Assessment of Unsecured Retail Credit Risk in Light of Cross Sell and Up Sell Strategy

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Assessment of Unsecured Retail Credit Risk in Light of Cross Sell and Up Sell Strategy

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Abstract

Consolidation of the banking sector, as well as the presence of well recognized banking brands in the retail banking market brought innovation and a proactive approach in relation between bank and client This trend accompanied with an aggressive strategy initially caused the growth of the deposit base and then followed by cross sales and up sell strategies that led to a restructuring of the retail banking market and increase the confidence of the population to commercial banks.

Cross sell and up sell as comprehensive strategies brought a remarkable changes in retail lending market. This dynamic of change that began in the middle of the past decade continued with rapid growth until the appearance of the global financial crisis, to slow down thereafter and continue with a moderate growth pace. This period of rapid growth of the so-called "boom" period by commercial banks, restructured retail lending markets and brought tremendous change in debt to citizens ratio, where for short period of time the indebtedness of Macedonia citizens to commercial banks achieved 650 EUR per capita. In the meantime, the rapid indebtedness period of the citizens followed by economic instability so-called "BUST" period that caused serious problems and consequences on the quality of retail portfolio as well as in personal finances of clients.

Purpose - The aim of this dissertation was to apply the scoring model card built by four blocks of factors: socio-demographic factors, microeconomic, macroeconomic and relationship bank-client to determine the factors that affect the deterioration of performing unsecured retail loans and assess loans into categories none risk, low risk, medium risk and high risk.

Design – A structured questionnaire was developed from the scoring model map and was distributed to the users of unsecured retail loans delivered by commercial banks in Macedonia.

Findings – From the analysis carried out, it was found out that push strategy for market penetration applied by Cross Sell approach in the context of volatile economy have reached on pointer 2, an indicator that shows that commercial banks had managed to deliver at least two credit products to their clients. However another side of coins is not so bright in the figures, the results shows the existence of strong relationship between sales-risk, i.e. selling additional banking products has led to increased credit risk and has increased the level of loans classified with average risk and high risk.

The results shows that Up Sell approach used for credit card market penetration has not yet reached pointer 2. Even though number of credit cards issued by commercial banks has reached 287,523 at the end of October 2012, the number of credit cards in clients' wallet still does not have two credit cards. On the other hand, the results show that holders of two or more than two credit cards have increased tendency of failure in a medium-term period. Multinomial regression and Correlation analysis with SPSS 17.0 were used to administrate this research study.

Introduction

Banking is an essential industry in an economy, and the main pillar that spurs the economic growth. This is an industry composed of so many financial institutions that literally affects the welfare of every other industry and the economy as a whole.

In the last decades the banking industry in the transition countries especially in Macedonia has shown a rapid change. The continuous regulation of the deregulated banking sector has opened the way to the commercial banks to apply proactive strategy and to reimburse the optimism which was lost during the period of transition.

The highly increased competition in last year's in this industry, at the same time the pressure of the foreign and domestic stockholders that applies to the banks management, has mobilized the banking sector to be a more vigilant and flexible in order to achieve a stated goal. For this reason, the strategies of commercial banks seem to be the main tool to fulfill the projected targets and to survive in volatile economy and competitive environment.

Banking is one of the main industries about which few of us can afford to be ignorant. As the recent crises occurred, and the challenges that will occur in the future, prompts dealing with concern, that will be beneficial from variety of stakeholders: institutions, clients and regulations.

"Push strategy in Commercial Banks under Volatile Economy, (Case of Macedonia) is correlated directly with our lifestyle and living standards that often depends heavily on a bankers' that are willing to extend credits. This doctoral thesis will be designed to help both sides and dig deeply into this fascinating and frequently trouble industry in order to master established principles of risk management and to confront head – on the perplexing issues of risk, regulation, technology, and competition that bankers see as their greatest challenges in the future.

After the worldwide financial crises of 2008, the financial institutions especially commercial banks have been faced with difficult time in setting up the new banking standards on behalf of strengthen regulation, supervision and risk management practices. Even though the Macedonian Banking system remained undamaged during and after financial crises, the risks within the real economy especially the negative trend in the business cycle hindered the key performances of commercial banks.

