX-10, the main index on the Sarajevo Stock Exchange, are shown in Table 5. Despite the recorded decrease of rate of return in this index by more than 62% during 2007, profitability, return on equity, and return on assets decreased by less than 20%, 30% and 33% respectively. During the same period capital increased by more than 14% because of recapitalising imposed by changes in the Insurance Act. From these results we can draw the conclusion that capital market changes are not proportionally related to insurers' investment results. Additionally we measured the difference between the money market interest rate and the inflation rate in order to use it as a proxy for insurers' investment returns (see Table 5). Based on previous years' results and measured return on investment, we estimate that investment results have decreased, but remained positive despite the financial crisis.

In contrast to the insurance industry's development in other regional countries the condition of the insurance industry in Bosnia and Herzegovina has not been significantly impaired despite the economic recession. Although the pace of growth has decelerated gross premiums written have increased in both federal units, according to preliminary results for the first six months of 2009. In the Federation of Bosnia and Herzegovina gross written premiums increased by 3.2%, in contrast to recorded growth in 2008 of 14.22% (Insurance Supervisory Agency of Federation of BiH, 2009). Positive developments have been recorded for both life and non-life insurance. Life insurance premiums increased by 5.3% while non-life insurance premiums increased by 2.7%. In the Republic of Srpska the growth of gross written premiums decelerated by 11.4% but still marked an increase of 2.09% (The Insurance Agency of Republic of Srpska, 2009). Similarly to the developments in the Federation of Bosnia and Herzegovina, both life and non-life insurance premiums have risen. Life insurance premiums increased by 24.58% while non-life premiums increased by 0.85%.

6. THE INSURANCE INDUSTRY IN THE FYR OF MACEDONIA

The Former Yugoslav Republic (FYR) of Macedonia declared its independence in 1991, after the breakup of the former federal state. Although Macedonia was not stricken by war, as was the case with all other former Yugoslav republics except Slovenia, it is the least developed economy in the region. The reason for this is that it was the least developed federal republic in former Yugoslavia. However during the last decade the Macedonian economy has made significant progress. During the period 2004-2008 it recorded a constant GDP growth that was not significantly impaired by the financial crisis (see Table 6). Although its GDP grew by almost 5% in 2008, it is estimated (IMF, 2009b) that the real GDP growth will recover in 2010 when it will reach 2%.

As the Macedonian economy is the least developed in the region, so is the insurance industry. Insurance penetration, density, and the share of life insurance premiums in gross written premiums are the lowest in the region (see Table 6). However during the period 2004-2008 there was a continuous growth of life insurance premiums, while during 2007 and 2008 it outpaced growth in all the other ex-Yugoslavia countries. Such developments have attracted foreign investors to the industry with the consequence that the majority of insurance companies in Macedonia are foreign owned. Only one company out of twelve has majority domestic ownership and all new companies established during the period 2004-2008 were established with a majority share of foreign capital. The greatest number of companies specialise in non-life insurance, only because non-life insurance has the predominant share in the total of premiums written. During 2008 there was only one company engaged in both non-life and life insurance, nine companies engaged in non-life insurance only, while two companies specialised in life insurance. As in other countries of the region during the period 2004-2008 there was a trend of increased interest in life insurance, which is emphasised by the fact that of the four new companies established in the reviewed period two were established as specialising in life insurance, and in 2004 there was only one company that offered life insurance in addition to non-life coverage.

The financial crisis has had a different impact on different classes of insurance, as is shown in Table 2. The most notable changes in non-life insurance during 2008 as compared to 2007 were the following: land motor vehicle insurance premiums increased by 19%, much faster than motor vehicle liability increased, goods in transit insurance premiums increased by more than 27%, and credit insurance premiums decreased by almost 80%. Such developments indicate the presence of the financial crisis as people and businesses feel less secure and insurers are cautious when underwriting credit risk exposures. Unlike other regional markets with the exception of the Serbian insurance market, the Macedonian insurance market showed a decrease in insurance premiums for property insurance against fire and natural forces, other property insurance, and general liability. Similarly to the Serbian insurance market but contrary to developments in most developed regional countries, Croatia, and Slovenia, despite the crisis life insurance premiums showed a considerable growth of more than 55% during 2008.

