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APPLICATION OF ASSET SECURITIZATION IN FINANCING AGRICULTURE IN SERBIA

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Summary

This paper aims to point out the possibilities of applying asset securitization in financing the Serbian agriculture. Government subsidies and banking loans do not provide sufficient funds so new sources of financing are in need. The process of asset securitization will enable the inflow of funds for agricultural loans approval as well as hedging. Agricultural loans can be used as collateral for issuing securities, although warehouse receipt, repurchase agreement and future income can also serve as collateral. Securitization can enable transfer of risk from insurance companies to financial market through CAT bonds and credit default swaps (CDS). The experience of countries having structured financing in agriculture is valuable for first steps in applying asset securitization in Serbia.

Key words: *financing agriculture, securitization, collateral, insurance.*

JEL: *Q14, G21, G22, G23*

The concept of asset securitization

Asset securitization is a process of issuing securities based on the pool of similar asset serving as collateral. The reasons for applying asset securitization are numerous and the most significant is diversification of financing sources. Off-balance sheet securitization means taking the asset from the balance sheet of the originator and then the issuance of securities. There may be existing asset securitization and future flow securitization. Therefore, the collateral for securitization does not need to be existing asset but the asset that will be generated in the future. In practice there can be synthetic securitization which transfers the risk to investors without removing asset from the balance sheet. Likewise, securitization can be domestic and cross-border securitization.

Securitization is carried out by special purpose vehicle (SPV). SPV purchases loans or other assets of the originator which is the basis for issuing the securities. The originator has the role of servicer in most cases – it collects interests and principal from the borrower

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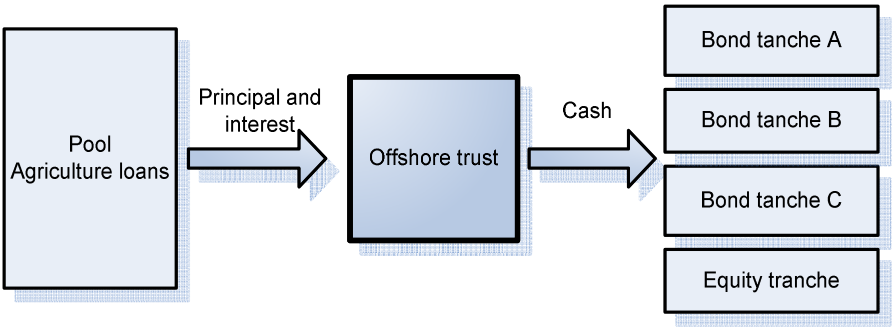
although it has been sold. The collected money is transferred to SPV. As the obligations based on the asset which is collateral are paid, investors who bought securities are paid.

Based on agricultural loans, there may be the issue of collateralized debt obligations (CDO) enabling different redistribution of risk and return. Collateralized debt obligations (CDO) consist of several tranche bonds. Every tranche is supported by the same pool of assets. The tranches (classes) may be: senior, mezzanine[3], subordination and equity class.

Graph 1. Collateralized debt obligation CDO



Tranches are classified according to risk and returns. Senior tranche is purchased by institutional investors for their highest rank (AAA), whereas subordination tranche is purchased by sophisticated investors. Equity tranche is retained by the sponsor (arranger) of the transaction or is purchased by hedge funds. Equity tranche is not ranked because it is the riskiest but also the most profitable. If the pool is in default, equity tranche first bears the loss (first-loss piece, FLP). The sponsors often retain equity tranche in order to attract investors and show that they are ready to have the first loss of securitization they have organised.

Payment to investors is made according to the class of the bond they possess. When the senior tranche is paid, the payment of subordinate classes of bonds commences. The distribution of cash flow is different in tranches and is called the cash flow waterfall. The oldest class has the lowest coupon, while the equity tranche does not have a coupon. This represents a residual cash flow after payment of liabilities to investors. This class is intended for investors who want to earn a lot and are willing to take a risk.

