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THE INVESTMENT POLICY OF DEPOSIT GUARANTEE FUNDS UNDER CONDITIONS OF LIMITED DOMESTIC SECURITIES MARKETS

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Abstract. *Deposit guarantee (insurance) schemes accumulate funds on the basis of guarantee (insurance) contributions. Funds are invested into particular financial instruments in order to increase them. These funds have to be used to pay pay-outs to depositors in the case of the failure of insured members. Therefore, investments must be safe, liquid, and properly diversified. This is especially important to carry out properly for deposit guarantee (insurance) schemes of countries whose domestic securities market is limited. This paper presents an analysis on investment structure of deposit guarantee (insurance) schemes of European countries under conditions of limited domestic securities markets, identifying weak points, and providing conclusions on their improvement. Based on the experience of the Lithuanian Deposit Guarantee Scheme, the structure of investments is examined, pointing to the principal problems and weaknesses of investments under conditions of a limited domestic securities market. The key factors for the investment policy are derived as a result of this analysis.*

Key words: *deposit insurance, deposit guarantee, investment*

Introduction

Deposit Guarantee Schemes (hereinafter – DGS), based on the ex-ante contributions system cumulate funds to be used for paying pay-outs to depositors. Since the DGS collects money, money must generate money by investing the funds into certain financial instruments. Each DGS defines its own investment strategy (Demirgüç-Kunt, Kane, Laeven, 2008), but the underlying principle should be that investments can be easily converted to money within a determined period of time. In general, this must be achieved within seven days at most (Directive, 2014).

Unlike the other funds' investments, the DGS investments must possess the ability to be liquidated within a very short period of time, when it is necessary to pay the pay-outs to a large number of depositors (IADI, 2014; Žilinskas, 2011). Therefore, the safety and liquidity are the key issues for DGS investments. The risk-reducing diversification is the main instrument to meet these key issues (Bernet, Walter, 2009).

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1. Safety and liquidity of DGS investments

The safety of investments means that, in the first place, investments cannot be frozen, devaluated or subjected to other restrictions of use (Public Funds Investment Policy, 2014; DiNapoli, 2014). This means that at any point in time investments must be paid out to their owners upon first demand, i.e. DGS. The safety of investment can be achieved by investing into treasuries of states with a high credit rating, as well as deposits with central banks (Cosman, 2013; Cannon, 2013).

The credit rating is a financial evaluation of the credit worthiness of a debtor or governmental debt securities such as bonds (Alessi, Wolverson, Sergie, 2013). These are assigned by credit rating agencies such as Moody's, Fitch Ratings and Standard & Poor's and those that have a slightly different letter designations which represent the quality of a bond (Bond credit rating, 2009; Moody, 2015; Fitch Ratings, 2015; Standard and Poor, 2015). The EU Directive on deposit guarantee schemes provides that deposit guarantee (insurance) funds must be invested in a low-risk and sufficiently diversified financial instruments (Directive, 2014). Absolutely safe financial instruments are bonds which are both of the prime and high grades (Bond credit rating, 2009; Moody, 2015; Fitch Ratings, 2015; Standard and Poor, 2015).

If the problem of investment safety can be solved easily, then the liquidity of investments poses much more problems. In theory, liquid investments are investments which can be immediately converted to money within a defined period of time without a greater loss or with a minimum accepted loss (Kancerevičius, 2009; Valentinavičius, 2010; Oliver, 2012; Ford, Childs, Terry, 2012). The accepted loss of the DGS investments means the liquidation of investments with a less than market price, but no less than the purchase price. While some researchers (Mao, Ostaszewski, Wang, 2011) prefer the security and profitability for DGS investments, at the same time excluding liquidity as a major criterion, this approach may lead to a situation where the DGS investments or any part thereof will be liquidated with big losses or not be liquidated at all. That's why we have to consider liquidity as one of the major criteria of DGS investments.

