

The Role of Portfolio Investors in Financial Sector Stability: The Case of Croatia

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Abstract: This paper examines the structure of the financial sector and the influence of funds on the development of capital markets, relation between assets of all funds, and government debt as well as dynamics of funds assets in the restrictive monetary policy conditions introduced by the Croatian National Bank (CNB). The paper further analyses investment limitations according to the UCITS III criteria and investment limits of the mandatory pension funds (OMFs).

Keywords: portfolio investors, financial development, capital allocation, regulation, financial stability

JEL Classification: G110

Introduction

In a broader sense, the financial sector stability can be defined as the avoidance of deterioration of a larger number of financial institutions and as the avoidance of serious difficulties in the functioning or intermediation of the financial system. The authors have divided into two groups, the one that states that the elasticity of the financial system is important for its stability and the other one that states that the avoidance of banking crisis and stability in the general level of prices are important for the financial system stability (Oosterloo, De Haan, Jong-A-Pin, 2006). Generally, financial stability does not have a universally accepted definition, but the shortest definition would read that it is smooth functioning of the key elements that make up the financial system.

There are several ways of presenting the conduct of financial stability policy, and one of the generally known and accepted methods is the creation of the national

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Financial Stability Reviews (FSR) developed by IMF. National FSR mostly comprise of: Financial Structure Indicators, Financial Development Indicators (FDI) and Financial Soundness Indicators (FSI). Such reviews have been created semi-annually and annually by central national banks of many countries especially since 2000. It is acknowledged that central banks have a natural role in maintaining financial stability (Schinsai, 2003) due to the fact that they are carriers of monetary policy measures, they are responsible for the payment system and create and withdraw money from the market, thus influencing market liquidity.

Published contents of the financial stability reviews differ from country to country, but banks publish on average 53% of the indicators, around 40% of the indicators for households and real estate are published, while the percentage for the non-financial institutions, market liquidity and other financial institutions lies between 15% and 20% of suggested Financial Soundness Indicators developed by IMF (Oosteloo, De Haan, Jong-A-Ping, 2006).

This paper shows the structure of the overall financial sector in Croatia and financial development indicators as well as the financial soundness indicators for particular financial industries. The focus of our research is the role and influence that institutional portfolio investors, such as investment and pension funds, have on financial sector stability and their connection with fiscal and monetary policy. In the analysis we will use indicators and methodology developed by IMF, as well as the correlation and regression methods according to the data available.

Financial Sector Structure

The Croatian financial sector is by its structure bank-oriented despite the fact that the share of banks' assets in total financial sector assets dropped from 83% in 2002 to 73% in 2007. The encouraging fact is that the share of pension and investment funds' assets in total financial sector assets has increased from 3.5% to 13% in the last five years.

In the period 2002-2007, the total financial sector assets grew by the average annual rate of 18%, while the total banking sector assets grew by around 15%, and non-banking by around 23%. In that period, the most significant growth among non-banking industries was recorded by open-end investment funds (OIFs) with the average annual growth rate of 65%. Generally looking, in the period of five years, the non-banking financial sector increased its share in GDP by 2.6 times, i.e. it increased from around 16% in 2002 to around 42% in 2007.¹

Table 1: Financial sector structure in 2002 and 2007 (in HRK billion)

Institutions	2002				2007			
	No.	Assets	Share in total assets (%)	% of GDP** *	No.	Assets	Share in total assets (%)	% of GDP** **
Banks*	46	165.60	82.80	83.47	35	323.30	73.00	122.00
Housing savings banks*	3	2.13	1.07	1.07	5	6.00	1.35	2.26
Building societies	103	1.10	0.55	0.42	109	2.00	0.45	0.75
Insurance companies**	25	13.00	6.50	6.55	22	23.00	5.19	8.68
Investment funds	32	5.10	2.55	2.57	112	33.50	7.56	12.64
Pension funds	8	2.07	1.04	1.04	22	21.80	4.92	8.23
Leasing companies**	35	11.00	5.50	5.54	26	30.77	6.95	11.61
Factoring companies**	n.a.	n.a.	n.a.	n.a.	9	2.50	0.56	0.94
TOTAL	252	200.00	100.00	100.81	340	442.87	100.00	167.12

