

## FINANCING AGRIBUSINESS: INSURANCE COVERAGE AS PROTECTION AGAINST CREDIT RISK OF WAREHOUSE RECEIPT COLLATERAL

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### Summary

*Financing agribusiness by warehouse receipts allows the agricultural producers to obtain working capital on the basis of agricultural products stored in licensed warehouses, as collateral. The implementation of the system of licensed warehouses and issuance of warehouse receipts as collateral for obtaining a bank loan is supported by the European Bank for Reconstruction and Development and it has had positive results in the neighbouring countries. The precondition for financing this project was to establish a Compensation Fund for providing insurance coverage for licensed warehouses against professional liability.*

*However, in the lack of an adequate legal framework, the operational risk is possible to occur. Bearing in mind that Serbia has a tradition in insurance industry and a number of operating insurance companies, the issue is that of the economic benefit and the method of insuring against this risk. The paper will present a detailed analysis of the operation of the Fund, capital requirement, solvency margin and a critical review of the Law on Public Warehouses which regulates the rights and obligations of the Compensation Fund in the case of loss occurrence.*

**Key words:** *warehouse receipt, licensed warehouses, Compensation Fund, Professional Liability Insurance, capital requirement, solvency margin.*

**JEL:** *Q14, G22*

### Introduction

The concept of public warehouses is deemed to refer to licensed warehouses which must have the required assets and professional staff and/or comply with all the relevant

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requirements for practising the warehousing activity. Also, it is necessary that they always be capable of maintaining a high degree of technical and financial performance (Varangis, Larson, 1996). In the economically developed countries, the concept of public warehouses has practically existed for more than half a century and has produced very successful results as a model of securing financial support to agribusiness. "Protection of agro-industry ... of vital importance for economic and social development of a country." (Domazet et al., 2016)

The licensed warehouses operate by providing storage for agricultural products and issuing warehouse receipts to the owner of the stored products. The warehouse receipt functions both as a security paper and a guarantee document whereby its holder confirms his ownership over the collateral of goods kept under the required conditions in a licensed warehouse. The cycle of the loan granted against the warehouse receipt as a financial instrument is as follows: a warehouse receipt may be used by its holder to trade on a commodity exchange or to apply for a bank loan to finance production, at which occasion the bank enters a lien on the lien warrant part of the warehouse receipt (Jovičić, Jeremić, Milicevic, Zeremski, 2014). Banks may grant loans in the amount of the collateral, equal to the risks they are willing to bear. As a rule, the amount of granted loan is 60-85% of the market value of the stored goods (Hollinger, Rutter, 2009). With increasing confidence in the licensed warehouses operation and control systems, banks are increasing the amount of the loans they grant. At the time of the loan maturity, the borrower pays off the bank loan, covers the costs of storage and retains the actual cash balance from selling the warehouse receipt at the best price. This ends the credit relationship and the warehouse receipt is cancelled.

For agricultural producers, this type of loan significantly reduces the necessary documentation and the time needed to obtain the loan. On the other hand, banks are allowed to extend their credit lines to individual agricultural producers as clients whose income depends on the seasonal nature of their work.

In Serbia, expanding bank credit lines to the business of small agricultural producers has been very modest so far, because of the high expenses of obtaining credit history of the borrower and the lack of movable property collaterals, as well as due to the non-regulated land ownership structure. The problem becomes more complicated due to the lack of loan placements and the trained banking employees, capable to assess the credit rating of potential borrowers. On the other hand, few agricultural producers and private farms possess the expertise in making investment plans needed for obtaining these loans (Jovičić, 2016).

By using warehouse receipts as security papers and through the establishment of Compensation Fund as a guarantor that the public warehouses will meet their obligations, the system of licensed warehouses stimulates banks to grant loans to agricultural producers. This is supported by the adoption of clear legal framework, which partly relates to the compulsory liquidation of stocks on the basis of a warehouse receipt if the loan becomes uncollectable in due time, thus allowing the banks to properly invest their funds at a

minimum risk. In this way, the confidence of banks is gained if they can be convinced that good and comprehensive legal framework and insurance industry operate to protect the interests of depositors in public warehouses in the cases when the outstanding loan is collected through warehouse receipts.