As Table 6 depicts, during the period 2004-2007 there was permanent growth of gross premiums written. In 2008 it decelerated because of the triple decrease in non-life insurance premium growth. As obligatory motor liability insurance premiums were predominant in gross written premiums during the period 2004-2008, we can conclude that the financial crisis has not significantly affected the underwriting results of the Macedonian insurance industry. Additionally we support this conclusion with the fact that the claims ratio in non-life insurance only slightly increased, while the proportion of settled claims in life insurance premiums significantly decreased during 2008.

The financial instruments traded at the country's only stock exchange are mainly shares and bonds. Insurance companies' investment strategies have been very conservative and in accordance with Macedonian Law on Insurance Supervision (2002). Types of assets insurance companies in FYR Macedonia are allowed to invest are defined according to Article 88 of the insurance law while limitations of investment classes are defined by Article 89. The regulation of investment activities in FYR Macedonia is also restrictive. For example, insurance companies may invest only 20% in instruments of foreign issuers, not more than 5% into stocks, bonds or other securities of a single issuer, or into loans extended to a single borrower and not more than 3% in cash-in-hand investments. Additionally, regulations determine that insurance companies shall not invest in stocks, bonds and other securities not listed on a recognised exchange or not publicly traded, instruments which cannot be legally disposed with, tangible assets which are rarely registered on recognised markets and with unreliable appraisal, real estate or any share in a real estate other than securities issued against mortgage and indirect investment in investment funds, stocks, bonds and other securities issued by stockholder of an insurance undertaking and individuals and entities associated with insurance company or stockholder of an insurance company and futures contracts, options and other derivatives, with exception of forward foreign currency contracts and other financial instruments used only for risk hedging purposes.

The largest share of assets during the period 2004-2008 was in loans to insureds, bank deposits and real estate. Although data for investment results of the insurance industry are not available we can estimate them using relative year-on-year changes in return on the MBI10 index, the Macedonian Stock Exchange index composed of up to ten listed ordinary shares chosen by the exchange's index commission. As this index underwent a strong decline during 2008 we could conclude that investment results have been severely hit by the financial crisis. When we use the difference between money market interest rate and inflation rate as a proxy for insurers' investment returns (see Table 6), we reach the conclusion that investment results might have been slightly negative. However the Macedonian insurance industry achieved profitability that was not significantly impaired when compared with 2007. Additionally return on equity has been positive. Thus we can conclude that the financial crisis has not significantly affected the Macedonian insurance industry.

However with the economic recession the insurance industry's situation worsened during the first six months of 2009. According to preliminary data (Ministry of Finance of the FYR of Macedonia, 2009) the growth of gross written premiums decelerated by 1.86%, despite the strong growth of life insurance premiums of 13.13%. Such a result has been achieved because non-life insurance premiums decreased by 2.47%. At the same time life insurance claims increased by 14.86%, while non-life insurance claims decreased by 5.63%. As a result the total volume of claims for the industry as a whole decreased by 4.91%. Based on these results we estimate that because of the underdevelopment of the insurance industry in the previous period the economic recession did not significantly impair the underwriting results of insurance companies in Macedonia during the first six months of 2009.

7. CONCLUSIONS

The countries that constitute the region of ex-Yugoslavia shared a similar socio-economic background that influenced the development of their insurance industries. After the breakup of former Yugoslavia all republics of the former federal state introduced market systems and democracy. During the nineties their development was different and strongly dependant on the presence of war activities. However during the period 2004-2008 both their economies and insurance industries have made significant progress. Economic growth together with liberalisation, privatisation, and the increased presence of foreign companies that brought substantial financial strength, new products, and advanced risk and asset liability management practices, have had the strongest impact on the development of regional insurance industries. Although the role of insurance activities is still relatively modest in all countries of the region with the exception of Slovenia, there is strong growth potential especially for life insurance. In general life insurance is less developed compared to non-life insurance, and accounts for a relatively modest share of the countries' insurance market in terms of gross written premiums.

