



Effect of Bank Assets Securitization in Investment Flows: A Cross-Country Analysis

¹ Akbarali Akhmedov, ² Umidjon Duskobilov

¹ Researcher, Tashkent State University of Economics, Uzbekistan

² Head of Banking Chair, Tashkent State University of Economics, Uzbekistan

Abstract: In modern financial architecture, banks actively engage in financial market operations to ensure the stability and efficiency of their activities. The latest trends in banking sector highlight the active role commercial banks play by securing their assets in securitization practices. The lessons from the global financial crisis show that securitization is one of the main methods for securing the soundness of bank assets as an investment tool. This paper investigates the impact of bank assets securitization on investment flows in 30 advanced and transition economies by applying GMM method. The results proved that securitization of bank assets significantly stimulates the inflow of investments towards selected economies.

Keywords: Bank assets, Securitization, Investment, GMM

1. Introduction

The long-term consequences of the global financial crisis revealed the existence of structural deficiencies and shortcomings in major capital markets around the world. The imprudent financial market regulation policy, excessively optimistic approach to market risk, the lack of diversification of financial market instruments, high level of market asymmetry and concentration of capital only in a bunch of financial markets all call for the changes in the global capital market architecture.

The collapse of the global financial system became a serious survival challenge for emerging and rapidly developing economies. Particularly, the fail of giant companies, and their consequent bankruptcy, a sharp decline in budget revenues, an increase in the unemployment rate and the growth of low-income population led to the overall economic weakening in developed economies. Moreover, the sovereign debt crisis, which originated in the third wave of the global financial crisis, caused fiscal default in European countries with high capital concentrations. As a result, the foundation of the global financial system started modeling in consistency with new market principles.

Despite the ongoing reforms aiming at eliminating systemic lacks and adapting to the new financial market environment, economic growth went in slow and hopeless paces. Moreover, the measures to diversify capital concentration and to minimize the market risk were not taken comprehensively. Specifically, pre-crisis early warning signals showed the non-standard market indicators in securitization practices in the banking sector. Unreliable and low-coverage assessment of credit rating agencies obscured the real scenario under the shed of diverse stability reports. Measures to revise securitization procedure of the entire financial market and to introduce strict standards were postponed due to the lack of the single strategy to address the crisis-led issues. It, in turn, resulted in a disproportionate and uneven growth of the securitization market in major financial centers around the world.

In this paper, theoretical aspects of improving securitization practice in the competitive capital market conditions were widely investigated. The newly shaped global financial market order was studied in accordance with new economic rules and a comprehensive economic and mathematical model was offered. The global securitization market development was

thoroughly examined through in-depth analysis. Practical and theoretical recommendations were proposed for the introduction and development of bank assets securitization practices in developing economies.

2. Literature Review

The securitization of banks assets has been a significantly popular and most debated topic since the 1980s. However, the role of banks assets securitization in increasing the investment inflows to a particular economy is a nearly untouched area of research interest. Despite the growing importance of banks' involvement in the securitization market in the movement of investment flows within and beyond the domestic economy, the existing literature is still insufficient. Greenbaum and Thakor (1987) examined a bank's choice of whether to fund the loans it originates by emitting deposits or to sell the loans to investors. They found that the choice is irrelevant, as better quality assets will be sold (securitized) and low-quality assets will be funded with deposits under asymmetry of market information.

According to Cetorelli and Peristiani (2012) securitization process redistributes a bank's traditional role into several specialized functions – namely, the bank becomes the issuer, the underwriter, servicer, and trustee. Their study on the role of banks in asset securitization shown that, although much of the securitization activity appears to have been done outside the regulatory boundaries of banking, strong evidence to the contrary is found. Dionne and Harchaoui (2008) conducted an empirical investigation of the relationship between bank capital, securitization and bank risk-taking in a context of the rapid growth in off-balance-sheet activities in Canada. They found that securitization has a negative statistical link with both current Tier 1 and total risk-based capital ratios, and there exists a positive statistical link between securitization and bank risk-taking.

Studies by Altunbas, Gambacorta and Marqués suggested that the use of securitization appears to shelter banks' loan supply from the effects of monetary policy in European banks and strengthens banks' capacity to supply new loans. Scopelliti (2011) analyzed two important aspects in the amplification process of the financial crisis to the real economy, i.e. the growth of bank off-balance sheet activities and the securitization of financial assets, with specific attention to the US context. He found that a rise in off-balance credit exposure may have a negative impact on the growth rate of bank lending, due to the potential and actual losses related to the off-balance sheet activities. Moreover, a positive impact on bank lending may arise for short-term loans, while a negative effect is stronger for long-term loans.

Bonner, Streitz, and Wedow (2016) analyzed the effect of securitization on bank loan supply over the 2001 to 2013 period using a large sample data for Eurozone banks. They found that asset-backed security issuers were better able to switch to covered bonds, and their activity did not increase bank risk.