### **Methodology**

This paper analyses the risk-adjusted capital requirement of the Guarantee Fund, as a security guarantor of collateral in the loan arrangements of the user of services of licensed warehouses. The survey is conducted in support of the significance of professional liability insurance in funding the agricultural producers and protecting the business of licensed warehouses and the Compensation Fund against credit risk. Statistical and mathematical computing is based on a quantitative statement of capital requirement of the Compensation Fund, made by analogous computing by applying the methodology of calculating the solvency margin in general liability insurance.

In this analysis, the solvency margin is computed according to the claims method applied in the general liability insurance. The use of such methodology is justified, since the Compensation Fund is legally obliged to possess a sufficient capital amount to be able to meet all contingent liabilities for damages to third parties. The quantitative statement is performed by using the relevant coefficients (0.26% for the incurred claims up to 7.0 mil. Euros and 0.23% for the outstanding claims in excess of 7.0 mil. Euros), with the obtained amount showing the level of capital required for safe business. In the non-life insurance, the capital requirement for safe business exceeds the solvency margin by 2 to 2.5 times.

The time span used for computing is 3 years, from 2011 to 2014, having in mind that the Compensation Fund was incorporated in 2010 and that, during that period, the Fund achieved the initial negative business and financial result. This time span is sufficient to present the trends of business.

The basic data used in this calculation are taken from the official balance sheets of the Compensation Fund for the relevant period (<http://www.kompenzacionifond.gov.rs> (visited on 3rd March 2015) and of the insurance company, which were published in accordance with positive legal regulations.

### **Characteristics of Compensation Fund and Professional Liability Insurance**

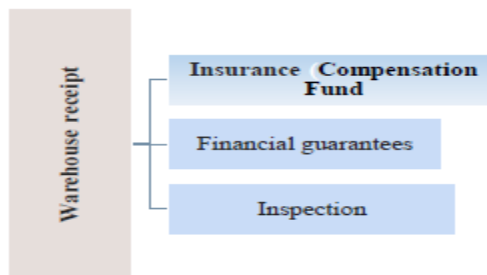
In the countries of Central and Eastern Europe, the warehouses and silos are owned by large state companies (in charge of strategic reserves) and/or small local groups not interested in having any goods stored in their licensed warehouses. On the other hand, the warehouses that wish to provide services of licensed warehouses and issue warehouse receipts often do not meet the bank requirements. (Kovačević et al, 2016) Under such conditions, the risk of proper storage and preservation of quality and quantity of the stored agricultural products is too high for financial institutions and banks to accept the warehouse receipt as collateral for loans they grant.

In order to be able to accept the warehouse receipts of such warehouses as collateral for granting loans, the banks are looking for the ways to reduce the credit risk (Stanković, 2010). The introduction of financial guarantees and insurance in such system has a dual role: to cover the contingent losses sustained by depositors in the event of bankruptcy of a public warehouse, theft or fraud and to establish trust in the warehouse receipts as collateral for financing the agricultural producers.

The role of insurance (Birovljev et al., 2015) is crucial for raising funds against warehouse receipts, since it provides the system participants with the comfort and certainty that the value of the collateral, its quantity and quality will not be compromised by the employees in the warehouse (Ace Global Depository). Namely, the owner of the warehouse is obliged to take out the insurance coverage not only for his facilities and the products stored in them, but also against the risks pertaining to his staff (professional liability insurance of employees). In order to protect depositors and banks, any entity engaged in issuing warehouse receipts is legally obliged to have insurance both against the standard property risks such as fire, flood and theft (to the amount of not less than the value of the insured property) and the professional liability of the warehouse employees. In Serbia, therefore, the licensed warehouses are legally obliged to take out, with the Compensation Fund, the insurance coverage against the risks not included under the standard insurance coverage, i.e. the risk of loss of value of a warehouse receipt due to professional liability of warehouse employees (Law on Public Warehouses, 2009).

In addition to the insurance coverage, proper licensing and inspection of the warehouses is needed if the warehouse receipts are to be regarded as eligible collateral. Accordingly, it is of vital importance to establish a state regulatory agency that would deal in licensing and inspection of licensed warehouses. The competent state authorities should ensure that licensed warehouses meet the statutory requirements and should perform a continuous supervision over the warehouses. This would eventually lead to an equal treatment of all warehouse receipts, regardless of which warehouse issued them. Strict inspection, financial guarantees of the warehouse and the insurance coverage are the pillars of protection and security of a warehouse receipt as collateral, for both financial institutions and depositors (Fig. 1).