The experience of countries in transition shows that asset securitization can be an important source of financing for agriculture. Agricultural corporations can raise funds through shares issues, but the issue of new shares in Serbia represents a rare event.[4] However, the problem is that Serbia has no law regulating the process of asset securitization. The National Bank of Serbia published - *The draft Law on Securitization*

[3] Transaction may, or may not, have the mezzanine class.

[4] See in Zakić, V., Vasiljević, Z., Zarić, V. (2012): Relevance of Dividend Policy for Food Industry Corporations in Serbia, Economics of Agriculture, IAE, Belgrade, Vol. 59, 4/2012, pg. 809-821.

on 17 January 2008. Hoping that the legal framework will be delivered in the near future, we point out potential applications of financial transactions in Serbia. The draft law on securitization of receivables enables only domestic securitization, which means that the seat of the issuer must be in the Republic of Serbia. Cross-border securitization is not allowed so foreign investors are excluded.

According to the draft law, assets of banks, leasing and insurance companies can be used in the asset securitization. SPV can therefore purchase agricultural loans from banks and issue securitized products. In addition to the banking sector, the insurance companies may take advantage of asset securitization. The issue of securities would transfer the risk to the financial market. The draft Law on Securitization enables leasing companies to use them as a financial mean. The possibility of the receivables sale would bring income to leasing companies that can be further used for leasing operations for buying tractors and other machines.

When the legal framework is completed, financing agriculture in Serbia can be carried out in the following ways:

1. agricultural loans securitization,
2. securitization of future agricultural income,
3. securitization based on other collaterals (Repurchase agreement, Warehouse receipt),
4. securitization of insurance risk.

Agricultural loans securitization

Agricultural loans securitization implies that agricultural loans are collateral for securities issuance. The possibility to sell agricultural loans in the financial market would bring numerous benefits to originators. First, by the sale of agricultural loans the lender receives funds that may use for approval of new loans. Thus, the lender improves liquidity and profitability, and diversifies sources of funding. Then, the sale of agricultural loans means their removal from the originator's balance sheet, and therefore the risk. The buyer of agricultural loans obtains the right to charge interest and principal, but also takes default risk of the borrower.

Agricultural loans securitization is applied in Brazil. Brazil Agrosec Securitizadora Company is a joint-stock company established in 2010 which buys agricultural loans from banks and issues securities (Certificado de recebíveis do agronegocio, Certificates of Agribusiness, CRA). The first issue carried out by Brazil Agrosec Securitizadora Company was valued at $50 million, and the collateral was the livestock. In 2001 Credit Rights Investment Funds (FIDCs) were established in Brazil – funds of open and closed type which are specialized for investment in agricultural instruments.[5]

Agricultural loans securitization in Serbia could be done by the state and/or private sector. It would be desirable if the government by establishing a separate agency carries out the

[5] Herscovici, R., Herszkowicz, J. E., Stacchini, M. F. (2008): Securitisation of agribusiness financial instruments in Brazil: an expanding market, Global Securitisation and Structured Finance 2008, pg. 35.

first securitization of agricultural loans. The involvement of the government would encourage banks, investors, and other stakeholders to be engaged in the process of securitization. The agency would have the role of SPV with the task of purchasing agricultural loans from banks. Given that the Serbian government gives subsidies to agricultural loans, the collateral for the first securitization could be subsidized loans. Therefore, the agency buys subsidized loans from the originator and based on that it issues securities. As farmers pay instalments of the loan, collected funds are forwarded to investors. The agency should guarantee payment of obligations to investors. The guarantee means that securities obtain high rating so the demand is higher. The agency may issue collateralized debt obligation (CDO), but to retain the equity tranche. Therefore, the agency will be the first to bear the loss if the transaction is not successful. In this way, investors are encouraged to buy securitized securities.

Another possibility is that the first securitization of agricultural loans is to be made by the private sector. Private SPV will purchase agricultural loans and issue securities. The private sector may also be the first to carry out securitization of subsidized agricultural loans. Later, as the market gets more developed, SPV could carry out securitization of other agricultural loans.

