Review
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ANALYSIS OF THE CAPITAL MARKET IN CROATIA

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Abstract
The financial crisis that began in 2008 in the USA turned into a global economic crisis in a short time. As such, it had a big impact on the financial stability of Croatia, primarily on capital market. Capital market includes securities trading, primarily stocks and bonds, whose market value is influenced by the market capitalization of capital market and vice versa. Macro economically, market capitalization had an influence on the fall in the value of the entire capital market, and micro economically, it had an influence on the fall of the prices of stocks, bonds and other financial instruments of companies. The volume of trade decreased, but there was an increase in the number of transactions. In other words, people traded more and in smaller quantities. Therefore, the risk increased, and investors became more cautious.

Keywords: economic crisis, capital market, securities, risk.

Jel Classification: G14

INTRODUCTION

Financial investments are inherently risky, primarily because of the fact that their value is uncertain, and secondly because they are based on expectations. The aim of this paper is to show how the financial crisis had a long-term negative impact on stock market trends and on the value of all financial instruments. Market is determined by various factors that determine its development. A number of researchers have conducted research into the influence of these factors on capital markets, some of which are mentioned in the paper. Low liquidity, the size of the public debt, low investment, underdeveloped banking market caused by the financial crisis led to a decline in the value of capital market. Precisely this problem is the subject of the research. The aim of this paper is to compare the market value of all financial instruments, trade, and the impact of market

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capitalization in the period from 2007, i.e. the year when the financial crisis began, up to 2014. Theoretical and empirical methods of scientific research were used to investigate the problem. Methods of analysis and synthesis, description and classification were conducted. The empirical part of the research was conducted using statistical methods and methods of analysis of time series through which data was collected and grouped in tabular and graphical display and analysed and compared on the basis of mathematical methods. Gross domestic product (GDP) indicates the beginning of recession in Croatia. Moreover, GDP has affected the overall changes that have taken place in the capital market. In order to prove this, an econometric analysis was conducted on the basis of a simple linear regression.

1. EMPIRICAL RESEARCH DETERMINANT CAPITAL MARKETS

Capital market as a meeting place for supply and demand of long-term securities is determined by a number of factors. This paper mainly analyses the influence of macroeconomic factors that have a major impact on the development of capital markets. Level of debt has a negative impact on the market development which in return leads to a more difficult access to private sector financing and inflation.

Yartey (2008) proved that the following macroeconomic factors particularly affect the capital market: level of income, investments, development of banking market, and flow of private capital and liquidity of capital markets. Liquidity is considered one of the most important factors on the basis of which market participants make investment decisions. Benic and Franic (2008) measured and compared the liquidity of Croatian market in comparison to certain countries: Croatian market showed a higher level of liquidity than Bulgarian and Serbian market, not much higher than Hungarian, Polish and German market, and the same level of liquidity as Slovenian market.

The banking system plays a major role in the development of capital market. Levin (1997) points out that banks and market perform different but complementary services that positively affect growth. Therefore, development and availability of financial services is what is important, and not the way the financial system is organized.

Samodol (2011) by long term indebtedness the State "supports" the price of capital in the market, given that there is relatively strong connection between national debt interests movements and movement of interests on long-term loans in the private sector, while by borrowing on the money market, the State stabilizes the price of money. However, the increase in central government debt due to the increase in assets of non-bank financial institutions has a latent risk of crowding out the private sector from the capital market, and by each higher interest payment on issued debt the State prevents drops in deposit interest rates on savings in banks, which is s a prerequisite for lower lending rates.

According to Curak, Kundid and Viskovic (2014) reform ownership structure and system of pension funds are considered to have the greatest influence in shaping financial markets. Privatization by issuing shares led to an increase in supply on the capital market, while the impact of pension reforms manifested in an increased securities demand. The underdevelopment of capital markets in transition countries is caused by the low level of assets of institutional investors, unfavourable institutional characteristics, gaps in the implementation of the privatization process, and insufficient growth of the economy, low savings and low investment culture and tradition.