Dealing with the liquidity problem requires finding answers to the following questions:

1. What should be the timeline to convert investments?
2. What level of loss is acceptable?

According to the currently applicable EC legislation, investments should be liquidated within a period of no less than seven days (Directive, 2014). But should we always pursue the liquidation of all investments within this period? We believe that a probability combination of average bank insolvency and the need for funds should be assessed. And only in exceptional cases the requirement of liquidating all investments within a period under seven days is reasonable. Assessment of bank insolvency probability, the scope of obligations to depositors, and investment liquidity duration would allow identifying a certain portion of the Fund which should be redeemed very quickly. It would be particularly relevant in the case of DGS with a high number of members (100 and above). Besides, one should also take into account the fact that the availability of fairly large quantities of financial instruments which are more difficult to convert allows for SWAP transactions by exchanging securities and funds with banks at agreed prices (Žilinskas, 2011; Liquidity and Funds Management, 2015). However, we have to keep in mind that any bank can fail, and DGS would not have enough funds to perform pay-outs to depositors.

The investments in securities have their price which depends on supply and demand. Moreover, the price is also affected by basic (key) interest rates. One way or another, money invested in securities is returned after its liquidation at a market price that can differ from the price at the time of investing (except for redemption of securities at their maturity date) (Goldie, Murray, 2011). The question is whether the entire amount invested will be redeemed or not and, in particular, whether the amount redeemed will be lower than the one invested. The growth of securities markets typically results in an increased demand, lower market interest rates, and increase in the price of securities, whereas shrinking markets lead to the opposite result – a decrease in demand, higher interest rates, and drop in the price of securities. However, in securities markets of certain states there are processes which do not follow this pattern. For example, the financial crisis in the years 2008–2009 caused the treasury interest rates in the U.S. and the Euro zone states to drop to their lowest level, increased the price of treasuries, and stimulated consumption (Ilie, Moise, 2012). In Lithuania, the process took the opposite direction. The shrinking securities market led to record high interest rates – up to 12% (whereas the base interest rate established by the ECB was a mere 1%), drop in the price of treasuries, and put an end to transactions on secondary markets (Bank of Lithuania, 2015; European Central Bank, 2015). And since the Government was in the urgent need of money, securities were issued at very high interest rates, and the demand existed only for short-term treasuries. Under these conditions, the liquidation of investments in national currency would be highly problematic and, if liquidated, would be achieved by suffering a significant loss.

2. Diversification of DGS investments

One of the principal issues is to ensure the minimum dependability of investment portfolio on the interest rate risk. The solution is somehow clear – investors need to invest in securities of the shortest term possible or deposits with the central bank. Yet, the assessment of costs of such investments could reveal that the profitability is not adequate.

Therefore, investments need to be combined and diversified so as to achieve the determined level for investment profitability and ensure the lowest possible dependability of investment portfolio on interest rate risk (Hanke, Quigley. 2014). In this way, a greater loss can be avoided.

Another thing to stress when talking about liquidity is the diversification of investments by issuers, issues, and currencies (McWhinney, 2015). However, these general requirements for investments of DGS funds could change. We agree that investments should be diversified by financial instruments, issues, duration, currencies, and by issuers. However, the latter two depend highly on the investment policies of DGS and its home state. The liquidity of these investments could cause major problems, especially if the securities market of the state is limited. The funds of DGS must be liquidated in a short time (Directive, 2014). When large amounts of securities are dumped on the market, there is a chance of no demand for the whole amount within such a short term or, if there is a demand, at a very low price. In such a case, the only solution could be intervention by the state if it has been to redeem securities earlier. The liquidation of corporate securities or fixed-term deposits with commercial banks could pose even greater problems. Only deposits with central banks can be regarded as completely liquid at any point in time if a central bank allows the earlier withdrawal of term deposits without any loss. However, deposits with a central bank in most cases are profitless.

The DGS investments may also involve the currency risk. It is relevant in those DGS which cover deposits in a number of currencies. If the exchange rate changes, balances of deposits denominated in foreign currencies also change. The scope of coverage by a DGS to its depositors changes respectively, i.e. when the exchange rate goes up the obligations go up, and when the rate goes down the obligations go down accordingly. To eliminate the currency risk to DGS, investments should be made in the same currencies and in the same proportions as the deposits taken. Naturally, investments should not completely repeat the deposits' structure by currencies as it would be very expensive and inconvenient; however, the structure should be repeated at least by the main currencies of deposits.

