

Dragan LončarFaculty of Economics
University of Belgrade
Department of Business Economics
and Management, Belgrade**Vesna Rajić**Faculty of Economics
University of Belgrade
Department of Business Economics
and Management, Belgrade

CONCENTRATION AND COMPETITIVENESS OF THE BANKING MARKET IN SERBIA: CURRENT SITUATION AND POSSIBLE FUTURE CHANGES UNDER THE INFLUENCE OF MARKET CONSOLIDATION*

Koncentracija i konkurentnost bankarskog tržišta Srbije: postojeće stanje i moguće promene pod uticajem buduće tržišne konsolidacije

Abstract

Serbia is a bank-centered financial market, which means that the analysis of concentration and competition is important. Currently, the banking market is weakly to moderately concentrated or mildly oligopolistic. In the future, we can expect a consolidation of the banking market in terms of reducing the number of banks and strengthening the market power of the largest banks. Possible channels of consolidation are the sales of the remaining state owned banking package, takeovers between banks and the disappearance of some banks as a result of competitive selection. The paper analyzes the possible scenarios for the future consolidation and their impacts on the competitive dynamics. The authors argue in favor of a positive impact of a more moderate consolidation on competition indicators, but are also warning the regulator to prevent excessive concentration and cartel arrangements.

Key words: *banking market, consolidation, Serbia, concentration, competition*

Sažetak

Srbija je bankocentrično finansijsko tržište i analiza koncentracije i konkurencije time dobija na značaju. Trenutno, bankarsko tržište je nisko do umereno koncentrisano ili blago oligopolizovano. U budućnosti se može očekivati konsolidacija bankarskog tržišta u pravcu smanjenja broja banaka i jačanja tržišne snage najvećih banaka. Mogući kanali konsolidacije su prodaja preostalog državnog bankarskog paketa, međusobno preuzimanje posotjećih banaka i nestanak nekih banaka kao rezultat konkurentske selekcije. Rad analizira moguća scenarija buduće konsolidacije i njen uticaj na konkurentsku dinamiku. Autori iznose argumente u prilog pozitivnog uticaja dodatne umerene konsolidacije na konkurentsku in-

dikatore, ali i upozorenja regulatoru radi sprečavanja prekomerne koncentracije i kartelskih aranžmana.

Ključne reči: *bankarsko tržište, konsolidacija, Srbija, koncentracija, konkurencija*

Introduction

Perfect competition in all areas of economy, according to the theoretical postulates, leads to optimal allocation of resources, protection of consumers' interests and results in general social welfare. Therefore, the trend in all countries of the world is to protect competition through regulations and standards of good practice. It is important to emphasize at this point that the issues of competition in financial markets are governed by the National Bank of Serbia, not the Competition Commission [11].

The financial system in Serbia is dominated by banks since the balance sheet assets of the banking sector comprise about 90% of Serbia's total balance sheet assets. Only a little over 10% of balance sheet assets refers to the share of all other financial intermediaries (insurance companies, voluntary pension funds, investment funds and leasing companies). It is clear that Serbia is "bank-centered" and that the key for the financial system stability in Serbia is the stability of the banking sector. In this context, the analysis of concentration and competition in Serbian banking market becomes more important.

* This edition is dedicated to the project financed by the Ministry of Education, Science and Technological Development titled "Strategic and tactical measures to overcome real sector competitiveness crisis in Serbia" (no. 179050, period 2011-2014).

Currently, there are 33 banks in Serbian market, and none of them with a higher than 20% share. Although at first glance it can be concluded that market concentration is not high, it is interesting to look at the possible scenarios of future consolidation of the banking sector affected by the sales of the remaining state capital and the dynamization of mutual takeovers, and how these might affect the competitive dynamics within the industry. It is also interesting to analyze specific aspects of concentration (for example according to the origin of the owner) and their effect on the stability of the banking sector.

The research was conducted on the basis of the data available from the National Bank of Serbia and other competent authorities, as well as 'insider' data from individual commercial banks which have developed analytical monitoring of important market and financial indicators.

The paper itself consists of four sections. The first section provides an overview of the major trends and indicators of the banking market in Serbia. The second part indicates the methodological approaches to measuring the concentration of the banking market and the values of the key measures of concentration. The third part looks at possible scenarios for the consolidation of the banking market and discusses possible impacts on the level of competition. The final part briefly summarizes the main results of the analysis.

The diagnosis of the situation in the Serbian banking market

Global economic recession is still present and causing lack of liquidity in the financial sector, the decline in the real sector lending and a general contraction of economic activity. Present economic situation in Serbia is quite discouraging. Regardless of the current low level of GDP, it is projected to fall by 2% in 2013. Export has not yet reached the pre-crisis levels, while the balance of payments deficit remains significant. Employment rate is in constant decline, while inflation is above targeted for this year by 10%. Since 2010, the budget deficit and public debt are on an exponential growth path and significantly exceed the legal limit [10].

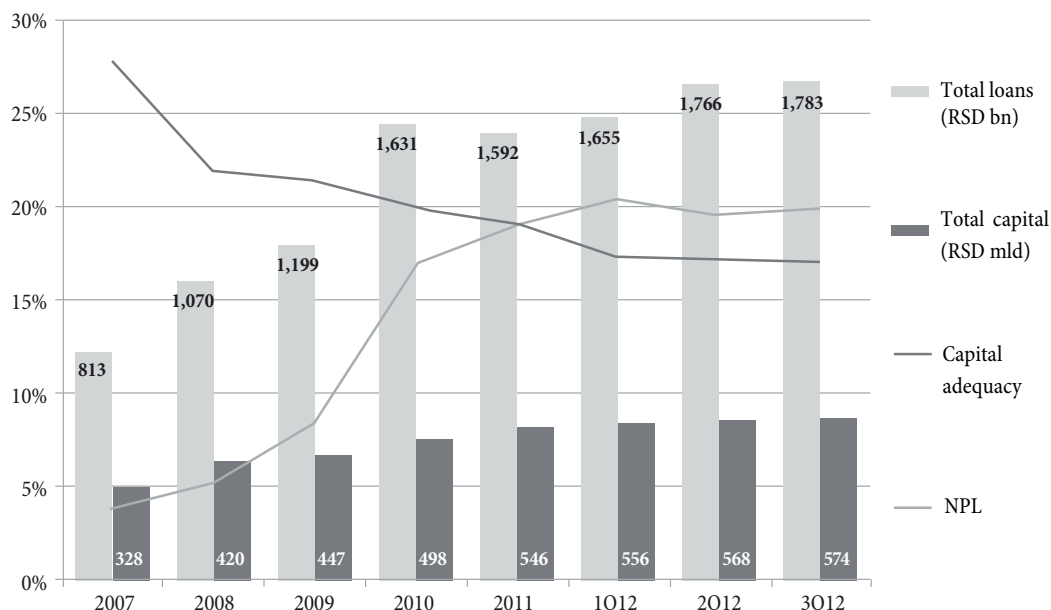
As a result of the increased uncertainty, the domestic real and financial sectors are further exposed to interest rate and exchange rate risks. In the first three quarters of the 2012 year-on-year, the dinar already depreciated against the euro by 13.7% [21]. The exchange rate risk remains the strongest market risk, primarily because of low exposure of banks to capital market through which it would be easier for them to hedge open positions. Foreign banks have held their overall foreign exchange position stable through transactional operations with their parent banks abroad. Namely, in order to protect themselves against exchange rate risks, local banks concluded foreign exchange swaps with their parent banks, in which they simultaneously negotiated forward and spot foreign exchange transactions. Thus, open foreign exchange position is controlled or disciplined to some extent.

