FACTORS INFLUENCING THE DYNAMICS OF BANCASSURANCE MARKET IN RUSSIA
Gulabyan A.M.

Gulabyan Alexander Misakovich – Master Degree Student,
DEPARTMENT OF WORLD ECONOMY AND WORLD FINANCE,
FINANCIAL UNIVERSITY UNDER THE GOVERNMENT OF THE RUSSIAN FEDERATION,
MOSCOW

Abstract: *this paper aims to determine the factors influencing the market of bancassurance in Russia and their effects on this financial segment through forming the model of bancassurance dynamics and testing its significance by regressing volume of life insurance premiums, being a reasonable proxy for the volume of collected bancassurance premiums, on some relevant economic indicators such as volume of real GDP, volume of aggregate population income, number of the unemployed and volume of loans, deposits and other funds placed by individuals in Russia, using the quarterly data on all the examined variables.*
Keywords: *economics, finance, bancassurance, Russia, econometrics, regression analysis.*

Introduction

1. Relevance of the subject

Nowadays in the era of the increasing globalization there is tendency of integration between the banking sector and insurance industry that turned into a characteristic feature of modern world economic development and served as a prerequisite to emergence of a new market segment - "bancassurance" that plays an important role in the present financial relations and is the guarantee of an economic safety.

In their paper [7] Mazaeva M.V. and Konovalceva A.A defined "bancassurance" as the process of integration between banks and insurance companies for the purpose of implementation of insurance and banking services including both sales channels and client base of the partner, risks insurance of banks and mutual access to internal finance. They also highlighted the advantages and drawbacks of this interaction:

- on the one hand, the motive of entry of insurance and bank institutions into bank insurance has considerable advantages. Successful mutual cooperation of banks and insurance companies promotes expansion of client base, reduces costs and minimizes possible risks due to diversification of services and distributive channels of insurance companies. Within this union efficiency of bank transactions improves and protection of the financial responsibility of persons to bank in case of disability or the death of the client is guaranteed. At the same time banks earn the monetary reward from insurance companies in the form of commission charges for rendering the necessary information services allowing to attract new clients and partners.
- on the other hand, despite clear advantages of merge of banks and insurance companies, it has also drawbacks: monopolization of the sphere of finance; high degree of integration between financial institutions, leading to common problems of organizations; insufficient development of the legislation concerning integration of bancassurance activity; different degree of maturity of the bank and insurance markets; low financial and insurance public culture; lack of the necessary software and others.

Today the bancassurance is one of the most perspective directions in the Russian market according to the recent data.

Forming and development of system of interaction between the financial organizations promotes preserving economic stability. The marketing interrelation between banks and insurance companies is a basis of stimulation of demand in the financial market, that’s why it’s crucial to know all the aspects of this process. This makes this topic not even interesting but really important to study.

2. The main goals and objectives of this work

The goal of this paper is to determine the factors influencing the market of bancassurance in Russia and their effects on this sphere of finance by trying to form the model of bancassurance dynamics and testing its significance.

Main part

Model of bancassurance in Russia

When modelling the dynamics of bancassurance market it is quite reasonable to use volume of premiums from sales of bancassurance products collected by insurers – one of the main determinants of growth of this financial segment as the dependent variable.

However, the main the main problem I faced was the lack of data on this dependent variable necessary to build a proper model. Hence, we need to replace this variable with some good proxy in order to be able to procced to regression and its testing, so I decided to use the volume of collected life insurance premiums (LIP) instead. The reasons are as follows: the life insurance in Russia is generally complementary to some banking activity such as granting loans to public or holding of individuals’ deposits on bank accounts and arises arises when signing a particular credit or deposit contract between bank and individuals or legal entities and rarely exist in a sole form. Thus the usual object of life insurance in Russia is the life of the borrower or the depositor which in turns is the major and the typical one of the bancassurance, as regarded by Doneckova O.Y. and Pomogaeva E.A in their textbook. Hence it is reasonable to propose that the main part of life insurance premiums in Russia comes from the premiums from sale of main bancassurance products such as borrower's and depositor's life insurance, making variable LIP a good proxy for our dependent variable to fit my proposed model of bancassurance market dynamics in Russia.