**Figure 1.** Pillars of Protection of Warehouse Receipt



*Author's analysis*  
*Source: Jovičić, 2016*

Where a strict control of the warehouses and high technical and technological standards are lacking and are not required for membership in the Compensation Fund, the good warehouses are actually co-financing the poor ones. In fact, a good warehouse, that meets the standards and owns the required equipment and professional staff for proper products storage and value preservation is less susceptible to operational failures, whereas the poor storage is more prone to omissions in work, due to inadequate technology and unskilled staff - this increases the risk of the value decrease of stored products. If this reciprocity does not become more selective, a higher quality warehouses will be reluctant to apply for membership in the Compensation Fund.

In some countries, where the establishment of Compensation Funds inspired much doubt, it has been considered more convenient that banks engage property managers to select and control the warehouses, ignoring their licenses issued by the state agency (IFC, 2013). In any case, though, the control over the warehouses and selective approach to the issuance of warehouse licenses should not be less important than the comfort provided by the existence of the Compensation Fund.

In the countries which implemented the system of public warehouses, the establishment of the Compensation Fund is a most constantly resisted requirement of the European Bank. The primary reason is that the initial capital of the Compensation Fund must be raised from the government resources, which additionally burdens the state budget (Milanović et al., 2017). The Compensation Fund (Indemnity Fund) is necessary in order to cover the risk of contingent fraud or negligence on the part of licensed warehouses. As the Compensation Fund is financed solely from the membership fees paid by the warehouses, public funds are only necessary to provide for the minimum start-up capital.

The appropriate insurance coverage is, anyway, a must. The additional need for the Compensation Fund originated from the inability to cover fraud and gross negligence under the standard insurance policy in those countries that lacked the tradition in insurance industry (which operates according to market principles) and did not yet develop tariffs for professional liability insurance, like the countries of the former Soviet Union. In Bulgaria, the suretyship insurance (insurance of outstandings) was not sufficient to protect banks and depositors, for two reasons: the first is that the warehouse insurance contract covered only 10% of deposited grain value; the second is the lack of professional liability policy on the insurance market (Hollinger, Rutter, 2009). An additional challenge in the implementation of this system was a capital injection required for this Fund from the government. The initial capital for the establishment of the Fund is mainly raised from the state budget. The European Bank for Reconstruction and Development suggests pooling of several warehouses for easier initial capital raising for the Fund establishment. A positive example is Kazakhstan, where 15 largest grain silos established the Compensation Fund (Hollinger, Rutter, 2009). According to the manner of the initial capital raising, the obligations of the warehouses towards the Compensation Fund in terms of membership fees and insurance contributions, as well as to the right of priority in the collection of indemnity and recourse claims, there are various types of Compensation Funds.

The premium and/or obligation of a warehouse towards the Compensation Fund can be determined in two ways: based on either the *size of storage capacity* (in Moldova) or *quantity of stored products* (in Hungary, Serbia and Bulgaria). Consequently, larger warehouses have higher obligations towards the Compensation Fund, which is in accordance with the size of coverage. Such method of the premium statement (which generally applies to all licensed warehouses) did not, in the long run, provide for the possibility of adjusting the premium for bonuses (premium discounts) for warehouses that reported no damages in the previous period and/or maluses (premium loadings) for the increased number of claims reported in the previous period. To that effect, the Compensation Fund should keep statistical records of the reported claims per all licensed warehouses, so as to differentiate between the responsible warehouses (rewarding them, by reducing their obligations towards the Fund) and less responsible ones (to which it would increase the level of due amount). *The value of stored grain, determined when issuing the warehouse receipt, serves both as the basis for concluding the insurance contract and for filing the claims for damages occurred on stored grain.* Compulsory insurance takes into account the cost price of the stored goods, while particular contracts concluded with deponents may be based on the sales and/or market price.

The expenses of public warehouse liability insurance are ultimately borne by the producers of deposited products, in the form of increased costs of warehousing services. Starting from the initial goal of establishing the Compensation Fund as an additional pillar of protection for banks granting loans, would lead to the conclusion that the banks themselves take on the risk of incurring bad debts which were covered by warehouse receipts. Accordingly, the banks, as risk takers, should take out the insurance coverage for warehouse receipts i.e. bear the insurance costs. In addition, it must be noted that not all depositors of agricultural products need to be loan borrowers; therefore, it is disputable whether all depositors should bear the costs of stored products insurance. Bulgaria has made a step forward in its law in this respect: deponents who have been granted a loan on the basis of stored grain collateral must pay for each tonne of the stored grain BGL 0.36 (0.18 \$) onto the account of the warehouse, and the warehouse shall make further payment to the Compensation Fund. The banks, in their turn, grant loans to the insurance coverage holders with stored goods collateral at the lower interest rate, on account of lower risk of incurring bad debts (credit risk). Hungary has a more liberal system of warehouse insurance – the coverage is taken for stored products only if required by depositors, and a warehouse is not legally obliged to have insurance in order to be licensed as public warehouse (Hollinger, Rutter, 2009).