If the state does not take steps to develop the agricultural loan securitization, it should help the private sector. Investors want assurance that the obligations towards them will be fulfilled. In other words, if users of agricultural loans stop paying obligations to creditors, SPV will not be able to pay investors. The state can give guarantees for issued securities of private SPV. The guarantee can be 100% or partial. The state can guarantee for the securities that have subsidized agricultural loans as collaterals. In this case, issuers of securities having other agricultural loans as collaterals must seek guarantees from the private sector. Insurance companies and banks can guarantee for securitized products. Securities can also obtain guarantees from international institutions (for example, IFC, EBRD, etc.).

Loans to finance agricultural sector in Serbia are *short-term* and *long-term* in nature. Loans can be made for the purchase of seeds, fertilizers, land, livestock, plants, machinery or the construction of buildings. Short-term subsidized loans in Serbia are with maturities of three, six, nine and twelve months.

Short-term and long-term agricultural loans can be used as collaterals in Serbia. The revolving structure is used when securitization is done on the basis of short-term loans and other short-term receivables. The revolving structure allows the issuance of long-term securities on the basis of short-term collateral. The essence of the revolving structure is to maintain the size of the pool, which is a necessity for short-term loans have shorter maturities than the issued securities. The revolving structure consists of a revolving period (lockout period) and amortization period. During the revolving period the amount of principal paid by borrowers is reserved by the SPV and reinvested in additional receivables in order to maintain the size of the pool. During this period payments to investors are based on commissions and interest of the borrower. After the revolving period, there is the amortization period. New receivables are not purchased during the amortization period, but the collected principal is forwarded to investors.

The first securities issued on the basis of the agricultural loans in Serbia can be issued with maturities from 5 to 10 years. It should be taken into account that investors will not be willing to risk too much. Likewise, it is necessary to issue more classes of bonds. Although structured securities are more complex, they attract different types of investors. The older class is purchased by institutional investors, banks and insurance companies because of the highest rank (AAA), while the last class may be held by the issuer. The reason for retention of the equity tranche by the issuer is that there probably will not be interested investors. Given that the draft Law does not allow cross-border securitization, there are no foreign investors or hedge funds that buy equity tranche. Also, equity tranche should be purchased by the state agency (or retained if it is the issuer), especially if the collateral are subsidized loans.

The guarantees for the securities may be given by the government or the private sector (insurance companies, banks). One of the classes of bonds (senior or mezzanine) should have the guarantees from international organizations (for example, IFC).[6] The application of the guarantees of the international organization will enable bonds to get higher rating. In addition to guarantees and subordinations through the issuance of more classes of bonds, credit enhancement transactions provides overcollateralization, excess spread, cash reserve funds and others.

Securities backed with agricultural loans may be used in repurchase agreement operations in the financial market and it is desirable if they are listed at the Belgrade Stock Exchange.

Securitization of future agricultural income

Securitization allows receivables that will arise in the future to be used as a source of financing. Investors who buy securitized products are interested in the cash flow brought by assets regardless of whether there are assets in the balance sheet or they will arise in the future. Classical future flow securitization means that the originator (bank, company) from a country in transition sells the receivables that will arise in the future to the (offshore) SPV. Customers (buyers of the goods) will transfer money to SPV, because SPV is the new owner of receivables. SPV issues securities denominated in hard currency. The currency of a country in transition is not stable and thus the risk of exchange rate change is avoided. Future flows securitization has allowed originators in the countries in transition to have inflow of funds from sale of future receivables. Future flow securitization is very popular in countries in transition. The collaterals include export receivables from the sale of oil, gas, coffee and agricultural products as well as future receivables on credit cards (VISA, MC), diversified payment rights (DPRs) and others. Future flow securitization has allowed many investment grade borrowers in developing

[6] International organizations can, if Law on securitization of receivables enables, buy bonds.

countries to pierce the sovereign credit ceiling and obtain financing at significantly lower interest rates and for longer duration. [7]

Drokasa[8], the leading Peruvian agricultural conglomerate, uses future flow securitization. Drokasa expanded into horticulture, creating Agrokasa, a company that produces and exports asparagus and grapes. The collateral for the issuance of bonds is the assignment of future receivables which Drokasa reached with the buyers of agricultural products. Drokasa obtains funds while SPV issues bonds. The buyers pay SPV according to the contract.

