Dynamics of Capital Market: Changes in Latvian Consumer Behavior

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ABSTRACT

This paper analyses current situation in the capital market of Latvia and changes in consumer behavior caused by external factors and dynamic of the market. The authors give historical insight in processes of the capital market development in Latvia. Very special role is devoted to definition of consumer behavior and factors what influences it. According to the research done by the authors there are 3 groups of factors what influences consumer behavior in the capital market – direct, indirect and situational factors. The authors present and analyze statistical information about the capital market of Latvia and according to it emphasize that political and economical factors currently stimulates passivity in credit-activity of companies.

Research findings disclosed that customers, especially individual customers are very sensitive to influence of economical factors as well as to fluctuation of interest rates of banks and financial institutions.

Keywords: changes, capital market, consumer behavior.

INTRODUCTION

A vast number of factors can influence consumer behavior in the capital market. Therefore the problem for the government and the capital market organizations is how to forecast changes in demand of credits and investments and how to regulate purchasing of the capital.

The objective of the research is to find out particularities of consumer behavior in and factors what influences behavior the capital market.

The authors present insight in the capital market of Latvia, definitions of customer and customer behavior as well as methods of decision making process of customers.

The authors employ well-established quantitative and qualitative methods of research: grouping, analysis, statistic method, etc. This research aims at investigations about:

- The definitions of the capital market, customer and customer behavior;
- Statistical analysis of the capital market of Latvia;
- Motivation of purchasing in the capital market;
- Analysis of factors what influences consumer behavior in the capital market.

This research helps to understand the particularities of consumer behavior in the capital market, motives of purchasing and specific features of small national market. As a novelty in this research the authors presume to affirm decision making process of industrial customers are based on optimization theory.

DYNAMICS OF THE CAPITAL MARKET OF LATVIA

It is clearly defined in many information resources that the capital market consists of the bond market, and the stock market and it can be divided in two main parts – primary market what distributes new issues and secondary market for trades of existing ones.

A lot of effort has been done from the Government point of view to improve the capital market in Latvia and the banking sector. Nevertheless there are several objective and subjective circumstances persist that makes Latvian capital market less developed if compared with other developed countries. It can be described by average interest rates for Latvian entrepreneurs what are still higher than in other the EU countries, by less developed financial market and other factors. Also we have to point out that Latvia has domination of low value added sectors in national economy and there is weak economic basis for venture capital.

According to the statistical data in the financial and capital market of Latvia, bank assets make the biggest share (96%) in the total assets. 21 banks and two branches of foreign banks operated in Latvia at the end of September 2007. Also credit institutions or their branches, which are registered in European Economic Area (EEA) countries and have submitted applications to the Financial and Capital Market Commission (hereinafter FCMC), may provide banking services in Latvia. [1]

Total amount of bank assets reached LVL 20.4 billion at the end of September 2007 (LVL 15.9 billion at the end of 2006). Loans issued to companies make up about half of the credit portfolio of banks. However, a substantial growth is observed in loans issued to households.

Commercial banks operate with profit. According to operational information, the total profit of the banking sector amounted to LVL 375 million in 2007, which was by 40.4% or LVL 108 million more than in 2006. Return on assets (ROA)
reached 2% at the end of September 2007, while return on equity (ROE) reached 24.2% (2.1% and 26.3% respectively at the end of 2006). [1].

16 insurance companies, of which five were life insurers and 11 provided non-life insurance, as well as 7 branches of foreign insurance companies operated in Latvia at the end of September 2007. In Latvian financial and capital market, the share of insurance companies in the total assets is slightly below 2%. [1].

Total of gross premiums written in the insurance market amounted to LVL 228.6 million in 3 quarters of 2007, which was by 55% more than in 3 quarters of 2006, while the volume of paid gross indemnities was LVL 93.9 million or by 33% more than in 3 quarters of 2006. Accession to the EU has encouraged increase of competition in this sector. Since May 1, 2004, non-bank financial institutions of EU member states no longer need to receive licence or open a branch in Latvia in order to offer their services in this country. Foreign companies now are allowed to insure assets of their subsidiaries in Latvia not only with local insurers, and this has reduced the growth of real estate insurance volumes in the Latvian market. 309 applications from local insurers, and this has reduced the growth of real estate

There are a lot of different definitions about the consumer behavior described in the scientific literature. Therefore, after deepened researches done by authors, they offer to define industrial and individual consumer behavior in the capital market as: "Reaction of individuals on influence of external factors, what it is driven by influence of external factors, previous experience and resource-availability".