Therefore, in order to invest safely, liquidly and profitably, the DGS has to invest in highly rated governmental securities that have a high liquidity, along with the diversification of investments by investment instruments, issues, securities issuers, securities duration and their currency, selecting the most profitable instruments.

3. The analysis of investments of European DGS under conditions of limited domestic securities markets

In order to assess the structure of DGS investments, to identify the general trends and to assess the quality of investments, in the year 2013 we conducted a survey among members of the European Forum of Deposit Insurance (EFDI). Responses have been

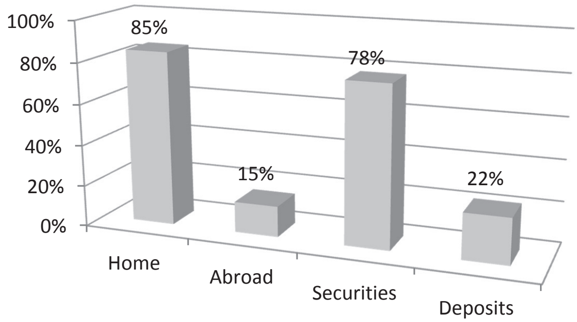

FIG. 1. **The structure of investments by financial instruments**

received from 16 DGS that belonged to a limited domestic securities markets. All DGS that took part in the survey have the right to invest funds in foreign financial instruments. The bond credit rating grades of theirs countries look as follows: upper medium grade – 5 DGS, lower medium grade – 3 DGS, non-investment grade – 6 DGS, highly speculative – 1 DGS, substantial risk – 1 DGS.

As we can see in Fig. 1, investment instruments are securities (78%) and deposits (22%). At the first glance, one can say that DGS investments meet the requirements set out above. However, the distribution of investments by home–foreign instruments shows that there is a too big concentration of investments in home instruments (85%). It may lead to the liquidity risk. As the survey shows, no single DGS is investing in securities of states with a low rating, except for investing in home state securities. A major number of DGS (57%) invest only in treasuries of their home state, but all investments in domestic instruments account for 85%. This is a too big percentage considering liquidity and diversification.

The majority of DGS invest in safe instruments, such as treasuries (Fig. 2). These securities account for 79% of all securities. A quite big portion (21%) is invested in corporate securities, but corporate securities account only for 4.85% of all investments. The profitability of corporate securities might be higher, but these investments involve higher risks. Deposits with central banks account for 22% of all investments. These investments could be regarded as very liquid, but in many cases having a low profitability position. Still, in the case of DGS, it is justifiable. It should be noted, though, that the predominance of short-term and middle-term positions allows the conclusion that the majority of DGS are more concerned about liquidity rather than profitability. However, in truth, long-term investments could be very profitable, but their liquidation could be risky; so, they can be (and are) a small part of all investments.

The diversification of DGS investments by currencies is shown in Fig. 3 where investments in EUR amount for 46.38%, in domestic currencies (other than EUR) – 53.03%,

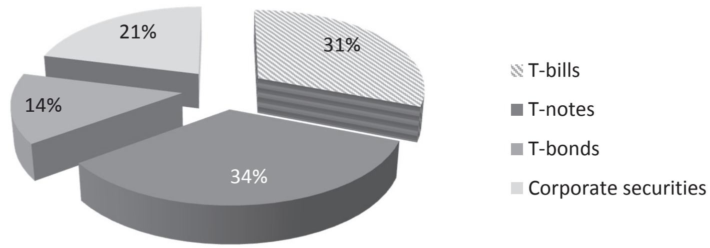

FIG. 2. **Structure of securities**

and in other currencies (USD) – 0.59%. But, as shown in Fig. 1, investments in domestic currency account for 85%, and investments practically are not diversified by currencies that lead to a currency and liquidity risk. This investment structure by currencies could be acceptable to the DGS of the large countries that have a large turnover of securities, but to the DGS of countries whose securities market is limited this structure is not justifiable due to a significant liquidity and currency risk. The EU Directive on deposit guarantee schemes specifies that pay-outs to depositors have to be ensured in the currency of the account (Directive, 2014). This shows the importance of the diversification of investments by currencies.