Source: Croatian Financial Services Supervisory Agency (HANFA), Croatian National Bank (CNB)

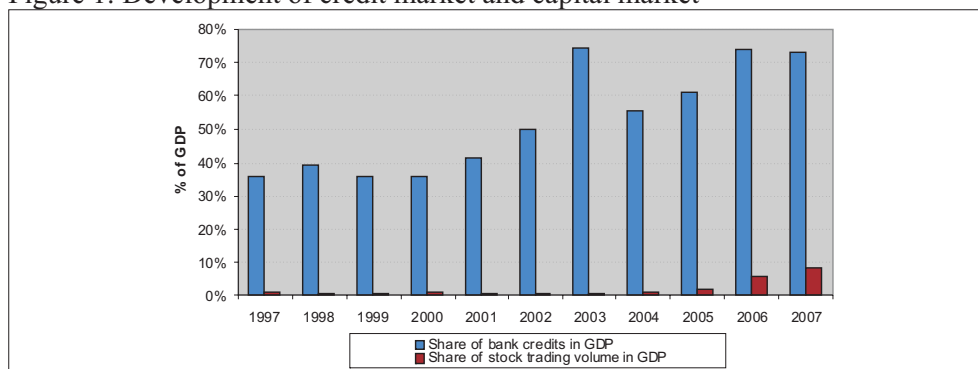
* assets in October 2007

** assets in September 2007

*** in 2002 GDP amounted to HRK 198.4 billion

**** in 2007 GDP was estimated at HRK 265 billion

Figure 1: Development of credit market and capital market



Source: CNB, ZSE

Bipolarity of the financial sector is best shown by the indicator of credit market development (the ratio of private sector bank credit to GDP) and stock market liquidity indicator (the ratio of trading volume of stocks on ZSE to GDP). Whereas by the end of 2007 Croatia was listed among developed countries and ahead of other transitional countries according to development of credit portfolio (73% of GDP), according to the share of trading volume of stocks in GDP (8% of GDP) Croatia was placed on a low level.²

Influence of Portfolio Investors on Financial Sector

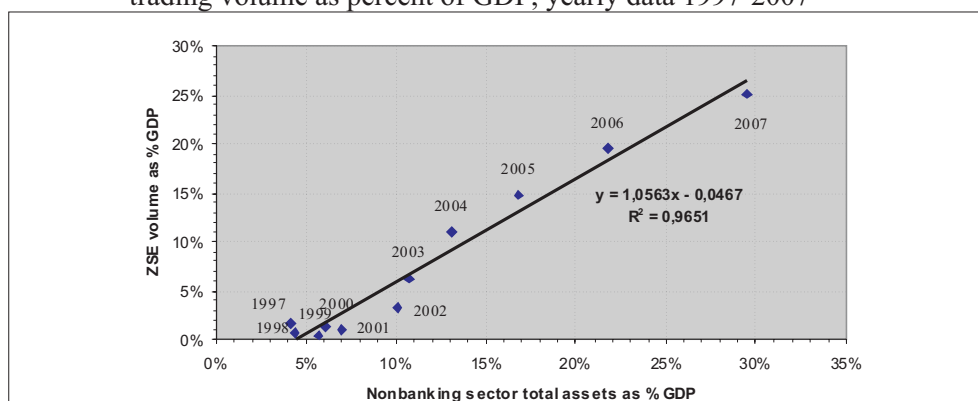
The facts that financial sector in the last five years has had the average annual growth 3.5 times faster than the average annual growth rate of GDP (5%) and that at the moment total financial sector assets are larger than GDP by around 67% require individual monitoring of financial sector intermediaries, i.e. its development and soundness indicators. Financial development and financial soundness indicators show that portfolio investors operate under the following market conditions: banks and insurance companies have relatively high capital adequacy indicators, capital market liquidity is relatively low and the ratio of debt and equity capital in corporate sector is increasing. Therefore, further on we will analyse the role of the non-banking sector and influence of institutional portfolio investors in the financial sector in the Republic of Croatia according to several criteria:

- general influence of the non-banking financial sector on the development of capital market,
- role of funds in the development of capital market,
- movements of funds' assets and issued public debt.