During 2008 all economies of the region were affected by the impact of the financial crisis. Although the consequences of the crisis varied across the countries of the region its impact on the insurance industry has been limited. Overall insurance industry results for the region show that the industry generated underwriting profit. Despite the fact that investment returns decreased, the regional insurance industry generated profit. However the profitability of the insurance industry decelerated in all countries with the exception of Serbia. The pace of premium growth decelerated in all countries with the exception of the insurance industry in Croatia and Bosnia and Herzegovina. Life insurance has been severely affected in Slovenia and Croatia, the developed economies of the region. As the relative year-on-year change of technical provisions has demonstrated a relative decrease in reserve strengthening in all countries, we can conclude that insurers have improved their claims estimates while still preparing for the possibility of adverse claims developments. While the capital position remained relatively stable and even increased in Macedonia, return on equity and return on assets significantly declined in all countries except Serbia.

The main argument for the relatively insignificant impact of the financial crisis, compared with the impact on the global insurance industry, is the absence of innovative financial market instruments, which were at the forefront of insurance companies' problems in other economies. The risks inherent in these instruments have not been underwritten by regional insurance companies nor have insurance companies invested their assets in these types of instruments, with the exception of insurance companies in Slovenia. As insurance companies have limited the share of investments in equities, investment results have not been significantly affected by the capital markets' turbulence. With the first signs of the crisis national insurance supervisors even increased their restrictions of insurance companies' investments in order to achieve insurance market stability. For example the Croatian Financial Services Supervisory Agency reduced the highest interest rate in the calculation of mathematical provision from 4.5% in 2006 to 3.3% for 2009, while the National Bank of Serbia increased the level of investments by insurance companies in technical reserves in the form of bank deposits from 30 to 35% and from 35 to 40% respectively.

These findings suggest the importance of insurance companies focusing on core business activities in risk underwriting and more conservative investment strategies, which are more balanced with corresponding liabilities. The findings also emphasise the role of regulation and supervision in the preservation of stability in the insurance industry. Regional insurers still have to develop a holistic approach to risk and capital management that would enable them to identify, in a timely manner, all potential threats to their solvency position, thus making them even more resilient to similar shocks in the future. This will require greater manager responsibility for identification, measurement, monitoring, and treatment of all identified risks in conformity with defined risk tolerance, greater emphasis on accumulation of risk exposures, precise definition of probable maximum losses, and greater transparency in reporting overall risk exposures.

Finally, we must emphasise that the economic recession has the potential to seriously destabilise the regional insurance industry by its direct impact on the increase of fraudulent and inflated claims and by affecting the decrease in insurance demand and investment results. Additionally, as the amount of available capital in regional capital markets is decreasing, the access to additional debt and equity capital will be limited and expensive. Although such developments have the potential to trigger solvency problems for some insurers, the opportunity for further strengthening the regional presence through relatively cheap acquisitions may arise for regional leaders such as Triglav, Sava, Croatia, or Dunav insurance companies.

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APPENDIX

Table 1: Slovenian insurance market indicators

	2004	2005	2006	2007	2008
Gross premiums written (in 000 EUR)	1456887	1549167	1725304	1894004	2018960
Growth of gross premiums written (year-on-year)	14.26%	6.33%	11.37%	9.78%	6.60%
GDP (in billion of EUR)	27.07	28.70	31.01	34.47	37.13
GDP per capita (end of 2008 EUR)	15859.00	16403.84	17288.57	18551.46	18902.91
Insurance density (gross premiums written per capita in EUR)	741.78	788.77	878.45	964.34	1027.96
Insurance penetration (gross premiums written / GDP)	5.38%	5.40%	5.57%	5.49%	5.44%
Life insurance share in gross premiums written	29.45%	30.01%	31.34%	32.17%	31.83%
Non-life insurance share in gross premiums written	70.55%	69.99%	68.66%	67.83%	68.17%
Auto liability insurance share in gross premiums	19.56%	19.70%	18.30%	17.40%	16.70%
Life insurance premiums growth (year-on-year)	40.66%	8.35%	16.31%	12.69%	5.48%
Non-life insurance premiums growth (year-on-year)	5.96%	5.49%	9.25%	8.45%	7.13%
Loss ratio (non-life insurance)	72.30%	68.10%	67.50%	67.10%	74.60%
Expense ratio (non-life insurance)	17.49%	18.75%	17.23%	18.00%	17.61%
Combined ratio (non-life insurance)	89.79%	86.85%	84.73%	85.10%	92.21%
Net claims incurred in net earned premiums (life insurance)	38.00%	35.00%	31.00%	29.00%	31.00%
Companies engaged in both non-life and life insurance	8	10	9	10	10
Number of specialised non-life insurance companies	5	4	4	4	4
Number of specialised life insurance companies	4	4	3	5	7
Number of companies with majority foreign ownership in relation to total number of companies	5 of 17	4 of 18	5 of 16	5 of 19	5 of 21