Agricultural corporations and farmers in Serbia can sell future receivables and thus be financed. Future flows securitization allows the farmer to sell the future receivables from the sale of products to SPV. The sale of future revenues will give the farmer the funds immediately that can be used for financing production. SPV issues securities on the basis of receivables that will arise in the future. The buyers of agricultural products pay SPV for goods, which then pay obligations to investors. SPV, as well as with agricultural loans, may be public or private.

SPV can buy future income from the sale of wheat, soybeans, corn, fruit, vegetables, livestock and the like. SPV sells securities to investors in the planting season and the beginning of the breeding stock. For example, the farmer who raises cattle for the meat industry can sell their future revenues to SPV and be immediately paid. When a customer buys the cattle, this amount of money will be forwarded to SPV. Payment is made to the investors when SPV receives income from the sale of livestock. The point is that the sale of future revenues can enable the farmer to obtain funds to finance production. The fruit grower may also sell its future revenues from harvesting fruit to SPV. The buyers of fruit will pay the SPV, which will then pay investors. The fruit grower received the funds prior to harvest, which allows him to finance production (the purchase of machinery, new plants, chemicals, payment of labour and the like).

Securitization based on other collateral

The collateral for securitization in agriculture may be repurchase agreement and warehouse receipt. Repurchase agreement is an agreement on the sale of securities with a commitment to repurchase them at a specified period and at a fixed price. The seller of securities agrees to repurchase them from the buyer. Repurchase agreement consists of two steps. The first step is the sale of securities, and the next step is its repurchase. Repurchase agreement is a type of loan backed with securities that are the subject of the transaction.

Repurchase agreement is applied in financing agriculture where the subject is trade of goods. The seller sells goods and consents to repurchase it. Securities may be issued on the

[7] Ketkar, S., Ratha, D. (2004-2005): *Recent Advances in Future-Flow Securitization*, The Financier, Vol. 11/12, 2004-2005, pg. 3.

[8] Drokasa, Structured Finance, International Finance Corporation, available at: http://www1.ifc.org/wps/wcm/connect/7f1bfa00487ca8d39dd9bd84d70e82a9/Drokasa.pdf?MOD=AJPERES

basis of repurchase agreements. The owner of the repurchase agreement (bank, SPV) can use them as collateral and issue securitized securities.

In 1996 Prudential Securities enables financing sugar mills in Mexico. The mills sold sugar to the bank with the obligation to repurchase it and in that way they were financed. The bank issued securitized bonds in the amount of 400 million US$.[9] Therefore the repurchase agreement for sugar is collateral for issued securities.

The securitization of repurchase agreement is also done in Colombia in financing livestock, which is an example of Livestock Securitization. Farmers sell livestock to SPV and commit themselves to repurchase the cattle in the future. Based on the agreements of livestock repurchase, SPV issues securitized securities. Although they sold the cattle to SPV, the obligation of farmers is to feed and take care of the cattle. SPV controls whether farmers breed the cattle well. Farmers feed the cattle for 11 months, repurchase them from SPV and sell in the market. National Agriculture and Livestock Exchange (BNA) has the leading role in the securitization and select farmers at a certain level of criteria.[10]

Financing can be done through securitization in which the stored goods are collateral, i.e. *warehouse receipt*. Inventories are collateral according to which SPV can issue securities. Stored goods are a guarantee to investors that the obligations will be performed by them. If the SPV fails to pay interest and principal, buyers of securities have the right to take charge of the collateral - goods that are stored. Securitization based on warehouse receipt enables post-harvest finance for working capital needs.[11] In Venezuela securitization is done on the basis of corn supplies. SPV issued securities on the basis of the warehouse receipt.