Figure 2 shows the influence of the non-banking financial sector on the development of capital market and confirms the existence of a high correlation between the assets of the non-banking sector and stock and bond turnover on ZSE.³ According to the coefficient of determination $r^2 = 0.97$, correlation coefficient amounts to $r = +0.98$. Therefore, the relation is tight and with positive direction.⁴

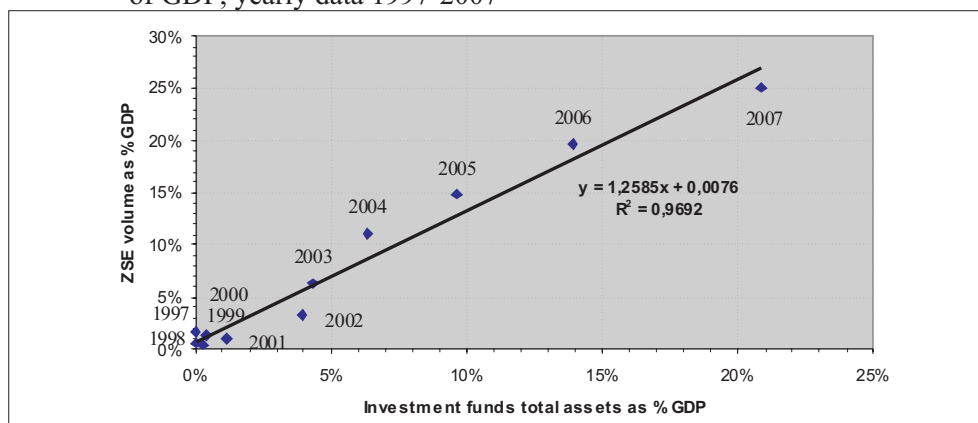
Figures 3 and 4, according to the data from Annexes 5 and 6, show the influence of funds on capital market development by the degree of correlation of all funds' assets with stocks and bonds trading volume and with market capitalisation on the ZSE. According to the coefficient of determination in Figure 3, $r^2 = 0.97$, correlation coefficient is $r = +0.98$, and according to the coefficient of determination in Figure 4, $r^2 = 0.95$, correlation coefficient is $r = +0.97$. Linear correlation coefficients are positive, suggesting a significant statistical connection between analysed variables.⁵

Figure 2: Assets of non-banking financial intermediators as percent of GDP and trading volume as percent of GDP, yearly data 1997-2007



Source: www.hanfa.hr, www.zse.hr

Figure 3: Assets of all funds as percent of GDP and ZSE trading volume as percent of GDP, yearly data 1997-2007

