

# Financial ratios of commercial banks in the Republic of Croatia

*Branko Sorić*

University Department of Professional Studies, Split, Croatia  
bsoric@oss.unist.hr

*Toni Šušak*

University Department of Professional Studies, Split, Croatia  
tsusak@oss.unist.hr

**Abstract.** Banks are an important part of the financial system and they have an important role in contributing to the economic development of the country. They play a vital role in the distribution of a country's economic resources. Banks are intermediaries between savings and investors. If banks have poor indicators, it can have repercussions for the country's economy which leads to the conclusion that a safe and profitable banking system is of utmost importance to a country. The financial crisis has also affected the business operations of banks in Croatia. This paper examines the performance of commercial banks in the Republic of Croatia in the period from 2009. to 2014. Profitability, liquidity, capitalization and credit quality are shown through financial ratios analysis. The database used for the analysis was created from the annual reports of banks, the newsletters published periodically by the Croatian National Bank, and other publicly available information.

**Key words:** banks, financial ratios, financial crisis, Republic of Croatia

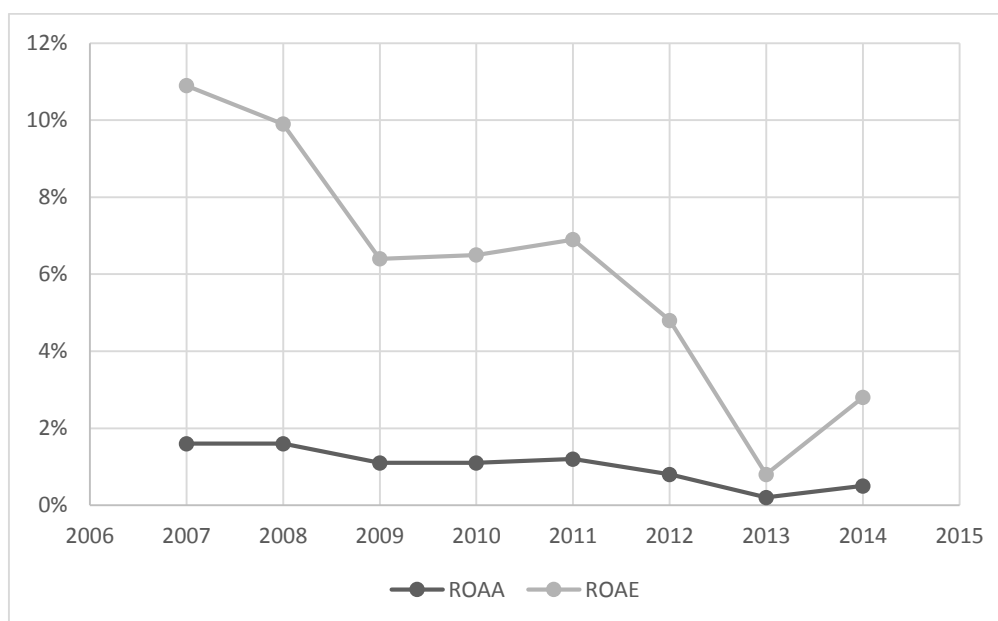
## 1. Profitability Ratios

In the banking literature two measures are used to assess the profitability of a certain bank. First one is Return on Assets (ROA) and the second one is Return of Equity (ROE). ROA is a measure of bank's profitability which shows the quality of bank's assets management. It also measures the managerial efficiency (Hasan and Bashir, 2003). ROA is calculated as a ratio between profit after taxation and average total assets and it shows how much money bank earned on each monetary unit of assets. Desirable ROA value depends on the intensity of company's assets. Success of a bank is perceived if ROA is higher than 1 percent. ROE is calculated as a ratio between profit after taxation and average or total equity. Value of ROE required for successful business activities of a bank amounts 8 – 10 percent.