3. Methodology

The econometric model arose from financial market equilibrium theory. The banking system, financial market, and macroeconomic stability indicators are selected based on economic rules. Taking into account the bank assets securitization practice is widely used in developed and emerging markets, where capital concentration is high. The United States and all 28 member states of the European Union were selected to assess the impact of bank asset securitization on investments in their economies. In order to provide comprehensive coverage of the analysis by examining the linkages between bank assets securitization and investment flows in transition economies, the Russian Federation was added to the list of selected countries. Dynamic panel data for total of 30 countries were compiled and a multivariate econometric model was formed. The econometric expression of the model is as follows:

$$INV_{i,t} = \alpha INV_{i,t-1} + \beta_1 SEC_{i,t} + \beta_2 BAS_{i,t} + \beta_3 BSI_{i,t} + \beta_4 GFC_{i,t} + \beta_5 GDP_{i,t} + \eta_i + \varepsilon_{i,t}$$

Here, $INV_{i,t}$ – investment volume in i country in t period, $SEC_{i,t}$ – bank asset securitization volume in i country in t period, $BAS_{i,t}$ – total bank assets in i country in t period, $BSI_{i,t}$ – syndicated bank stability indicator in i country in t period, $GFC_{i,t}$ – dummy variable for crisis (0 for pre-crisis and post-crisis period, 1 for crisis period), $GDP_{i,t}$ – GDP volume in i country in t period. In econometric modeling analyzed quarterly data for each country from 2000 till 2017 with 20400 observations.

The methodology for econometric research has been developed by using the two-step small square (Two Step Lessest Squares - 2SLS) method of Generalized Method of Moments (GMM). The 2SLS method is aimed to use in structural

econometric modeling method for dynamic panel data analysis. The main advantage of this method is that the results obtained from the analysis can provide a higher level of likelihood to other methods than other methods.

4. Result and Discussion

At the initial stage of the econometric analysis, the initial test of the panel data was conducted through descriptive statistics test (Table 1).

Table 1: Descriptive statistics

	INV	SEC	BAS	BSI	GFC	GDP
Mean	2363.512	1261.148	16826.45	14.88664	0.254902	11257.11
Medium	2809.960	1190.923	8827.495	14.19110	0.000000	13807.94
Maximum	4418.030	5455.288	85191.80	20.90000	1.000000	19485.40
Minimum	362.6572	0.000000	795.1610	12.10000	0.000000	1763.125
Std. Dev.	1302.578	1160.082	22641.78	2.381195	0.440143	6298.920
Skewness	-0.354616	1.410610	1.989310	1.056718	1.124803	-0.345698
Kurtosis	1.575422	5.438992	5.901372	2.979903	2.265182	1.482274
Jarque-Bera	5.381419	29.55443	51.52568	9.492409	11.90146	5.910734
Probability	0.067833	0.000000	0.000000	0.008685	0.002604	0.052060
Sum	120539.1	64318.56	858148.7	759.2187	13.00000	574112.5
Sum Sq. Dev.	84835469	67289455	2.56E+10	283.5045	9.686275	1.98E+09
Observations	20400	20400	20400	20400	20400	20400

The results of the descriptive statistics show that the values of the panel data indicators are normally distributed in time intervals, the confidence interval is below the 10% boundary.

Levin-Li-Chu unit root test is used for GMM in multivariate parameters. Unit root test indicates whether or not a link exists between the aggregate data set in the author's dataset on the basis of alternative selection. Deriving from the objectives of the model, following alternative hypotheses are proposed:

H0 – link exists between bank assets securitization and investment flows;

H1 – link does not between bank assets securitization and investment flows.

If the results of the Levin-Li-Chu unit root test indicate that all variables are stationary, then there is a link between the securitization of the bank's assets and the investment volume, and the econometric analysis is continued. If none of the indicators are stationary, the connection is found to be inaccurate and the econometric analysis is canceled.

Levin-Li-Chu unit root test was conducted to determine the relationship between independent and dependent variables:

Table 2: Levin-Li-Chu test

Variable	t-statistics	Probability**
INV	-2.771	0.0011
SEC	-1.698	0.0064
BAS	-0.207	0.0119
BSI	-1.582	0.0423
GFC	-0.118	0.0094
GDP	-2.813	0.0063

The results of Levin-Li-Chu test showed the stationarity of all variables. In the next stage, the GMM test for dynamic panel data is conducted in EVIEWS 10.0 tool (Table 3).