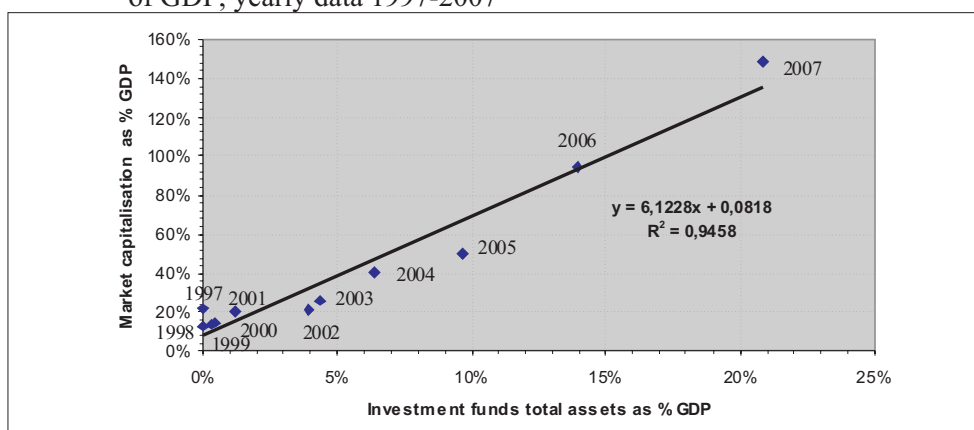


Source: www.hanfa.hr, www.zse.hr

By taxation and debt management, fiscal policy has a significant influence on allocation and reallocation of portfolio investors' investments. Figure 5, according to the data given in Annexes 7 and 8, shows the trends of the issued debt of the central government in bonds and share of bonds in the mandatory pension funds' assets. While in 2002 the share of government bonds in mandatory pension funds' assets amounted to over 80%, in 2007 the share of bonds dropped to 64%. Nevertheless, out of totally issued HRK 40.1 billion of central government bonds, HRK 13.5 billion of them is in mandatory pension funds and HRK 1.6 billion of them in investment funds' assets which is around 38% of the total issue of bonds. Such relation between

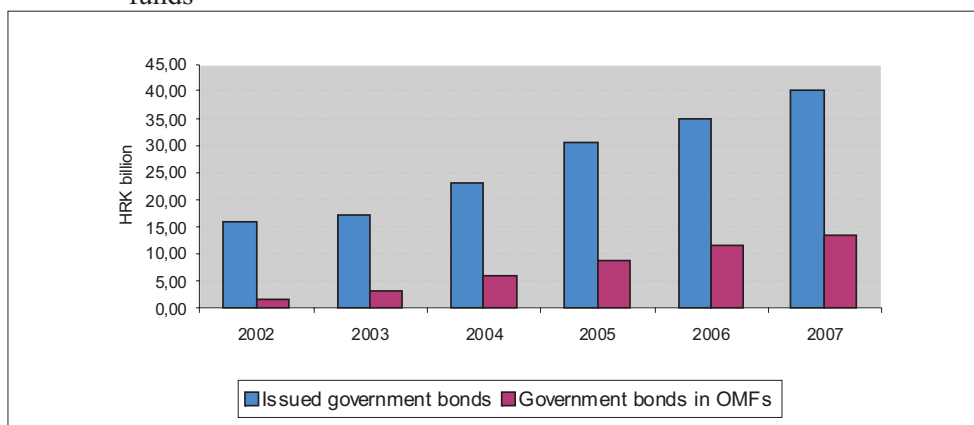
the central government, as an issuer, and funds will deteriorate due to at least two reasons: firstly, when Croatia becomes a full member of the EU, it will have to abolish mandatory subscription of government bonds in the amount of 50% by pension funds and secondly, an increase of interest rates decreases the price of bonds in the portfolio structure of funds which are forced to reallocate their assets. The current, relatively tight relationship between funds' assets and issue of central government debt will deteriorate.

Figure 4: Assets of all funds as percent of GDP and market capitalisation as percent of GDP, yearly data 1997-2007



Source: www.hanfa.hr, www.zse.hr

Figure 5: Issued central government bonds and share of bonds in mandatory pension funds



Source: Ministry of Finance, Hanfa

Institutional Investors and Monetary Conditions

Based on the empirical research of the relations between investment management and monetary policy, the correlation between the return on assets (portfolio included) and monetary policy can be traced. A lot of studies, among which are those by Jensen and Johnson (1995) and Thorbecke (1997), show that changes in monetary conditions influence future rates of return on investments in securities.

An analysis of the average monthly rate of return in different monetary conditions from 1960 to 1998 in USA was conducted by G.R. Jensen, R.R. Johnson and J.M. Mercer (2000) and showed that the average rate of return on investment in stocks was 1.05% on a monthly basis, and around 12.6% on a yearly basis, for the whole period.

At the same time, the rate of return for 30-day treasury bills was 0.49% on a monthly basis or 5.87% on a yearly basis, while the rate of return for 30-year government bonds was 0.63% on a monthly basis or 7.5% on a yearly basis, which equals the 'regular' rate of return in the observed period.

However, that analysis proved the fact that the rate of return on investments in stocks during the period of the expansive monetary policy was four time higher than the rate of return during the period of the restrictive monetary policy. The average annual rate of return on the investments in stocks during the period of the expansive monetary policy was approximately 19.7% compared to the rate of return of 4.5% during the period of the restrictive monetary policy.