According to the consultative document of the Basel Committee on resilience of the banking sectors the reforms in strengthening the regulatory capital framework, building based on the three pillars of the Basel II Capital Accord it is imperative guidance. "The reform raises the quality of the regulatory capital base and enhances the risk coverage of the capital framework. They are underpinned by a leverage ratio that is intended to constrain excess leverage in the banking system and provide an extra layer of protection against model risk and measurement error" (Bank for International Settlements, 2009)

Literature Review

In the last years a lot of literature has emerged as a result of financial crunches that occurred in 2008. Many researchers have tried empirically investigating the roots of problem that cause the disaster in the financial World, and brings new risk framework based upon the quantitative and qualitative approach. According to literature the appropriate retail credit risk model is the base of competitive strategy that needs to determine which factors can be influenced and how to handle the factors that are beyond their control.

According to CAPCO research and thought institute – white paper, reduces loss or reduces lending the choice is stark. Lenders want to lend and borrowers want to borrow. But in the light of tough experience over the last three years, it is very clear that we need new approaches if we are to avoid the mistakes of the past and build a sustainable future. The authors express the relevance of effective strategy that need to be taken into account that we are at an interception between the "old way" of, lending and a new and more trouble period. Successful implementation will focus on the four pillars of credit risk management, customers, vendor, policies and costs.

Change within credit risk departments is both inevitable as an outside force and essential as an internal attitude and culture. A rigid approach that ignores a different financial landscape is highly to work. An understanding of the key cost drivers and cost optimization techniques- reducing loss or reducing lending will be critical in assessing the retail banking strategies. The banks should invest time in developing, monitoring and updating business models which put strategic ambitions in lock step with cost awareness and cost control. The banks must design an operating model that provide for; deep analysis of risk, strong governance of risk procedure, capacity to accommodate multiple customers engagement and product holding, transparency and accountability of the decision making model. The authors summarize the paper with conclusion that, there is no other sustainable way to transform credit risk. The banks must understand the new challenges and new phase and the retail credit strategy must be focus on reduce losses rather than reduce lending.

In nowadays Macedonian banking landscape, banks often use scoring models for managing the risk of their portfolio. According to Daniel Porath, scoring models are statistical risk assessment tools designed for retail banking exposure. A scoring model assesses a borrower's creditworthiness, where the result of the model is expressed in the terms of a number called "score". Increase the score usually indicate declining risk and decreasing the score usually indicate increasing the risk. The total customers score can be calculated by adding the score of the borrowers several characteristics. Each variable contains the category "neutral". The score of this category represent the portfolio mean of the scores for a variable and there within constitutes a benchmark when evaluating the risk of a specific category. According to author, the estimation of a scoring model requires the classing of all individual variables that are essentials of the model. This is done in a preliminary step called univariate analysis. The classing can be defined by comparing the performance of different alternatives. Since risk distribution of the variables is often completely unknown, the univariate analysis should rely on the performance measures which are independent from the ordering of the single class. After the classing is settles the variables have to be recoded in order to build model. At the end, the model can be estimated with standard statistical techniques like logit analysis or discriminatory analysis (Porath, 2011).

According to Raymond Anderson the credit scoring's advantage relies on the fact and ability to rank the risk. However, the lender has to estimate expected losses at the same time the expected profits. The expected losses are the amount that the lender expects to lose based upon available data. According to Anderson this paradigm it consisted from two parts; probability of default (PD), which express the risk of not payment, and the loss severity, the extent of the loss in the event of default, which is affected by the exposure of default (EAD), loss given default (LGD) and maturity of the loan (M). Expected loss equitation is expressed as follow (Anderson, 2007);

$$EL= PD\% \times \$EAD \times LGD\% \times F(M) \qquad\qquad 1$$

According to research paper "Banking Retail Costumer Finance Data Generator – credit scoring data repository, done by Karol Przanowski. The banking data generator is a new hope in research of finding the proving method of comparisons of various credit scoring techniques. In the research is analysed the influence of one cyclic macro economic variables on stability in the account and clients characteristics. The author presented very interesting conclusions for crisis behaviour, namely that if a crisis is impacted by many factors both costumers' characteristics, application and behavioural; then there is very difficult to indicate these factors in the typical scoring analysis and crisis is everywhere, in every kind of risk reports (*Banking retail* consumer finance data generator, 2011).