Josic (2006) the process of Croatian accession to the European Union has led to a rapid liberalization of the capital market in the area of investment banking, especially investment funds. European decisions have significantly influenced the development of Croatian capital market and rapid development of investment funds. Transfer of capital from the banks into investment funds has had a positive effect on the revival of securities market and the development of stock market operations which are a driving force for the development of the real economy.

2. MARKET VALUE AND OWNERSHIP STRUCTURE OF FINANCIAL INTRUMENTS ON CAPITAL MARKET IN CROATIA

Each security has its own market value. The market value of a company is the value of the company at the time of the sale. This value is often referred to as the fair market value because it is assumed that assets of the company or its financing instruments are traded in organized markets or between parties who are not burdened so that the transaction can be carried out without any coercion Orsag (2002, 165).

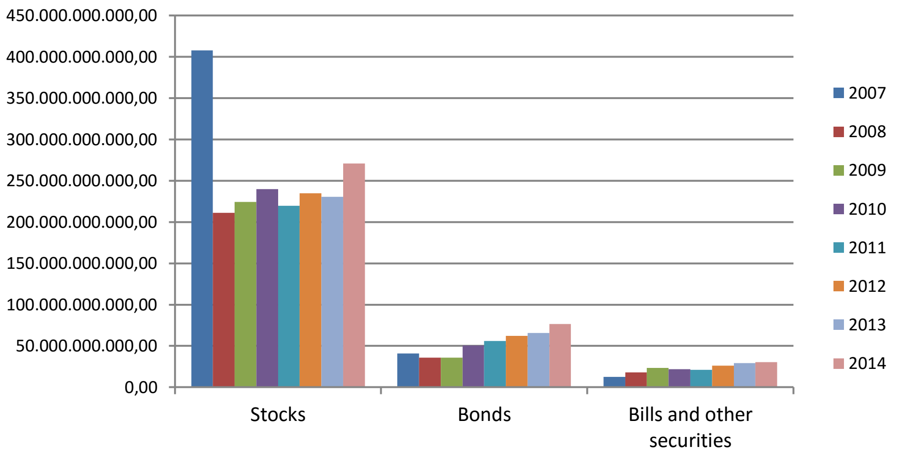


Figure 1. The Market value of financial instruments

The chart shows the market value according to the structure of securities from 2007 to the end of 2014, the CDCC (Statistical Newsletter, 2007–2014). Stocks have the largest share, they are then followed by bonds and other securities. The highest market value of stock was reached in 2007 and it amounted to 407704241802.07 £, or 88.41% of the total market value. A year after, the value dropped to HRK 21128 2484929.89 or by 48.2%, the reason for this is the globalization crisis, which hit Croatia. Its market value in the coming years oscillated, and in 2014 it achieved a growth of 17.6% in comparison to the previous year. Because of the economic crisis which began in 2008 the market value of bonds fell by 12.3%. However, bonds value has been expanding since 2008, and the reason is increased corporate borrowing.

Table 1. The total market value of financial instruments

Year	Number of securities	Released quantity	Nominal value	Market value
2007	1.073	39,075,867,745,40	182,481,169,888,68	461,157,621,669,78
2008	1.082	41,642,403,062,48	189,717,473,634,36	265,107,632,719,79
2009	1.163	39,077,739,911,00	195,528,000,597,24	283,441,951,501,13
2010	1.141	45,858,763,468,94	208,488,799,707,33	312,370,525,987,69
2011	1.125	49,975,830,527,04	215,886,711,982,73	296,702,188,577,21
2012	1.104	53,179,613,679,06	220,224,991,011,51	322,947,203,705,15
2013	1.098	57,082,225,251,68	226,289,363,663,12	325,150,961,366,81
2014	1.052	64,255,100,498,10	234,445,514,252,80	377,898,942,712,97

According to the CDCC the lowest number of securities was achieved in 2014, but in that year compared to other years since 2007, the largest amount of securities at the highest nominal value was released. The smallest amount of issued and nominal value was recorded in 2007 in which it achieved the highest market value. From 2007 to 2014 the nominal value increased by 28.5%, while the market value fell by 18.1%. From the table it can be seen that the lowest recorded market value in the period was in 2008, when economic crisis started. In that year compared with 2007, there has been a record drop in the market value of all securities to 42.5%.