Because of a decrease in money supply, the domestic sector is exposed to additional liquidity risk. Namely, due to its low operating profitability, which has been further burdened by high interest rate costs, the domestic economic sector has no room for rest and recovery. On the retail side, the discretionary income has been drastically reduced, which narrows the space for new loans and makes the repayment of the existing debts more difficult. The National Bank statistics says that there are 16% legal entities and entrepreneurs who are at least 90 days behind with repayments, and about 8% individuals with the same delay [20].

Half of the credit supply is being directed to the corporate sector, while slightly less than 30% is being directed to the retail sector. On the deposit side, the biggest creditors of banks are individuals with a total share in the deposit mass of about 60%. The positive trend of the retail deposit mass growth in the last five years occurs mainly due to favorable deposit interest rates which attract capital from abroad.

While the total capital of banks and loans stagnate or grow modestly (they are in fact falling due to inflation and negative exchange rate scissors), the already approved loans are burdened by increased credit risk due to increased share of non-performing loans in the total loans of both corporate and retail sectors. In parallel with the increase of NPL share, there is a decline in the capital adequacy

Figure 1: The NPL share and capital adequacy trends in Serbian banking sector



Source: The National bank of Serbia, 2012, internal data.

of banks, which is clearly illustrated in the following presentation (see Figure 1).

Such risks, although increased, have not activated the systemic risk in the banking sector in terms of compromising its stability and the atmosphere of trust. However, they have led to a mild, in some cases (Agrobanka or Razvojna banka Vojvodine) even significant undercapitalization of banks. This has resulted in increased interventionist measures of the National Bank in order to strengthen the resilience of the banking system, primarily through capital strengthening and consolidation of the assets structure.

An additional stabilizing mechanism is the Vienna Initiative launched in 2008, which required that Serbian banks maintain the level of credit loans, and prevented a sudden outflow of capital from the country's banking capital. To some extent, the Vienna Initiative prevented the crisis spillover from the financial into the real sector by facilitating the restructuring of loans granted to the corporate sector. It is necessary to know that foreign banks are prevented from withdrawing capital to their parent banks through dividend payments (Decision on Classification, Decision on Capital Adequacy), but that foreign banks have been doing this in other ways, such as by placing available liquid assets to their parent banks or by increasing the costs of various services based on the parent bank policy and withdrawing money on that basis.

A key anchor of stability in the banking sector is its reliance on Basel Accords [1]. Basel focuses on deposit insurance by strengthening the capital base. The crisis has caused a new analysis of Basel II adequacy and its improvement through Basel III regulations. It is a document that sets out options to strengthen the capital base of banks (with a stronger focus on ordinary shares), the regulation of the banking sector liquidity, leverage optimization and stricter risk control of regular banking activities and capital market activities. Basel Accords focus especially on providing quality, consistency and transparency of regulatory rules and adequate application of disclosure standards. As for the capital requirements, starting from 1st January 2013, the banks will be required to adhere to minimum standards of capital relative to risky assets in the following ratios: ordinary shares compared to risky assets at the level of 3.5%, Tier 1 capital (primarily ordinary shares plus retained earnings) compared to risky assets 4.5%, and total capital compared to risky assets 8%. Many banks in Serbia are still not ready to implement Basel III standards.

At the end of the third quarter, the banking sector in Serbia comprises 33 commercial banks with total assets of nearly 25 billion euro. Composite earnings before tax (EBT) in the first three quarters amounted to 106 million euro, which is as much as 57% less than the EBT in the first

three quarters of 2011. The total capital is 5 billion euro, which is a year-on-year decline of more than 5%. Total deposits, including transaction deposits of 3.5 billion euro, were at the level of 14.2 billion euro, which is a year-on-year decline of 4%. Finally, total loans amounted to 15.5 billion euro, a year-on-year decline of 2.3%. Based on preliminary statistical indicators for the first nine months of the 2012, summarized in Table 1, it is clear that Serbian banking market is in a mild contraction. It should be noted that all of the previously presented data were derived on the basis of the financial statements that commercial banks submitted to the National Bank of Serbia.

When we talk about profitability of banks in Serbia we should bear in mind that the overall profit consists of operating profit and profit from capital. Namely, the mentioned 5 billion in capital is in RSD directed in risk-free securities at 2-week repo rate. It means that this revenue is integrated into income statement although it is not a result of banking activities, but regulatory requirements. The consequence is that true (operating) profit, after deducting profit from capital activities, is much lower and shows true profitability state of banks doing business in Serbia.

The National Bank adheres rigorously to prudent policy that partially considers the specifics of the banking market in Serbia. Specifically, the National Bank forces the New Keynesian model characterized by the dominance of monetary policy, primarily with the aim of targeting inflation. The main shock absorbing instrument in economy is the reference interest rate modification. This policy was not successful in the past, because the rigidity of changes in prices and earnings leads to the situation where monetary policy only affects real economic variables, only in the long term and only slightly. Also, rational expectations of economic agents are generally in line with the intentions of the policy makers, further neutralizing the effect monetary measures have on real economic variables.

Table 1: Performance indicators for Serbia's banking sector in the first three quarters of 2012

Number of banks	Total assets	Total capital	Total deposits	Loans	EBT
33	25 EUR bn	5 EUR bn	14,2 EUR bn	15,5 EUR bn	106 EUR bn

Source: National Bank of Serbia, 2012.

The analysis of market concentration and competition in Serbia's banking sector

The analysis of market concentration in the banking sector typically branches off into two directions in the literature. One direction is a structural approach based on the so-called SCP paradigm (structure-conduct-performance), the hypothesis on market efficiency and a range of other formal approaches in the theory of industrial organization [2]. The SCP paradigm analyzes whether a higher level of market power concentration leads to tougher competition between large banks and better overall market performance for clients (primarily through lower interest rates). This paradigm highlights the theoretical relationship between the structure (concentration levels), behavior (competition) and performance (for example, profitability of banks). The Efficient Market Hypothesis analyzes whether competitive pressure increases the efficiency of banks and thus improves their performance. As a reaction to the inadequacy of structural models, there are Non-Structural models, especially the Panzar and Rosse model (P-R model). The idea is to determine the level of market concentration and analyze the dynamics of competitive struggle between banks, without explicit analysis of the banking market structure. The greatest value of this model is that it attempts to empirically determine the relationship between the level of market concentration in the banking sector and the level of competition [3].