Robert B Avey et all, with empirical study analysis the relationship among situational circumstances and credit scoring system. The Authors find out that failure to consider situational circumstances and raises important statistical issue that may affect the ability of scoring system to accurately quantify an individual's credit risk. The paper express the evidence from national sample of credit reporting agency records suggest that failure to consider measures of local economic circumstances and individual trigger events when developing credit history scores can diminish the potential effectiveness of such models.

Clark R. Abrahams and Mingyuan Zhang in their research paper analytically describes an approach that combines judgmental factors with analytical methods to achieve a more complete and accurate credit assessment that is possible with today's typical loan underwriting systems. The author's addresses the credit scoring limitations imposed by insufficient credit and market information and sampling timeframes and static data - driven factors selection and weightings. The authors came with conclusions that this new and flexible approach will promote a new generation of credit models that can narrow the information gap in developing markets.

According to Daniel Rosch and Harald Sceule the major topic in retail banking is the inherent portfolio credit risk. Two important parameters are default probabilities (DPs) and correlation. Both are considered in the new Basel Accord. The author analyse the standard specifications for assets correlation, and offers credit risk models that incorporates the lagged macroeconomic drivers which explain the credit risk exposures given the state of business cycle. The author argue that taking lagged macroeconomic risk factors into account may lead to more accurate loss forecasts and may considerably reduce economic capital

Vennet, De Junghe and Beale in their research paper, investigate and tried to find out the return/risk behaviour of the European banks in the economic downturn of 2000-2003. The authors identifies banks with different strategies and different characteristics before the slow

down and investigate their risk profile before and during the downturn with market based
measures such as Q ration, the sharp ration and the betas for relevant risk exposure. From the
empirical study they concluded that neither size nor hedging offer a structural protection against
adverse economic conditions (Vennet et al., 2005).

Risk identification and risk and risk measurement are the main ingredient in designing the
appropriate risk models. According to Amalendu Ghosh in his published book "Managing the Risk
in Commercial and Retail Banking" "risk identification and risk measurement are the main
concept in risk models. "Risk identification is the magnitude of risk will have to be assessed both
in terms of the level of risk and quantum of potential loss that may arise from assumed risk".
According to author measurement tools should achieve three basic objectives. First, the
measurement tools should quantify the potential loss consisted of both expected and
unexpected losses, and it indicates the amount of economic capital that bank should maintain
against is risk taking activities. Second, the risk measurement tools should be effective to
measure separately borrow – specific, asset- specific, and facility – specific potential loss. And
third, is that the risk measurement tools shall enable the bank to calculate the risk – adjusted
return on capital in order to evaluate the performance efficiency of difficult business lines (Ghosh,
2012).

Methodoly Used in this Study
In order to answer the central theme questions, "Push strategy of retail banking on behalf of
volatile economy, case of Macedonia" receiving information from clients, users of retail
unsecured and secured credits play a fundamental role. Quantitative data collection methods
were used to collect all the necessary data needed to answer the central question and problems
of the research. Therefore, a well structured questionnaire was conducted with the close - ended
questions to clients users of credits from the retail oriented banks, classified as a big banks
(Tutunska Banka, Komecijalna Banka, Stopanska Banka) as a market leader, medium size banks
as a follower and small size banks as a challenger of the retail market in the republic of
Macedonia.

All the empirical findings were collected from primary and secondary data. Primary data is the
data collected from the used questionnaire, while the secondary data was collected from the
reports of NBRM, State Statistic Office, Public Revenue Office, online articles, magazines and
Journals.

In order to measure the overall credit risk level of performing loans, the designed questionnaire
consisted form socio-demographic factors, microeconomic factors, macroeconomic factors and
client banks relationship factors was used to elicit concluding remarks. The questionnaire score
was derived from the following research questions;
*Are the mass market clients' are triggered by CROSS SELL banking strategy and how are clients
are expose to credit risk levels?*
*Are the mass market banking clients' are triggered by UP SELL strategy and what are the
implications caused by applied strategy regarding to credit risk levels?*
In order to answer central theme questions, the clients' user of unsecured retail loans from entire
banking system were used to respond to a structured questionnaire with close ended questions.

The questionnaire was developed in accordance with theoretical framework of credit scoring card.

Participants' privacy was protected, because respecting participants'rights and privacy is one of the main research ethics. The quantitative data collection method was used to collect primary data from customers.