**Table 1.** Average bank profitability in Republic of Croatia measured by average return on bank's assets and capital

Year	ROAA	ROAE
2014	0,50%	2,80%
2013	0,20%	0,80%
2012	0,80%	4,80%
2011	1,20%	6,90%
2010	1,10%	6,50%
2009	1,10%	6,40%
2008	1,60%	9,90%
2007	1,60%	10,90%

**Source:** HNB (2007. – 2014.), Bilten o bankama, available at website: [http://www.hnb.hr/publikac/bilten-o-bankama/hbilten\\_o\\_bankama.htm](http://www.hnb.hr/publikac/bilten-o-bankama/hbilten_o_bankama.htm)



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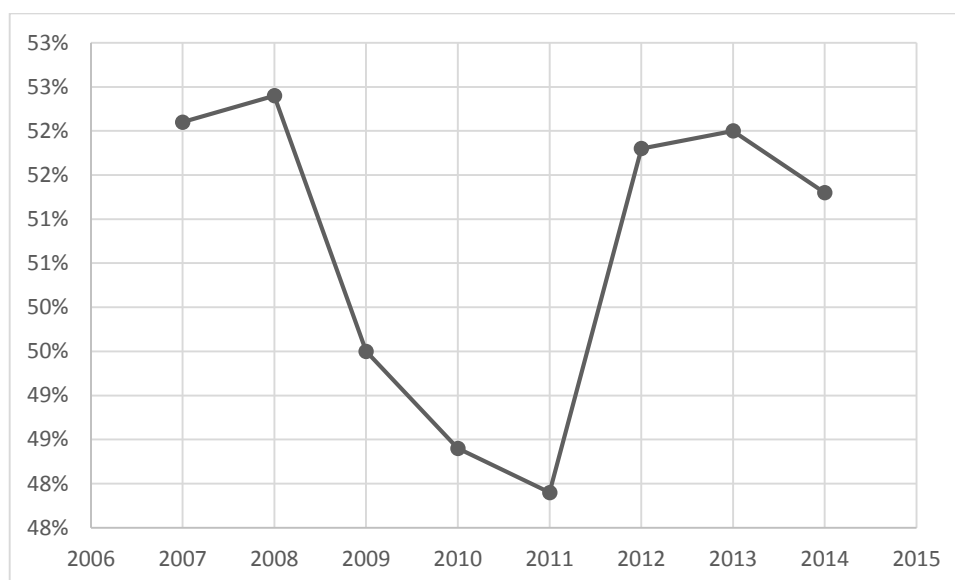
## 2. Management Efficiency Ratios

Management efficiency is reflected in operating costs management. Operating costs consist of employee costs, material costs and amortization. They are the result of the successful bank management. Salaries and bonuses can represent a significant percentage in the structure of bank costs. Similarly, large banks have high values of capital, especially IT equipment that are amortized relatively quickly and must be frequently replaced. The profit of a bank is directly related to the cost. Operating costs are measured by CIR (Cost to Income Ratio), which is calculated as ratio between operating costs and total revenue. This ratio reflects the bank's ability to cover operating costs. High CIR value in financial institutions is equivalent to low productivity in the real sector. CIR shows how many monetary units are needed in certain period of time to generate one monetary unit of revenue. If the ratio increases, it means that costs are growing at a higher rate than revenue. Control of noninterest costs is the most important in the process of reducing CIR, since the costs of interest are, however, mainly influenced by exogenous (market) factors (Trip, 1998). High CIR directly reflects on quality and price of loans. CIR is generally regarded as a benchmark in comparison among banks (Cochea, 2000, Asher, 1994). Little (2008) identifies five key performance indicators of European banks: culture of cost rationing, high degree of automation and investment in IT equipment, clear decision – making hierarchy, high degree of decentralization and focus on costs that are directly related to generating income. Higher ratio implies less efficient management (Kosmidou, 2008). Operating costs have a negative effect on the bank profitability (Abreu and Mendes, 2001, Sufian, 2011). It is expected that banks with high costs charge higher margins to cover their costs (Maudos and de Guevara, 2004). Also, greater operational efficiency enables banks to lower interest margins through lower loan rates or higher deposit rates (Claeys and Vander Venne, 2008).