Regardless of the fact that the P-R model is the most widely used tool for the analysis of concentration and competition in the banking market [18], it has several major limitations for which it cannot be applied in the case of the analysis of the banking market in Serbia. Firstly, this model assumes that each bank has only one commercial product. Secondly, the assumption of this model is that all banks have the same cost function. The problem is that the practice shows that input prices do not necessarily correlate with the quality of service or income of the bank. In this case, the H statistics, which is calculated in the model, becomes biased. Thirdly, it has been shown empirically that this model very often wrongly assesses the level of competition based on the level of concentration [4].

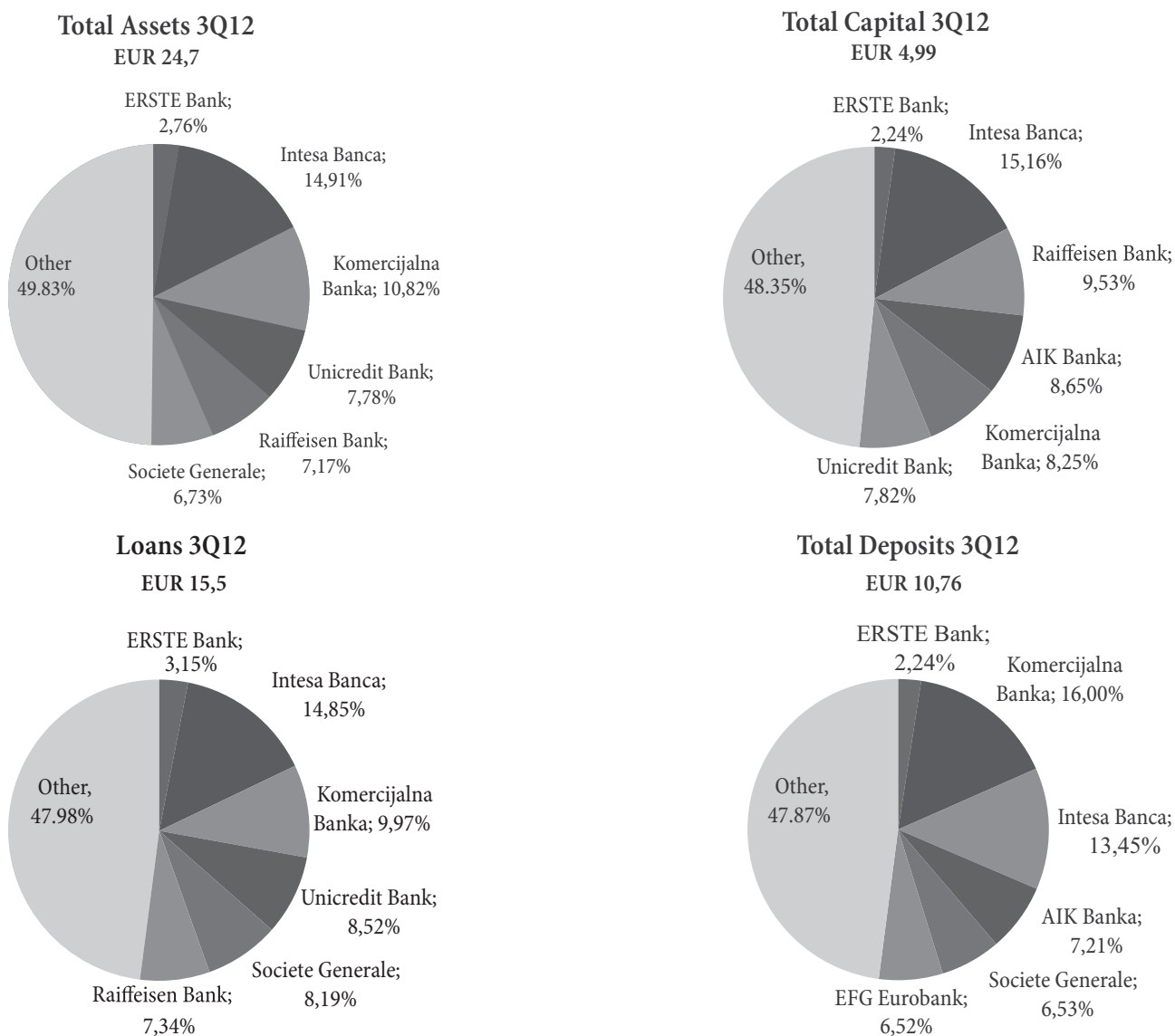
That is why this paper focuses on standard instruments for determining the market concentration levels, and on a qualitative discussion on possible impacts of alternative banking market consolidation scenarios or instability of a part of the banking market on the level of competition. These typically include the following parameters of concentration levels: the concentration ratio of k companies (CR_k), the Herfindahl-Hirschman Index (HHI), the concentration curve and the Gini coefficient, the Horvath Index (CCI) and measures of entropy (E).

Basis for the calculation of market concentration indicators stated above is the definition of the relevant banking market. Defining the relevant market includes its determination in terms of products (relevant product

market), but also its geographic and spatial determination (the relevant geographic market).

When it comes to relevant geographic market for the sake of simplicity of the analysis and availability of data, we are assuming that it is the banking market of Serbia, although it makes sense to separately consider markets of major cities and regions where there is a significant concentration of bank branch offices. As far as the relevant market for products is concerned, we will adhere to the logics for commercial banks licensing. In other words, all licensed commercial banks in Serbia (33 of them) will be considered as factors in relevant banking market, despite the fact that a part of them is also registered for other types of financial services (leasing, for example) and that

Figure 2: Market share of banks in Serbia according to the amount of total assets, total equity, loans and deposits



Source: National Bank of Serbia, submitted financial reports of commercial banks

not all licensed banks have the same range of banking services and the same range of clients (some banks have developed only retail sectors, while most banks have both retail and corporate sectors).

Market power distribution in the banking sector in Serbia is best described in Figure 2.

The charts above lead to some interesting conclusions. Firstly, according to the four market indicators, it is clear that the market is dominated by five banks (Intesa, Raiffeisen, Komercijalna, Unicredit, and Societe Generale). This is particularly conspicuous in the distribution of assets and loans. Intesa is a striking leader with a share of almost 15%. It is followed by other four banks with individual shares between 7 and 10%. Secondly, it is interesting to observe the distribution of partially altered structure of deposits distribution, where the obvious leader is Komercijalna banka with 16% share. Newly emerging important players are EFG Eurobank and AIK Bank. The reason is easily explained. A more aggressive interest rate policy on retail deposits attracts deposits towards these two banks. In last year's week of savings, the interest rates in these banks were on average higher than the interest rates in the abovementioned quintet of banks by more than 100 bps. Thirdly, in terms of the size of capital, once again AIK Bank 'pushed' itself among the five banks. Intesa is a pretty convincing leader with more than 15% market share.