Formal representation of the model

$D(\log(LIP_t),2) = c + b_1*D(\log(Y_t)) + b_2*D(I_t) + b_3*D(W_t) + b_4*D(R1_t) + u_t$,

t= 1(=1st quarter of 2007)… 40 (=4th quarter of 2016) (1)

T (sample size) = 40

Table 1. Model components' description

Component	Description
LIP_t	quarterly volume of bancassurance premiums in Russia measured in million rubles
c	constant term
Y_t	quarterly volume of real GDP measured in million rubles
I_t	quarterly volume of aggregate population income in Russia measured in million rubles
W_t	quarterly number of the unemployed in Russia measured in millions of people
$R1_t$	quarterly volume of loans, deposits and other funds placed by individuals in Russia measured in million rubles
u_t	disturbance term

b_1, b_2, b_3, b_4 = coefficients to be estimated

When running this regression in EViews we get the following output:

Dependent Variable: D(LOG(LIP),2)
Method: Least Squares
Date: 06/16/17 Time: 17:11
Sample (adjusted): 2007Q3 2016Q4
Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.061241	0.070793	0.865066	0.3932
D(LOG(Y))	-2.546202	1.300071	-1.958511	0.0587
D(I)	5.08E-07	1.53E-07	3.314397	0.0022
D(W)	-0.558377	0.222609	-2.508336	0.0172
D(R1)	-7.25E-08	6.41E-08	-1.131136	0.2662

R-squared	0.392389	Mean dependent var	-0.011103
Adjusted R-squared	0.318739	S.D. dependent var	0.360395
S.E. of regression	0.297465	Akaike info criterion	0.535040
Sum squared resid	2.920021	Schwarz criterion	0.750511
Log likelihood	-5.165753	Hannan-Quinn criter.	0.611703
F-statistic	5.327757	Durbin-Watson stat	2.286008
Prob(F-statistic)	0.002011		

Fig. 1. Initial regression estimation in EViews

Main finding and the results of model testing

Main findings on the model's significance

- coefficient $\mathbf{b_1}$ is significant at a level of significance (**a**) equal to 10% =0.1 or higher (formally $\mathbf{b_1}$(or other tested coefficient) is significant at **a** being greater than its **p-value(**=0.0587 in this case), but it is not at **a**= 5% or 1% (we used a=1%, 5%, 10% since these are the usual reasonable values of **a** to test the significance of parameters) since its **p-value**(=approx. 6%) is lower than 10% but higher than 5% or 1%), so the null-hypotheses that $\mathbf{b_1}$ is equal to zero is rejected at **a** = 10%=0.1 but shouldn't be rejected at **a** lower than its p-value (for ex. at a= 5% or 1%)

• coefficient $\mathbf{b_2}$ is significant at all reasonable values of **a** since its p-value(=0.0022)is far smaller than even **a**=1%=0.01, so the null- hypotheses that $\mathbf{b_2}$ is equal to zero is rejected at any reasonable values of **a**

• coefficient $\mathbf{b_3}$ is also significant practically at all reasonable values of **a** except **a** = 1% since its **p-value**(=0.0172) is greater than **a**=1%=0.01 but smaller than **a**=5%=0.05 or **a**=10%=0.1, so the null- hypotheses that $\mathbf{b_3}$ is equal to zero is rejected at any reasonable values of **a** except **a** = 1%

• coefficient $\mathbf{b_4}$ appeared **not** to be **significant** at all reasonable values of **a** since its p-value(=0.2662) is far greater than even **a**= 10%=0.1, so the null- hypotheses that $\mathbf{b_4}$ is equal to zero shouldn't be rejected at any reasonable values of **a**

• constant term **c** also tends to be insignificant at any reasonable values of **a** due to same reasons

If we reject the null- hypotheses that factor's coefficient (b_1 or b_2 or b_3 or b_4) is equal to zero than there is a statistical evidence that this factor affects the dependent variable and is significant when explaining its variation.