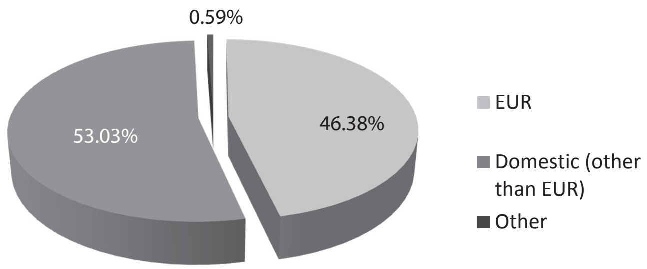

FIG. 3. **The structure of investments by currencies**

As the survey shows, investment operations of DGS funds are managed by the DGS themselves (45%), outsourced (40%), or have a mixed management (15%).

4. The investment liquidity risk in limited domestic market: the Lithuanian case

If the DGS of the countries with a broad domestic securities market have no major problems with investments in home securities, the DGS of the countries with limited domestic securities markets experience significant risks when investing in home securities. However, the DGS of countries with broad domestic securities markets have also to take care of investment diversification. The present problem is particularly acute for the DGS whose securities market is limited in comparison with the need to liquidate the large DGS funds in a relatively short period of time (up to 7 days or less).

Let us consider the case of Lithuania. In November 16, 2011, the licence of the bank “Snoras” was revoked. The total amount that was paid to depositors amounted to 1,159.51 mill. EUR; however, the DGS funds had 493.08 mill. EUR in investments. The cash deficit amounted to 666.43 mill. EUR. Therefore, the Lithuanian DGS (hereinafter LDGS) had to borrow the missing amount from the Ministry of Finance.

The structure of LDGS investments before stoping the activities of the bank “Snoras” is presented in Table 1. This table shows that the investments in the Lithuanian Government bills and bonds, the Republic of Italy bonds and the Republic of Hungary bonds did not meet the security requirements. If the Lithuanian Government bills and bonds, the Republic of Italy bonds at that time met the Lower medium grade requirements, the bonds of the Republic of Hungary were of Non-investment grade, so the LDGS did not need to invest in the latter.

TABLE 1. **The structure of LDGS investments on September 30, 2011**

Name of security	Mill. EUR	Number of securities (thous. units)	Credit grade	Turnover per day (thous. units)	Liquidi-ty by days
Lithuanian Government bills and bonds issued in LTL	253.97	8.769	Lower medium	40	200
Lithuanian Government bonds issued in EUR	53.63	54	Lower medium	30	10
Republic of Italia bonds	11.38	11	Lower medium	10	3
Belgium Kingdom bonds	32.17	3.216.777	High	50.000.000	1
German Federal Republic bonds	39.97	3.996.927	Prime	50.000.000	1
France Government bonds	28.60	2.860	High	50.000	1
Republic of Hungary bonds issued in EUR	6.33	6	Non-investment	10	5
Republic of Austria bonds	3.03	30	Prime	25	3
Netherlands Government Bonds	7.29	7.292	Prime	50.000.	1
Republic of Italia bonds issued in USD	3.57	4	Lower medium	3	3
US Treasuries	7.32	73	Prime	20.000	3
Republic of Austria bonds issued in USD	11.47	11	Prime	4	4
Republic of Hungary bonds issued in USD	6.57	7	Non-investment	7	5
Deposits with Bank of Lithuania	27.77				1
Total Investments	**493.08**				

Sources: Deposit and Investments Insurance, 2015; Trading Economics, 2015; Bloomberg, 2015; Reuters, 2015; Bank of Lithuania, 2015).