Agricultural producers in Serbia could be financed through repurchase agreement and warehouse receipt. In order to carry out the securitization based on the repurchase agreement and warehouse receipt, it is necessary to have the adequate storage (size, quality, location, reliability). In Serbia, public warehouses with a license have been used as proof that they meet the necessary technical requirements for storage of goods since 2009. Public warehouses ensure safety, quality and quantity of stored goods. The public warehouses may store wheat, barley, corn, sunflower, canola, soybean, etc.

Warehouse receipt is a type of securities issued by public warehouses and represents a proof of ownership of the deposited goods. Warehouse receipt proves the ownership of a specified quantity and quality of stored agricultural products. It is issued for a period of one year, or for a period which cannot be longer than the lifetime of the agricultural product.

Agricultural producers can sell the warehouse receipt and can use it as collateral for loans. Loans to agricultural producers based on the warehouse receipt are interesting for the bank as it is not so risky. The bank does not have to put a mortgage on real estate (house

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[9] Using Commodity Stocks To Raise Funds Directly On The Capital Market, Trade Finance & Risk Management, Briefing Note N° 3, pg. 2

[10] Innovative Vehicles for Mobilizing Domestic Funds for Agricultural Development (2001), Economic and Social Commission for Asia and the Pacific, 22-23 November, 2001, Bangkok, pg. 7.

[11] Expanding Post-Harvest Finance Through Warehouse Receipts and Related Instruments (2006), The Commodity Risk Management Group, issue 8, March, 2006, World Bank, pg. 1.

in the countryside), but the pledge is the goods in a public warehouse. If the borrower does not pay the loan, the bank sells the goods. EBRD provided a line of credit to local banks for short-term loans with the help of warehouse receipt.

The adoption of the Law on securitization would allow a step further and the use of repurchase agreement and warehouse receipt for financing agriculture. Agricultural producers will be able to sell the repurchase agreement and warehouse receipt to SPV which will carry out securitization. The sale of warehouse receipt to SPV, agricultural producer receives funds immediately and there is no credit debt. With securitization it is not required to have a credit line for financing from EBRD. The possibility that domestic and later cross-border SPVs buy warehouse receipts and issue securities would enable the funds to be collected from the financial markets.

Securitization of insurance risk

Securitization allows the transfer of risk to those participants in the financial market who are willing to bear risk. Insurance securitization led to the emergence of securities that are issued on the basis of the pool of claims from insurance and reinsurance. The risk is repackaged into securities purchased by investors. The most important product of the Insurance securitization is the catastrophe (CAT) bond. The insurer (or reinsurer) reduces portfolio risk by issuing CAT bonds.

The insurer issues CAT bonds which are purchased by investors. If an insured event occurs, the investors bear the loss. The payment of interest and principal to investors will depend on the amount of the loss. If the insured event does not occur, investors will be repaid in full. CAT bonds are used to protect against the risks associated with extreme weather (hurricane, earthquake, etc.). These financial instruments are important for insurance companies because they can reduce risk exposure and transfer it to the capital market.

Agricultural Insurance is a means of protecting agriculture from financial losses. Crop insurance not only stabilizes the farm income but also helps the farmers to initiate production activity after a bad agricultural year.[12] Farmers want to protect themselves from the risk (droughts, floods etc.) that endanger their production (crops, livestock etc.) and buy an insurance policy. They transfer risk to the insurance company. On the other hand, the insurance companies want to protect themselves from the risks that may arise in agriculture. Risk is repacked in CAT bonds and transferred to the financial market. Thus, the risk in agriculture does not have to be kept by the insurer or transferred to the state. It is taken over by investors who are willing to take the risk.