According to the above results all the factors except $D(R1_t)$ are likely to be significant at **a**=10% and explain some variation in the dependent variable $D(\log(LIP_t),2)$

However, the most significant variable is $D(I_t)$, since its coefficient $\mathbf{b_2}$ is significant at all reasonable values of **a.** The second place in terms of significance is after $D(W_t)$ as its coefficient $\mathbf{b_3}$ is significant practically at all reasonable values of **a** except **a** = 1%. Finally the third place is after factor $D(\log(Y_t))$ since its coefficient $\mathbf{b_1}$ is only significant at **a** greater its **p-value**(=approx. 6%) (for ex. at **a** = 10%)

• In addition there is also a statistical evidence of the joint significance of estimated coefficients, since the Prob (F-statistic) = 0.002011 is lower than any reasonable significance level, so we reject the null-hypothesis that all parameters (b_1, b_2, b_3, b_4) are simultaneously equal to zero.

Interpretation of results on parameters' estimates:

$*D(\log(LIP_t),2) = \log(LIP_{t-1}) - \log(LIP_{t-2}) = \log(LIP_{t-1}/LIP_{t-2})$

$*D(\log(Y_t)) = \log(Y_t) - \log(Y_{t-1}) = \log(Y_t/Y_{t-1})$

• with a 1% increase in (Y_t/Y_{t-1}) (LIP_{t-1}/LIP_{t-2}) will decrease by 2.546202 % = about 2.5% (implies negative relation between these variables)

• with a 1 million increase in $(I_t - I_{t-1})$ (LIP_{t-1}/LIP_{t-2}) will increase by ((5.08/e^7)*100)% = about 0.46% (implies positive relation between these variables)

• with a 1 million increase in $(W_t - W_{t-1})$ (LIP_{t-1}/LIP_{t-2}) will drop by (0.558377*100)% = about 56% (implies negative relation between these variables)

• with a 1 million increase in $(R1_t - R1_{t-1})$ (LIP_{t-1}/LIP_{t-2}) will fall by ((7.25/e^8)*100)% = about 0.24% (implies negative relation between these variables)

Model testing

Heteroskedasticity Test: White

F-statistic	0.545219	Prob. F(14,23)	0.8792
Obs*R-squared	9.468742	Prob. Chi-Square(14)	0.7999
Scaled explained SS	19.98911	Prob. Chi-Square(14)	0.1305

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/16/17 Time: 20:09
Sample: 2007Q3 2016Q4
Included observations: 38

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.047129	0.123087	0.382889	0.7053
D(LOG(Y))^2	25.80594	25.36909	1.017220	0.3196
D(LOG(Y))*D(I)	-7.26E-06	5.57E-06	-1.303547	0.2053
D(LOG(Y))*D(W)	-2.121848	6.833115	-0.310524	0.7590
D(LOG(Y))*D(R1)	4.38E-08	1.31E-06	0.033336	0.9737
D(LOG(Y))	-0.869430	2.210578	-0.393304	0.6977
D(I)^2	4.52E-13	3.93E-13	1.149532	0.2622
D(I)*D(W)	-4.41E-07	6.46E-07	-0.683157	0.5013
D(I)*D(R1)	-1.00E-14	1.48E-13	-0.067771	0.9466
D(I)	1.42E-07	2.26E-07	0.629449	0.5353
D(W)^2	-0.914678	0.685413	-1.334492	0.1951
D(W)*D(R1)	4.91E-08	2.87E-07	0.170901	0.8658
D(W)	-0.062694	0.314427	-0.199390	0.8437
D(R1)^2	-6.57E-14	6.48E-14	-1.013324	0.3214
D(R1)	8.90E-08	9.35E-08	0.951370	0.3513

R-squared	0.249177	Mean dependent var	0.076843
Adjusted R-squared	-0.207845	S.D. dependent var	0.184259
S.E. of regression	0.202504	Akaike info criterion	-0.068730
Sum squared resid	0.943183	Schwarz criterion	0.577686
Log likelihood	16.30587	Hannan-Quinn criter.	0.161260
F-statistic	0.545219	Durbin-Watson stat	0.803847
Prob(F-statistic)	0.879200		

Fig. 2. Heteroscedasticity Test

Results of White’s test imply that we shouldn’t reject null-hypothesis of no heteroscedasticity of any type in our model at any reasonable level of **a** (a=0.01, 0.05 or 0.1) since it is significantly smaller than the corresponding p-value (0.8792)

Hence there is a strong statistical evidence that our model is not subject to heteroscedasticity of any type.