Assets covering mathematical provisions	Government securities	50.10%	46.10%	43.40%	34.30%	38.10%
	Real estate	0.10%	0.20%	0.10%	0.10%	0.30%
	Loans	1.00%	0.80%	0.40%	0.30%	0.50%
	Debt securities	26.40%	27.70%	28.30%	30.50%	32.30%
	Equity securities	12.50%	16.80%	22.50%	28.50%	21.30%
	Bank deposits	9.70%	35.20%	4.70%	5.60%	6.40%
	Other investments	0.30%	0.20%	0.60%	0.70%	1.10%
Assets covering technical provisions	Government securities	30.60%	37.60%	38.70%	33.40%	26.10%
	Real estate	3.70%	3.20%	1.50%	1.50%	2.60%
	Loans	2.60%	1.50%	1.40%	1.60%	1.40%
	Debt securities	17.60%	17.50%	19.70%	24.10%	22.10%
	Equity securities	19.40%	16.50%	20.00%	20.60%	15.00%
	Bank deposits	15.20%	13.60%	9.70%	7.20%	8.10%
	Other investments	10.90%	10.20%	9.00%	11.60%	24.70%
Technical provisions (in million EUR)		1938.74	2243.13	2576.36	3078.10	3169.30
Relative year-on-year change of technical provisions		14.84%	15.70%	14.86%	19.47%	2.96%
Investment gains (non-life insurance, in million EUR)		67.2	65.1	56.8	85.5	14.8
Investment gains (life insurance, in million EUR)		0.8	0.4	3.8	8.3	-4.8
Relative year-on-year change of return on SBI20 (base date 20 June 1994)		24.74%	-5.59%	37.86%	78.13%	-67.49%
Profit (non-life insurance operations, in million EUR)		17.9	47.6	64.7	69.1	1.0
Profit (life insurance operations, in million EUR)		11.7	14.2	13.8	20.8	1.8
Capital (non-life insurance, in million EUR)		298.7	293.0	398.3	702.4	549.0
Capital (life insurance, in million EUR)		116.8	158.6	191.5	240.2	193.1
Net return on equity		4.00%	8.00%	10.00%	12.00%	0.40%
Return on assets (non-life)		1.24%	3.03%	3.58%	3.07%	0.04%
Return on assets (life)		1.05%	1.03%	0.81%	0.90%	0.08%

Source: author's calculations, Ljubljana Stock Exchange, Slovenian Insurance Supervisory Agency, Slovenian Insurance Association, The Bank of Slovenia and Statistical Office of the Republic of Slovenia.

Table 3: Croatian insurance market indicators

	2004	2005	2006	2007	2008
Gross premiums written (in 000 EUR)	863859	996536	1113691	1237511	1388767
Growth of gross premiums written (year-on-year)	8.88%	15.36%	11.76%	11.12%	12.22%
GDP (in billion EUR)	32.02	35.85	38.98	42.89	46.54
GDP per capita (end of 2008 EUR)	8298.95	9066.37	9620.26	10217.94	10489.62
Insurance density (gross premiums written per capita in EUR)	194.67	224.57	250.97	278.88	312.96
Insurance penetration (gross premiums written / GDP)	2.70%	2.78%	2.86%	2.89%	2.98%
Life insurance share in gross premiums written	23.68%	25.79%	26.47%	27.39%	26.30%
Non-life insurance share in gross premiums written	76.32%	74.21%	73.53%	72.61%	73.70%
Auto liability insurance share in gross premiums	31.86%	30.56%	29.96%	30.02%	28.87%
Life insurance premium growth (year-on-year)	17.32%	22.35%	15.41%	14.47%	4.15%
Non-life insurance premium growth (year-on-year)	8.20%	9.24%	11.44%	9.23%	10.08%
Loss ratio (non-life insurance)	71.00%	70.50%	70.80%	73.90%	68.42%
Expense ratio (non-life insurance)	36.10%	37.70%	39.40%	40.20%	39.38%
Combined ratio (non-life insurance)	107.10%	108.20%	110.20%	114.10%	107.80%
Companies engaged in both non-life and life insurance	12	11	11	10	10
Number of specialised non-life insurance companies	8	7	5	8	9
Number of specialised life insurance companies	4	5	4	5	8
Number of companies with majority foreign ownership in relation to total number of companies	12 of 24	13 od 23	12 of 20	14 of 23	16 of 27
Investment returns	4.90%	3.90%	4.50%	5.70%	1.88%