In 2006 Mexico issued CAT bonds to provide protection from earthquakes. The bonds were underwritten by Swiss Re and issued by CAT-Mex Ltd and $160 million was collected for earthquakes of 8.0 or greater on the Richter scale that occur in a defined area

[12] Raju, S. S., Chand, R. (September 2002): *Agricultural Insurance in India Problems and Prospects*, National Centre for Agricultural Economics and Policy Research (Indian Council of Agricultural Research), NCAP Working Paper No. 8, March, 2008 and Factors Affecting Their Use, United States General Accounting Office, pg.1.

in Mexico and $290 million for earthquakes of the same magnitude occurring in either of two other zones. If an earthquake of this strength occurs, investors lose their entire principal, which is transferred to the state.[13] A similar scheme may be used for flood and drought, livestock death and the like.

Soon CAT bonds began to be issued in several tranches. In June 2007 The Goldman Sachs developed the first collateralized catastrophe risk obligations (CRO) or catastrophe CRO. Gamut Reinsurance Ltd (Gamut Re) is a SPV which issued collateralized catastrophe risk obligations (CRO) and the sponsor of the securitization is Nephila Capital.[14] The funds raised by Gamut Re were used to source a diversified portfolio of natural catastrophe risks. Gamut Re issued more tranche bonds with the value of $310 million:

Table 1. Gamut Re securitization

Class	Size(mm)	Moody's/S&P	Pricing
A	60	Aa3/A-	L + 140 bps
B	120	Baa3/BBB-	L + 300 bps
C	60	Ba3/BB-	L + 700 bps
D	25	NR/NR	L + 1.500 bps
E	45	NR/NR	Equity

Source: PR Newswire, available at: www.prnewswire.com/news-releases/gamut-re-notes-placed-as-first-primary-catastrophe-risk-cdo-58069052.html

Catastrophe Collateralized Risk Obligations (CRO) was underwritten by Goldman Sachs and Swiss Re Capital Markets.[15]

Serbia is exposed to losses in agriculture arising from natural disasters, especially droughts, floods and hail. Agro meteorological conditions have a significant impact on the worsening of yield position of the Serbian agricultural sector.[16] The possibility of applying asset securitization would allow insurance companies to transfer risks to the financial market. Therefore, it would raise the interest of the insurer for agriculture. It is essential that farmers understand that there is no development of agriculture without insurance. It is not realistic to expect that losses due to weather calamities are covered from the state budget. Agricultural risk should not be covered by the state, but by the financial markets.

[13] Skees, R. J., Barnett, J. B., Murphy, G. A. (2007): *Creating Insurance Markets for Natural Disaster Risk in Lower Income Countries: The Potential Role for Securitization*, 101st EAAE Seminar - Management of Climate Risks in Agriculture, Berlin, Germany, July 5–6, pg. 5.

[14] Nephila Capital Ltd., the Bermuda-based investment manager specializing in catastrophe reinsurance and weather risk, is the manager of the vehicle. Nephila is the first asset manager to apply its expertise in the natural catastrophe sector using CDO technology on an actively managed basis.

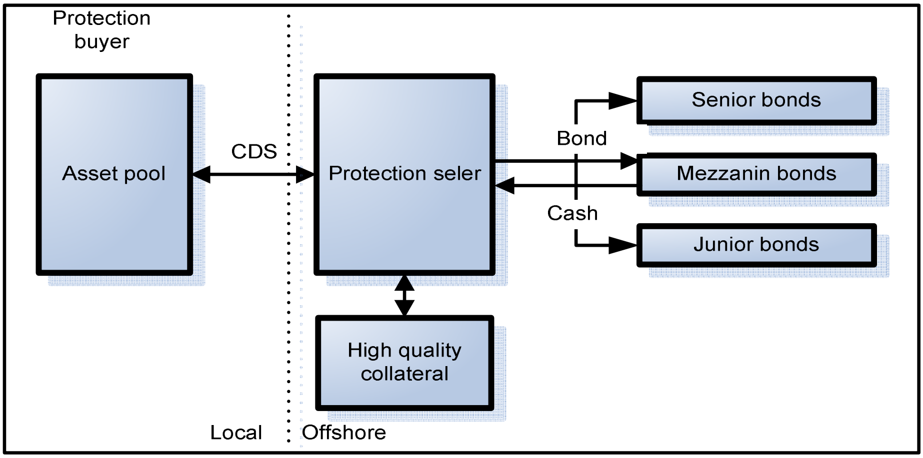
[15] PR Newswire, http://www.prnewswire.com/news-releases/gamut-re-notes-placed-as-first-primary-catastrophe-risk-cdo-58069052.html