**Table 2.:** Operating costs management ratio

Year	Cost to income ratio (CIR)
2014	51%
2013	52%
2012	52%
2011	48%
2010	48%
2009	50%
2008	52%
2007	52%

**Source:** HNB (2007. – 2014.), Bilten o bankama, available at website: [http://www.hnb.hr/publikac/bilten-o-bankama/hbilten\\_o\\_bankama.htm](http://www.hnb.hr/publikac/bilten-o-bankama/hbilten_o_bankama.htm)



**Figure 2.** Operating costs management ratio

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### 3. Capitalization Ratios

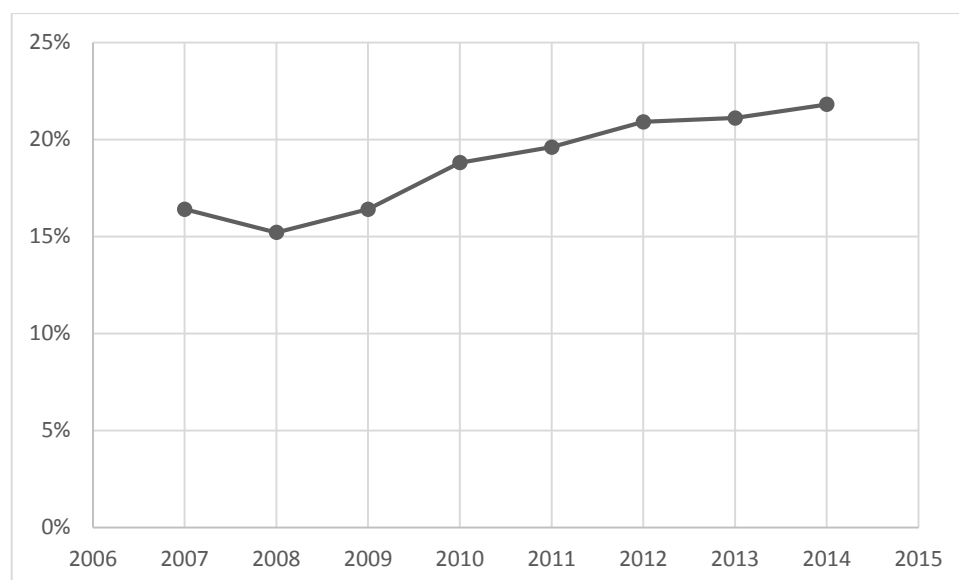
In general, the banks are expected to absorb losses generated by particular bad loans from their operating income. But, the problems emerge with unexpected, extraordinary losses that cannot be absorbed from regular income. Bank's capital is the "first line of defense" against these unexpected shocks. The capital adequacy ratio, as a measure of a bank's capitalization is calculated as the ratio between capital and risk-weighted assets. In order to ensure that banks can absorb a reasonable level of losses before they become insolvent, a minimal capital adequacy ratio is defined by international standards. Minimal capital adequacy ratio is intended for protection of depositors and promoting the stability and efficiency of the banking system. Regulators demand that banks maintain capital adequacy ratio above the required minimum level as a corrective for excessively risky loans and investments. In the analysis of bank profitability, unavoidable variable is the capital adequacy ratio. Better capitalized banks should achieve higher profitability. That is confirmed by Berger (1995), Abreu and Mendes (2001), Staikouras and Wood (2003), Athanasoglu, Brissimis and Delis (2005), Kosmidou (2008), Gul, Irshad and Zaman (2011) and Olalekan and Adeyinka (2013). Some studies have shown that banks which have high capital adequacy ratio operate cautiously and ignore potentially profitable investments (Goddard, Molyneux and Wilson, 2004). At the same time,

better capitalized banks typically have less need for external financing, what results in greater profitability (Pasiouras and Kosmidou, 2007).

**Table 3.** Capital Adequacy Ratio

Year	Capital Adequacy Ratio (CAR)
2014	22%
2013	21%
2012	21%
2011	20%
2010	19%
2009	16%
2008	15%
2007	16%

**Source:** HNB (2007. – 2014.), Bilten o bankama, available at website: [http://www.hnb.hr/publikac/bilten-o-bankama/hbilten\\_o\\_bankama.htm](http://www.hnb.hr/publikac/bilten-o-bankama/hbilten_o_bankama.htm)



**Figure 3.** Capital Adequacy Ratio

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#### 4. Liquidity Ratios

Liquidity is defined as the ability of a bank to settle their obligations within maturity. It is determined by comparing maturity of the loans on the asset side of balance sheet and asset funding sources on the liability side of balance sheet. Although the liquidity is crucial for bank's operations, high liquidity reduces income and negatively influences returns (Atahnasoglou, Delis, Staikouras, 2006). High liquidity can also result in lower interest rates which usually lead to increased demand for loans. In this way, high liquidity in banks stimulates economic growth. The liquidity of banks can be measured using three indicators:

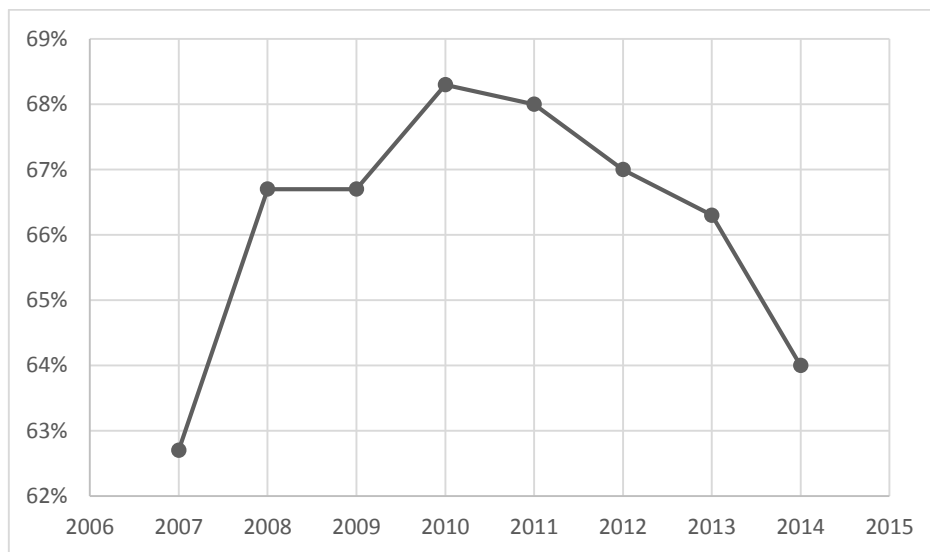
1. liquid assets to total assets ratio,
2. liquid assets to total deposits ratio, and
3. total loans and total assets ratio.

In this research, third indicator will be presented. Loans are less liquid than other components of a bank's assets. The higher value of this ratio indicates lower liquidity of the bank.

**Table 4.**Total Loans to Total Assets Ratio

Year	Total Loans to Total Assets Ratio
2014	64%
2013	66%
2012	67%
2011	68%
2010	68%
2009	67%
2008	67%
2007	63%

**Source:** HNB (2007. – 2014.), Bilten o bankama, available at website: [http://www.hnb.hr/publikac/bilten-o-bankama/hbilten\\_o\\_bankama.htm](http://www.hnb.hr/publikac/bilten-o-bankama/hbilten_o_bankama.htm)



**Figure 4.**Total Loans to Total Assets Ratio

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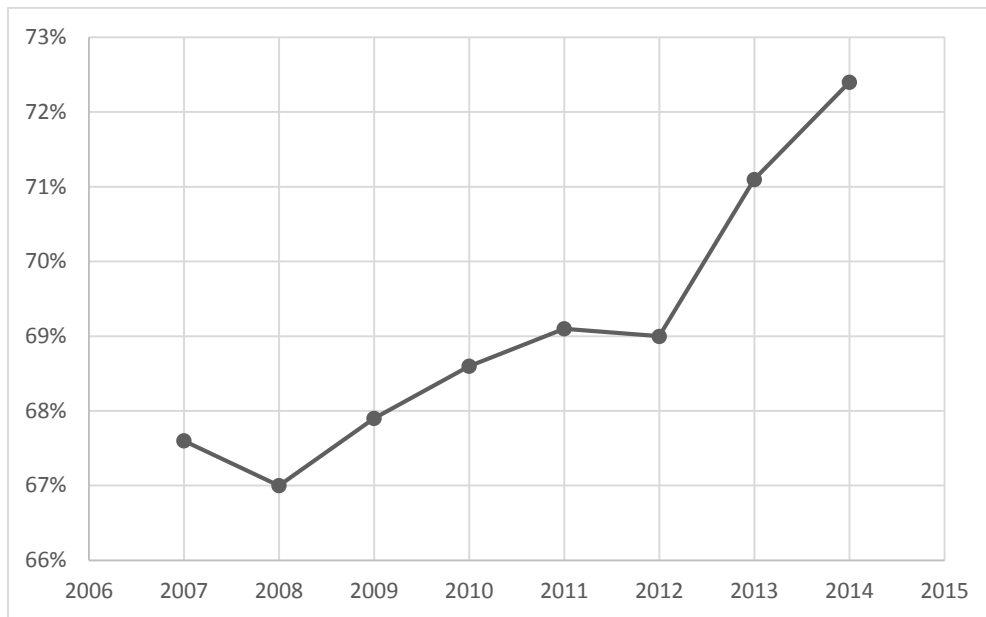
## 5. Funding Sources Ratios