The design of questionnaires respected completely the anonymity of participants. First of all, there was an informed approval from participants before they took part. This means that they should have known exactly what they were being asked to do, before they agreed to take part. Participants were informed that this study was for academic purposes only.

The secondary data was obtained from web pages of National Bank of Macedonia, State Statistical Office and data with permition offered by Public Revenue Office

Questionnaires interview was realized from 15 April to 15 August 2012, the interview took place in three regions in Macedonia with following weight in total response. Southwest region 37%, Skopje region 34% and Central region 13%

Data Analysis

The main objective of the analysis of primary data collected from the structured questionnaire is to answer our research questions which include finding out how clients are exposed in credit risk level as a result of aggressive strategies of commercial banks applying the tools of cross sell and up sell in context of volatile economy.

The questionnaire has been developed from 4 parts in order to find out data concerning client's credit risk exposure and elicit the problems caused by aggressive banks selling strategies. The respondents, credit users of the retail products distributed from retail oriented banks in Macedonia (Tutunska Banka AD Skopje, Stopanska Banka Ad Skopje, Komecijalana Banka Ad Skopje, Ohridska Banka AD Skopje, and some medium size banks that are retail oriented), respond by answering structured questions concerning their credit risk exposure and approval criteria's for retail products. Part I of the questionnaire deals with respondents' socio demographics.

Part II deals with selected microeconomic variables. The use of microeconomic factors provided important insight in order to depict how household as a core socioeconomic units and client's behavior impacts the dynamic of demand and supply of unsecured and secured loans. Microeconomic part of questionnaire highlights selected microeconomic variables that are essential in risk assessment and validation in retail banking.

Third part of questionnaire highlights some important macroeconomic indicators that describes cause – effect relationship between clients' user of unsecured loans and selected macroeconomic indicator that are important from risk assessment and validation in retail banking

Part IV deals with Clients – Banks relationship, hence the positioning of the last part of the questionnaire is to investigate the key risk drivers derived from behavioral analysis, consumer lifestyle and consumption and contracting issues between banks and clients'.

Data analysis for this study was done in two steps, the preliminary analysis and the main analysis. The first part of the data analysis was to check the internal reliability of results in order to determine the credibility of findings results from the study. Thus the reliability model was computed with *Cronbach"s Alpha* for each 39 item. The *Cronbach"s Alpha* ranges between 0

(denoting no internal reliability) and 1 (denoting perfect internal reliability). The *Cronbach's Alpha* for comparing the internal reliability of items both in expectation and perception of service quality was used. A reliability coefficient of .70 or higher is considered acceptable in most social science research

The Paired Samples T-Test was used to compare means of population between clients holder of consumer loans and consumer loans & credit. The p*aired samples t test* compares the means of two variables. It computes the difference between pairs of the two variables for each case, and tests to see if the average difference is significantly different from zero.

ANOVA was used for comparing means of populations in order to find out about significant differences between groups.

The *Gap Score Analysis* was used to summarize means of deviation from loan contracting standards. We calculate the delay in monthly installment payments minus expectation scores for each item in order to identify the loans risk level gaps.

Correlation Pearson's R analysis was used to find the relationship among GDP, the number of companies paid wages, total paid wages in the real economy and nonperforming loans.

And finally, *Multinomial Logistic Regression* is used to develop the model. Modeling credit risk level identification, monitoring and reporting, planning and mitigation etc is among rather difficult subjects tackled by risk analyst especially in applying multinomial logistic regression in dynamic (social) setting. Invariably though, social science research problems somewhat call for analysis and prediction of a dichotomous1 outcomes.

5. Research Questions Regarding to Strategies Applied by Commercial Banks

The three core questions were used in order to identifies and measure credit risk level. The first research question identifies the cross selling (CS) approach and how banks captures a greater share of wallet from clients, The second question identifies up sell (US) approach that banks apply to client's profile. And the third question measures cross selling and up sell approach in context of volatility in the real economy.

1. Are market mass clients triggered by CROSS SELLING bank strategy and how are clients are affected by credit risk exposure?

Concerning overall cross selling approach regarding types of unsecured loans, respondents had to answer the research question*: What Type of Unsecured Loan/Loans you are holding*, with the following.