[16] See in Đuričin, S., Bodroža, D. (2013): *The impact of drought on yield position of the group of enterprises from agriculture sector*, Economics of Agriculture, IAE, Belgrade, vol. 60, no. 1/2013, pg. 25-38.

In order to protect against flooding, drought and hail, insurance companies can issue CAT bonds. However, it should be noted that in the later stages of development of the financial and securitization markets in Serbia, cross-border securitization ought to be allowed. In the domestic financial market, there are no hedge funds willing to take a risk by purchasing equity tranche. Securitization allows the agricultural risk to be transferred out of the country in transition if the CAT bonds are purchased by international investors.

An important tool in protecting the insurer is *synthetic securitization*, which allows transfer of credit risk in the financial market. Insurer attempts to transfer risk to other participants in the financial market. The risk transfer is done by credit default swaps (CDS). The originator buys the guarantee to be protected against credit risk because it may happen that the borrower fails to fulfil its obligations. The seller of the protection (insurer) is willing to take a risk and receives a commission for the service. Most often it is the insurer who specializes in protection against credit risk (monoline insurer), but the seller of protection may be the bank or SPV as well.

Graph 2. Synthetic securitization



The buyer of protection (originator) enters into swap with insurer and transfers the credit risk of the portfolio to the insurer. In other words, it buys protection from possible default loan from the insurer. The insurer obtains commission for this service and if the default occurs, the insurer must indemnify the originator. In synthetic securitization the assets are not transferred to the insurer, but remains in the originator's balance sheet. By using credit default swaps (CDS) only risk is transferred, but not the ownership of assets.

The insurer issues collateralized debt obligations (CDO) or collateralized synthetic obligations (CSO) that sells to investors. When a credit event occurs, the insurer pays according to the agreement, and then forwards the loss to investors, according to the seniority of tranches.

The adoption of the Law on securitisation and development of financial derivatives are needed to implement the synthetic securitization in Serbia. The insurer will carry on securitization, without buying the assets, and the risk will be passed on to investors.

Furthermore, the use of credit default swaps (CDS) might protect the banks that have approved agricultural loans. Synthetic securitization allows banks to retain assets in the balance sheet, but to transfer the risk to the insurer. The insurance company takes the risk but transfers it to the financial markets over synthetic securitization.

Conclusion

The application of asset securitization as a form of financing is widely used not only in developed countries but also in countries in transition and developing countries. Claims arising from contractual relations in agriculture are a potential source of funding. Asset securitization means that the claim can be used as collateral. Sales of agricultural loans enable banks to receive cash funds that will be used to grant new loans. Therefore, asset securitization would allow diversification of funding sources and the influx of funds to finance agriculture. Also, securitization allows hedging. In addition to the classical form of securitization in which the securities are issued on the basis of agricultural loans there may be future flows securitization, securitization under repurchase agreement and warehouse receipt, synthetic securitization and securitization to transfer the risk through CAT bonds.

Serbia, like most countries in transition, has a problem to finance agriculture. Traditional sources of financing through the banking system are not sufficient. Furthermore, there is a problem to transfer risk in agriculture. The first step is the adoption of the Law on Securitization of receivables in Serbia. The existence of a legal framework would stimulate banks, insurance companies and leasing companies to sell their receivables from the agricultural sector.