In case of problems with loan repayment, a warehouse receipt, as collateral, should prioritize the enforced collection of creditor's claims over the claims of third parties. This requires a harmonization of other laws with the law on bankruptcy proceedings. The Indemnity Fund in the United States of America (USA) is actively involved in warehouses bankruptcy proceedings. They are able to react quickly and take control over the management of property and goods, the warehouse liquidation process and fulfilment of obligations to depositors and creditors.

## Compensation Fund in Serbia and Legal Framework

In Serbia, drafting of the Law on Public Warehouses began in 2005, when it was supported by the USAID's (United States Agency for International Development) financial and technical assistance. Unlike other countries in the region, Serbia adopted the Law on Public Warehouses for Agricultural Products only in 2009. During the enforcement of the Law and legal regulations, in the first half of 2010, the USAID supported the process of training the interest groups in how to apply the law.

Already at the stage of the Law adoption, the EBRD (The European Bank for Reconstruction and Development) provided for 50 million Euros to finance loans granted against warehouse receipt collateral, and, upon its initiative, during 2010/2011, the United Nations Food and Agriculture Organization (FAO Food and Agriculture Organization of the United Nations) funded a project for the promotion of public warehouses, creation of the information system for warehouse receipts and register of public warehouses (Mastilović, 2011)<sup>4</sup>.

The adoption of the Law on Public Warehouses for Agricultural Products, Article 43, defined the establishment, activity and managing bodies of the Compensation Fund in Serbia. The Compensation Fund, which is a legal entity, was established with the aim to compensate, on the basis of a warehouse receipt, for damages occurred to stored agricultural products for which the public warehouse is responsible.

Under the Program for Allocation and Use of Subsidies in Agribusiness, Forestry and Water Management, adopted by the Serbian government for the year 2009 (Budget Law of the Republic of Serbia, Official Gazette of the RS, No. 120/08), the raising of the initial capital was provided for the establishment of the Compensation Fund. Consequentially, during 2010 and 2011, 80 million Dinars were allocated and paid to the Fund's account for the formation of the initial capital (Grant Thornton Revizit, 2011).

In addition to the budget of the Republic of Serbia, the funds for the establishment and operation of the Fund were provided by:

- Contributions of public warehouses stipulated under the Law on Public Warehouses,
- Income of the Fund, earned on investments,
- Donations and other legal resources.

Obligations of public warehouses towards the Compensation Fund are:

- Bank guarantees which are irrevocable, unconditional and payable on the first demand,

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4 Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia financed the Project titled *Contemporary Approach to Managing Grain Culture Warehouses*, with the aim to primarily conduct a survey of the existing storage capacities and technological and technical conditions in 141 warehouses/silos in Serbia, and then regulate the procedures and conditions for issuing licenses to warehouses. The Project was completed in May 2011, by the professional team from the Institute for Food Technology in Novi Sad.

- Annual membership fees,
- Monthly premium for insurance coverage against professional liability.

For the entry into the Register of Public Warehouses, it is necessary that a warehouse submits evidence of payment of membership fees to the Compensation Fund and a bank guarantee issued to the benefit of the Fund. The membership fees are paid as a single annual lump sum. Moreover, a warehouse is obliged pay monthly EUR 0.12 per tonne of stored agricultural products in Dinar equivalent at the mean rate of the National Bank of Serbia (NBS) at the date of payment, to guarantee that the holder of the warehouse receipt shall be allowed to collect his claims for contingent damages to the stored products due to errors and omissions of the warehouse employees. For the same reason, a public warehouse is also obliged to deliver the Compensation Fund a bank guarantee which is irrevocable, unconditional and payable on the first demand, to the amount of 10% of the value of goods that can be stored in the warehouse (considering its total registered capacity) at the price of EUR110 per tonne of capacity, with a validity period exceeding the expiry of the work permit by 60 days.

