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## ARTICLE INFO

Olha Kozmenko and Olena Pakhnenko (2012). Securitization of bank assets and insurance liabilities on the basis of the stock market potential. *Insurance Markets and Companies*, 3(2)

## RELEASED ON

Friday, 28 December 2012

## JOURNAL

"Insurance Markets and Companies"

## FOUNDER

LLC "Consulting Publishing Company "Business Perspectives"



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

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# Securitization of bank assets and insurance liabilities on the basis of the stock market potential

## Abstract

The convergence processes in the financial market have led to the emergence and development of new forms of interaction between the stock market, the insurance market and the banking sector. One of the main areas of convergence of the financial market segments is the use of securitization mechanism for refinancing of bank assets and liabilities of insurance companies under the contracts of catastrophic risks insurance. The paper conducts a comparative analysis of the two principal forms of securitization, studies the current level of securitization development in Ukraine and assesses the potential of the domestic stock market as one of the main growth factors for the securitization of banking assets and insurance liabilities.

**Keywords:** securitization, bank assets, insurance liabilities, stock market.

## Introduction

Traditionally, securitization as a method of transforming non-liquid assets into securities, began to be used in the 70s of the 20th century for refinancing of mortgage bank loans. Today, it remains the most popular type of securitization. Moreover, the list of assets that could be securitized, has been steadily growing and includes both all types of bank loans (mortgages, car loans, credit card payments, education loans, long-term credits to legal entities) and assets of other financial and non-financial institutions (insurance and leasing companies) [1, 2].

In addition, a special area of securitization development over the past decades has been the use of securitization in order to create additional sources to indemnify losses from catastrophic events and other types of insurance risks – securitization of insurance risks.

## 1. Securitization characteristics

In general, both securitization of assets and securitization of insurance risks (securitization of insurance liabilities) have common principles in their securitization structure and in organization of “special purpose vehicles” [4]. Thus, any form of securitization involves the transfer of certain assets or liabilities of initiator (who is called “originator” in asset securitization or “sponsor” in the security-

zation of insurance liabilities) to a special purpose entity that issues securities and distributes them to investors (Table 1). Through the use of bond payments financial resources are generated, which are used to refinance assets or create additional sources to cover insurance liabilities.

Specialized entities created in the process of building a securitization structure are “passive” financial companies that do not conduct an independent commercial activity. The sole purpose of a specialized entity is to keep the assets or insurance risks transferred to it, to issue relevant securities and manage the funds received as a result of their distribution.

The creation of a special purpose entity during securitization should safeguard the transferred assets or liabilities from the risk of bankruptcy of the founding company – bankruptcy remote. Full legal independence of a special purpose entity is guaranteed by the transfer of its shares to a holding company [7, p. 211].

As a result, credit risk, that is the risk of default on obligations to investors regarding interest payments or principal payments on bonds, depends only on the quality of assets of the special purpose entity. In their turn, investors have no right of recourse to the founding company.

Table 1. Comparative characteristics of assets and liabilities securitization operations

Securitization of assets		Securitization of insurance liabilities	
Basic structure of securitization			
Originator (bank)	assets ↔ financial resources	Special purpose vehicle	securities ↔ financial resources
Sponsor (insurance company)	insurance risk ↔ insurance coverage	Special purpose reinsurance vehicle (SPRV)	securities ↔ financial resources

Table 1 (cont.). Comparative characteristics of assets and liabilities securitization operations

Securitization of assets	Securitization of insurance liabilities
<i>Goal of securitization</i>	
Refinancing of loans and transformation of future cash flows	Formation of additional sources to indemnify losses from catastrophic insurance risks
<i>Management of funds received during the floating of bonds</i>	
Funds raised from the distribution of bonds during assets securitization are placed at the originator bank's disposal, raising its solvency	Funds received as bond payments are accumulated on a separate reserve account and invested in safe securities; an insurance company does not receive financial resources at once, but only in the form of reimbursement in the case of a specified insured accident
<i>Type of coverage</i>	
Credit agreements	Securities into which the funds from the SPRV reserve accounts are invested
<i>Common features:</i>	
<ul style="list-style-type: none"> <li>◆ creation of legally separated, specialized entity – a stock market intermediary, to whom the assets / liabilities are transferred and who issues the relevant type of securities;</li> <li>◆ improvement of credit quality of securitized loans, creation of additional guarantees to fulfill the obligations to investors.</li> </ul>	

The next common characteristic of assets and liabilities securitization is the use of mechanisms to improve the credit quality of securitized loans (“credit enhancement”), that is the creation of additional guarantees to fulfill the obligations to investors and to the sponsoring company during the implementation of insurance risks securitization [4, c. 10].

Although the above-mentioned forms of securitization have many common features, they have several significant differences. First of all, they lie in different goals of securitization and in differences regarding the use of financial resources received through the issue and distribution of securities.