Deposit ratio is the ratio between deposits held by banks and total assets and it shows attracted deposits contribute to the financing of bank's assets. Deposits are the main source of bank's assets and represent a cheap financing source for the bank (Roman, Tomuleasa, 2013). Financing costs are calculated as the ratio between costs of deposit interests and total deposits.

**Table 5.** Share of Deposits in Total Assets

Year	Share of Deposits in Total Assets
2014	72%
2013	71%
2012	69%
2011	69%
2010	69%
2009	68%
2008	67%
2007	68%

**Source:** HNB (2007. – 2014.), Bilten o bankama, available at website: [http://www.hnb.hr/publikac/bilten-o-bankama/hbilten\\_o\\_bankama.htm](http://www.hnb.hr/publikac/bilten-o-bankama/hbilten_o_bankama.htm)



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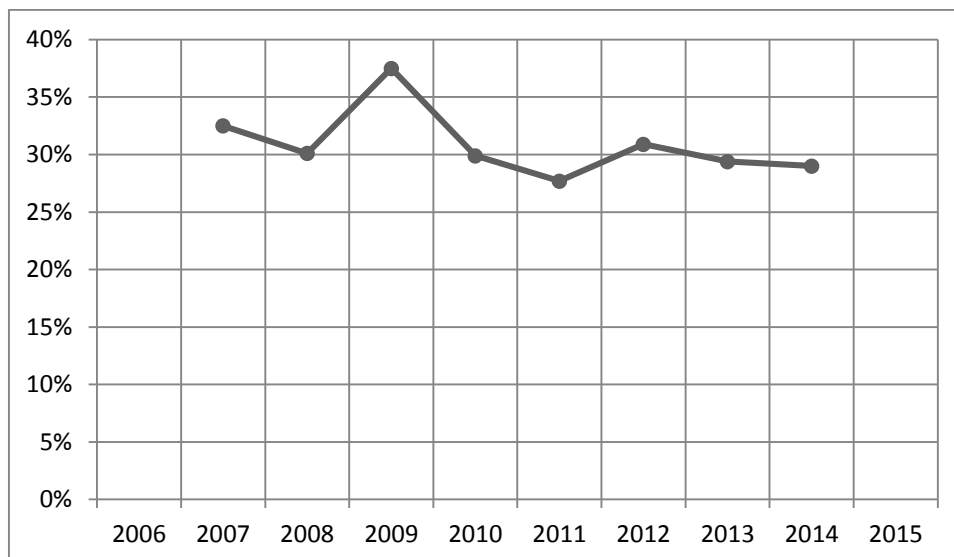
## 6. Income Diversification Indicators

Deregulation and increased competition forced banks to expand their activities and to develop new lines of business alongside their traditional activities. Banks diversify their income by engaging in new activities such as the issuing and trading securities, investment banking brokerage and other activities that generate noninterest income. Cross – country bank analysis in eleven developing countries (Sanya and Wolfe, 2011) has showed that diversified income positively affects profitability and reduces insolvency of banks. NIIR variable is equal to the proportion of noninterest income in total income where noninterest income comprises different types of charges. Gross values of charges are usually used, since it is difficult to determine the cost of certain charge because it is often independent of noninterest income. High noninterest costs carry certain risks. Namely, there is a possibility of losing clients if charges are constantly increasing. Also, the growth of noninterest income may be related to a stronger credit activity, which increases the volatility risk of income. Noninterest income can be divided into those generated by traditional banking activities and those generated by untraditional banking activities (such as investments in financial innovations, derivatives etc.).