Many authors have their own classification of factors what influences consumer behavior. For example, David Jobber recommended such classification – Technical, Economic, Social and Personal. [4]

Very well known authors - William O.Bearden, Thomas N.Ingram and Raymond W.Lafarge recommended allocating factors in three groups – Social, Individual and Situational [8].

Brassington Frances and Stephen Pettit are grouping all factors in four groups – Individual, Situational, Group influences and Marketing mix. [2]

Thomas C.Kinner, Kenneth L.Bernhardt and Kathleen A.Kemler classify factors - Demographic, Marketing mix, Internal/ Psychological, External/Social and Situational [7].

According to authors’ point of view factors what have influence on consumer behavior is: Social, Personal, Economic, Situational, Cultural, Psychological and Marketing mix communication. Each factor can interact with another (see Fig.2) and create subgroups of new factors or their combination and effect consumers and as a result can change consumer’s behavior. Without six groups of factors there are also marketing mix communication, what can seriously impact each of six factors and change consumer behavior.

## ON FACTORS WHAT INFLUENCE CONSUMER BEHAVIOUR

In capital market consumers can be divided in two parts – industrial customers (companies, organizations, legal institutions etc.) as well as private persons (customers).

According to statistical information the structure of local for both groups were with positive dynamic in last years (see table 1.)

<table>
<thead>
<tr>
<th>Credit holder</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household</td>
<td>240.5</td>
<td>432.0</td>
<td>761.6</td>
<td>1331.1</td>
<td>4303.2</td>
<td>5724.0</td>
</tr>
<tr>
<td>Enterprises</td>
<td>1417.6</td>
<td>1810.2</td>
<td>2443.6</td>
<td>3723.2</td>
<td>5359.2</td>
<td>6546.5</td>
</tr>
<tr>
<td>State org.</td>
<td>154.7</td>
<td>250.7</td>
<td>173.4</td>
<td>266.3</td>
<td>100.5</td>
<td>273.6</td>
</tr>
<tr>
<td>Total</td>
<td>2004.3</td>
<td>2822.0</td>
<td>3948.1</td>
<td>6441.2</td>
<td>9762.9</td>
<td>1199.9</td>
</tr>
</tbody>
</table>

| Fig.1. A general model of consumer decision making and influences [8] |

For description of consumer behavior in the capital market the authors recommend all factors divide in three groups: direct, indirect and situational. Direct factors for the industrial
customers are current economical situation in the country (inflation, interest rates etc.), marketing mix and communication, indirect factors are cultural and social factors, besides some of social factors could be applied to both – direct and indirect groups. Under the group „situation factors” the authors presume those who depends on the individual - psychological, personal and situational (with situational factors the authors presume environmental factors, impact of the situation, sales personnel etc).

All these factors, especially factors of direct influence the authors recommend analyzing by using method of correlation and correlation coefficients. As we know there are a lot of different methods for analysis of correlation among variables, for example analysis of correlation, correlation coefficient, linear regression, analysis of co-variation etc.

It is proved that a customer could have a lot of permanent features therefore for one and the same group of customers we can set a lot of changing variables, especially under the impact of external factors. The Authors recommend group of direct factors indicate with $x_i (i=1,\ldots,n)$, but situational factors with $y_i (i=1,\ldots,n)$. According to the theory with $y$ we have to indicate changeable factors and the authors emphasize that situational factors corresponds to this group.

Relations between two consumer behavior features we can establish if changes in one factor group affect factors form another group. Interconnections among factors could be different: thoroughgoing and functional or imperfect. In imperfect interconnections one factor form direct factor’s group has impact to two or more situational factors and we can call this situation “imperfect” or correlative. If we can find relationship among those factors, we can easily forecast, for example, what influence the company marketing activities and marketing mix elements will have on consumer behavior.

The authors recommend for evaluation of correlation among factors in impact on consumer behavior use imperfect linear correlation method what is often described through Pearson correlation coefficient. This coefficient shows how changes in one factor impacts other group of factors. Pearson correlation coefficient is described in formula (1):

$$r = \frac{\sum_{i=1}^{n} (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n} (x_i - \bar{x})^2 \sum_{i=1}^{n} (y_i - \bar{y})^2}}$$

(1)

where:  
- $r$ – Pearson correlation coefficient,  
- $n$ – Number of factors,  
- $x$ – Direct influence Factors,  
- $y$ – Situational factors.

We can set following limitations for this coefficient:
- The coefficient should vary from -1 to +1.
- If $r = \pm 1$, then it means that between two changing parameters we have linear function, but according to the authors point of view, in evaluation of consumer behavior this situation, is rare.
- If $r = 0$, then there are no linear relations among two parameters.
- If $r \geq 0$, then with low values of $x$ we also can indicate low $y$ values, and to high $x$ values corresponds high $y$ values.
- If $r \leq 0$, then, for low $x$ values there are high $y$ values and to high $x$ values corresponds low $y$ values.