In order to protect the real value of capital, the Compensation Fund is legally permitted to invest its free funds. To achieve the best financial results and the highest possible investment security, the may invest into:

- Purchase of securities issued by the Republic of Serbia and/or,
  - Term deposits with commercial local banks.
1. The rights and obligations of the Compensation Fund and public warehouses are defined under the Law on Public Warehouses (*Službeni glasnik RS*, br.41/2009). As regards the rights and obligations of the warehouses under the Articles 38 and 39 of the aforementioned Law, we have a few issues of concern, as follows:
    - ✓ The insurance coverage is provided only for the holder of a warehouse receipt (depositor or a lien warrant holder), whereas the warehouse is obliged to provide coverage against professional liability. From a legal point of view, the liability insurance contract is a regulated legal relation between three parties: the Insurer who, in consideration of the collected insurance premiums, takes over the adverse effects of a particular loss event; the Insured, who is relieved from adverse effects of civic liability; and a third party, who is paid the insurance indemnity by way of compensation for contingent damages arising from the loss event (Kovačević, Šulejić, 2006). So, by way of insurance coverage and in consideration of the insurance premium payment, the public warehouse transfers its liability to the Compensation Fund, whereas the Compensation Fund effects the insurance coverage and accepts the risk of occurrence of a loss event.

Under the Article 39 of the Law on Public Warehouses, whereby a public warehouse is bound to pay compensation for damages, the meaning and function of the existence of the Compensation Fund is lost, as is the interest of the warehouse to pay the insurance premium, in consideration of which it receives no compensation.

2. Recourse claims are possible only in the case of criminal liability, which is deter-



mined in court. If no distinction is made between criminal and civic liability, the purpose of insurance (being, indeed, an indirect economic protection of the Insured and/or the obligation to pay the agreed indemnity to the Insured or a third party in case of occurrence of the event insured against) is lost. The holder of a warehouse receipt is exposed to a risk of errors and omissions during the enforced sale of agricultural products. The law prescribes that: "in the case the debtor and/or lienor has suffered damages in the process of sale of agricultural products, upon enforced collection proceedings for a non-existing and/or non-due claim or the paid-up debt, due to errors and omissions in the sale or for any other reason, the injured party may assert his right to compensation by filing a lawsuit against the person responsible for the damage." (*Službeni glasnik RS*, br.41/2009, Article 32).

- ✓ It is unclear why the Compensation Fund does not cover the risk of errors and omissions during the enforced collection proceedings, as well, if it has been established to cover the damages on stored goods due to operational errors and omissions (the liability risk), on the basis of a warehouse receipt.

### Results of Calculation of Equity Capital of the Compensation Fund and Discussions

The capital requirement of the Compensation Fund is determined based on the valuation of the assumed risk, as the ratio between the equity capital of the Compensation Fund, on the one hand, and the average quantity and value of goods stored in the public warehouses during the given period, on the other hand. According to the calculation made by the Compensation Fund, the equity required for the payment of damages occurred in the public warehousing system should amount to 4% of the value of the stored products. The Table 1 below presents the Compensation Fund equity fluctuations in the period from 2010 to 2015.

**Table 1.** Compensation Fund Balance Sheet Items per Annum in Thousand RSD

item/year	2010	2011	2012	2013	2014	2015
<b>1. capital</b>	<b>28.065</b>	<b>39.679</b>	<b>25.131</b>	<b>14.029</b>	<b>410</b>	<b>1.396</b>
<b>2. total income</b>	<b>50.083</b>	<b>34.408</b>	<b>7.344</b>	<b>10.407</b>	<b>8.191</b>	<b>8.622</b>
2.1. <i>other income</i>	83	4.408	7.344	10.407	8.191	6.622
2.2. <i>income from budget</i>	50.000	30.000	-	-	-	2.000
<b>3. total expenditure</b>	<b>23.123</b>	<b>22.752</b>	<b>21.642</b>	<b>21.306</b>	<b>21.415</b>	<b>7.519</b>
3.1. <i>payroll expenses</i>	13.707	14.188	12.860	15.003	15.163	6.100
3.2. <i>use of goods and services</i>	8.107	8.309	8.680	6.224	6.016	1.419
3.3. <i>other costs and expenses for non-financial assets</i>	1.309	255	102	79	236	0
<b>4. cash balance</b>	<b>26.960</b>	<b>616</b>	<b>1.318</b>	<b>919</b>	<b>672</b>	<b>2.774</b>
<b>5. financial result</b>	<b>26.960</b>	<b>11.656</b>	<b>-14.298</b>	<b>-10.899</b>	<b>-13.224</b>	<b>1.103</b>