As far as market concentration indicators are concerned, there will be only a few general words about the essence of the most important ones that we have calculated and interpreted here.

The concentration ratio of four or eight (CR4 or CR8) leading companies is calculated as the sum of the percentage of market share of the four or eight largest firms in the market. An unwritten rule says that if four largest firms control more than 40% of the market, it is an oligopoly. If the value of this ratio is higher than 90% it is a pure monopoly.

The Herfindahl-Hirschman Index (HHI) is considered the most reliable indicator of market concentration. The value of this index is defined as the sum of squares of individual market shares of all the competitors who participate in the market:

$$HHI = \sum_{i=1}^n s_i^2, \quad (1)$$

where s_i is the market share of an i^{th} competitor, and n is the number of competitors in the market.

Unlike CR4 or CR 8, the HHI value depends on the number of competitors in the market and the differences in their relative market powers. The HHI value decreases as the number of competitors in the market increases. Also, the value of this index increases as the differentiation in size of the market power increases, because large companies have a greater weight in the calculation due to the fact that market shares are squared. Markets are usually classified into one of the following three categories: unconcentrated (if the $HHI < 1,000$), moderately concentrated (if the $1,000 < HHI < 1,800$) and concentrated (if the $HHI > 1,800$) [9].

The concentration curve is a popular tool for visualizing the level of market concentration and identifying the disparities in market power. The point is to rank competitors based on market share (from the smallest to largest), to cumulate market shares of competitors and to graphically connect the points obtained. The resulting concentration curve is then placed in relation to the curve of equal market shares ('line 45°'), which is obtained in the hypothetical case of perfect competition. The concentration curve is the basis for calculating the Gini coefficient as a measure of market power inequality. The first step is to measure the area of the curve between the actual concentration and the concentration curves with equal market shares. When this area is placed in relation to the whole area under the equal market share curve (triangle area), it gives the value of the Gini coefficient. In the case of perfectly equal distribution of market power, the Gini coefficient would be zero, since the concentration curve coincides with the curve of equal market shares. If there was total inequality in which one competitor could choose the market share that suits him (if that was possible), the concentration curve would coincide with the lower horizontal and the right vertical axis, so that the Gini coefficient would reach a maximum value of 1. It should be noted that these two extremes rarely occur in practice, so that the value of the Gini coefficient is almost always in the range between 0 and 1 [8].

The following index that we mention is the Horvath Index or the CCI (Comprehensive Concentration Index). This index measures the relative dispersion of banks and highlights the importance of the largest banks in the industry [14]. It is calculated using the following formula:

$$CCI = s_1 + \sum_{i=2}^n s_i^2 (2 - s_i) \tag{2}$$

where s_i is the market share of the largest bank. It takes the value of 0 to 1 ($0 < CCI \leq 1$). The closer this value is to 0, the greater the concentration.

The entropy measure measures the ex-ante distribution of market power [2]. It is calculated using the following formula:

$$E = - \sum_{i=2}^n s_i \log_2 s_i \tag{3}$$

It takes the values from 0 to $\log_2 n$. The entropy values are inversely related to the level of concentration. If there is a monopoly in the market, its value is closer to 0, and if there is a uniform market share, its value is then closer to $\log_2 n$.

The values of the previously explained indicators (CR4, CR8, HHI concentration curve, and Gini coefficient) will be presented for seven key parameters (assets, capital, loans, deposits, total revenues, net income from interest and non-interest income).

In terms of the CR indicators, the situation is fairly uniform for all the parameters analyzed (see Table 2). The CR4 indicator is slightly over 40%, indicating a slightly

Table 2: The CR4 and CR8 indicators for banking market in Serbia in the first nine months of 2012

Parameter	Assets	Capital	Loans	Deposits	Total revenue	Net income from interests	Non-interest income
CR4	40.68%	41.60%	41.54%	43.19%	42.06%	42.05%	42.09%
CR8	64.86%	68.90%	65.87%	64.60%	63.62%	64.51%	61.68%

Table 3: The Hefindahl-Hirschman index for the banking market in Serbia in the first nine months of 2012

Parameter	Assets	Capital	Loans	Deposits	Total revenue	Net income from interests	Non-interest income
HHI	672	713	686	732	691	711	674

oligopolistic structure. The CR8 indicator is about 65%, confirming the previously stated thesis.

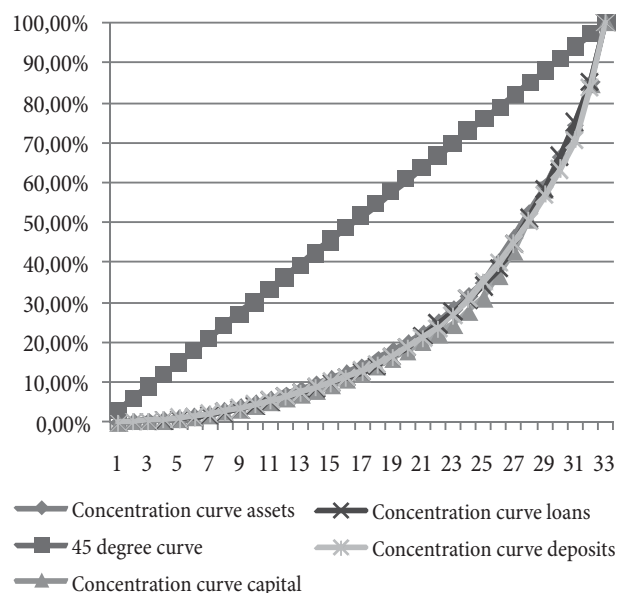
The HHI for the observed indicators is around 700 points (see Table 3), which, based on the established norms for market structure classification, is a weakly concentrated market. The reason for such low HHI value is the absence of one or several dominant leaders in the market that would have more than 20 or 30 percent market share. Interestingly, the HHI is the largest for deposits market, which can be explained by aggressive deposit policies of several banks.

We have prepared the concentration curve for four parameters (assets, capital, loans, and deposits). The position of the concentration curve indicates an oligopolistic market structure given that the curve is rather convex towards the abscissa (see Figure 3). The concentration curve shape is almost identical for the parameters of assets, capital, loans and deposits. The Gini coefficient was estimated at 0.5, which confirms the thesis that it is an oligopolistic market structure.

The Horvath index takes values between 0.2359 for assets and 0.2513 for deposits. These values indicate a lower level of concentration, i.e. a pretty even distribution of market share.

