

DEVELOPMENT OF ELEMENTS OF FINANCIAL AND INNOVATIVE MARKETS' INFRASTRUCTURE IN RUSSIAN ECONOMY

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Abstract

Paper deals with elements of financial and innovative markets' infrastructure. Several cases were chosen for analysis. They are: lease services, business valuation and appraisal, banking and informational technologies. Each case is studied as a separate industrial market. Special methodology of market structure analysis is suggested and applied under research. Selected examples don't pretend to represent the complete picture of Russian financial and innovative markets' infrastructure. They represent different types of such infrastructure elements. The effectiveness and general state of infrastructure are influenced by them. The results show that controversial tendencies could be observed in Russian economy.

Key words: market structure; market concentration; market power; sustainability and stability of leadership; leasing; business valuation and appraisal; unit investment trusts; banking services; financial markets' infrastructure; innovative infrastructure.

JEL classification codes: G20, D40, G30

Introduction

Financial markets couldn't develop without basic elements which are essential for the economy of developed countries (Brealy et al. 2004). The complicated system of financial markets' infrastructure is formed from these elements. They didn't exist in administrative type soviet economy and appeared during transition period. Very interesting processes of financial markets' infrastructure development could be observed in Russian economy. Several empirical examples are discussed in the paper. Effective banking services, mechanisms of companies' valuation and appraisal, financial lease schemes are connected tightly with financial markets' infrastructure. These particular segments were studied under our research. We don't pretend that they are crucial

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or most important. They are very different but each of them characterizes the level of financial markets' infrastructure. It seems interesting to compare these segments.

Informational technologies market is also new for Russian economy. It plays very important role in formation of infrastructure required for innovative economic development.

Each example is understood and analyzed as a separate industrial market. Our initial hypothesis is related to the competitive structure of these markets. High level of competition could be explained as a positive tendency which leads to the effective financial markets' functioning. If these markets are far from being competitive, if they are ruled administratively than it is important to analyze the position of market leaders, to see the sources of market power. Empirical data on Russian industrial markets were used. The principles and methods of industrial economics are applied under research and a special method of leadership analysis is suggested.

Research Methodology

The processes of real industrial markets emergence occur in Russian economy. The principles of industrial economics could be applied for the analysis of real situation. In some cases real Russian markets confirm theory, but very often they demonstrate controversial characteristics. Anyway there are enough data necessary for the research of real Russian industrial markets.

It is necessary to pay attention to the industrial market as an economic category which is very important for economic analysis. Industrial market structures, cooperation of its participants, dependence or independence of their behavior, dominance of definite firms determine the character and profitability of firms operation (Scherer and Ross, 1991). According to the old Russian economic approach the enterprise considered to be the main economic agent. Certainly it is extremely important to study each enterprise, but now under the development of integration processes, existence of many complex contracting procedures the decisions of the firm are determined greatly by industrial market type and structure. Some researchers consider now that industry and industrial market are the main parts of the whole economic system. They should be studied and analyzed.

The broad descriptive model of the relations mentioned above was conceived by Edward Mason and developed by Joe Bain. It is called The Structure – Conduct – Performance Paradigm (Scherer and Ross, 1991). The research idea of the project is based on this approach. According to the paradigm performance in particular industries or markets is said to depend on the conduct of sellers and buyers in many matters. Conduct in turn depends on the structure

of the relevant market, characterized by the number and size of distribution of sellers and buyers, the degree of products differentiation, the presence or absence of barriers to the entry of new firms, the shapes of costs curves, the degree to which firms are vertically integrated and the extent of firms' product line diversification. Market structure is in turn affected by a number of basic conditions (both from supply and demand side). This basic paradigm will provide the basic framework for the research of real Russian markets' structure.

There are several basic indicators of any industrial market structure. Level of economic activity of large enterprises and level of dominance (market power) of one or several firms are among such indicators. Concentration is one of the main characteristics of market structure, it shows the number of firms on the market from and it reflects how much they differ from each other. Concentration is related to the level of competition, to the market power of selected firms. It is well known from economic theory that level of concentration should be rather low for competitive markets (Morgan, 2007). However real Russian markets don't always fit theoretical models.