Source: Author's analysis on the basis of the Balance Sheet and Profit and Loss Statement at the official website: <http://www.kompenzacionifond.gov.rs>

In 2010, the Fund equity amounted to 28,065 thousand dinars (1,105 thousand Dinars in non-financial assets - property and equipment and 26,960 thousand in financial assets). In the 2011 equity structure, the non-financial assets (property and equipment) accounted for 1,063

thousand dinars whereas the financial assets (funds and short-term receivables) accounted for 38,616 thousand Dinars. In 2012 and 2013, there was a significant equity downfall, since the negative operating result of the Fund was covered to the debit of equity capital; consequentially, as at 31.12.2013, the equity amounted to only 14,029 thousand Dinars. The equity capital requirement calculated as 4% of the value of stored goods in 2013 amounted to 40 million dinars, whereas the value of actual equity capital was three times less. As at 31.12.2014, public warehouses had total registered storage capacity of 55.680 tonnes, with average monthly occupancy of 70%, meaning 38,976 tonnes at average price of Euro 5,846,400 (Euro 150 per tonne). Therefore, the calculated equity requirement of the Compensation Fund in 2014 would amount to 28,314,000.00 Dinars. (<http://www.kompenzacionifond.gov.rs>, 3.3.2015).

However, based on the financial statements, the real equity capital value in 2014 amounted to only 410 thousand dinars. Having in mind that it was expected that the number of licenced warehouses was going to grow in future, the capital requirement should be much higher, as well as the premiums paid by the warehouses for insurance coverage. By contrast to what was expected, in 2015 a large number of warehouses left the system, so that at this moment, out of 16 public warehouses, only two are left.

For the purpose of comparison between the equity capital requirement of the Compensation Fund and the calculated equity capital requirement of insurance companies, hereinafter, we shall have calculated the solvency margin of general liability insurance by the methodology prescribed under the provisions of the valid 2014 insurance regulations. Since the premium method for determining the solvency margin is not relevant for the analysis regarding the Compensation Fund, all the calculations and analyses shall have been based on the margin calculated by the claims method.

**Table 2.** Solvency Margin as per Claims Method

REPORTING FORM - CLAIMS METHOD								
No.	Type of insurance	Average amount of insured claims in past 36 and/or 84 months <sup>1)</sup>	Coefficient	INCURRED CLAIMS (in the past 12 months)		Coefficient (coinsurance and reinsurance) K ≥ 0.5	Solvency margin	
				Total	Self-retained			
01	02	03	04	05	06	07=06/05	08=03*04*07	
<b>GENERAL LIABILITY INSURANCE</b>								
2	Incurring claims - up to 7,000,000 EUR	142.433.731,47	0,26	143.007.289,85	147.339.534,85	1,0303	12.718.212,10	
3	Outstanding amount - over 7.000.000 EUR	0,00	0,23	0,00	0,00		0,00	
4	<b>TOTAL (2+3)</b>	<b>142.433.731,47</b>		<b>143.007.289,85</b>	<b>147.339.534,85</b>		<b>12.718.212,10</b>	

*(Author's analysis based on the sample from the Insurance Department according to the applicable legal regulations)*

During 2014, the Compensation Fund was submitted claims for compensation of damages for which a public warehouse for agricultural products “*Graniko*” *Ltd. Uljma* was responsible, by the following entities: Banka Intesa a.d. Beograd (to the amount of 80,241,062.00 Dinars), the Republic Directorate for Commodity Reserves (to the amount of 364,561,179.00 Dinars), and by Komercijalna Bank a.d. Beograd (to the amount of 61,887,126.00 Dinars). Total liabilities of the Compensation Fund for submitted claims amounted to 506,689,368.00 Dinars.