Domestic legal entities have the largest share in the structure of ownership of securities, while domestic private persons have the lowest share. According to the Central Depository Agency (CDA), out of a total of 1,052 securities in the register of the CDCC 85.93% are shares, 5.7 % bonds, 0.1% notes and 0.03% other securities. The market value of these securities is around HRK 377 billion, of which 71.72% are shares, 20.25% in bonds, 8.02% bills and less than 0.02% other securities. Investors are mostly local people, out of which 47.35% are domestic legal entities and 15.44% domestic natural persons. Foreign individuals are owners of 23.85% of the securities and other investors have 13.55% securities in their portfolios.

3. MARKET CAPITALIZATION AND LIQUIDITY SECURITIES

The total market value of securities is their market capitalization. It is the product of the market price of securities and the total number of securities.

Table 2. Chain and base indices at market capitalization in mil.

Year	Market capitalization	Chain Index	Rate of changes	Base index (2007)
2007	393,934,5	—	—	100.00
2008	177,037,2	44.94	-55.06	44.94
2009	171,624,0	96.94	-3.06	43.57
2010	193,599,2	112.80	12.80	49.15
2011	184,733,5	95.42	-4.58	46.89
2012	191,574,3	103.70	3.70	48.63
2013	183,747,5	95.91	-4.09	46.64
2014	202,142,7	110.01	10.01	51.31

The table shows the value of market capitalization needed to calculate the chain and basic index. Chain indices show relative changes in the value of market capitalization in subsequent periods, and are calculated on the basis of their rate of change. The table shows that chain indices had a growth tendency in 2010 by 12.8%, in 2012 by 3.7%, and in 2014 by 10.1%. A sharp decline of 55.06% was visible in 2008. Base index shows the change in the value of market capitalization compared to the base year or 2007. The index recorded a large drop in market capitalization in 2008, and from the data presented it can be seen that the value of market capitalization which in 2007 amounted to 393,934,5 million in 2014 was not nearly the same.

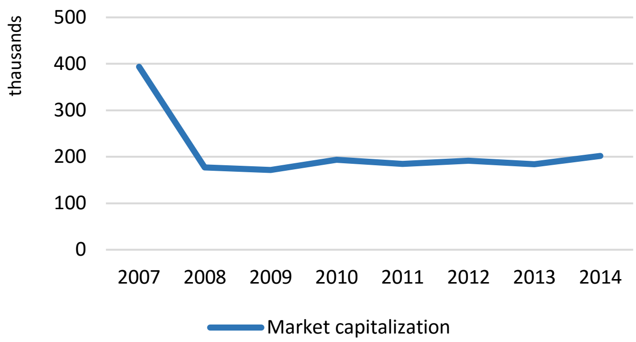


Figure 2. The market capitalization of the securitie

In 2014 the highest value of market capitalization was achieved in comparison with other observed periods. The total market capitalization was 10% higher than in 2009. This was thanks to a significant increase in bond market capitalization of 17.2%, while the market capitalization of shares increased by 6.1% and structured products by 24.8%. Among the most liquid shares shares of INA have achieved the highest growth rates in 2010, as high as 93.27%. That year, INA took the first place with the highest market capitalization and it remained there until the end of 2014 with a 28.9% of shares in the total market capitalization.