The entropy measure varies between 4.235 for capital and 4.324 for assets. Given that for the 33 banks,

Figure 3: The concentration curve with four parameters



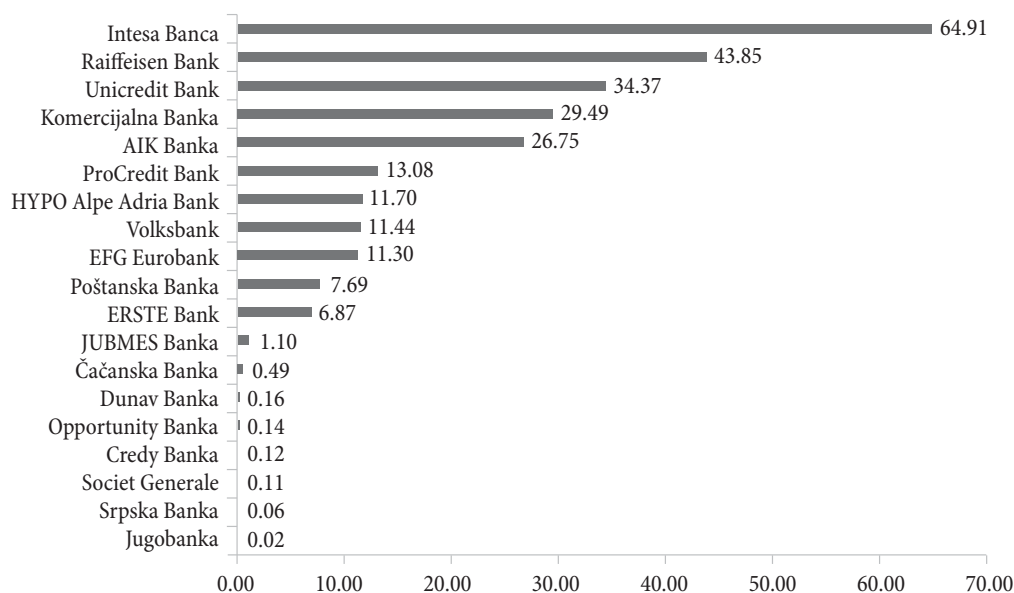
the maximum entropy value is $\log_2 33 = 5.04$, it is clear that the calculated value of entropy is very close to the maximum value. It is an indicator of equitable distribution of market power.

In total, all of the above concentration indicators point more or less to the fact that the banking market in Serbia is slightly oligopolistic. The banking market is, as a whole, weakly to moderately concentrated.

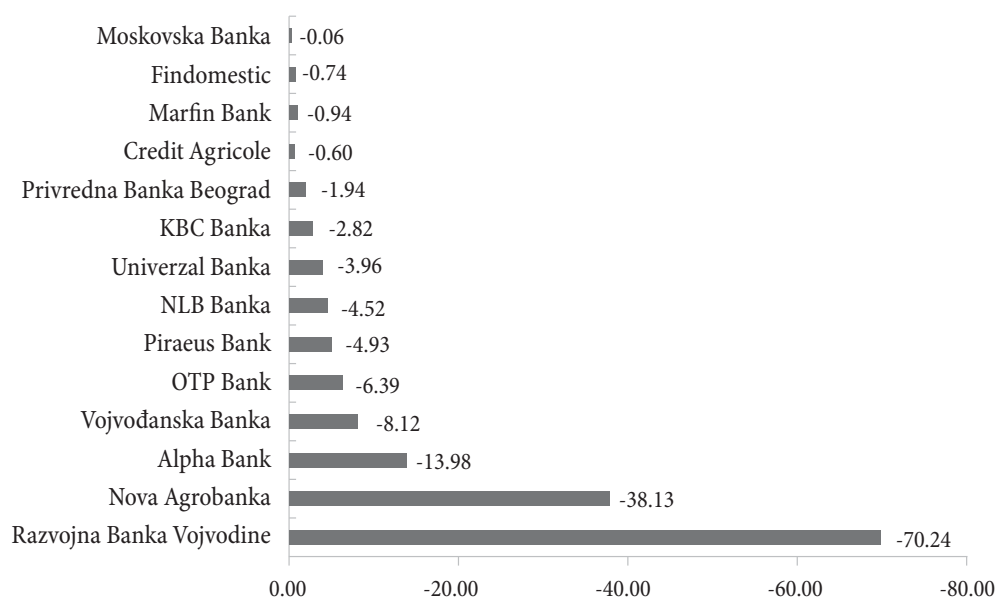
In addition these standard instruments, it would be useful to also mention other indicators of market power distribution and financial strength. The plus and minus sides of the income statement show financial health of the banks in Serbia (see Figure 4). It is clear from this view that the largest banks are also the most profitable as measured by the EBT indicator (Earnings Before Taxes). The biggest loss makers are Razvojna banka Vojvodine

Figure 4: Earnings before tax for banks doing business in Serbia (first three quarters of 2012, EUR millions)

Earnings before tax (EBT) 1-3Q12
Profit in mEUR



Earnings before tax (EBT) 1-3Q12
Loss in mEUR



Source: The National bank of Serbia, financial reports submitted by commercial banks

and Nova Agrobanka (taken over by Postanska Stedionica Bank by the decision of the Government of the Republic of Serbia). Also, it is evident that the Greek banks, with the exception of EFG Eurobank, are showing significant losses, which will be further addressed later in this paper.

With respect to their ownership structure, the banks can be divided into three categories: predominantly foreign banks, the predominantly state-owned banks and banks predominantly owned by domestic natural or legal persons. The share of these three categories, according to total assets, loans and deposit potential, are given in Table 4.

It is clear that banking market in Serbia is dominated by foreign banks. This motivates us to look more closely into the share of foreign banks by their country of origin (see Table 5).

It is evident that Serbian banking market is dominated by banks from three countries: Italy, Austria and Greece. Together, these banks take 56% of the market from the

Table 4: Market share of banks according to their ownership structure

Parameter	Category	Share
Balance sheet total	Foreign banks	74%
	State owned banks	18%
	Private banks	8%
Credit activity	Foreign banks	77%
	State owned banks	16%
	Private banks	7%
Deposit potential	Foreign banks	69%
	State owned banks	22%
	Private banks	9%

Source: The National Bank of Serbia

Table 5: Share of foreign banks by their country of origin

Country	Share in balance sheet total		Share in deposit potential
	Share in balance sheet total	Share in loans	
Italy	21%	23%	21%
Austria	18%	18%	15%
Greece	17%	17%	19%
France	8%	9.5%	5.5%
Germany	3%	3%	2.5%
Slovenia	3%	2%	3%
Hungary	1.5%	1.5%	1%
Belgium	1%	1.5%	1.5%
Cyprus	1%	1%	0.5%
Russian Federation	0.5%	0.5%	0.0%

Source: The National Bank of Serbia, derived data

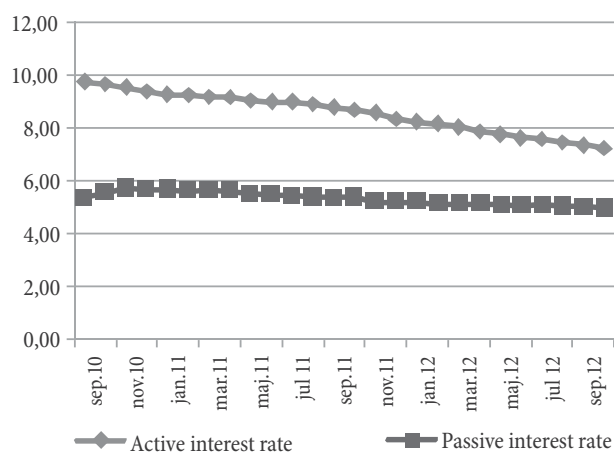
perspective of the balance sheet total, 58% of the loans market and 55% share of deposits market.