**Table 6.** Share of Noninterest Income in Total Income

Year	Share of Noninterest Income in Total Income
2014	29,0%
2013	29,4%
2012	30,9%
2011	27,7%
2010	29,9%
2009	37,5%
2008	30,1%
2007	32,5%

**Source:** HNB (2007. – 2014.), Bilten o bankama, available at website: [http://www.hnb.hr/publikac/bilten-o-bankama/hbilten\\_o\\_bankama.htm](http://www.hnb.hr/publikac/bilten-o-bankama/hbilten_o_bankama.htm)



**Figure 6.** Share of Noninterest Income in Total Income

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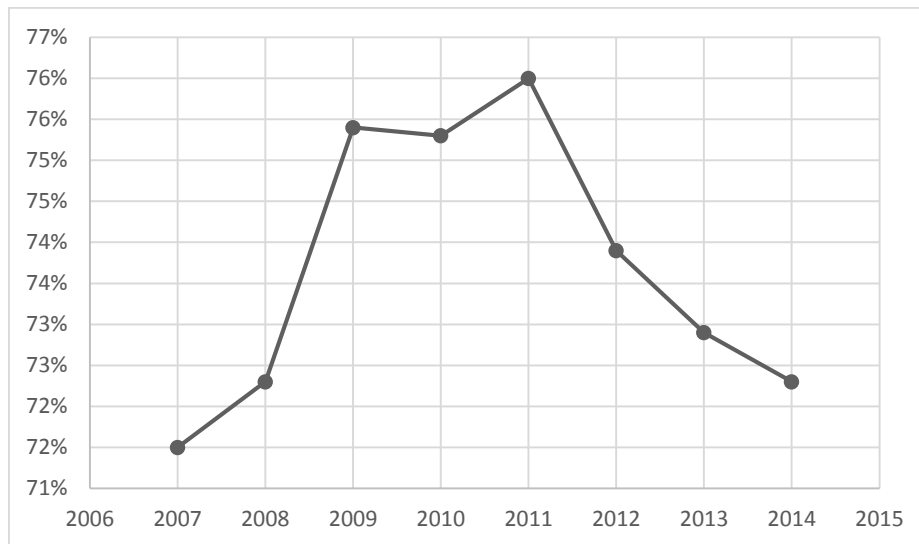
## 7. Market Concentration Measures

Concentration is a measure of market power. Market power can be defined as the ability of companies to increase the price above their marginal costs without reducing their total sales. A higher level of concentration implies a market in which larger banks that can effectively benefit from economies of scale are present. On the banking market with a higher concentration, customers have less choice and market power of some banks is higher. Under this approach, a higher concentration will be positively correlated with the profitability of banks. Concentration Ratio and Herfindahl – Hirschman Index are most frequently used as a measure of concentration. In this study, the concentration index CR5 which measures asset proportion of five largest banks in banking sector will be used as a measure of market structure.

**Table 7.** Total Assets Share of Five Largest Croatian Banks in Total Assets of Croatian Banking System

Year	CR5
2014	72%
2013	73%
2012	74%
2011	76%
2010	75%
2009	75%
2008	72%
2007	72%

**Source:** HNB (2007. – 2014.), Bilten o bankama, available at website: [http://www.hnb.hr/publikac/bilten-o-bankama/hbilten\\_o\\_bankama.htm](http://www.hnb.hr/publikac/bilten-o-bankama/hbilten_o_bankama.htm)



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## 8. Conclusion

This paper presents business performance of banks in the Republic of Croatia through series of indicators. Profitability indicators (ROAA and ROAE), despite the good operational costs management, have a downward trend. It is the consequence of financial crisis, particularly because of the decreasing economic activity in some sectors (such as construction) and reduced demand for house and car loans, traditionally the most abundant income of banks. Capitalization of the Croatian banking system is very good, capital adequacy ratios are well above the legal minimum, indicating the safety of the Croatian banking system. It is also supported by liquidity, sources of financing and revenue structure. In the traditional banking system, such as Croatian, loans constitute the most significant component of bank's assets, deposits are the most important source of financing, while interest income is most significant part of income structure. Croatian banks have avoided the challenge of greater presence in the financial markets, the so-called casino banking, which has (bearing in mind the financial crisis) positively affected the stability of the Croatian banking system. As far as the market concentration measures are concerned, Croatian banking system is highly concentrated, significantly higher than the banking systems of Germany and Italy, but on the other side significantly less than the banking systems of Estonia, Lithuania, Finland and Netherlands.

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