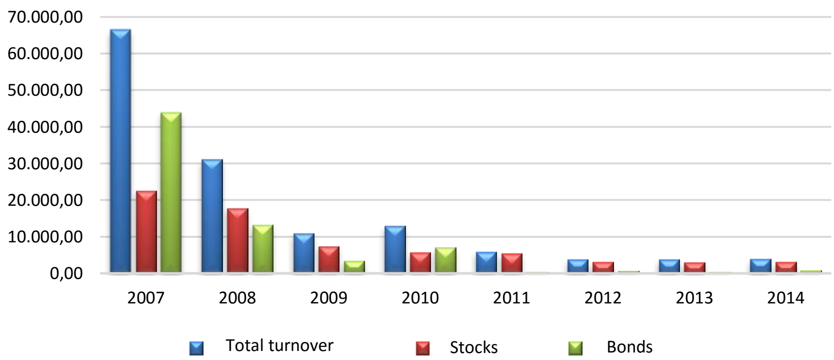


Figure 3. Stocks and bonds trade in HRK

Market turnover in 2008, according to the ZSE fell by 53.3% compared to 2007. Stocks with 57.3% of total turnover had the largest trade share, however the stock's price dropped significantly by 40 to 90%. There was an increase in the total turnover of 18.2% in 2010. Shares had the largest share in the total turnover, except in 2007 when they had 32.2% less turnover than bonds, which achieved a record share of 66% in total turnover that year. The shares have reached a record in 2011 with 90.6% of total turnover. The total turnover of securities in 2014 increased by 2.4% compared to the year before, it amounted to HRK 3,898,794,669 out of which 79.2% refers to trading in shares, 18.4% in bonds, and 2.5% in structured securities. According to statistics since 2008 until the end of 2014 shares of Croatian Telecom dominated as the most traded shares. In 2014 Croatian Telecom shares accounted for 23% of total turnover.

4. COMPARISON OF CROATIA WITH OTHER COUNTRIES

To obtain a clearer picture of the position of capital market in Croatia and to analyse the situation in the period of recession, the chart 4 was made in order to compare Croatia with less developed countries, and chart 5 compares Croatia with developed countries. Examining the data it can be seen that the global crisis caused a decline in market capitalization in all countries. Developed markets have better indicators than small emerging markets such as Croatia. The basic variable and the basic indicator of development and size of a capital market is its market capitalization, which was used in the comparison. In order to show how the crisis affected the market capitalization the data for 2007 was compared to the data from 2008 and the data from 2012 was obtained in order to illustrate how the country performed.

In comparison to less developed countries Croatia has more developed capital market in relation to Serbia, Bulgaria, Slovenia, but has a lower level of development of capital market in comparison to the Czech Republic. The largest decline of 60% in the market capitalization was experienced by Croatia and Slovenia, while the Czech Republic did the best and had a decline in market capitalization of around 30%. The downward trend in market capitalization still lasts, but in smaller fluctuations. Markets are still being repaired, and they are still small and underdeveloped.

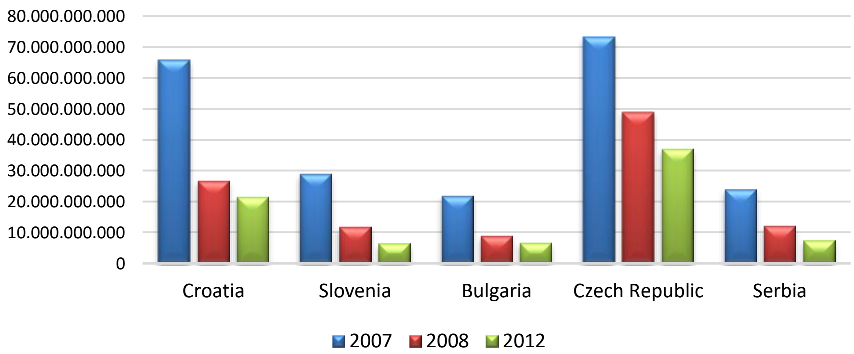


Figure 4. Comparison of the market capitalization of Croatia with less developed countries

Comparing Croatia with developed countries confirms the above, and it becomes obvious that Croatian capital market is small and underdeveloped. According to market capitalization, German and French markets have a significant deviation in comparison to the rest of these countries. Soon after the beginning of the crisis market capitalization in developed countries such as Germany, Belgium, France and Austria started to grow again, although none has achieved the value of market capitalization which they had in 2007.