By setting up the regression model where the independent variable was Monetary Aggregate M1, and dependent variable consisted of total obligatory reserves and other deposits at CNB (Samodol, 2007), the degree of restriction of the monetary policy in Croatia, that is, the terms under which portfolio investors allocate assets and realise rates of return were determined.

The said model was supposed to provide the answers to the inquiry what would be the amount by which the obligatory reserves and other obligatory deposits at CNB will increase in average, provided the unit increase of the Monetary Aggregate M1. The correlation between the Monetary Aggregate M1 (independent variable X, in HRK million) and total obligatory reserves and other deposits (dependent variable Y, in HRK million) is analysed by the log-log model. The starting model is:

$$Y_i = \beta_1 X_i^{\beta_2} e^{u_i}, i=1,2,\dots,n$$

and its logarithm form (log-log model)

$$\ln Y_i = \alpha + \beta_2 \ln X_i + u_i, \alpha = \beta_1$$

The regression model with the estimated factors and basic statistical-analytical indicators is:

$$\ln \hat{Y} = -6.43 + 1.58 \ln X$$

(-3.76) (933)

$$\sigma^2 = 0.23$$

$$\hat{V} = 2.45$$

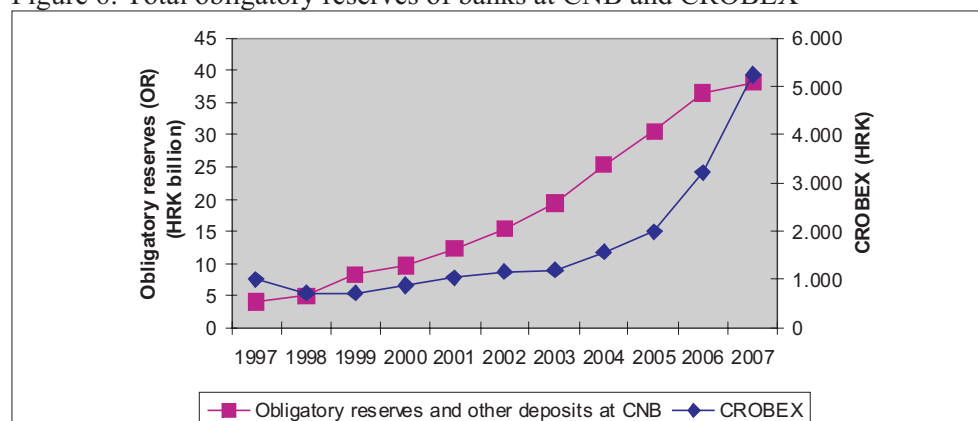
$$r^2 = 0.92$$

$$r = +0.96$$

$$DW = 1.182$$

The coefficient showed that the increase in Monetary Aggregate M1 in 1 % was followed by the average increase of the total obligatory reserves with other deposits at CNB of rounded 1.6%. Despite the empirical research showing that rates of return on investments in stocks are higher during the period of the expansive monetary policy, and the fact that the restrictive monetary policy is being conducted in the Republic of Croatia demonstrate how specific the situation in Croatia is.

Figure 6: Total obligatory reserves of banks at CNB and CROBEX



Source: CNB, ZSE

The Zagreb Stock Exchange (32 stocks) is growing exponentially and it shows that there is neither enough supply nor liquidity on the capital market. This should be the most important fact for fund managers because among equity funds which invest between 50 and 80% of their portfolio in domestic stocks, there are those where the

average number of working days needed to sell domestic stocks from the portfolio is 60, and for balanced fund almost 50 days.