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.731714	Prob. F(2,31)	0.0808
Obs*R-squared	5.693656	Prob. Chi-Square(2)	0.0580

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 06/16/17 Time: 20:21
Sample: 2007Q3 2016Q4
Included observations: 38
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.025958	0.068266	-0.380242	0.7064
D(LOG(Y))	0.608384	1.264594	0.481091	0.6338
D(I)	-2.79E-08	1.47E-07	-0.189836	0.8507
D(W)	0.133153	0.219304	0.607163	0.5482
D(R1)	2.04E-08	6.17E-08	0.330333	0.7434
RESID(-1)	-0.429134	0.184372	-2.327539	0.0266
RESID(-2)	-0.187359	0.180312	-1.039082	0.3068

R-squared	0.149833	Mean dependent var	2.70E-17
Adjusted R-squared	-0.014715	S.D. dependent var	0.280926
S.E. of regression	0.282986	Akaike info criterion	0.477980
Sum squared resid	2.482505	Schwarz criterion	0.779641
Log likelihood	-2.081624	Hannan-Quinn criter.	0.585309
F-statistic	0.910571	Durbin-Watson stat	1.576694
Prob(F-statistic)	0.500300		

Fig. 3. Autocorrelation Test

Results of Breusch-Godfrey Serial Correlation LM test imply that we shouldn't reject null-hypothesis of no autocorrelation in models' residuals at any reasonable level of **a** (ex. **a**=0.01 or 0.05) except when it is greater than the corresponding p-value (0.0808) (for ex. at **a**=0.1>0.0808 there is a statistical evidence in favor of autocorrelation that is possibly present in our model) and according to Durbin-Watson stat = 2.286008(the value which is close to 2) of the initially estimated regression (1) our model is not likely to be subject to autocorrelation at all.

The presence of autocorrelation has the following possible implications and problems:

- Standard errors of the regression coefficients are estimated wrongly. Hence, t-test and F-test are could be invalid
- OLS estimators are unbiased and consistent BUT inefficient. It becomes possible to find estimators that are still unbiased with a smaller variance

However, EViews provides built-in tools that allow us to adjust standard errors for the possible presence of both heteroscedasticity and autocorrelation of unknown form (HAC –Newey-West)

Using these techniques we obtained the following output by estimating the regression (1):

Dependent Variable: D(LOG(LIP),2)
Method: Least Squares
Date: 06/16/17 Time: 20:30
Sample (adjusted): 2007Q3 2016Q4
Included observations: 38 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed
bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.061241	0.038455	1.592514	0.1208
D(LOG(Y))	-2.546202	1.037559	-2.454032	0.0196
D(I)	5.08E-07	1.39E-07	3.653777	0.0009
D(W)	-0.558377	0.112066	-4.982567	0.0000
D(R1)	-7.25E-08	3.09E-08	-2.349266	0.0249

R-squared	0.392389	Mean dependent var	-0.011103
Adjusted R-squared	0.318739	S.D. dependent var	0.360395
S.E. of regression	0.297465	Akaike info criterion	0.535040
Sum squared resid	2.920021	Schwarz criterion	0.750511
Log likelihood	-5.165753	Hannan-Quinn criter.	0.611703
F-statistic	5.327757	Durbin-Watson stat	2.286008
Prob(F-statistic)	0.002011	Wald F-statistic	19.34900
Prob(Wald F-statistic)	0.000000		

Fig. 4. Initial regression estimation (HAC-Newey-West)

According to the results all the estimated coefficients including $\mathbf{b_4}$ of factor $D(R1_t)$ with their standard errors adjusted for the possible presence of both heteroscedasticity and autocorrelation of unknown form are likely to be rather significant when testing each of them separately (t-test) or jointly (F-test) since p-values and Prob (F-statistics) is lower than any reasonable significance level (note that $\mathbf{b_1}$ and $\mathbf{b_4}$ are significant at **a** greater than their p-values which are 0.0196 =approx. 1.9% and 0.0249=approx. 2.5% correspondingly, thus this parameters as well the factors they belong to ($D(\log(Y_t))$ and $D(R1_t)$) are still not significant at **a**=1% but significant at **a**=5% , so the null- hypotheses that each estimated coefficient separately or all of them simultaneously are equal to zero are rejected for all parameters $b_{1,}$ $b_{2,}$ $b_{3,}$ b_4 given any reasonable **a**. (particular values of **a** in case of $\mathbf{b_1}$ and $\mathbf{b_4}$ as explained above)

Though the constant is still not significant at any reasonable value of **a**, the adjustment of the coefficients' standard errors for the possible presence of both heteroscedasticity and autocorrelation of unknown form improves the overall significance of the model.