In the further analysis, we shall have calculated the solvency margin of the Compensation Fund on the basis of margin stated in Table 2:

1. In order to compare the claims incurred by the Compensation Fund with the presented solvency margin calculated as per claims method, we shall take the average claims amount of the Fund in a three-year period, of 168,896,456.00 Dinars.
2. Then we shall apply the percentage share of the calculated solvency margin in the average amount of incurred claims (8.93%<sup>5</sup>) on the three-year claims average of the Compensation Fund.
3. Thus calculated solvency margin of the Compensation Fund shall have amounted to 15,081,126.00 Dinars.
4. Since the non-life class of the insurance industry is required to have the equity capital exceeding by 2 to 2.5 times its solvency margin, we conclude that the calculated equity capital requirement of the Compensation Fund for 2014 should have amounted to 30 - 38 million Dinars.

It is characteristic of the funds to operate with losses in their first business year and that, as membership increases, the payments increase as well, gradually leading to profitability and achievement of positive business results. Therefore, the initial capital is important in the first year of any fund, as is the role of the government, since the initial capital is mainly raised from the state budget funds and the shares of the storekeepers. In the neighbouring countries, the resources that the Fund collected from annual membership fees of licensed warehouses and income from investments can only be used to cover the payroll expenses, whereas other income, like warehouse payments for insurance coverage of warehouse receipts and payments from the state budget represent an equity capital which is strictly controlled.

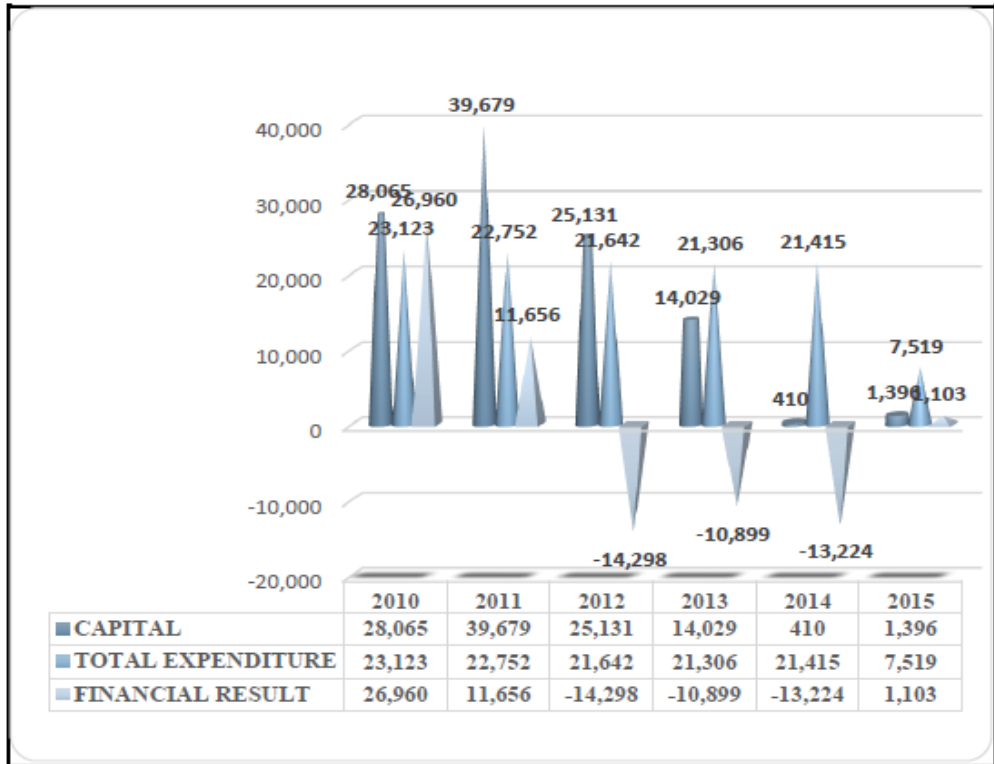
The largest share in the 2010 and 2011 revenues of the Compensation Fund was accounted for by payments from the budget to the amount of 80 million Dinars, while a significantly smaller share was accounted for by the payment of membership fees of public warehouses and/or income from investments. The share of the Fund's expenditures in the total income of the Fund in 2010 was 46.16%, whereas in 2011, it increased to 62.49%. It is alarming that in 2012, 2013 and 2014, total expenditures exceeded the total income by approximately 2.5 times. In the structure of total expenditures, the largest share was accounted for by the payroll expenses (64% on the five year average).

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5 Percentage based on the representative sample from the General Liability Insurance Department.