Assets covering mathematical provisions	Securities of the Republic of Croatia and Croatian Bank for Reconstruction and Development	77.60%	75.00%	65.70%	65.50%	68.40%
	Deposits	10.20%	11.80%	15.60%	18.00%	20.20%
	Real estate	6.20%	4.50%	5.10%	2.50%	2.00%
	Units and shares in investment funds	n.a.	n.a.	8.30%	8.90%	3.90%
	Other	6.00%	8.70%	5.30%	5.10%	5.50%
Assets covering technical provisions	Securities	25.50%	26.50%	30.40%	34.60%	27.90%
	Deposits	14.80%	19.60%	16.60%	18.00%	20.90%
	Real estate	30.30%	27.50%	20.50%	14.40%	16.40%
	Units and shares in investment funds	n.a.	n.a.	9.40%	11.20%	6.10%
	Loans	12.20%	9.50%	8.00%	7.80%	14.30%
	Other	17.20%	16.90%	15.10%	14.00%	14.40%
Technical provisions (in million EUR)		1429.86	1691.87	1910.56	2212.24	2484.84
Relative year-on-year change of technical provisions		14.73%	18.32%	12.93%	15.79%	12.32%
Relative year-on-year change of CROBEX index value (last trading day – base date 1 July 1997)		32.12%	27.57%	60.67%	63.24%	-67.13%
Relative year-on-year change of CROBIS index value (last trading day – base date 30 September 2002)		1.14%	3.57%	-4.50%	-4.53%	-6.07%
Net profit (in million EUR)		27.0	32.4	42.4	46.8	1.4
Capital (aggregate for non-life and life insurance, in million EUR)		286.12	357.81	529.03	659.99	637.35
Return on equity		9.44%	9.06%	8.01%	7.09%	0.22%
Return on assets		1.44%	1.44%	1.58%	1.48%	0.04%

Source: author's calculations, Zagreb Stock Exchange, Croatian Financial Services Supervisory Agency, Croatian Insurance Bureau, Croatian Insurance Association, Croatian National Bank and Central Bureau of Statistics of the Republic of Croatia

Table 4: Serbian insurance market indicators

	2004	2005	2006	2007	2008
Gross premiums written (in 000 EUR)	334785	405727	481712	565145	588994
Growth of gross premiums written (year-on-year)	-1.78%	21.19%	18.73%	17.32%	4.22%
GDP (in billion of EUR)	18.10	20.44	25.85	30.20	31.58
GDP per capita (end of 2008 EUR)	2777.15	3059.60	3775.01	4257.44	4211.76
Insurance density (gross premiums written per capita in EUR)	44.65	54.11	64.25	75.37	78.55
Insurance penetration (gross premiums written / GDP)	1.85%	1.98%	1.86%	1.87%	1.87%
Life insurance share in gross premiums written	7.05%	9.51%	9.96%	11.03%	12.16%
Non-life insurance share in gross premiums written	92.93%	90.49%	90.04%	88.97%	87.84%
Auto liability insurance share in gross premiums	23.10%	29.50%	33.20%	32.50%	32.10%
Life insurance premium growth (year-on-year)	82.98%	63.41%	24.32%	29.95%	14.88%
Non-life insurance premium growth (year-on-year)	-5.11%	17.99%	18.14%	15.92%	2.90%
Loss ratio (non-life insurance)	60.23%	51.98%	60.16%	60.51%	62.25%
Expense ratio (non-life insurance)	25.68%	29.88%	40.49%	40.04%	41.66%
Combined ratio (non-life insurance)	85.91%	81.86%	100.66%	100.55%	103.91%
Companies engaged in both non-life and life insurance	8	7	7	7	6
Number of insurers engaged only in non-life insurance	10	8	6	8	9
Number of insurers engaged only in life insurance	2	2	1	3	6
Number of companies with majority foreign ownership in relation to total number of companies	4 of 20	4 of 17	8 of 14	14 of 18	15 of 21