Hence, the presence of possible heteroscedasticity (though this hypothesis was rejected according to results of Heteroscedasticity White Test) and autocorrelation of unknown type affects the significance of the estimated coefficients and the corresponding factors so should be eliminated for ex. by using special tools of EViews such as HAC –Newey-West standard errors' adjustment in order to get more faithful representation of the model significance.

Endogeneity

We performed the Davidson-McKinnon test in order to identify possible issues of endogeneity in our model. We regressed the initial explanatory variables on their possible instruments – lags of high order and saved the obtained residuals. Then we added these residuals in our initial model as new regressors and ran OLS procedure.

Dependent Variable: D(LOG(LIP),2)
Method: Least Squares
Date: 06/27/17 Time: 23:56
Sample (adjusted): 2007Q3 2016Q4
Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.103627	0.282914	0.366285	0.7168
D(LOG(Y))	-2.168072	2.212498	-0.979920	0.3352
D(I)	5.08E-07	2.02E-07	2.515550	0.0177
D(W)	-0.621581	0.403997	-1.538578	0.1347
D(R1)	-1.52E-07	4.17E-07	-0.364572	0.7181
RESIDY	1.381587	3.046213	0.453543	0.6535
RESIDI	-4.04E-07	4.69E-07	-0.861773	0.3959
RESIDW	0.337602	0.526061	0.641755	0.5261
RESIDR1	1.18E-07	4.19E-07	0.282026	0.7799

R-squared	0.437456	Mean dependent var	-0.011103
Adjusted R-squared	0.282272	S.D. dependent var	0.360395
S.E. of regression	0.305323	Akaike info criterion	0.668499
Sum squared resid	2.703437	Schwarz criterion	1.056348
Log likelihood	-3.701481	Hannan-Quinn criter.	0.806493
F-statistic	2.818945	Durbin-Watson stat	2.443141
Prob(F-statistic)	0.019211		

Fig. 5. Davidson-McKinnon test on endogeneity

The results indicate that OLS estimates are consistent and there is no need to use instrumental variables instead of the initial factors in the model, since there is no statistical evidence of their endogeneity as all the residuals' variables coefficients turned out to be insignificant at any reasonable level of **a.**

Testing for variables' stationarity

Let's introduce some new variables in order to test our model for stationarity in EViews:

$LGLIP = \log(LIP_t)$

$LGY = \log(Y_t)$

Null Hypothesis: LGLIP has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.688129	0.9902
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

Null Hypothesis: D(LGLIP) has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.959574	0.0488
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

Null Hypothesis: D(LGLIP,2) has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.085937	0.0000
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

Fig. 6. Testing variable LGLIP on stationarity

Null Hypothesis: LGY has a unit root
Exogenous: Constant
Lag Length: 5 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.457113	0.8876
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

Null Hypothesis: D(LGY) has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.865059	0.0056
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

Fig. 7. Testing variable LGY on stationarity

Null Hypothesis: I has a unit root
Exogenous: Constant
Lag Length: 7 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.426396	0.8928
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

Null Hypothesis: D(I) has a unit root
Exogenous: Constant
Lag Length: 6 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.488973	0.0149
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

Null Hypothesis: D(I,2) has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.094765	0.0036
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

Fig. 8. Testing variable I on stationarity

Null Hypothesis: W has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.936593	0.0526
Test critical values:	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.619160	

Null Hypothesis: D(W) has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.124803	0.0029
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

Fig. 9. Testing variable W on stationarity

Null Hypothesis: R1 has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.347462	0.9074
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

Null Hypothesis: D(R1) has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.402863	0.0188
Test critical values:	1% level	-3.670170	
	5% level	-2.963972	
	10% level	-2.621007	