If we tried to link the level of concentration in the domestic market with the level of competition, perhaps the most logical way to do that would be to look at the trend of the link between lending and deposit interest rates. For instance, if we look at the link between the weighted lending interest rate on household loans in euro and weighted deposit interest rates on deposits in euro for the period between 2010 and 2012, we would get the following figures (Figure 5). It shows that the interest margin on retail loans is constantly narrowing, which may indicate a trend of increased competitiveness of the banking sector in Serbia. It should be noted that the weighted average interest rate on loans does not include the interest rate on the revolving loans, overdrafts on current accounts and overdrafts on credit cards. If we included these interest rates in the calculation of the difference between lending and deposit interest rates would have increased significantly, but for us, in this case, trend was more important than the absolute value of the interest margin.

Possible trends of consolidation of the banking sector in Serbia and their impact on the competitive dynamics

In the banking sector in Serbia since 2001, there has been a trend of consolidation, but it is slower than expected. The consolidation trend is mainly related to the banks that are majority or minority state owned, as well as the banks owned by domestic entities. The number of

Figure 5: The trend of the link between lending and deposit interest rates on retail loans and deposits in foreign currency



Source: The National Bank of Serbia, 2012, interest rates

foreign banks is generally stable and ranges between 20 and 22. There is still a large number of banks on the market, out of which at least half have no significant effect on the banking market trends. For example, when in terms of the size of assets, 15 smallest banks together form only 11% of the total mass, while the smallest 20 banks make only 20% of the total assets. In the loans and deposits markets the weakness of the banks are even more pronounced (9% and 18%, respectively).

It is clear that Serbia is waiting for further consolidation of the banking sector. Maybe it is not a bad idea to briefly check the experience of the neighboring Croatia regarding the consolidation of its banking market. Subic [19] gave an overview of the Croatian banking sector consolidation affected by the entry of foreign banks. In short, in 1998, there were 60 banks in Croatia. Under the influence of market consolidation, this number halved in 2010. Although the number of banks declined, their strength measured by the value of assets, has consistently increased from about 100 billion to nearly HRK 400 billion today. The consolidation happened under due to the entry of foreign banks, which have taken over the leading domestic state-owned banks, with the key takeover wave in 1999 and 2000 when foreign banks took over four largest state-owned banks. Today, foreign banks have in their possession 91% of the total banking assets in Croatia, and the HHI in Croatian banking market is at the level of 1,400 points. The first six largest banks are foreign banks (dominated by Austrian banks with a share in total banking assets of as much as 60%), and among the top twelve banks, only one is state-owned. These data indicate that the consolidation of the banking sector in Croatia is a few years ahead of the consolidation in Serbia, which makes the example of Croatia even more interesting. The author of the analysis addressed the question of the sudden impact of consolidation on the competition level within the banking sector. The author concludes that the entry of new foreign players brought a higher level of market concentration, but it did not upset the competitive dynamics, but on the contrary, it intensified the competition in the market. Some of the indicators are: expansion of the banking network, modernization of operations (the introduction of online banking, for example), then a larger influx of cheaper foreign capital through their parent

banks, enabling local customers easier access to foreign markets and foreign corporate strategic partners, as well as expanding range of financial services relying on basic banking services. We should not neglect the introduction of new management principles and know-how and their transfer to local managers and staff. On the other hand, the key risk lies in the over dependence of the banking system on foreign banks and the inability to affect the financial health of their parent banks.

If we considered the examples of consolidation of the banking markets in other countries in Southeast and Central Europe, we would come to similar observations. These markets are penetrated by established European banks which buy the largest domestic state-owned banks. It is, for example, interesting to observe that the eight largest foreign banks present in Croatian market are also present in Serbian market. These are: UniCredit, Intesa, Erste, Raiffeisen, Hypo, Societe Generale, OTP and Volksbank.

It is expected that foreign banks increase their share in the banking market in Serbia in the next few years. From the perspective of concentration, it does not matter whether further consolidation is done by banks already present in the market or whether new foreign players appear. Targets for consolidation will be the remaining state owned banks, with the state as the majority or minority shareholder, as well as smaller privately owned banks. The state is expected to offer packages foreign investors quite soon. The only exception might be Komercijalna banka, whose state owned package will be offered for sale in the medium term.

What could be the motives of other banks for acquisitions? Of course, it depends on the particular case being analyzed, but in general, the key motive would be to increase the market power and the ability to achieve this through powerful economies of scale and economies of scope. According to [13] a bank considers takeover of another bank for four possible reasons. One reason may be to optimize the cost through economies of scale and lowering financing costs. Another reason would be to strengthen their income through economies of scope, to conclude large contracts more easily and to impose their pricing policies more aggressively as larger players. The third type of motivation stems from the economic

context. Usually, concentrations are more frequent after a crisis ends or during the rise time of an economic cycle. Finally, the motives for takeover can be specific and related to personal motives of the management or the need for strategic retaliation. A common motivation of foreign banks to penetrate into the domestic market in the form of external growth is asymmetric information, given that the local target bank has information about the market dynamics and specific regulations. Another motive is definitely impatience to quickly master a significant market power, which would not be possible through organic growth, particularly in the part of developing a network of branch offices.