On the other hand, the monetary authority must take account of the allocation of assets of portfolio investors, especially as regards cash funds or cash items and deposits in the assets of funds. At the end of 3Q in 2007, the assets of cash funds amounted to HRK 4.1 billion, and the deposits of investment funds at the banks amounted to almost HRK 8 billion. This amounted to as much as 25% of the Monetary Aggregate M1, while at the same time the available cash of the banks in HRK (cash above the level needed to maintain the obligatory reserves) amounted to only HRK 1.2 billion.⁶

Regulations and Liberalization of the Financial Market

The investment funds in the Republic of Croatia are regulated by the Investment Funds Act, and the open-end investment funds are completely aligned with the UCITS III EU Directive, while the open-end funds with private offering, closed-end funds with public offering and venture capital funds remain in the national competence without the need for alignment. Pension funds are regulated by the Mandatory and Voluntary Pension Funds Act according to the World Bank method with mandatory funds forming the second pillar, and voluntary funds forming the third pillar. There are two specific features of portfolio investors.

Firstly, portfolio investors are often limited by the investment limits regulated by the investment policy or by prospectuses and types of funds, so it is hard to make quick arbitrage of portfolio structure with new instruments.

Secondly, fund managers often stick to 'benchmarking' and compare their results with other funds according to the type they belong to, so they prefer establishing new funds with a more liberal investment policy to restructuring the assets of the existing funds. Portfolio management of Croatian pension funds and investment funds with public offering (UCITS III) is a result of the combination between investment limits imposed by regulations and 'prudent person rule'.

At the end of 2007, 30 investment and pension funds management companies are active in the Republic of Croatia, and these manage 134 funds, and out of this number there are 103 open-end investment funds which manage HRK 29.5 billion of net assets. Four foreign-owned management companies administrate most of the assets and manage more than HRK 23 billion or 78% of total assets of the open-end funds⁷. These companies are so called 'bank companies' as they belong to bank groups. Mandatory pension funds which administrate HRK 21 billion are managed by 4 bank-owned companies.

Due to the circumstance that at least six financial conglomerates are present in Croatia and that owners are mostly from the EU Member States, dynamic capital flows and portfolio investments with complete liberalisation of the capital flow and provision of financial services can be expected.

Conclusion

Institutional portfolio investors are regulated by separate acts, and they invest the assets collected from the individual investors and other institutional investors in various financial instruments and manage these in a professional manner. They have strong influence on the development and soundness of the financial sector in general. The aim of this paper is to get a better understanding of the impact of portfolio investors on the stability of the financial sector in the Republic of Croatia. By applying the statistical analysis, close relations between the assets of the non-banking financial sector and trading volume on the stock exchange, as well as those between assets of the fund and trading volume and capital capitalisation of the stocks and bonds at the stock exchange have been confirmed. There is also a relation between the movement of the funds' assets and issue of public debt, that is, the fiscal policy. Despite the restrictive monetary policy, the Crobex - ZSE index is growing fast, and due to the presence of strong correlation between the assets of the fund and trading volume at the stock exchange, monetary policy must, due to the structure of monetary aggregates, take into account the allocation of the funds' assets.

In Croatia there is a great concentration of the assets of the funds managed by the companies belonging to bank groups. Due to the regulations, the investments of the funds are a combination between regulated investment limits and 'prudent person rule'. The influence of portfolio investors on the stability of the financial sector in Croatia is best noticeable through the allocation of their assets, although portfolio investors' investment goals do not necessarily correspond with the goals of fiscal and monetary policies.

NOTES

¹ When calculating the share of non-banking financial sector in GDP in 2007, credits (HRK 4.6 billion) are excluded from the leasing companies' assets. Besides operating and finance lease, leasing companies used to grant loans until the new Leasing Act entered into force in 2006 and forbade crediting.

² According to the data of Eurostat and Erste Bank Vienna, share of credits in GDP (in 2005): Austria 107%, the Czech Republic 41%, Slovakia 39%, Hungary 53%, Romania 21%.

³ Assets of leasing companies and factoring companies as a part of the non-banking sector are not included due to the relatively significant share of granted credits in leasing business and due to the very nature of factoring business as purchasing of receivables.

⁴ The sample size in the model is relatively small due to the late development of the fund industry in Croatia, which to a certain degree limits the implementation of other models and particular analytical procedures.

⁵ See endnote 4.

⁶ According to data from the CNB Bulletin and monthly HANFA reports.

⁷ According to data from HANFA.

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