Assets covering non-life insurance technical provisions	Bank deposits	n.a.	13.00%	28.00%	27.00%	30.00%
	Cash	n.a.	n.a.	n.a.	n.a.	20.00%
	Receivables from premiums not due for payment	n.a.	n.a.	n.a.	n.a.	12.00%
	Government securities	n.a.	n.a.	14.00%	10.00%	10.00%
	Equity securities	n.a.	n.a.	17.00%	20.00%	7.00%
	Real estate	n.a.	30.00%	n.a.	n.a.	n.a.
	Other investments	n.a.	57.00%	41.00%	43.00%	21.00%
Assets covering life insurance technical provisions	Bank deposits	n.a.	n.a.	16.00%	12.00%	19.00%
	Cash	n.a.	n.a.	n.a.	n.a.	n.a.
	Receivables	n.a.	n.a.	n.a.	n.a.	n.a.
	Government securities	n.a.	n.a.	n.a.	n.a.	71.00%
	Equity securities	n.a.	n.a.	n.a.	n.a.	n.a.
	Securities	n.a.	33.00%	57.00%	69.00%	n.a.
	Market-traded bonds	n.a.	30.00%	n.a.	n.a.	n.a.
	Other investments	n.a.	37.00%	27.00%	19.00%	10.00%
Technical provisions (in million EUR)		145.42	267.84	365.82	498.51	581.26
Relative year-on-year change of technical provisions		n.a.	84.18%	36.58%	36.27%	16.60%
Investment returns (in million EUR)		n.a.	9.59	13.13	17.25	52.01
Relative year-on-year change of BELEXline index value (last trading day - base date 30 September 2004)		n.a.	68.29%	36.01%	44.12%	-68.72%
Net profit (in million EUR)		n.a.	11.31	20.18	17.67	24.22
Capital (aggregate for non-life and life insurance, in million EUR)		n.a.	168.9	202.17	311.37	285.8
Return on equity		n.a.	4.37%	9.98%	5.67%	8.47%
Return on assets		n.a.	1.43%	2.83%	1.98%	2.53%

Source: author's calculations, Belgrade Stock Exchange, National Bank of Serbia, Serbian Insurance Association and Statistical Office of the Republic of Serbia.

Notes: The available data for coverage of technical reserves by asset forms is not fully transparent and comparable by years. Only the data for assets with the largest share are available; thus all other assets are included in "other investments".

Table 5: Insurance market indicators for Bosnia and Herzegovina

	2004	2005	2006	2007	2008
Gross premiums written (in 000 EUR)	151971	170744	184369	205655	231663
Growth of gross premiums written (year-on-year)	12.76%	12.35%	7.98%	11.55%	12.65%
GDP (in billion EUR)	8.07	8.66	9.78	11.06	12.55
GDP per capita (end of 2008 EUR)	2443.65	2556.52	2817.28	3077.78	3302.54
Insurance density (gross premiums written per capita in EUR)	39.99	44.93	48.52	54.12	60.96
Insurance penetration (gross premiums written / GDP)	1.88%	1.97%	1.89%	1.86%	1.85%
Life insurance share in gross premiums written	9.82%	9.57%	11.08%	13.55%	14.55%
Non-life insurance share in gross premiums written	90.18%	90.43%	88.92%	86.45%	85.45%
Auto liability insurance share in gross premiums	56.34%	56.45%	54.94%	52.12%	52.13%
Life insurance premium growth (year-on-year)	83.64%	9.50%	25.03%	36.45%	20.98%
Non-life insurance premium growth (year-on-year)	8.21%	12.66%	6.18%	8.43%	11.36%
Ratio of losses in gross premiums written	36.72%	36.89%	35.84%	39.01%	39.16%
Expense ratio	n.a.	n.a.	n.a.	n.a.	n.a.
Combined ratio	n.a.	n.a.	n.a.	n.a.	n.a.
Companies engaged in both non-life and life insurance	9	n.a.	8	9	11
Number of insurers engaged only in non-life insurance	15	n.a.	13	15	14
Number of insurers engaged only in life insurance	2	n.a.	3	1	1