Development of the system of public warehouses was not at the expected level, despite the reduced expenses and achieved positive business result of the Fund in 2015<sup>6</sup>. According to the available data, in 2014, there were 16 licensed warehouses with good conditions for storing wheat and corn, of the total available storage capacity of 170,000 tonnes (<http://www.kompenzacionifond.gov.rs> (3.3.2015)). Most of the warehouses left the system and only two were left in the Compensation Fund. Causes for this should be sought in the early mode of operation and spending.

**Graph 1.** Capital and Total Expenditure Fluctuations and Financial Result of Compensation Fund per Annum



*(Author's analysis)*

Recognising that the underlying principles of the insurance industry are mutuality and solidarity, and the principle of functioning of insurance coverage is the payment of damages and sums insured, we can conclude that the Compensation Fund, though established to insure the warehouse receipts against professional liability, did not operate according to the principles and rules applying to insurance companies. Since the business of the Compensation Fund is not economically efficient and the Fund is

6 The Compensation Fund Profit and Loss Statement did not show the obligation for the claim payment, since Public Sector IAS were applied. Cash basis is defined as the principle of accounting of income and expenditures at the moment of collection and/or payment.

not capable of maintaining the required level of equity capital in its business, it cannot figure as the guarantor of the fulfilment of obligations which may arise under the warehouse receipt insurance.

### **Conclusions and Recommendations**

Multiple protection of depositors and holders of warehouse receipts as a collateral, in terms of insurance of quality and quantity of the stored goods, is important for the system to become functional in practice. In particular, it is important for loan granting banks to be certain of the validity of a warehouse receipt as a security paper supported by safe collateral. Therefore, the law provides for three levels of protection: the first is achieved through proper licensing and inspection of warehouses; the other through the establishment of financial guarantees and the third through the compulsory insurance of public warehouses against fraud and professional liability of employees.

The Serbian Compensation Fund was established in 2010, when the government allocated 80 million Dinars for raising the Fund's initial capital. The law stipulated that the licensed warehouses had to take out the professional liability coverage with the Compensation Fund, and that, in case of damage to stored products, the warehouses were obliged to compensate the holder of a warehouse receipt. In cases when the Compensation Fund pays out the damages, it shall be automatically assigned the right to recourse against the warehouse. Pursuant to the Article 38, Paragraph 2 and Article 39 of the Law on Public Warehouses, no distinction is made between civil and criminal liability (whereas the recourse claims are possible only on the merits of criminal liability). Thus defined liabilities of the Compensation Fund as the insurance coverage provider are actually contrary to the fundamental principles of the insurance industry (solidarity and mutuality) because the liability insurance represents a contractual legal relation between three entities: 1) the Insurers who charge the insurance premiums, on the basis of which they assume the property losses due to a particular adverse occurrence, 2) the Insured, who is released from the effects of actual civic liability by paying an insurance premium, and 3) a third party, indemnified under the insurance coverage for damages sustained due to such adverse occurrence. This brings us to the conclusion that the warehouse, which pays the insurance premium, is provided with no material coverage against the risk occurrence and that the Compensation Fund protects only the holder of the warehouse receipt (either a depositor or a bank).

The operation of the Compensation Fund, as regulated by the Serbian law, is not in accord with the standard insurance practice, because of the right to claim recourse against the warehouses in the case of the insured occurrence. Another important fact is that the Compensation Fund in Serbia operates at a loss, i.e. its income does not cover the operating expenditure – this is the main reason for the capital downfall beyond the stated equity requirement.

Perhaps the solution should be sought in combination and cooperation with the insurance companies. Serbia, on the one hand, indisputably has a large number of reputable insurance companies, with a tradition in transacting this type of insurance, under strict supervision of the state regulators, whereas, on the other hand, the Serbian Compensation Fund is economically

inefficient and financially unsustainable. Therefore, it would be economically more efficient if the insurance of warehouse receipts was transacted by insurance companies, operating by principles of solidarity and mutuality, as it would allow to restore confidence of all participants in the system (Warehouse Receipts Program) and its further development. Moreover, the state would have no obligation to finance the Fund by supplying its equity capital, which would significantly reduce the burden to the budget

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## FINASIRANJE POLJOPRIVREDE: OSIGURANJE U FUNKCIJI OBEZBEĐENJA KREDITNOG RIZIKA ROBNOG ZAPISA KAO KOLATERALA

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### Rezime

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**Ključne reči:** *robni zapis, licencirana skladišta, Kompenzacioni fond, osiguranje od profesionalne odgovornosti, zahtevani kapital, margina solventnosti.*

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