The possibility of selling agricultural loans would stimulate the originators in Serbia to grant new loans and finance agriculture. The originator who can sell the loan increases its liquidity, profitability and reduces risk. It is also stimulated to obtain funds from the sale of the loan and use it for new lending activities. In order to develop securitization of agricultural loans in Serbia, the active role of the state is desirable. There are two possibilities. The first is that the state agency buys agricultural loans and to make the first securitization. Another possibility is that the first securitization will be done by the private sector, which had strong support from the state. The support of the state may first include the guarantees for issued securities. Given that the Serbian government gives subsidies to agricultural loans, the collateral for the first securitization could be the subsidized loans.

Securities supported by agricultural loans should be medium-term, with a maturity of 5 to 10 years. It is also necessary to issue more classes of the bonds. Although structured securities are more complex, they may attract different types of investors. The issuer, regardless of the fact whether it is public or private SPV, must retain the equity tranche. Guarantees for securities may be given by the government or the private sector (insurance companies, banks). These guarantees enable securities to obtain high rating, so the demand is higher. Likewise, one of the classes of the bond (older or mezzanine) should have the guarantee of an international organization (for example, IFC). The application of the guarantee of the international organization will lead to higher rating of the bonds. In addition to this, credit enhancements of transactions can be provided by subordination through the issuance of more classes of bonds, while overcollateralization, excess spread and cash reserve funds.

The adoption of the Law on securitisation would allow the use of future flows securitization in agriculture. The transaction will enable agricultural producers to sell receivables that will occur in the future from the sale of the products (livestock, crops) to SPV. In this way, they receive grants and do not have to wait for the last to sell products. Financing can be done through securitization in which the stored goods are collateral, through repurchase agreement or by using the warehouse receipt. An important condition for the use of repurchase agreement and the warehouse receipt as collateral for the issue of securities in Serbia is fulfilled - existence of public warehouses.

The application of asset securitization would allow insurance companies to transfer risk of the portfolio to financial markets. The transfer of risk would have a stimulating effect on insurers to offer new forms of insurance. The issuance of CAT bonds may allow insurers to transfer the risk of drought, flood or hail to the investors. In addition, synthetic securitization, through credit default swaps (CDS), allows the sale and transfer of credit risk to financial markets.

In the end, it is important to note that the possibility to sell receivables from agriculture will stimulate banks, insurance companies and leasing companies to create new receivables. The sale of receivables lead to cash inflows in agriculture, increase competition, decrease interest rate and lending is more affordable. The experience of other countries in transition shows that asset securitization leads to the creation of new financial products that further simplify and improve the financing of agriculture.

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PRIMENA SEKJURITIZACIJE AKTIVE U FINANSIRANJU POLJOPRIVREDE U SRBIJI

***Vera Mirović*[17], *Dragana Bolesnikov*[18]**

Rezime

Rad nastoji da ukaže na mogućnost primene sekjuritizacije aktive u finansiranju srpske poljoprivrede. Državne subvencije i bankarski krednititi ne obezbeđuju dovoljno novčanih sredstava, pa su potrebni novi izvori finansiranja. Poces sekjuritizacije aktive bi omogućio priliv novčanih sredstava za odobravanje novih poljoprivrednih kredita, ali i zaštitu od rizika. Poljoprivredni krediti mogu biti kolateral za emitovanje hartija od vrednosti, ali se kao kolateral mogu koristiti skladišnica, repo ugovori i prihodi koji će nastati u budućnosti. Sekjuritizacija aktive bi omogućila i prenos rizika sa osiguravajućih kuća na finansijsko tržište, preko CAT obveznica i svopa kreditnog neizvršenja. Iskustva zemalja koje primenjuju strukturirano finansiranje u poljoprivredi su dragocena za prve korake u primeni sekjuritizacije aktive u Srbiji

***Ključne reči**: finansiranje poljoprivrede, sekjuritizacija, kolateral, osiguranje.*

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