Table 3: GMM test results

Variables	Model	Model 1	Model 2	Model 3
INV (-1)	0.4181*** (0.1072)	0.4094*** (0.1001)	0.4132*** (0.0112)	0.4209*** (0.0143)
SEC	0.1612* (0.1031)	0.1183* (0.0992)	0.1389 (0.1176)	0.1578* (0.1012)
BAS	0.0666* (0.0578)	0.0623 (0.0557)	0.0651** (0.0565)	0.0610*** (0.0529)
BSI	0.0498** (0.0411)	0.0447 (0.0403)	0.0421** (0.0397)	0.0433 (0.0402)
GFC	-0.0263*** (0.0074)	-0.0236*** (0.0083)	-0.0248*** (0.0078)	-0.0266*** (0.0069)
GDP	0.0123* (0.0112)	0.0128** (0.0129)	0.0121 (0.0122)	0.0199* (0.0101)
Sargan test [j-value]	61.2863 [0.4900]	62.6542 [0.4500]	64.5269 [0.4600]	57.4122 [0.4300]
Arellano-Bond test AR1 [p-value]	-6.94 [0.0000]	-10.41 [0.0000]	-8.56 [0.0000]	-12.93 [0.0000]
Arellano-Bond test AR2 [p-value]	0.614 [0.358]	1.026 [0.078]	0.407 [0.852]	0.049 [0.088]

The GMM test results were based on the main model and three auxiliary models. The main and auxiliary models had the same effect on the direction of effect. According to the results, the volume of bank assets securitization, bank assets volume, banking system stability and the countries' economic stability positively influenced the investment flow. The global financial crisis was the only negative factor. Among the main and auxiliary models, the most reliable was Model 1, where the p-values for all results were within the boundaries of Bayesian confidence intervals. The results of the main model, Model 2 and Model 3 were found insignificant, as p-value exceeds the upper boundary of confidence intervals. Sargan and Hansen tests were conducted to examine the reliability of the obtained results. These tests were designed to test the presence of excess limitations as a result of the main GMM test and the results of the Sargan's J-value and the Hansen's p-value showed that the results are normal (Table 3).

It should be noted that the GMM model is used to analyze dynamic panel data. The panel data variables can be stationary (see Table 2) only in lagged orders (as in Model I and Model II). It indicates that there is a probability of autocorrelation between the random variables and the error term. Therefore, with the help of the Stata software, the Arellano-Bond I and Arellano-Bond II tests were conducted to check the existence of autocorrelation. The obtained result showed that the Arellano-Bond test conditions were satisfied. The argument regarding the absence of autocorrelation according to the Arellano-Bond theory is supported. The GMM test results have been proven to be reliable.

Moreover, according to macroeconomic methodology, the impact of investment on one of the most significant components of GDP is measured through the factor analysis of the impact of economic growth on the investment flows. The factorial analysis showed that the impact of the global financial downturn on the volume of investments was relatively insignificant compared with the pre- and post-crisis periods.

5. Conclusion

The econometric analysis suggested that growth in bank assets securitization volume stimulates the investment flows in the selected economies. The classical theory of investment and financial market interconnectedness is proven, as securitization of bank assets enables the mobilization of funds in banks as investments in the capital markets. Consistently with obtained results, the following recommendations are proposed:

- To strengthen governments' role in regulating linkages between capital markets and banks by allowing banks to invest their assets to the financial markets using an easier procedure.
- To consolidate the bank's resource base and capital formation to withstand financial shocks and market turbulences by enabling them to attract more savings from individuals and firms as well as obtaining alternate revenue sources.

- To ensure a stable and smoothly functioning market environment for banks to act as an investor or an issuer by launching a safety net, early warning signals, and support programs in case of market imperfection.

References

- Abdelsalam, O., Elnahass, M. and Mollah, S. (). Asset securitization and bank risk: do religiosity or ownership structure matter? Swansea University School of Management Working Papers. No. 2018-17. [Crossref](#)
- Altunbas, Y., Gambacorta, L. and Marqués, D. (2007). Securitization and the bank lending channel. European Central Bank Working Paper Series, No. 838/2007. [Crossref](#)
- Cetorelli, N. and Peristiani, S. (2012). The Role of Banks in Asset Securitization. The Federal Reserve Bank of New York Economic Policy Review, Ed. 7/2012, pp. 47-63.
- Clemens Bonnera, C., Streitzb, D. and Wedowc, M. (2016). On the differential impact of securitization on bank lending during the financial crisis. De Nederlandsche Bank Working Papers. No.501. [Crossref](#)
- Dionne, G. and Harchaoui, M. (2008). Bank capital, securitization and credit risk: an empirical evidence. Insurance and Risk Management, vol. 75(4), pp. 459-485.
- Greenbaum, S. and Thakor, A. (1987). Bank funding modes: securitization versus deposits. Journal of Banking and Finance, vol 11, pp. 379-401. [Crossref](#)
- Nuzzo, G. (2017). A critical review of the statistics on the size and riskiness of the securitization market: evidence from Italy and other euro-area countries. Proceedings of IFC-National Bank of Belgium Workshop on "Data needs and Statistics compilation for macroprudential analysis". Brussels, Belgium, 18-19 May 2017. [Crossref](#)
- Scopelliti, A. (2013). Off-balance sheet credit exposure and asset securitization: what impact on bank credit supply? MPRA Papers. No. 43890.