Consolidation partly occurs because small banks wind down, but predominantly it happens through horizontal mergers of the existing banks and the existing or new banks that take over. Also, there is an option where strategic partners in the form of international financial institutions penetrate the market according to the model that has already been seen with Komercijalna or Cacanska banka. Such a scenario is realistic for the Postanska stedionica, which is attractive because of the large number of active current accounts. The state is, most likely, not interested in remaining the majority shareholder in Privredna banka Beograd and a tender for a consultant can be expected quite soon, and they will continue to look for a strategic partner. Razvojna banka Vojvodine is in very poor condition with the NPL ratio of over 80%. It is possible that the state applies the same model as in the case of Nova Agrobanka [12], which involves the transfer of adequate good quality assets and liabilities into one of the private banks, which would be a transparent process for the stakeholders. The problem in practice is that the government of Vojvodina believes that it possible to solve the problem through recapitalization, which in our opinion is very difficult given the condition of the bank at the moment. Recapitalization is not a permanent and sustainable solution and is definitely not a solution that is in the best interest of the taxpayers in Serbia. Other banks that are partially state owned (Srpska banka, Jubmes and other) will also be subject to sales in the near future or establishing strategic partnerships. All in all, the current market share of state-owned banks, except for

Komercijalna banka, is minute. Current developments in this part of the banking market cannot significantly affect the market concentration, unless one of the existing large banks buys one or more banks in which the state holds a majority stake. This is also highly unlikely given the vast liquidity problems and problems with collecting loans that state owned banks have. One possible way of solving the problem of state owned banks is the formation of the so-called Bad bank, which would be a separate SPV and which would absorb all the bad loans of the state banks. Its job would be to deal only with the collection of bad loans, while the healthy assets of the state owned banks would merge into one large state-owned bank.

Further sale of the state capital in banks makes sense for many authors [15], who found that the presence of the state capital in the banking system is considered as a restriction of competition because it established control from one single center, which at least in the countries in transition, does not exhibit the ability of the introducing and implementing good corporate governance model.

In addition to the possible sale of state owned banks, another way of future consolidation of the banking sector is takeovers of private and foreign banks by the existing foreign banks. Specifically, in Greece they are currently considering an option that EFG Eurobank is taken over by the National Bank of Greece - NBG (the largest Greek bank majority owned by the state of Greece), which would also mean the takeover of its network in Serbia. This would have direct implications on the structure of the top ten banks by market share, especially after the earlier takeover of Vojvođanska banka by NBG. The new entity would then take the third place in terms of market share. This potential transaction opens up the earlier question of specific market concentration according to the country of origin of the banks (see Table 5). Namely, the Bank of Greece has around 20% market share according to the analyzed parameters. They are especially important players in the deposit market, due to a more aggressive policy of deposit rates. With such share, they have systemic importance for Serbian financial market and any instability in their business can be a significant source of instability in the entire banking, and more broadly, the financial system. It is known that Greek banks are significantly dependent

on funding from the European Central Bank (ECB), as well as that they are under tremendous pressure from the crisis in Greece and the Eurozone. We can say that the deteriorating situation in the parent banks would inevitably lead to a deterioration of the situation in their branches in Serbia, primarily from the perspective of liquidity. Another potential takeover is related to the possibility that Erste Group buys certain Hypo Group banks, with unofficial indications are that their target could be the Hypo Bank in Serbia. In the case this transaction occurs, Erste Bank would jump to the third or fourth place in the market according to most of the parameters analyzed.

At this point, we should mention the possible withdrawal of certain domestic or foreign banks. This is supported by the list of loss makers in Figure 4. These are mostly large banking groups, which failed to reach a market share that they expected in Serbia. Some of them are KBC, OTP, Credit Agricole, and Nova Ljubljanska banka.

If we assume that all of the previously mentioned scenarios occurred, we are interested in how this would affect the change in concentration indicators. Assuming that the two currently largest banks (Intesa and Komercijalna) 'suck in' the rest of the state owned package in the banking sector and that the two takeover transactions mentioned above occur, the HHI would increase to 1,291 and 1,705 points for the credit and deposit markets, respectively. We deliberately did not calculate the HHI for assets and capital, because it is expected that after merger and acquisition their aggregate value is not equal to the simple sum of the two elements, due to the logics of rationalization and determining the right size of the consolidated system. It is clear that such a consolidation scenario would substantially increase the level of market concentration, particularly in the deposits market, suggesting to the regulatory body (the NBS) to be careful when granting approvals for concentration when they appear.

Assuming that such a scenario of consolidation occurs, the question is what would be the impact on the competitive dynamics of the industry. The general thesis is that the higher the level of concentration the greater slowdown in the competitive dynamics. Previous researches focused on the banking market have failed to prove this

[6]. These authors failed to prove a negative correlation between concentration and competition in a large sample that included banking sectors of fifty countries. On the contrary, they have proven more concentrated banking sectors to actually be more competitive.

Ljubaj [16] gave a very interesting review of the possible impact of possible banking market concentration on the development of the financial sector, the stability of the banking system, the concentration in other sectors and economic growth. Analyzing the relevant sources in the field and concrete practical examples, the author concludes that a certain degree of concentration in the banking market is natural and useful because a higher level of concentration means that market participants are large banks, which stimulate the economies of scale, economies of scope, application of modern knowledge in the area of developing and providing banking services that help solve the problem of asymmetric information, and which perform good credit ratings analyses of their clients based on these. All of the above has a positive effect on the development of the financial system. Given that it is easier to regulatory control and monitor a smaller number of banks, a higher concentration, if the banks are under tighter monitoring, can also mean a greater stability of the banking system. Concentration in the banking sector may also affect the concentration in other sectors of the economy, especially in the case of less developed countries, as is the case in Serbia. Namely, the Cetorelli [5] analysis showed that large and powerful banks in developing economies may affect the penetration of new companies in certain industries by stimulating or discouraging credit policies. Finally, the concentration of the banking market also affects economic growth of the countries. Deidda and Fattouh [7] showed that the concentration in the banking sector is negatively correlated with economic growth in underdeveloped countries, while in developed economies such correlation has not been established.

Based on all this, we can conclude that additional moderate increase in market concentration can have a positive impact on the competitiveness of the banking market in Serbia, assuming that the possibility of cartel agreements is prevented.

Conclusion

General indicators of market concentration show that Serbian banking market is weakly to moderately concentrated, i.e. that it can be characterized as mildly oligopolistic. In terms of the ownership concentration, there is a greater concentration of banks from Italy, Greece and Austria, which should be considered primarily in terms of possible transfer of instability from their countries of origin to the subsidiaries in Serbia.

The analysis in this paper suggests that we can expect further increase of banking sector consolidation in Serbia, which, if carefully dosed and regulated by the National Bank of Serbia, might give positive results on the side of competitive dynamics and stability of the banking system. This is supported by the example of Croatia, and Serbia as well, where the concentration of growth in the last few years is constantly lowering the interest margin. Possible forms of further consolidation are the sales of the remaining state owned capital in banks and mutual takeovers of banks directly in Serbia (less likely) or indirectly through parent banks (more likely).

Therefore, in the medium term, we can expect further decline in the number of banks and increase in the market power of the largest banks. The National Bank of Serbia should monitor the dynamics of concentration and competitiveness and apply the fine control measures for concentration levels, through careful consideration when granting approvals for mergers and acquisitions, when defining capital threshold and by meticulous application of licensing policy for banks. Particular attention should be paid to monitoring and identifying possible cartel forming trends, which may occur with this kind of market structure, especially in the area of defining the interest rate policy and market sharing. Any change in the concentration levels should be viewed through the competitiveness indicators (interest margins, for example), stability factors (amount of capital, assets quality, management structure, profit and liquidity), and social implications (for example, to prevent negative impacts in terms of reducing the supply of related banking services).