Also very important question in consumer analysis is methodology applied to the research. According to the authors point of view first of all we have to analyze one factor, forecast its variations and on the basis of values of other changing factor, determine correlation.

But, taking into account that there are more than 2 changing factors what we have to analyze in consumer behavior, the authors recommends to use computer program SPSS what contains program ANCOVA for analysis of co-variations.

**CONSUMER BEHAVIOUR IN THE CAPITAL MARKET**

In the capital market the demand is created mostly by companies and households with an aim to get a credit for real estate etc. The demand is oriented to financial resources and investments.

The consumer behaviour in the capital market could be described by following classification of consumption and capital investments for it (the classification is worked out on basics of classification offered by Philip Kotler [5]):
- Recurrent purchase (standard – equity capital, current assets etc.);
- Changing irregular purchase (cars, computers etc.);
- Investments in innovation (research and development);
- New purchase (real estate, equipment etc.);
- Educational and development processes.

The process of decision making in the capital market could be described according to classical consumer behaviour model, taking into account the particularities of external factors of the country as well as historical experience of consumers and specific features of business (industrial) consumers (the process is worked out on basics of classical decision making process offered by Philip Kotler and other authors (avots)). The steps of decision making process:

1) Problem recognition (necessity);
2) Information search;
3) Evaluation of alternatives and variants offered by or in the capital market (comparing of all possible alternatives);
4) Decision making about the purchasing of the capital;
5) Realization of the decision;
6) Reaction on purchasing;
7) Feedback necessity (to the first step).

In the decision making process most difficult par is evaluation of alternatives.

Consumers for evaluation of alternatives advisedly or unaware use methods of optimization. According to the research results done by the authors most often they use one of two most popular methods: direct optimization or reflexive method of optimization.

The authors offer to describe the decision making process by following formulas. Direct optimization (see formula 2.):

$$C \rightarrow \min(c_1, c_2, \ldots, c_n) \rightarrow \min$$

(2)

at $$E\rightarrow E_g$$

where:  
- $C$ – Capital investments,  
- $c_1, c_2, \ldots, c_n$ – variants of capital investments,  
- $E$ – profitability or profit  
- $E_g$ – given profitability or profit.

And according to the reflective method of optimization the equitation will be (see formula 3.):
\[ E \to \text{max} \to (e_1, e_2, e_3, \ldots, e_n) \]

\[ K \leq K_s \]

where:  
- \( E \) - profitability or profit,  
- \( e_1, e_2, e_3, \ldots, e_n \) – variants of profitability or profit,  
- \( K \) – Value of investments,  
- \( K_s \) – given value of investments.

During last two years (since Latvia became the EU member) there are very high inflation rate – more than 10% a month, some times even 14-15%. This is one of factors what causes changes in the capital market, as well as in consumer behaviour. No doubts that the high inflation ratios directly impact the capital market and vitality of companies. Thus, for instance in 2007 in Latvia were 57 thousand enterprises or 20 companies per 1000 inhabitants, but average indicator in the EU is 40-60 companies per 1000 inhabitants of a country. At the same time this indicator has been changed positively during last years in Latvia. It assures that the capital market of Latvia have operated, but not sufficiently. For development of entrepreneurship the credits and investments are essential, but there are a lot of economical and political barriers in Latvia.

### ECONOMICAL FACTORS WHAT INFLUENCED INDUSTRIAL CUSTOMER BEHAVIOUR IN LATVIA

The banking system of Latvia has established during the process of biggest bank mergers and takeovers in 1998-2001. Almost all banks are in private hands. Only the Land Bank of Latvia is fully owned by the state. Foreign shareholders own almost 70% of the total paid-up equity capital of banks [1]. According to the authors’point of view most important factors are economical and factors –inflation, interest rates etc. as well as historical experience of the customers. Thus, for instance, the idynamics of interest rates in Latvia are not very inviting for the customers (see table No. 2). Also the industrial customers have their own historical experience:

- Low trust in the capital market because of bankruptcy of largest Latvian banks on 1996-1997;
- No experience in credit and investment market because of short history of the capital market (Latvian capital market was established after Latvia became independent country in 1991); economical factors;
- No experience on household bankruptcy;
- High inflation rate and other important external factors.