Consumer Loan

Credit Card

Consumer Loan and Credit Cards

Thus, the hypothesized test value in our study is 2 and it can split clients into triggered by cross selling strategy from the banks and not responded to cross selling strategy from the banks. In this way the null and the alternative hypothesis could be specified as follow:

Null hypothesis   Ho: $\mu \geq 2$ — Clients triggered by cross selling strategy.

Alternative hypothesis   Ha: $\mu < 2$ — Clients are not triggered by cross selling strategy.

One sample T Test was used to analyze types of unsecured loan/loans. The one-sample t test shows whether a mean of a single variable differs from a specified constant.

Table 5.1 One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Type of Unsecured Loan/Loans	873	2.58	.740	.025

Table 5.2 One-Sample Test

	Test Value = 2					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Type of Unsecured Loan/Loans	23.112	872	.000	.578	.53	.63

As shown in the table 5.2, types of unsecured loan/loans had positive value, which means that cross selling strategy had triggered mass market banking client's profile. Therefore, the null hypothesis was accepted. The null hypothesis here is that the means are equal, and the alternative hypothesis is that they are not. A big t, which is a small p-value, means that the null hypothesis is accepted, and we would assert that the means are not significantly different. *Thus, we can conclude that clients have been triggered by cross selling strategy.*

2. *Are mass banking clients' triggered by UP SEll strategies that banks applies to clients profile regarding to credit risk levels.*

Concerning overall *UP Sell* strategy regarding to credit risk levels, respondents had to answer the research question*: How Many Credit Cards you Hold*, with the following:

One
Two
Three

Null hypothesis   Ho: μ ≥2 — Clients triggered by upgrading strategy.
Alternative hypothesis   Ha: μ <2 — Clients are not triggered by upgrading strategy.

One sample T Test was used to analyze the issued number of credit cards . The one-sample t test shows whether a mean of a single variable differs from a specified constant.

Table 5.3 One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Number of Credit Cards	873	1.17	.661	.022

Table 5.4 One-Sample Test						
	Test Value = 2					
			Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
	t	df			Lower	Upper
Number of Credit Cards	-36.891	872	.000	-.826	-.87	-.78

As shown in table 5.4 numbers of credit card that was distributed to clients had negative value which means that at the moment clients do not responded to upgrade strategy applied by banks? Even though the number of mass market clients that have two or more than two credit cards in this research is weighted with 29.7% which means number of clients that have two or more cards are 259 out 873 respondents. We cannot say that the UPGRADING strategies of the banks have triggered mass market. Therefore, the null hypothesis was rejected. The null hypothesis here is that the means are equal, and the alternative hypothesis is that they are not. A negative t, with a small p-value, means that the null hypothesis is rejected, and we would assert that the means are significantly different (while a small t, with a big p-value indicates that they are not significantly different). *Thus, we can conclude that clients have not been triggered by UP SELL strategy.*

5.1 Testing hypothesis Related to Research Question 1

The hypothesis of the fist research question explores the clients' credit level caused by additional product in their wallet.

Concerning overall *cross selling* strategy regarding to credit risk levels, respondents had to answer the research question: How many day in last six months you have delayed in payment of monthly installment with the following:

No delay   - No Risk
1-29 days   - Early delinquency (Low Risk)
30-60 days - Delinquent   (Medium Risk)
60-90 days – Potential NPL   (High Risk)

Thus, the hypothesis test value in our study is one and it can split mass market clients into category with no delays in payment – non risk, and the clients that delays to pay monthly installment categorized as 1-29 days delay (early delinquency) or low risk, 30-60days delay (delinquent) medium risk and 60-90 days delay as a (potential non performing loan) high risk.

Null hypothesis   Ho: μ ≥1 — Clients are exposed in credit risk
Alternative hypothesis   Ha: μ <1 — Clients are not exposed in credit risk

One sample T Test was used to analyze the credit risk level that clients are exposed. The one-sample t test shows whether a mean of a single variable differs from a specified constant.