Nevertheless, investments in foreign states’ securities were liquidated within one week, with the acceptable liquidity (the total result of liquidation of these investments was been positive). The biggest problem was the liquidation of investments in the

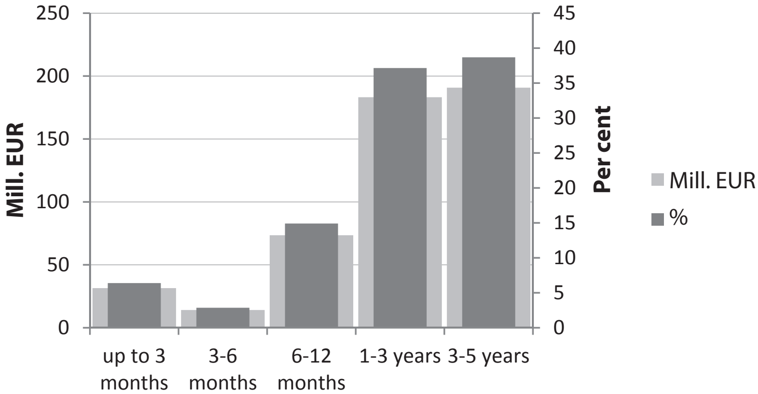

FIG. 4. **The structure of LDGS investments by terms**

Lithuanian Government securities, in particular due to the fact that in relation to the total investments these investments amounted to 62.38%, which means that the diversification of investments was inadequate. If the diversification of investments in foreign securities was rather good (32% of total investments were resolved into securities of 31 issues of 9 issuers), the concentration of investments in the Lithuanian Government Securities in comparison with the whole investment portfolio was too high; due to this fact, large part of these securities failed to be liquidated in time at reasonable prices.

Although LDGS investments were diversified by terms, the largest problem was the domination of long-term investments (Fig. 4) which amounted to 75.84%. That is why the LDGS failed to perform the timely liquidation of the Lithuanian Government securities for 211.39 mill. EUR which amounted for 42.87% of the total investments (Table 2). Accordingly, the LDGS borrowed 945.61 mill. EUR (by 279.18 mill. EUR more than it would be needed if all investments were liquidated in time) from the Ministry of Finance. Therefore, the insufficient diversification of the LDGS investments didn't allow liquidating investments in time. The analysis of data from Table 1 shows that if all LDGS investments issued in LTL were invested in securities of German, the Netherlands or France governments, such investments would be liquidated in 1–2 days.

TABLE 2. **The structure of Lithuanian DGS investments in December 31, 2011**

Name of security	Mill. EUR	Number of securities (thous. units)	% of Table 1
Lithuanian Government bills and bonds issued in LTL	184.65	6.376	72.71
Lithuanian Government bonds issued in EUR	26.74	92	49.86
Total	**211.39**		**42.87**

Source: Deposit and Investments Insurance, 2015; Bank of Lithuania, 2015).

The year 2013 was the year of a chain of failures of credit institutions in Lithuania. The middle-sized bank "Ūkio bankas" and the credit unions "Nacionalinė kredito unija", "Švyturio taupomoji kasa", "Laikinosios sostinės kreditas" have failed. The deposits with the "Ūkio bankas" were transferred to the "Šiaulių bankas". The LDGS covered the value of deposits transferred to the "Šiaulių bankas". Pay-outs were paid to the depositors of the failed credit unions. Each failure required an appropriate amount of the LDGS funds: the bank's "Ūkio bankas" failure 269.2 mill. EUR and the failure of the mentioned credit unions 46.13 mill. EUR (Deposit and Investments Insurance, 2015). These LDGS cases prove that DGS at any moment have to be prepared for the available funds that would be used for pay-outs or financing the failure settlement.

The LDGS case shows that the main problem to be solved by DGS of the limited domestic securities market is to ensure the liquidity of investments. The DGS should have readily available funds necessary to ensure prompt pay-outs, including assured liquidity funding arrangements (IADI, 2014). The way to do this is the sufficient diversification of investments, what allows liquidating all investments in an acceptable term. Therefore, the DGS of the limited domestic securities market must invest part of funds in foreign financial instruments of the high or prime grade and the part of funds in domestic financial instruments that could be liquidated in 1–5 days. This is an absolutely legal way to act for the EU countries because of the EU Directive on deposit guarantee schemes (Directive, 2014), ensuring the safety and liquidity of DGS investments. The last task for the DGS investment managers is to achieve profitability.