The analysis of concentration and competition is related to integral commercial banking sector in Serbia.

Future studies could consider separate analysis of retail banking market and corporate banking market. This way, we could get more precise picture of concentration within commercial banking segments.

The other thing worth of mentioning here is related to portfolio investment segment of banking market, which was not elaborated in this paper. There are several foreign banks, without licence to work in Serbia, which are allowed to invest in state securities (such as Barclays, Deutsche or CitiBank). The other segment is direct credit segment, where supranational investors (e.g. EBRD or IFC) directly give loans to large corporate clients. This is significant chunk of loan market in Serbia. The first mentioned segment is one of the main generators of short-term instability and fluctuations in exchange rate (apart from chronic current account deficit), because their 'hot money' is attracted only by high interest rates (as is the case with our National Bank reference rate). This charge and discharge phenomenon has immense influence on shallow Serbian financial market. The other segment of cross-border financing by supranational investors is also very important for supporting large corporate clients and large projects, where local commercial banks are not interested or not capable of crediting large loans with long time horizon. More detailed analysis of these segments of banking market, especially in terms of their influence on dynamics and stability of overall financial system, might be a topic of future related research projects.

References

1. Bank for International Settlements. (2012), *Basel Committee on Banking Supervision data*, available at <http://www.bis.org/bcbs/>, accessed 27.11.2012.
2. Bikker, J.A., Haaf, K. (2001), *Measures of competition and concentration: A review of the literature*, Amsterdam, De Nederlandsche Bank.
3. Bikker, J.A., Haaf, K. (2002), "Competition, concentration and their relationship: An empirical analysis of the banking industry", *Journal of Banking and Finance*, Vol. 26, No. 11, 2191-2214.
4. Bikker, J.A., Spierdijk, L., Finnie, P. (2006), "Misspecification of the Panzar-Rosse Model: Assessing competition in the banking industry", *DNB Working Paper*, No. 114/September, De Nederlandsche Bank.
5. Cetorelli, N. (2001), "Does bank concentration lead to concentration in industrial sectors?", *Working Paper Series*, WP-2001-01, Federal Reserve Bank of Chicago.

6. Claessens, S., Laeven, L. (2003), "What drives bank competition? Some international evidence", *World Bank Policy Research Series Working Paper*, No. 3113.
7. Deidda, L., Fattouh, B. (2002), "Concentration in the banking industry and economic growth", *CRENOS Working Paper*, No. 02/02.
8. Đuričin D., Lončar D., Rajić V. (2008), "Merenje koncentracije tržišta: primer sektora prehrambene maloprodaje Beograda", *Ekonomika preduzeća*, Vol. 56, No. 1-2, 61-80.
9. Đuričin, D., Lončar, D. (2010), *Menadžment pomoću projekata*, Beograd, Centar za izdavačku delatnost Ekonomskog fakulteta u Beogradu.
10. Đuričin, D., Vuksanović, I. (2012), "Isn't output more important than inflation in impotent economy: Serbia's economic policy revision", *Ekonomika preduzeća*, Vol. 60, No. 1-2, 13-32.
11. Government of the Republic of Serbia. (2012), *The Law on the National Bank of Serbia, Belgrade*, Official Gazette of the Republic of Serbia, nos. 72/2003, 55/2004, 85/2005, 44/2010, 76/2012, 106/2012.
12. Government of the Republic of Serbia. (2012), *The Law on the Assumption of Assets and Liabilities of Banks for the Purposes of Safeguarding Stability of the Financial System of the Republic of Serbia*, Belgrade, Official Gazette of the Republic of Serbia, No. 102/2012.
13. Hayward, M. (2002), "When do firms learn from their acquisition experience?", *Strategic Management Journal*, Vol. 23, Issue 1, 21-39.
14. Horvat, J. (1970), "A Suggestion for a Comprehensive Measure of Concentration", *Southern Economic Journal*, XXXVI, 4, 446-452.
15. La Porta, R.F., Lopez-de-Silanes, F., Shleifer, A. (2000), "Government ownership of banks", *NBER Working Paper*, No. 7620.
16. Ljubaj, I. (2005), *Indeksi koncentracije bankarskog sektora u Hrvatskoj*, Pregledi, Zagreb, Hrvatska narodna banka.
17. Lončar, D., Ristić, B. (2011), "Analiza konkurencije i tržišne koncentracije u sektoru mlekarstva u Srbiji", *Ekonomika preduzeća*, Vol. 59, Br. 1-2, 125-142.
18. Shin, D.J., Kim, B.H.S. (2012), "Bank consolidation and competitiveness: empirical evidence from the Korean banking industry", *Journal of Asian Economics*, accepted manuscript.
19. Šubić, R. (2009), "Uloga stranih banaka u okrupnjavanju bankovne industrije", *Ekonomski vjesnik*, 22, 2, 296-313.
20. The National Bank of Serbia. (2012), *Bank claims on corporate and retail sectors by structure* <http://www.nbs.rs/internet/cirilica/80/index.html>, accessed 28.11.2012.
21. The National Bank of Serbia. (2012), *Foreign exchange trends*, available at <http://www.nbs.rs/internet/cirilica/80/index.html>, accessed 30.11.2012.
22. The National Bank of Serbia. (2012), *Interest rates*, available at http://www.nbs.rs/export/sites/default/internet/latinica/80/monetarni_sektor/SMS_najvaznije_kamatne_stope.xls, accessed 29.11.2012.



Dragan Lončar

Assistant Professor at the Faculty of Economics, Belgrade University, in Project Management and Strategic Management. As a scholar of Shell Foundation, in 2003 he completed Master course in Management Studies at the University of Cambridge (Judge Business School) in the UK. Acquired the PhD title at the Faculty of Economics in Belgrade in 2007. As a Fulbright Scholarship Program grantee, he completed post-doctoral research studies in the field of financial management at the University of Chicago (Booth School of Business) in 2009. The author of a significant number of scientific-research and consulting projects. The current focus of his research is the methodology of financial evaluation of investment projects. Other areas of his research interests include market analysis, strategic forecasting and planning, decision modeling and corporate governance.



Vesna Rajić

Assistant Professor at the Faculty of Economics, Belgrade University, in Elements of statistical analysis. She attained her Master degree in 2002 on the Faculty of Mathematics in Belgrade, the department of Probability and Statistics. In 2007, she gained the title of a Doctor of statistical science at the Faculty of Economics, Belgrade University. The current focus of her research is statistical methods of repeated patterns and their application in the field of property insurance, as well as market analysis. Other areas of her research are nonlinear time series models and possibilities of their application, as well as multivariate analysis. The results of her scientific research were presented in numerous scientific papers in relevant national and international conferences.