Table 5.5 One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Delay_ to Pay the Monthly Installment	873	1.49	1.076	.036

Table 5.6 One-Sample Test						
	Test Value = 1					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Delay_ to Pay the Monthly Installment	13.553	872	.000	.494	.42	.57

As shown in the table 5.4 delays to pay monthly installment, which means that an additional product distributed to clients profile increase the level of risk. Therefore, null hypothesis was accepted. The null hypothesis here is that the means are equal, and the alternative hypothesis is that they are not. A big t, which is a small p-value, means that the null hypothesis is accepted, and we would assert that the means are not significantly different. *Thus, we can conclude that clients have been exposed in higher risk as a result of cross selling strategy.*

5.2 Up Selling Strategy

Up Selling strategy in commercial banking is one of the tools used to penetrate in the market vertically, mainly is used by retail banking to increase the sales in specific type of product concretely in credit cards segment. This strategy applies to clients' holder of one credit card (particular credit card brand) to sell additional card from another credit card brand (Visa versus co branded Visa, Visa versus Master, Visa versus American express etc). Or by grading up the functions of particular card in term of sells

Concerning overall *UP SELL* strategy regarding to credit risk levels, respondents had to answer the research question: The clients budget constrain measured by monthly household income minus monthly household expenses is an analytical tool for household *coverage ratio* that predict demand elasticity for credit cards, with the following:

Very Hard

Hard

Very Easy

Easy

No Answer

Thus, the hypothesis test value in our study is two and it can split mass market clients into category with having problem with budget constraints and clients that do not have problem with household coverage ratio.

Null hypothesis   Ho: $\mu \geq 2$ Clients have problem with household coverage ratio

Alternative hypothesis Ha: $\mu < 1$ Clients do not have problem with household coverage ratio

Table 5.9 One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Cover _ monthly Income/ monthly household expenses	873	2.32	1.502	.051

Table 5.9 One-Sample Test						
	Test Value = 2					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Cover _ monthly Income/ monthly household expenses	6.311	872	.000	.321	.22	.42

As shown in the table 5.9 the clients' budget constrains measured by monthly household income minus monthly household expenses is an analytical tool to detect the performances of household *coverage ratio,* which predicts demand for financials and elasticity for credit cards. Therefore, null hypothesis was accepted. The null hypothesis here is that the means are equal, and the alternative hypothesis is that they are not. A big t, which is a small p-value, means that the null hypothesis is accepted, and we would assert that the means are not. *Thus, we can conclude that the household deficit draws a link between coverage ratio and UP selling strategy*

The second hypothesis of the second research question explores implication of increased risk level as a result of revolving characteristics of credit card/cards.

Concerning overall *Up Selling* strategy regarding to credit risk levels, respondents had to answer the research question: practicing the manner to withdraw amount from one credit card in order to pay the installment of second credit card in mid tem and long term will doom clients to be a categorized as high risk- potential NPL, with the following:

Never
Sometimes
Always

Thus, the hypothesis test value in our study is two and it can split mass market clients into category that practicing this manner of installment payment and clients that do not practice this manner of installment payment of credit card.

Null hypothesis   Ho: μ ≥2 Clients practice installment payment by withdrawing amount from one credit card in order to pay the installment of second card
Alternative hypothesis Ha: μ < 2 Clients do not practice installment payment by withdrawing amount from one credit card in order to pay the installment of second card

Table 5.10 One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Withdraw	261	2.05	.853	.053

Table 5.10 One-Sample Test						
	Test Value = 2					
				Mean Difference	95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)		Lower	Upper
Withdraw	1.016	260	.311	.054	-.05	.16

As shown in the table 5.9 the mean 2.05 shows that holder of credit cards are practicing the manner of withdrawing amount from one card in order to pay installment in second card which in medium term and long term clients will doom to failure. Therefore, null hypothesis was accepted. The null hypothesis here is that the means are equal, and the alternative hypothesis is that they are not. A big t, which is a small p-value, means that the null hypothesis is accepted, and we would assert that the means are not. *Thus, we can conclude that an opportunity to use this manner of installment payment (as a result of revolving principle of credit card) is caused by up selling strategy.*

6.   Findings and Research Questions

6.1 First research Questions

Are the mass market clients' triggered by CROSS SELLING banking strategy and how are clients are exposed to credit risk levels?

The empirical findings from clients response shows that Cross selling strategy is a robust tool used by retail oriented banks to penetrate in retail mass market. Based upon the findings, retail oriented banks in the republic of Macedonia have increased their market share, by inducing clients to borrow additional retail products or services, which means that cross selling strategy had triggered mass market client's wallet. This statement was verified with testing the research questions. One sample T-test was used to analyze types of unsecured loan/loans, a big t which is a small p –value means that the null hypothesis "clients triggered by cross selling strategy" was accepted. The promised payoff of this strategy for banks is higher clients' profitability, improved clients retention and lower clients' sales costs. On the other hand, findings also showed that inducing mass market clients to borrow additional product in context of volatile national economy leads to increase the credit risk level. This statement was verified with gap score analysis. The gap score are the difference between the retail clients' that fulfills the banking contracting conditions and delinquents clients that do not meet on the time contracting conditions with the bank.