The LDGS case, its lessons and findings just confirm the necessary DGS actions that are rather relevant today and will be relevant in the future. This assertion is proved by the new EU directive on deposit guarantee schemes and the latest Core principles for effective deposit insurance systems (Directive, 2014; IADI, 2014).

5. The guidelines of the DGS funds investment policy

The analysis of investments of the European DGS (including LDGS) under conditions of limited domestic securities markets shows the importance of having liquid available financial funds as well as the right investment policy. The latest version of the "Core principles for effective deposit insurance systems" provides that the DGS should have readily available funds necessary to ensure prompt pay-outs, including assured liquidity funding arrangements (IADI, 2014). The EU Directive on deposit guarantee schemes requires that the funds of the DGS shall be invested in a low-risk financial instruments and in a sufficiently diversified manner (Directive, 2014). These acts indicate that DGS should have the right investment policy.

Following the overview of the DGS investment portfolio structure, we would like to talk about the key aspects of the investment policy. As it has been emphasized above, the security of the DGS investments is the main key. In the first place, the investment manager has to take care of investing the funds in governmental securities of the prime or high grades. Certainly, the manager can invest funds in domestic securities, but with the one main restriction – investments have to be liquidated in an acceptable term (1–5 days). Definitely, investments must be diversified by bonds issuers, issues, terms, currencies.

The investment policy would base on the following main requirements:

1. Investing in the prime grade or high grade financial instruments.
2. The liquidation of investments of all issues of the one issuer has to be accomplished in the acceptable term (1–5 days).
3. The term of investments has to be chosen in accordance with the liquidity and the expected profitability. It is recommended that the manager would develop an optimal term indicator to financial instruments of each issuer and would watch the deviation from the term indicator.
4. Diversification of investments by currencies would be exercised in accordance with the structure of deposits by the main currencies. A rational norm of the deviation from the structure could be developed.
5. For the monitoring of investments, a benchmark should be developed, whereas the investment manager would watch the conformity of investments to the benchmark.

The benchmark allows the investment manager to assess the state of investments and change the structure of investments in order to meet the principal requirements, as well as to assess the expected profitability. Investing directions should not be changed because of minor deviations from the comparative index or the established values of the benchmark.

The difference in returns is the value added (or lost) due to the management. If the actual portfolio made more or less money than the benchmark portfolio, then the management of investment has chosen the funding investment means that have provided for that difference in value (Smart, Gitman, Joehnk, 2014; Oliver, 2012, Swedroe, 2012). The investment with a buy-and-hold asset allocation with the index funds is a passive management strategy. This means that the manager has to create investment indicators and trace them (Reilly, Brown, 2012). Therefore, the permanent benchmarking of investments allows the manager to maintain the effective investment portfolio structure that ensures the safety, liquidity, and profitability of the DGS investments.

Conclusions

Investments of the European DGS under conditions of limited domestic securities markets are mostly concentrated in domestic governmental securities. There is a lack of attention to the diversification of investments, especially to securities issuers and currencies.

The existing point of view could lead to a logjam in the case of the paying pay-outs to a large number of depositors, because the DGS would not have money enough to pay it. The policy of investment must be built on the main principles presented in the order of significance: safety, liquidity, profitability. The safety could be reached by investing in securities of the prime and high grades. The main requirement of diversification is to invest in the financial instruments of different countries in different currencies. Definitely, investments have to be diversified by issues and terms.

The LDGS case shows that it is particularly important for the DGS of limited domestic securities markets to comply with the requirements presented in this paper. The DGS like these could invest in domestic securities the part of funds that could be easily liquidated in an acceptable time, and they would take attentive care to the diversification of their investments by issuers, issues, terms, and currencies. The diversification by currencies should correspond to the structure of deposits by the main currencies.

It is preferable that DGS investments would be made based on the principle of the conservative investing, because following this principle can ensure a lower investment risk. In order to assess the efficiency of investments, the manager has to develop the comparative benchmark of investments that would best reflect the selected policy. The target indicator values have to be developed in accordance with the policy, and the manager should make efforts to maintain these values.

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