Number of companies with majority foreign ownership in relation to total number of companies	n.a.	n.a.	10 of 24	9 of 25	10 of 26
Return on investment	8.50%	4.40%	1.90%	2.40%	0.60%
Relative year-on-year change of return on SASX-10 (last trading day - base date 31 December 2004	n.a.	61.25%	77.10%	29.05%	-66.52%
Profit (before taxes, in million EUR)	14.31	15.38	13.56	10.96	n.a.
Capital (aggregate for non-life and life insurance, in million EUR)	117.35	130.02	134.87	154.05	n.a.
Return on equity	12.19%	11.83%	10.05%	7.11%	n.a.
Return on assets	n.a.	4.45%	3.75%	2.51%	n.a.

Source: author's calculations, Sarajevo Stock Exchange, Insurance Supervisory Agency of Federation of Bosnia and Herzegovina, Insurance Agency of Republic of Srpska and Insurance Agency of Bosnia and Herzegovina, National Bank of Bosnia and Herzegovina and Federal Office of Statistics.

Notes: Following a similar approach by Pope and Ma (2008), due to the lack of information on investment activities we proxy the return on investment by rate of return, measured by the difference between money market interest rate and inflation rate.

Table 6: Insurance market indicators for FYR of Macedonia

	2004	2005	2006	2007	2008
Gross premiums written (in 000 EUR)	83813	84457	89846	99815	104565
Growth of gross premiums written (year-on-year)	2.76%	0.77%	6.38%	11.10%	4.76%
GDP (in billion EUR)	4.33	4.69	5.08	5.79	6.49
GDP per capita (end of 2008 EUR)	2461.04	2599.98	2751.76	3025.60	3209.42
Insurance density (gross premiums written per capita in EUR)	41.44	41.76	44.42	49.35	51.70
Insurance penetration (gross premiums written / GDP)	1.94%	1.80%	1.77%	1.72%	1.61%
Life insurance share in gross premiums written	2.06%	2.11%	2.10%	2.80%	4.15%
Non-life insurance share in gross premiums written	97.94%	97.89%	97.90%	97.20%	95.85%
Auto liability insurance share in gross premiums	44.33%	45.24%	47.80%	50.51%	49.36%
Life insurance premium growth (year-on-year)	0.38%	3.24%	5.85%	48.01%	55.76%
Non-life insurance premium growth (year-on-year)	4.04%	3.19%	19.94%	10.35%	3.66%
Loss ratio (non-life insurance)	56.70%	56.51%	52.17%	45.97%	48.57%
Total expenses (in million EUR)	121.21	102.23	103.89	107.89	122.77
Proportion of settled claims in life insurance premiums	73.66%	65.96%	94.32%	79.19%	39.20%
Companies engaged in both non-life and life insurance	1	1	1	1	1
Number of insurers engaged only in non-life insurance	7	8	8	9	9
Number of insurers engaged only in life insurance	0	1	1	2	2
Number of companies with majority foreign ownership in relation to total number of companies	5 of 8	6 of 10	7 of 10	10 of 12	11 of 12

Investment structure (in % of assets)	Cash and bank deposits	7.96%	9.41%	8.61%	12.74%	n.a.
	Bonds and other securities issued or guaranteed by the government of Macedonia	0.17%	0.83%	1.18%	0.97%	n.a.
	Mortgages	0.20%	0.49%	0.02%	0.02%	n.a.
	Loans to insureds	12.99%	12.07%	12.88%	22.93%	n.a.
	Equities	2.60%	4.00%	4.82%	5.27%	n.a.
	Real estate	9.37%	8.71%	8.19%	10.78%	n.a.
	Other investments	36.82%	34.54%	36.22%	9.18%	n.a.
Technical provisions (in million EUR)		n.a.	68.80	70.84	74.59	75.70
Relative year-on-year change of technical provisions		n.a.	n.a.	2.97%	5.29%	1.49%
Return on investment		6.91%	5.10%	1.20%	3.00%	-2.60%
Relative year-on-year change of return on MBI10 (last trading day - base date 4 January 2005)		n.a.	n.a.	61.54%	109.07%	-72.92%
Profit (in million EUR)		4.47	4.07	5.51	5.06	4.20
Capital (aggregate for life and non-life insurance, in million EUR)		n.a.	n.a.	43.94	43.50	60.18
Return on equity (non-life insurance)		11.41%	10.24%	16.34%	11.61%	6.98% (aggregate)
Return on equity (life insurance)		53.81%	15.35%	-14.07%	3.32%	
Return on assets (non-life insurance)		1.59%	1.38%	2.07%	2.13%	n.a.
Return on assets (life insurance)		4.18%	1.90%	-1.89%	0.81%	n.a.