Real Russian markets provide basis for very interesting interpretations from the point of view of Industrial and Institution Economics. Real data show that in general competition on the Russian markets increased during last 15 years. At the same time competition led to the companies consolidation and concentration increase (Perloff and Carlton, 2004). Current market structure and market structure in general is related to the activities of few large companies. Leading position provides market power for a company. It is important to determine whether there are such market leaders and of so – how stable is their leading position.

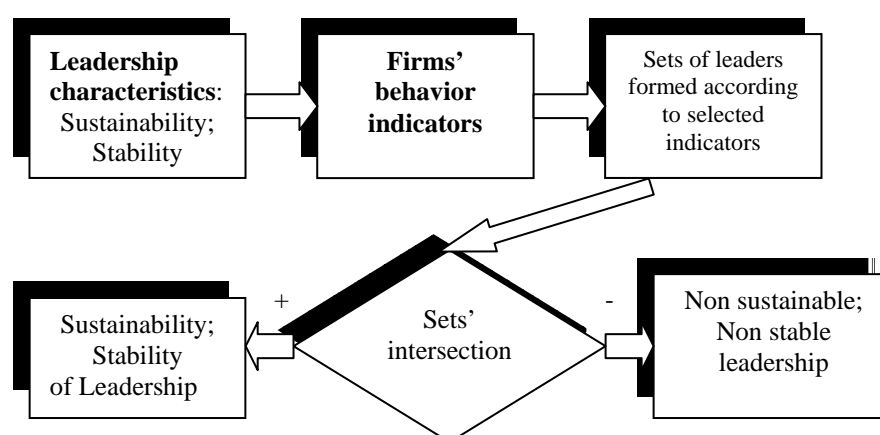
We suggest an approach to the research of leading position. Under this approach we analyze "sustainability" and "stability" of leading position and therefore market power on the industrial market. The list of leading firms could be created basic on different criteria. It is possible to form a group of top (10, 20 etc) firms – leaders on sales, a group of leaders according to the level of profit, cost of assets, value added etc. Many groups of leaders could be created on each market. These groups may include the same or different firms According to our definition "sustainability" of leading position of the company means that this company is included to the group of leaders more than one time, i.e. is included in more than one group. If leading position is sustainable it is based on various criteria. If leadership is unsustainable groups of leaders are very different, if leadership is sustainable they are similar.

"Stability" of firm's leading position in our approach means that it remains in the group of tops during several (more than one) years, it reflects long term leadership.

Summing up definitions described above we could formulate that leading position of the firm is sustainable and stable if this position is based on various criteria in long term period. If such leadership could be observed at the market it would be possible to make forecasts on this market development tendency.

The scheme of analysis is showed on the figure 1 below.

Fig. 1 Leadership analysis scheme



Special indicator – sustainability (stability) coefficient (SC) could be calculated.

$$SC = 1 - \frac{N_{fact} - N_{min}}{N_{max} - N_{min}}$$

Where: N_{fact} – real number of leading firms included in all sets;

N_{min} – minimal possible number of leading firms included in all sets;

N_{max} - maximum possible number of leading firms included in all sets;

Four industrial markets were analyzed using this methodology. They are: lease services market, business valuation and appraisal market, banking services market and informational technologies market. The results are presented below.

Lease market

The level of leasing development in Russia is considered to be insufficient in general, though this market is extremely dynamic.

Interesting combination of competitive structure elements with market power of leaders is observed at this market.

Concentration coefficients (CR_n) are presented by figures 2 and 3. Definite market leaders still have strong positions (fig. 2). Data on fig.3 show that market structure is going through some changes. There are many firms with similar positions; general concentration level is decreasing in long term period. Such tendency was very clear during initial stage of market development (period science 2002 till 2004). Picture changed in 2006-2007, concentration level indicators began to increase though there are much lower that they were earlier. All estimations were done using data from www.raexpert.ru.