Null Hypothesis: D(R1,2) has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.413098	0.1456
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

Fig. 10. Testing variable R1 on stationarity

According to Augmented Dickey-Fuller Unit-Root tests (above results)

- LGLIP is integrated of the order 2 (~I(2)) (the 2nd difference of LGLIP (=D(LGLIP,2)) is stationary since the null-hypothesis of its non-stationarity is rejected at any reasonable level of **a** which is greater than the corresponding **p-value** =0)
- LGY ~ I(1) (the 1st difference of LGY is stationary since the null-hypothesis of its non-stationarity is rejected at any reasonable level of **a** which is greater than the corresponding **p-value** =0.0056)
- I_t ~I(1 or 2) (the 2nd difference of I_t is stationary since the null-hypothesis of its non-stationarity is rejected at any reasonable level of **a** which is greater than the corresponding **p-value** =0.0036, however the 1st difference of I_t is also likely to be stationary but the null-hypothesis of its non-stationarity is rejected at any level of **a** which is greater than its corresponding **p-value** =0.0149, so at **a**=1% this hypothesis shouldn't be rejected for the 1st difference of I_t but is still rejected for the 2nd difference of I_t , however for ex. at **a**=5% or higher the null hypothesis of non-stationarity is rejected both for the 1st and the 2nd difference of I_t hence there is still a statistical evidence that 1st difference of I_t (=D(I_t)) is stationary at this level of **a** and can be used in our model)
- W_t ~ I(1) (the 1st difference of W_t is stationary since the null-hypothesis of its non-stationarity is rejected at any reasonable level of **a** which is greater than the corresponding **p-value** =0.0029)
- $R1_t$ ~ I(1) (the 1st difference of $R1_t$ is stationary since the null-hypothesis of its non-stationarity is rejected at any reasonable level of **a** which is greater than the corresponding **p-value** =0.0188); though the null-hypothesis of its non-stationarity shouldn't be rejected at **a**=1%=0.01 it is rejected at **a**=5%=0.05, hence there is still a statistical evidence that 1st difference of $R1_t$ is stationary at this level of **a** and can be used in our model)

Hence in our model (1) all the variables are stationary, hence the risk to obtain spurious regression so there could be the case when there is no relationship between the examined variables even if all the estimated coefficients are proved to be apparently significant is eliminated or at least minimized.

Conclusion

To summarize, in this paper I tried to determine the factors influencing the market of bancassurance and its dynamics in Russia and their effects on this sphere of finance by regressing D(log(LIP_t),2) (where LIP_t is a reasonable proxy for the volume of collected bancassurance premiums) on D(log(Y_t)), D(I_t), D(W_t), D($R1_t$) using the quarterly data on all these variables. The results adjusted to possible presence of heteroscedasticity or autocorrelation that I obtained using EViews software suggest that there is a significant positive relation between

$(I_t - I_{t-1})$ and (LIP_{t-1}/ LIP_{t-2}) and significant negative correlation between (LIP_{t-1}/ LIP_{t-2}) and such factors as (Y_t/Y_{t-1}), $(W_t - W_{t-1})$ and $(R1_t - R1_{t-1})$, though the constant term appeared to be insignificant.

Since all the variables in my model are likely to be stationary and the model itself is not subject to endogeneity issues according to results of corresponding tests, my finding could be trusted and are likely to be fair. Though the effect on (LIP_{t-1}/ LIP_{t-2}) of some macroeconomic factors (such as population income, real GDP) is rather small (about hundredths of a percent) it is reasonable to argue that the bancassurance segment needs to be paid more attention in financial sector analysis and macroeconomic policy.

References

1 *Мазаева М.В., Коновальцева А.А.* Рынок банкострахования в России: современное состояние и перспективы развития. [Электронный ресурс]. Режим доступа: http://www.sworld.com.ua/konfer27/727.pdf/ (дата обращения: 03.03.2018).

2 *Донецкова О.Ю., Помогаева Е.А.* / Банкострахование: учебное пособие. Москва: DirectMedia, 2015.

3 Данные ЦБ РФ.

4 База Данных ЕМИСС.

5 Единый архив экономических и социологических данных НИУ ВШЭ.