### Table No.2

| Year | Deposits in credit institutions | OECD currencies | | lats | | lats | | OECD currencies |
|------|--------------------------------|----------------|---|-----|---|-----|---|----------------|---|
| 2000 | 7.3 | 6.76 | | 4.4 | | 5.5 | | 5.5 | | 5.5 |
| 2001 | 6.8 | 5.6 | | 5.3 | | 4.0 | | 4.0 | | 4.0 |
| 2002 | 5.4 | 3.7 | | 3.2 | | 2.0 | | 2.0 | | 2.0 |
| 2003 | 4.9 | 3.0 | | 3.0 | | 1.6 | | 1.6 | | 1.6 |
| 2004 | 4.8 | 3.2 | | 3.3 | | 1.7 | | 1.7 | | 1.7 |
| 2005 | 4.0 | 3.5 | | 2.8 | | 2.5 | | 2.5 | | 2.5 |

1The OECD member countries are Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Hungary, Germany, Greece, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom and the USA.

2In foreign currencies (in euro, USA dollar and other currencies).

On September 2007, the quality of loans issued by banks was as follows: 99.3% of all issued loans were evaluated by banks as standard loans, 0.3% were evaluated as loans under supervision, and only 0.4% were evaluated as loans generating no income (sub-standard, doubtful, or lost). In compliance with requirements of the Bank of Latvia, loans generating no income are secured by special savings hence this category of loans does not present a serious threat to stability of banks. Special savings for claims against non-banks reached LVL 72 million at the end of September 2007, exceeding the volume of loans generating no income by 26%.[1]. These changes influenced the profitability of the companies directly (see table No 4).

Therefore the authors’ emphasize that that political and economical factors stimulates passivity in credit-activity of companies and causes changes in industrial consumer behavior.

### Table No.4

<table>
<thead>
<tr>
<th>Year</th>
<th>Net turnover</th>
<th>Profit or loss before taxes</th>
<th>Profit or loss after taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>4,125.4</td>
<td>40.2</td>
<td>-26.9</td>
</tr>
<tr>
<td>1996</td>
<td>5,076.8</td>
<td>33.7</td>
<td>-48.6</td>
</tr>
<tr>
<td>1997</td>
<td>6,832.6</td>
<td>252.3</td>
<td>144.6</td>
</tr>
<tr>
<td>1998</td>
<td>8,181.8</td>
<td>231.3</td>
<td>110.3</td>
</tr>
<tr>
<td>1999</td>
<td>8,505.0</td>
<td>198.9</td>
<td>82.1</td>
</tr>
<tr>
<td>2000</td>
<td>9,588.5</td>
<td>208.5</td>
<td>94.1</td>
</tr>
<tr>
<td>2001</td>
<td>10,758.0</td>
<td>329.3</td>
<td>220.4</td>
</tr>
<tr>
<td>2002</td>
<td>11,996.4</td>
<td>342.3</td>
<td>226.4</td>
</tr>
<tr>
<td>2003</td>
<td>13,764.0</td>
<td>475.7</td>
<td>346.0</td>
</tr>
<tr>
<td>2004</td>
<td>14,972.7</td>
<td>849.0</td>
<td>683.3</td>
</tr>
<tr>
<td>2005</td>
<td>22,080.0</td>
<td>967.1</td>
<td>724.1</td>
</tr>
</tbody>
</table>

We can characterize changes in consumer behaviour in the capital market of Latvia by relations of demand and supply of capital and investments. The authors recommend using following formula for description of customer credit-activity in the capital market of Latvia (see formula 4.):

\[ K_c = \frac{C_v}{EC} \]

where:  
- \( K_c \) – Coefficient of credit-activity,  
- \( C_v \) – credit taken by customer per year,  
- \( EC \) – equity capital of companies.

At the same time companies are looking forward to receive profitability form the credits, what can be described by following formula:  

\[ E \to \text{max} \to (e_1, e_2, e_3, \ldots, e_n) \]
\[ \text{PC} = \frac{P_c}{P_t}, \]  

(5.)

Where:  
\( \text{PC} \) – Profitability from the credit per year,  
\( P_c \) – profitability from current credit per year,  
\( P_t \) – total profitability of the company per year.

**CONCLUSIONS**

This research confirms consumer behavior in the capital market is sensitive to external factors such as state economical situation, inflation, GDP growth, interest rates etc. The authors presume that Latvian customers of the capital market have no previous experience of bankruptcy, but, according to the situation in the capital market we can expect first cases of bankrupting in the nearest future.

The research contributes to better understanding of the specifics of factors what influences consumer behavior under impact of external factors, especially under impact of the capital market. There are a lot of potential for further analysis of consumer behavior, therefore it is important to develop new methods and techniques for it.

However, the field of research is very wide and this study presents just an insight into the large scope of different questions, which have to be tackled in the consumer behavior research.

**REFERENCES**