Fig.2 Concentration coefficients on lease market in 2007

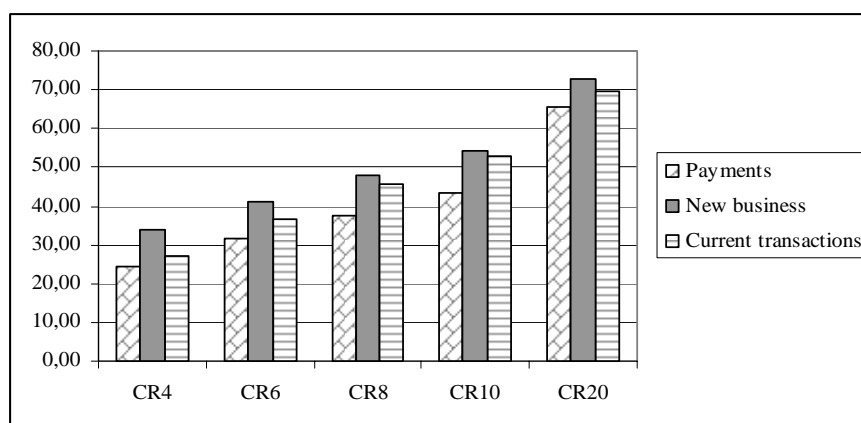
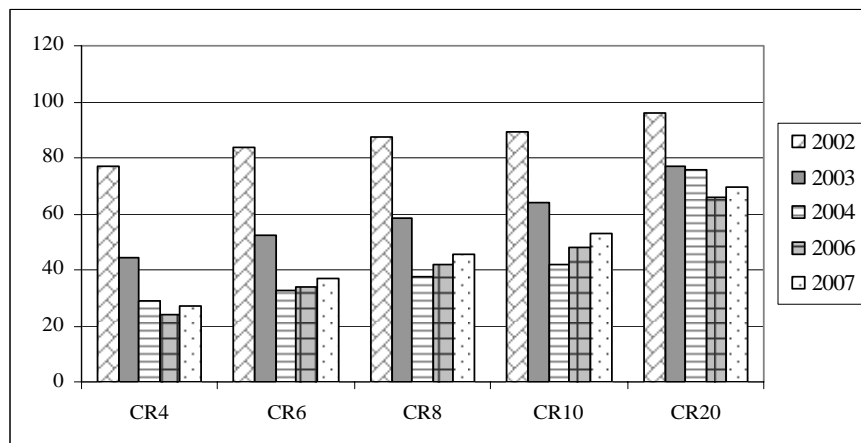


Fig.3 Concentration coefficients on lease market calculated for currents transactions



We've estimated Herfindalsh-Hirshman Index (HHI) for lease market. It turned to be not high. HHI for current transactions in 2004 was 581, 56. Such level is typical for non-concentrated markets. V.Gazman in his research came to the similar conclusion (Gazman, 2003). HHI meanings for 2006 and 2007 years are shown in table 1.

Table 1. HHI for Lease Market

Basis for calculation	2006 year	2007 year
Payments	267,25	311,89
New business	301,8	<u>423,54</u>
Current transactions	<u>303,77</u>	356,57

Results also show that concentration increased in 2007, though HHI meanings are close to competitive market. The highest increase in HHI level was observed for new business; at the same time HHI for new business in 2007 was greater than indexes calculated for other showings. Basing on this observation it is possible to predict concentration growth in future. It should be pointed out that in general HHI levels are not very high and any operations (M&A etc) are legal at this market. There is no any threat of monopolization here.

Lease market demonstrates very interesting combination of competitive (HHI level) and non-competitive (CRn) structures. Market leaders could be clearly identified. The analysis of their behavior, privileges sources is very important for market description. If there are stable and sustainable leaders it could be possible to predict market tendencies. Character of leadership and features of market power are studied below.

Using suggested methodology of analysis which was mentioned earlier we've analyzed market leaders' positions Following indicators were taken into

account under this part of research: value of: payments received; payments paid to providers; current transactions; transactions with different financial instruments; equity; regional current transactions; current transaction with different assets; new business in the current year;

The analysis showed that leading position could be characterized by growing stability and sustainability.

Bank and commercial credits and bills were studied among financial instruments. It turned out that leading firms use mainly bank credits. This reflects the general weakness of financial markets' infrastructure.

Equity level analysis showed that it is necessary to have large amount of equity in order to take very high market position. However average firms could operate effectively without significant equity.

Our results illustrate that positions of national leaders are sustainable in regions. At the same time a couple of regional leaders could be identified in each region.

Another result reveals that market power is applied only for limited set of assets.

Some results are presented in table 2.