Thus, securitization of assets is carried out to refinance loans or other contractual cash obligations and to transform the future cash flows. Through securitization the original owners of assets receive a possibility to manage credit risks by transferring them to investors, to improve their own balance sheet structure by eliminating from it the obligations of the third parties, and to ensure the compliance with the minimum capital requirements (this is especially important for banks) [8]. The main objective of insurance liabilities securitization is the formation of additional sources to indemnify losses from catastrophic insurance risks.

During asset securitization the money received from the distribution of securities, is immediately placed at the disposal of the originator bank while the assets transferred to a special purpose vehicle are the provision of security. However, during the securitization of insurance liabilities the funds received as bond payments are accumulated on a separate reserve account and invested in safe securities. A sponsor (insurance or reinsurance company) does not receive financial resources at once, but only in the form of reimbursement in the case of a specified insured accident. The collateral of such securitization agreements is the assets into which the funds received from investors are in-

vested. In other words, during the securitization of assets the current need in financial resources is financed, while during the securitization of insurance liabilities the future need in financial resources is financed. It should also be noted that during asset securitization a “true sale” of assets takes place, that is, the right of their ownership is fully transferred to a special purpose vehicle while the originator retains the right to receive part of the profit from those assets as a difference between the profit from assets and repayment of obligations to investors. During the securitization of insurance liabilities, the insurance (reinsurance) company remains responsible to the insured under the insurance contract. In this case only economic transfer of insurance risk takes place by analogy with the traditional reinsurance [6].

Thus, the use of securitization mechanism in the field of insurance is fundamentally different from the securitization of bank assets. A new type of securitization – securitization of liabilities – is formed. Special features of the stock market mechanism in insurance are directly related to the specific characteristics of insurance activities: the probability of payments, the possibility of extremely large losses in insuring catastrophic or mass risks, the necessity to form insurance reserves and reallocate insurance risks through reinsurance or alternative instruments of risk transfer.

Fundamental differences between these two forms of securitization suggest that insurance risk securitization is an independent specific mechanism of the financial market arising from the convergence of insurance and capital markets.

In spite of the rapid development of securitization in the global financial market, the use of this mechanism in Ukraine has not gained considerable popularity. This is explained by the lack of need and opportunities of the market participants to carry out such operations. The insurance coverage of the same type

of catastrophic risks is so insignificant that it does not allow to form a pool of insurance liabilities, which is sufficient for securitization of operations. In addition, Ukraine does not have a legal and organizational framework for the development of insurance risk securitization.

In the banking sector the preconditions for the development of securitization operations are relatively better. In the recent years the legislation in this area has been substantially improved (Law of

Ukraine "On Mortgage", Law of Ukraine "On Mortgage Bonds"). In addition, in order to promote the development of mortgage lending and simplify the use of securitization mechanism by banks in 2004 the State Mortgage Institution was established, and in February 2012 on the initiative of four state banks the Agency for Refinancing Home Loans was founded. Despite these events, the development of mortgage lending in Ukraine, especially the secondary mortgage market, remains at a low level (Table 2).

Table 2. Indicators of mortgage lending in Ukraine in 2006-2012

	2006	2007	2008	2009	2010	2011	3 quarters 2012
Mortgage loans*, mln. hryvnias	10507	49095	79193	75648	74508	74390	135444
Loans refinanced by the State Mortgage Institution, mln. hryvnias	21,3	280,7	947,5	2,8	0	76,4	193,9

Source: Monetary and credit statistics; Dynamics of mortgage loans refinancing on October 1, 2012.

Note: \*including credits with several types of credit security.

The financial crisis had an adverse effect on the dynamics of mortgage lending development in Ukraine, leading not only to the suspension of housing loans at the end of 2008-2009, but adversely affecting growth rates of the mortgage market in the post-crisis period.

Thus, the primary factors that determine the development of the respective types of securitization in Ukraine are the state of the insurance market and the market of mortgage lending – indicators which influence the formation of the need in the use of this mechanism. On the other hand, the deciding factor for the use of securitization operations in Ukraine is the availability of a sound stock market infrastructure that could provide sufficient possibilities to distribute securities related to the securitization of bank assets or insurance liabilities.

The analysis of the state and dynamics of the stock market in terms of opportunities to increase the volumes of securities floated and traded in the stock markets, including bonds issued in the process of securitization, can be performed by evaluating its financial potential. For this purpose a mathematical model is developed, the algorithm of which includes the following steps:

- ◆ determination of factors that affect the stock market potential and formation of information provision for economic and mathematical models;

- ◆ determination of weight coefficients for the investigated factors;
- ◆ calculation of the potential according to each of the identified factors and for each evaluation period as the difference between the maximum value of the factor for the whole period, its standard deviation and the actual values of the analyzed factors in each period;
- ◆ giving scores (25, 50, 75 or 100) and qualitative characteristics (low, average, sufficient or high) to the indicators of the stock market potential;
- ◆ assessment of the potential level by breaking down each of the defined intervals of the indicator's possible values into 3 equal ranges and their adjustment with regard for standard deviation of the factors' values;
- ◆ calculation of the aggregate indicator of the stock market potential.