Deviation – Expectation = Gap Score

Number of clients	Deviation	Expectation	Gap Score	
265	0	0	0	No deviation
183	1	0	1	Early delinquency
209	2	0	2	Delinquent
216	3	0	3	High delinquency

Second Research Questions

Are the mass market banking clients' triggered by UPGRADE strategy and what are the implications caused by applied strategy regarding to credit risk levels?

The empirical findings from clients response shows that upgrade strategy in last few years is an another tool that retail oriented banks wants to penetrate in saturated credit cards market in the Republic of Macedonia. Based upon the finding, retail oriented banks in the republic of Macedonia have increased their market share, by inducing clients to hold additional credit card. Even though the applied strategy by banks shows positive result (based upon the information from NBRM the total number of issued credit cards is achieved 287.000). The statement that Clients triggered by upgrading strategy was not verified. One sample T test, testing of the second research question, showed mean of 1.17 which means that at this moment of time the clients have 1.17 cards in their wallet. Therefore, clients still do not respond to aggressive strategies of banks to achieved constant 2. However, the dynamics of achieving the constant in retail banking it seems to be the main challenge from banking perspectives. So targeting tapped mass market credit card segments will brings to banks to higher fueling competition.

On the other hand, findings also showed that inducing mass market clients to hold additional credit card or increases of limit of existing credit card, it caused by household budget instability where needs for financials to cover current life expenses is the main reason of clients response. However, volatility in national economy where business cycle is followed by ups and downs leads to increase the demand for credit cards at the same time increases the credit risk level, the results show that holders of two or more than two credit cards have increased tendency of failure in a medium-term period

Deviation – Expectation = Gap Score

Number of holders second cards	Deviation	Expectation	Gap Score	
127	0	0	0	No deviation
44	1	0	1	Early delinquency
65	2	0	2	Delinquent
53	3	0	3	High delinquency

Concluding Remarks

In this research project we assessed credit risk in unsecured loans triggered by cross sell and up sell strategy applied by commercial banks in Macedonia. The data shows that tradeoffs between rapid increase of unsecured retail loans and unbalanced credit risk evaluation is the main concern that need to be addressed to financial institutions.

- From technical point of view, the retail lending processes is a reasonably straightforward series of action involving two principle parties. Since increases of sales of additional retail loans brings increases of probability of default of loans. Thus, the key findings of this research is the variables that increase credit risk exposure and classifies the retail loans on high risk, medium risk and low risk.

- The empirical findings validate the significance of variables used for assessment of retail loans credit risk for assessing cross sell and up sell strategy applied by commercial banks under volatile economy.

- The findings show that, the interval age group 30-36 and 36-42 that represent 66.55% of sample population have been reacted to aggressive banks strategy. Moreover, the empirical results shows that the main target of commercial banks are the age group between 30-42 years old, consumers that are in early stage of creating household, where demand for financial are high compare to middle age group.

- The research shows, understanding the influence of macroeconomic variables is essential for credit risk assessment when commercial banks targeting the retail markets. Business Cycle and amplitude within and purchasing power of retail banking consumer are the factors that determine demand and supply for loans and credit cards, at the same time crates a lot of implications in consumers risk profiles.

- Today's Macedonian retail banking landscape faces a relentless stream of competitors, eager to take any piece of mass market share. The empirical research shows that retail mass market structure it seems to be heightening as a result of switch of commercial banking strategy from higher risk in commercial banking to lower risk in retail banking.

- The empirical research shows that the effort of banks to attract competitors' consumer is become the main priority of commercial banks. This statement are verifies with current accounts, where consumer have more than two current account in different banks.

We can conclude in general that the cross sells and up sells strategy in context of volatile economy will increase the probability of default of distributed unsecured retail loans. The tradeoffs between rapid increase of unsecured loans (caused by aggressive strategy) and not balanced risk evaluation during the credit approvals procedures (neglected credit risk, market risk and creditworthiness) is one of the main concern than need to be address to commercial banks.

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