Table 2. Sustainability and stability of leadership at lease market

Indicators	Nfact/N max/Nmin	CS
<i>Sustainability characteristics</i>		
2004 - Value of payments received; - Value of payments to providers; - Value of current transactions;	13/30/10	0.85
2004 - Value of transactions with bank credits - Value of transaction with commercial credits - Value of transactions with bills;	31/45/15	0.47
2004 - Value of regional transactions (9 regions studied);	48/90/10	0,525
2007 – Value of regional transactions (9 regions studied);	45/90/10	0,563
2005 - Value of transactions with definite assets (16 types of assets);	59/160/10	0.67
2006	16/30/10	0.7

- Value of new business; - Value of current transactions; - Value of payments received;		
2007 - Value of new business; - Value of current transactions; - Value of payments received;	13/30/10	0,85
<i>Stability characteristics</i>		
- Value of new business;	14/20/10	0.6
- Value of payments received;	14/20/10	0.6

These data confirm our conclusion that there sustainable market leaders from one side and competitive tendencies from the other. The second characteristic is especially relevant for regional markets and for transactions with definite assets.

Summing up empirical analysis results it is possible to suggest following conclusions. Market structure is determined by the limited number of leading firms; at the same time competition is emerging; there two competitive segments: one reflects growing competition among leading firms, another deals with non-leading group.

Firm's position on lease market, its market power is determined mainly by current operations and relations with lessees; This is indirect characteristics of undeveloped financial mechanisms and financial markets' infrastructure;

Sustainable leadership is forming in some areas; the level o sustainability is increasing. However there unsustainable areas also;

Market leaders use bank credits mainly, other financial instruments are utilizes in a very limited way.

Regional and asset specialization is typical for market leaders. Only 1-2 national leaders have strong positions in provincial areas and in transactions with definite assets.

In general taking into account the dynamics and competitive direction of lease market development it is possible to predict positive changes of this market. It would play important role in improvement of investment system and financial markets' infrastructure.

Basing on low meaning of HHI and high growth rate it is possible to predict significant increase of mergers and acquisitions in coming years.

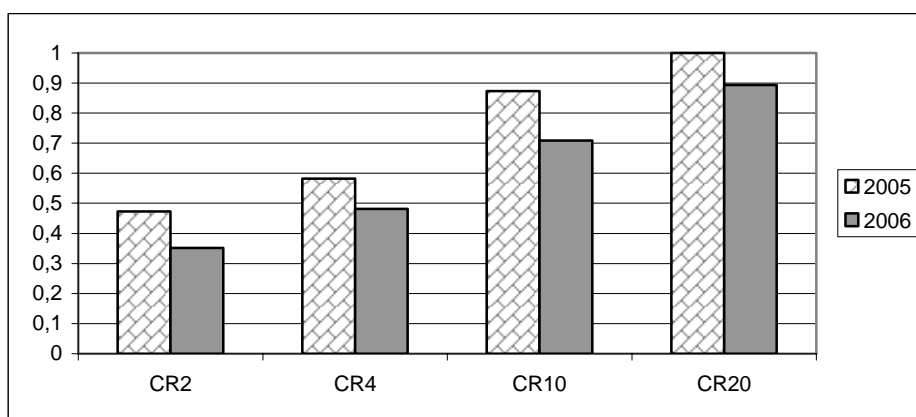
Other sections of the paper deal with different examples. Similar methodology was applied. Data from www.raexper.ru and www.rbc.ru were used for other cases analysis.

Market for business valuation and appraisal

The demand for assets, companies' valuation and appraisal is growing steadily under market economy development, under financial markets emerging and evolution. The structure of valuation and appraisal market reflects the financial infrastructure in general. This market is rather young in Russia. We studied its structure basing on data for Siberian region. The situation on it is very typical for regions.

There were 34 companies operating on this market in 2006. Volume of their sales increased on 28% comparing with 2005. Concentration ratios calculated for this market are presented on the figure 4.

Fig. 4 Concentration ratios calculated basing on general sales volume



The results show that there are distinguished leaders but their dominance decreased in 2006.

Market concentration estimated by HHI is shown in table 3. HHI meanings were calculated basing on different indicators.