## 2. Indicators to assess stock market potential

To assess the potential of the Ukrainian stock market we have used nine indicators, which in accordance with their economic content and the nature of their impact on the output indicator were grouped into three areas: the volume of stock market contracts with securities; indicators of the number of securities intermediaries and macro indicators (Table 3).

Table 3. The system of indicators to assess the potential of the Ukrainian stock market

Indicators		Weight coefficient of	
		groups of indicators	indicator
Volume of stock market contracts with securities, mln. hryvnias	Shares	0,6	0,12
	Corporate bonds		0,12
	Internal government bonds and the bonds of local authorities		0,12
	Investment certificates		0,12
	Derivative securities		0,12

Table 3 (cont.). The system of indicators to assess the potential of the Ukrainian stock market

Indicators		Weight coefficient of	
		groups of indicators	indicator
Number of securities intermediaries	Securities traders	0,22	0,11
	Asset management companies		0,11
Macro indicators, mln. hryvnias	Net savings	0,18	0,09
	Net capital transfers		0,09

From this list the first five factors that characterize the volumes of contracts by types of securities are the most significant because they are the indicators of the stock market's realized potential and reflect the actual volumes of the distribution and circulation of securities on the stock markets.

The following factors – the number of securities traders and asset management companies operating on stock exchanges – have indirect influence on the potential of the stock market. The indicator of securities intermediaries has an impact on the state of the stock market, in particular, on the formation of demand for securities, but the change of this indicator does not lead to the same changes in the stock market potential.

An important role in assessing the potential of the stock market also belongs to the analysis of the volumes of financial resources generated in the form of net savings and net capital transfers. Since redistribution of these financial resources can take place through the financial market (including the stock market), the increase in net savings and net capital transfers potentially increases the volumes of securities which can be distributed in the stock market. However, the impact of these indicators on the stock market potential is the smallest.

The information base for the calculation of the stock market potential was formed on the basis of data from the State Statistics Service of Ukraine [3] and the National Commission on Securities and Stock Market [10] for the period of 2001-2011.

The aggregate indicator of the stock market potential is defined as a product of the potential's estimations for each factor and analyzed period and the corresponding weight coefficient:

$$FP = \sum_{j=1}^m \sum_{i=1}^n B_{ij}^{kp} \cdot v_i, \quad (1)$$

where  $FP$  is the aggregate indicator of the stock market potential expressed in points;  $B_{ij}^{kp}$  – score assessment of the stock market potential in intervals  $k$  and  $p$  for factor  $i$  in the period  $j$ ;  $v_i$  – weight coefficient of factor  $i$ .

Economic interpretation of the results of the stock market potential assessment can be conducted by comparing the obtained value of the performance indicator with the corresponding interval of its possible values (Table 4).

Table 4. Qualitative assessment of the aggregate indicator of the stock market potential in Ukraine

Intervals of $FP$ values	Qualitative assessment of the potential's level
[215,3; 449,4]	Low
(449,4; 683,5]	Average
(683,5; 917,5]	Sufficient
(917,5; 1151,6]	High

As a result of the calculations the aggregate indicator of the Ukrainian stock market potential received the score of 1053 points, which is a high indicator for this model (corresponds to the fourth interval [917,5; 1151,6]). It indicates the existence of sufficient financial possibilities of the domestic stock market to use the mechanism of securitization of bank assets and insurance liabilities under the contracts of catastrophic risks insurance.

### Conclusions

It should be noted that the current trends of convergence between the insurance market, the stock market and the banking sector form new opportunities to use the advantages of one segment of the financial market to neutralize disadvantages or minimize risks of the other.

Securitization as one of the main areas in the development of the financial market convergence processes, provides an effective mechanism for asset refinancing, increasing the solvency of credit institutions and forming an additional source for the repayment of insurance indemnities. With this in mind, an increase in the use of the stock market resources in securitization of bank assets and insurance liabilities can be a promising trend in the development of the Ukrainian financial market.

Our calculations demonstrate a high potential of the Ukrainian stock market in terms of distribution and circulation opportunities for securities issued in the process of securitization.

However, there are problems that impede the development of securitization mechanisms in Ukraine. They are related primarily to the peculiarities of the domestic insurance market (insufficient coverage of catastrophic risks; the lack of big insurance or reinsurance companies that can accumulate considerable risks) and the banking sector (low mortgage lending, poor quality of mortgage assets, etc.).

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