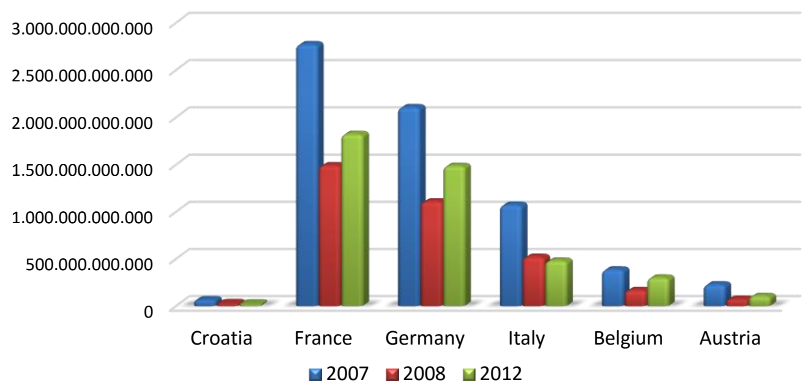


Figure 5. Comparison of Croatia with developed countries

5. LIQUIDITY OF CROATIAN CAPITAL MARKET

Market liquidity criterion is an important factor to all market participants. It is influenced by a number of variables, and varies considerably over time.

Table 3. Trends in the liquidity of capital markets

Year	Total volume	Total number of transaction	Number of active securities
2004	4,394,788,142	52,794	153
2005	10,723,758,247	101,018	169
2006	19,360,901,684	142,194	197
2007	27,419,894,024	519,240	376
2008	6,902,030,321	758,164	372
2009	2,067,355,798	387,252	310
2010	4,007,968,126	286,875	250
2011	268,165,505	351,498	344
2012	441,829,942	280,990	367
2013	266,383,719	255,046	368
2014	295,047,430	221,933	332

Before the financial crisis, the market was characterized by constant growth of total trading volume, a growing number of transactions and a growing number of listed securities. Liquidity has been increasing since the beginning of the study period. The climax was reached in 2007, when the highest liquidity of the capital market was marked taking into consideration the period before and after entering a major financial crisis. The reason for this is considered to be the consolidation of the Zagreb Stock Exchange with the stock exchange VARAZDINKA. The year of 2008 was the worst, the most difficult for all participants, and liquidity was very low. As a result of low liquidity there was a much smaller turnover, it was halved in comparison to 2007, the number of transactions increased, they were more often and in smaller amounts, the total trading volume fell by 75% thus reflecting the reduction of funds in circulation.

Major fluctuations in prices, with low levels of turnover, are an indication of the lack of liquidity. In the following years, the level of liquidity of the total market fluctuated. Although there have been some small improvements, the capital market is still illiquid.

6. ECONOMETRIC ANALYSIS OF GDP OF THE MARKET CAPITALIZATION

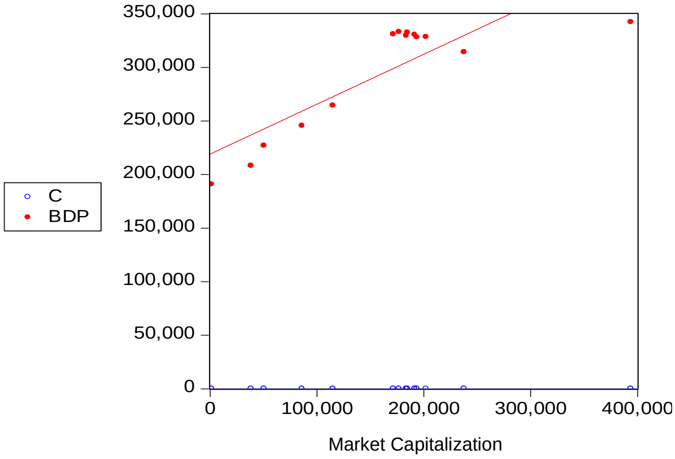
Changes in the GDP, as one of the most important indicators of the economic situation in Croatia, recorded an upward trend from 1999 until 2009, when there was a sudden drop. Reduced economic activity resulted in a reduction in domestic demand. The fall in GDP was reflected in the decline in incomes on the capital market, the total sales volume decreased, as well as other segments, resulting in a reduction of total market capitalization.