Table 3. HHI level

Indicator	HHI calculated according to the indicator
Volume of sales	1058,89
Number of employees	428,47
Earnings from activities on business valuation	3367,73
Earnings from activities on real estate valuation	1054,28
Earnings from activities on movable assets valuation	691,11

Earnings from activities on intangible assets and intellectual property valuation	1825,63
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In general the level of concentration is moderate (first line in the table). There are no great differences in number of employees. This means that this parameter is not connected with leading position. It is interesting to estimate concentration on different market segments, reflecting firms' specialization. Very high level of concentration could be observed for business valuation segment. Market power is related to this type of activities. Moderate level of concentration is observed on segment of intangible assets valuation. Companies don't differ much on movable assets valuation activities.

Sustainability of leadership is studied below, table 4.

Table 4. Sustainability of leadership on business valuation and appraisal market

Criteria of leaders' sets selection	Nfac/N max/Nmin	CS
- Volume of sales - Earnings from activities on business valuation	10/20/10	1
- Volume of sales - Earnings from activities on real estate valuation	18/20/10	0.2
- Volume of sales - Earnings from activities on real estate valuation - Earnings from activities on movable assets valuation - Earnings from activities on business valuation	25/40/10	0.5

The results show that sets of leaders formed according to criteria of general volume of sales and earnings from activities on business valuation are almost the same. Leadership is absolutely sustainable here. Leadership on real estate valuation is very unsustainable.

Leadership on different segments of valuation activities (last line in the table) could be characterized by intermediate level of sustainability.

First three leaders' positions didn't change during 2005-2006 years while positions of other firms were unstable.

In general it is possible to conclude that market is highly concentrated and sustainable leaders could be defined.

Banking services market

Bank system and market for banking are the most important basic elements of financial markets' infrastructure. This market development started at the very initial stages of market economy formation. Other institutes (including the examples analyzed earlier) functioning is impossible without effective banks' operation. Some empirical data concerning banking market in general are presented below, table 5.

Table 5. Concentration on banking services market in Russia in 2004

Indicator – basis for calculation	Concentration indexes				
	CR2	CR4	CR10	CR20	HHI
Number of employees	69,64	72,31	78,21	83,47	4604,44
Value of assets	56,85	65,41	77,20	85,36	2 768,75
Value of equity	39,48	50,26	61,96	72,17	1 067,69
Profit level	54,30	60,53	70,47	81,36	1 991,02

Dominance of selected companies could be observed on this market also. The general level of concentration measured by HHI is much higher than in other cases. HHI calculated basing on employees number is the highest, market concentration is extremely strong. HHI values calculated basing on the other indicators are much lower. This reflects low efficiency of market leaders (labor productivity in particular).

There is one distinguished leader on this market - Sberbank of Russia. The difference between this giant bank and average level is showed in table 6.

Table 6. Difference between leader and average level, %, 2004 year

Indicator	Gap, %
Number of employees	66,61
Value of assets	50,66
Value of equity	28,14
Profit level	40,76

If Sberbank data are excluded from analysis the structure is changed significantly. In this case market structure would be close to competitive and maximum HHI would be reached for profit level. However such assumption seems unreal because it is Sberbank who controls the main part of the market. Except existence of one leader which makes the structure close to monopoly there are other strong banks which have market power. Sustainability of leadership is illustrated below in table 7.

Table 7. Sustainability of leadership on banking services market

Criteria of leaders' sets formation	Nfact/ N max/Nmin	CS
- sales volume in 2005 - sales volume in 2004	12/20/10	0.8
- sales volume in 2005 - sales volume in 2004 - assets value on 1.01.2006	14/30/10	0.8
- sales volume in 2005 - assets value on 1.01.2006	13/20/10	0.7
- sales volume in 2004 - assets value on 1.01.2006	13/20/10	0.7
- sales volume in 2005 - sales volume in 2004 - assets value on 1.01.2006 - annual sales growth rate	21/40/10	0.63

Comparison of data for two years shows stability of leadership. Comparison of sales and assets value indicators shows relatively high sustainability of leadership. However leadership characteristics are changed when we take into account growth rates. These rates influence to some extent future positions. So it is possible to predict some market structure changes in future.

In general market is high concentrated. Its structure is determined currently by small group of sustainable leaders with clear dominance of one bank. Such type of structure could not be understood as relevant to market economy requirement. At the same time it provides possibilities for government regulation.

Information Technologies Market

Our last example deals with new industrial market – market for informational technologies. We understand informational technologies as wide range of economic activities related with management technologies and data proceeding by means of computing equipment. Several segments are marked at this market, they are: distribution, equipment and software for integrated projects supply, informational technologies services, soft ware development, equipment production, telecommunication services;

This market develops rapidly during last few years. General growth of sales was 32% in 2004, and 28% in 2005 and 2006.