Source: author's calculations, Macedonian Stock Exchange, National Insurance Bureau of Macedonia, National Bank of Macedonia, Ministry of Finance of the Republic of Macedonia and State Statistical Office of Macedonia.

Notes: Following a similar approach by Pope and Ma (2008), due to the lack of information on investment activities we proxy the return on investment by rate of return, measured by the difference between money market interest rate and inflation rate.

Table 2: Major classes of insurance and their changes during the financial crisis of 2008

	Slovenia			Croatia			Serbia			Bosnia and Herzegovina			FYR Macedonia		
Class of Insurance	2007	2008	% change	2007	2008	% change	2007	2008	% change	2007	2008	% change	2007	2008	% change
Accident	108.0	111.6	103.3%	71.7	76.4	106.5%	34.2	34.6	101.1%	15.0	17.8	119.2%	9.0	9.0	100.4%
Health Insurance	368.0	389.6	105.9%	34.4	38.4	111.7%	21.9	24.0	109.9%	3.9	4.7	121.6%	0.5	0.5	101.2%
Land motor vehicle	191.8	218.0	113.7%	146.7	157.6	107.4%	83.2	95.1	114.4%	24.6	30.9	125.5%	11.4	13.5	119.0%
Goods in transit	8.1	8.3	102.5%	10.5	14.3	136.3%	9.8	10.5	107.9%	1.5	2.0	135.2%	1.0	1.2	127.5%
Fire and natural forces	79.8	84.2	105.5%	72.7	95.1	130.8%	54.5	51.5	94.5%	11.5	13.4	116.3%	7.0	6.4	90.8%
Other property	96.8	114.8	118.6%	94.6	119.1	125.9%	95.3	93.9	98.5%	11.7	12.3	105.3%	14.3	13.3	92.9%
Motor vehicle liability	330.0	336.3	101.9%	371.5	401.0	107.9%	181.4	187.0	103.1%	107.2	113.9	106.3%	50.4	51.6	102.4%
General liability	43.3	48.4	111.8%	n.a.	n.a.	n.a.	9.0	9.6	107.3%	1.6	1.7	106.4%	0.9	0.8	97.8%
Credit	39.7	40.8	102.8%	14.8	21.7	146.5%	6.9	1.5	22.5%	0.2	0.3	128.6%	0.1	0.0	21.0%
Other non-life	20.8	25.9	124.5%	81.6	117.6	144.1%	6.8	9.6	141.2%	0.7	0.9	128.6%	2.6	3.9	150.9%
Total non-life	1286.3	1377.9	107.1%	898.6	1,041.2	115.9%	502.8	517.4	102.9%	177.8	197.9	111.3%	97.0	100.2	103.3%
Life insurance	230.7	224.9	97.5%	283.1	292.3	103.3%	52.9	62.2	117.7%	27.9	33.7	121.0%	n.a.	n.a.	n.a.
Supplementary insurance	0	0	n.a.	21.6	22.1	102.4%	4.32	4.8	111.2%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Unit linked	237.7	251.6	105.8%	31.6	30.6	96.9%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Other life insurance	44.7	57.6	128.9%	2.7	2.6	96.3%	5.1	4.6	90.2%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total life insurance	513.1	534.1	104.1%	338.9	347.6	102.5%	62.3	71.6	114.9%	27.9	33.7	121.0%	2.8	4.3	155.2%

Source: author's calculations, Slovenian Insurance Supervisory Agency, Croatian Financial Services Supervisory Agency, National Bank of Serbia, Insurance Supervisory Agency of Federation of Bosnia and Herzegovina, and National Insurance Bureau of Macedonia.

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