Data used in the analysis, which seeks to demonstrate the impact of GDP in the Republic of Croatia on its market capitalization, were taken in the period from 2001 to 2014. The dependent variable (y) is market capitalization, while the independent variable is (x), or GDP.

Dependent Variable: Market Capitalization
Method: Least Squares
Date: 07/07/15 Time: 17:55
Sample: 2001 2014
Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-294873.8	82765.65	-3.562757	0.0039
BDP	1.548299	0.277915	5.571130	0.0001

R-squared	0.721173	Mean dependent var	159158.7
Adjusted R-squared	0.697938	S.D. dependent var	98263.10
S.E. of regression	54005.58	Akaike info criterion	24.76313
Sum squared resid	3.50E+10	Schwarz criterion	24.85442
Log likelihood	-171.3419	Hannan-Quinn criter.	24.75468
F-statistic	31.03749	Durbin-Watson stat	1.654316
Prob (F-statistic)	0.000122		



Based on the diagram dissipation it can be concluded that the relationship between the variables y (market capitalization) and the variable x (GDP) is linear because the points are arranged close to the direction; the direction is positive and strong. Correlation between GDP and market capitalization can be described by model, which reads:

$$y_i = \alpha + \beta x_i + \varepsilon_i, \quad i = 1,2 \ldots, n \tag{1}$$

where α and β_{1x} are unknown parameters and variable ε is the error in the model. The model with the estimated parameters is:

$$\hat{y} = \hat{\alpha} + \hat{\beta} x \tag{2}$$

$$\hat{y} = -294873.8 + 1.548299x$$

If the value of GDP increases to 1, the market capitalization will be increased on average by 1.548299.

The coefficient of determination R^2 = 0.721173, meaning that gross domestic product explains for 72.1% of the market capitalization, is considered representative because it is close to 1. The corrected coefficient is 0.697938. The correlation coefficient is calculated from the coefficient of determination r = $\sqrt{R^2}$ and its value varies between -1≤ r ≤ 1. A coefficient of correlation between GDP and market capitalization amounts to r =$\sqrt{0.7211723}$ = 0.84921864, which indicates a strong relationship between the variables. It can be concluded that with the significance level of 5%, the the variable gross domestic product is significant at the 5%.null hypothesis is rejected, i.e.

CONCLUSION

Based on the empirical and theoretical analysis, it can be concluded that the capital market in Croatia is very dependent on the country's economy. The price of dividends and the market price of shares depend on company’s business performance and company's business performance depends on the state of the overall economy. The fall in the value of domestic product resulted in a decline in prices of all financial instruments on the Zagreb Stock Exchange. This led to a downward trend in market capitalization and in transactions of financial instruments. Investors’ aversion to risk increased, which was particularly highlighted in illiquid markets such as Croatia. Taking everything into account, the biggest drop happened in 2008. The stagnation of Croatian capital market still lasts, longer than expected. However, the very fact that in recent years the trade figures have been relatively uniformed, without sharp drops, may be a reason for optimism. Market liquidity has increased, but liquidity of individual companies has continued to fall. The capital market is still underdeveloped and illiquid. Insufficient development of capital is linked to the lack of economic growth.

In order to stock market to recover new projects have been initiated, the new Rules of the Exchange have been introduced, and the emphasis has been placed on the educational role. In this way the investors will be more informed and educated, so that they can set accomplishable goals.

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