Data on IT market concentration are presented in tables 8 and 9.

Table 8. Concentration indicators on IT market calculated on sales

Concentration index	2004	2005	2006
CR ₄ ,%	37,74	35,86	35,84
CR ₆ ,%	52,42	50,08	48,55
CR ₈ ,%	61,30	60,19	58,03
CR ₁₀ ,%	67,09	66,54	63,81
CR ₂₀ ,%	85,67	85,14	82,00
HHI	575,57	547,6	520,36

Table 9. Concentration indicators on IT market calculated on number of employees

Concentration index	2005	2006
CR ₄ ,%	25,93	22,99
CR ₆ ,%	32,95	27,44
CR ₈ ,%	38,98	35,33
CR ₁₀ ,%	44,03	37,89
CR ₂₀ ,%	64,06	51,47
HHI	301,75	317,24

Data on HHI for sales show that in general level of market concentration is not high. Competitive models of firms' behavior may be developed. In 2005 level of concentration even decreased comparing with 2004. This decrease continued in 2006. This fact confirms competitive environment creation. It is necessary to note that the concentration indexes calculated for number of employees show similar tendency while their level is even lower. This is true both for HHI and for concentration coefficients. Such correlation is typical for many markets. From the other side, it shows great differences in labour productivity which means that market could be polarized in future. Low level of HHI is combined with rather high concentration ratios, which means market leaders existence.

Further analysis showed that leadership here is unsustainable from one side and stable from another. However level of sustainability is increasing. Results are presented below in table 10.

Table 10. Leadership characteristics on IT market

Criteria of leaders' sets formation	Nfac/N max/Nmin	CS
<i>Sustainability characteristics</i>		
2005: - Sales; - Number of employees;	16/20/10	0.4
2006: - Sales; - Number of employees;	14/20/10	0.6
2006 - specialization of firms; - equipment production; - soft ware production; - IT services ;	24/30/10	0.3
<i>Stability characteristics</i>		
Sales	11/20/10	0.9
Number of employees	13/20/10	0.7

Unsustainability of leadership at separate market segments shows that leaders are specialized, they concentrate their activities on definite areas where they have strong market power. The highest level of CS is achieved of sales volume.

IT market is marked by special role of state. Government orders are very important. Firms look for large scale state financed projects but in case of success they become dependent. Therefore many leaders try to combine state and private clients. Specific characters of activities cause great importance of large projects with high level of investments. At preset firms are rather limited in investment opportunities. Under such circumstances they could integrate with each other in different ways.

General conclusions

The scheme of industrial market analysis was developed and applied for the investigation of several Russian markets. Some of the results are discussed in the paper.

New industrial markets are developing in Russian economy. Many of them form infrastructure of financial markets. Their tendencies, type of structure, typical models of behavior etc. have great influence for the character and effectiveness of this infrastructure. Several examples of these markets –

lease services, bank services and services for business valuation and appraisal markets are described in the paper. Another case under analysis is presented by IT market. This example reflects new areas of entrepreneurial activities. The level of its development indicates state of innovative development of economy.

Our analysis showed that all markets are characterized by the existence of distinguished leaders. However in the case of lease market these leaders' dominance co-exists with competitive segment emergence. This tendency could be interpreted as a positive signal and in general promotes effective financial and innovative markets' infrastructure development. Other example – market for business valuation and appraisal – is far from being competitive. Controversial tendencies could be observed here. The market is passing the early stage of development now and its contribution to financial markets' infrastructure is not clear. While the fact of such markets existence after years of administrative economy should be recognized positively.

Our results lead to the conclusion that mergers and acquisitions will develop actively within leasing and IT markets. On IT market this tendency is related with the incentives to attract investment resources under stable growth rates. On leasing market main incentive for M&A deals with market power increase. Both markets' structures are characterized with absence of monopolization threat. This makes M&A transactions possible.

Banking services market which was also analyzed plays curial role in financial markets' infrastructure. This market appeared at the very beginning of transition period. Our results show that is structure is characterized by dominance and great market power of one super leader. Many changes in banking system should take place in order to promote effective financial markets' infrastructure.

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