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EVOLVING UKRAINE'S DEPOSIT GUARANTEE SYSTEM TOWARDS GLOBAL STANDARDS: A MACROPRUDENTIAL PERSPECTIVE

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ABSTRACT

This paper proposes changes to the deposit guarantee system in Ukraine to enhance its contribution to the country's financial stability. The proposals are supported by an analysis of the evolution of international research and practices on building effective deposit guarantee systems in Europe and globally. The proposals also consider the current post-crisis environment and the problems of Ukraine's current deposit guarantee system.

JEL Codes: E61, G28

Keywords: deposit guarantee system, financial safety net, reforms of the Deposit Guarantee Fund, financial stability

I. INTRODUCTION

Deposit guarantee systems have a substantial impact on a financial system's resilience and its ability to mitigate the consequence of shocks and crises, primarily by preventing bank runs and by expediting the resolution of failing institutions. Ukraine's current deposit guarantee system is undergoing a transformation, which was prompted by the lessons learned from past crises and a need to adopt European standards. It is important to ensure that those changes also contribute to financial stability. Therefore, this paper proposes improvements to the deposit guarantee system that will promote greater financial stability and contribute to the adoption of international best practices. This paper's focus on the macroprudential aspect of the transformation of the deposit guarantee system is new for a study focused on Ukraine.

Globally, a greater emphasis on financial stability in the functioning of deposit guarantee schemes (DGSs)[2] emerged gradually, often spurred by crises. The global crisis of 2007-2009 pushed the process ahead significantly. Changes stemming from that crisis yielded some common trends for DGSs in terms of the expansion of mandates, the scope of participating credit institutions, changing approaches to funding, and deposit coverage. One of the most important changes in terms of the enhanced macroprudential aspects of the functioning of DGSs came with a gradual transition towards differentiated risk-based contribution of banks to DGSs (mostly in some advanced countries so far). Also after the crisis, a greater number of countries adopted explicit DGS and attempts to establish international principles for the work of DGSs based on a consensus among leading researchers.

Ukraine's Deposit Guarantee Fund (DGF) had to weather a large-scale w-shaped crisis. The second wave in 2014 coincided with the start of the financial sector clean-up and put the DGF's institutional and financial capacity to the test.

In response to the crisis and the general demand for best European and global standards, which was building over more than a decade among experts and wider public, Ukraine has initiated a reform to enhance the capacity of the DGF. However, there is no consensus for some key elements of those changes. Moreover, the macroprudential aspect of the evolution of DGSs (especially in Ukraine) has not been investigated properly, which makes this topic especially relevant.

This paper follows the following structure: chapter two looks at the evolving vision of the role of DGS in financial safety nets; chapter three outlines the major global developments in DGSs and their significance for financial stability; chapter four summarizes the key challenges that faced Ukraine's DGS over the crisis years and the measures enacted to address them; and the final chapter makes recommendations on the reform of Ukraine's DGF in light of its contribution to financial stability.

[1] Disclaimer: Views expressed in this article are those of the author and do not necessarily match with the views of the National Bank of Ukraine.
[2] DGS will also appear in the text for Deposit Guarantee System.

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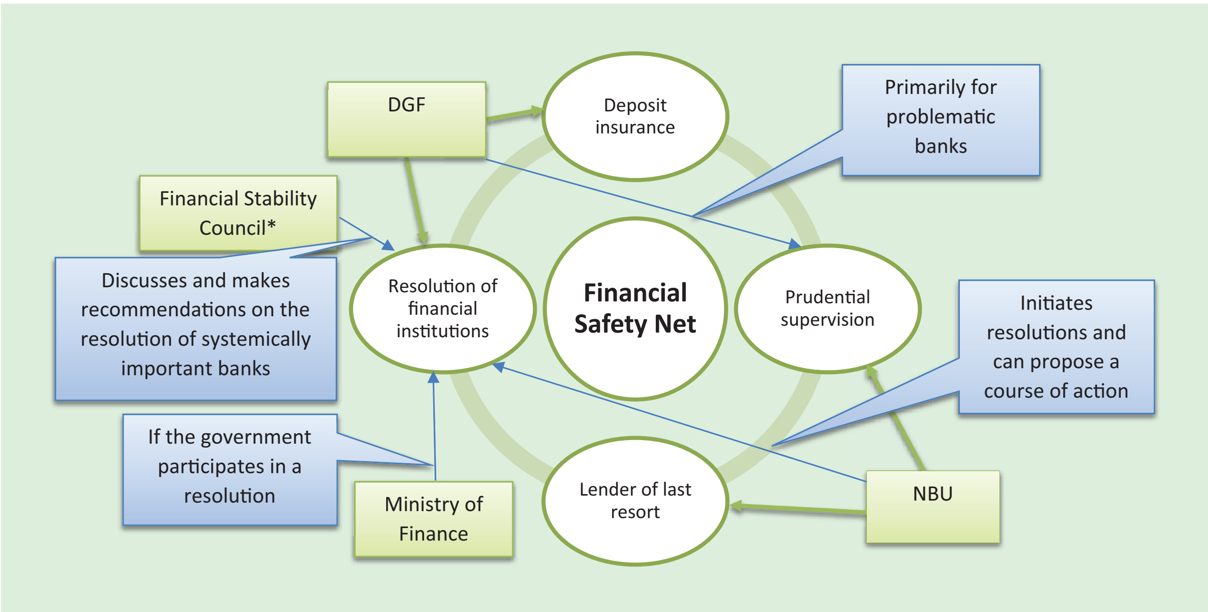
II. ROLE OF DEPOSIT GUARANTEE SCHEMES IN FINANCIAL SAFETY NETS

The DGS plays a key role in any financial safety net (Figure 1). The safety net contributes in two ways to financial stability: the deposit guarantee (insurance) prevents bank runs as the funds of most depositors remain covered even if a bank fails,[3] and it offers the means to support solvent banks that experience temporary liquidity problems and for a timely resolution of insolvent banks – thus promoting the continuous operation of the financial system (Schich, 2008).

The contribution of a DGS to financial stability is mixed (it can even be negative), as noted for the US (Kane, 1989) and a wider selection of countries (Demirgüç-Kunt and Detragiache, 1998; Demirgüç-Kunt and Huizinga, 1999). On one hand, insufficient deposit coverage (both in terms of the scope of depositors covered and the amount covered) raises the risk of bank runs during banking crisis that can result in substantial deposit outflows. On the other hand, the overprotection of depositors through guarantees may lower the incentive for depositors to choose banks responsibly and for banks to use deposits carefully. That leads to an increase in risks to financial stability. Some studies (Kane, 2009; 2016) have shown that the role of certain financial stability nets during the last crisis was unfair in social and economic terms as some used public funds to preserve the wealth of the owners of large financial institutions. In addition, different guarantee terms (if not priced into deposits) for financial institutions competing on the same markets result in regulatory arbitrage and harm competition (Kane, 2016).

Figure 1. Financial Safety Net in Ukraine



Notes: * Discussion platform that brings together the heads of the NBU, Ministry of Finance, DGF, National Securities and Stock Market Commission, National Commission for State Regulation of Financial Services Markets.

Faced with that dilemma, the world accepted the notion that DGSs should first protect depositors who lack the knowledge or skills to assess risks. However, the definition of those depositors varies in different jurisdictions.

DGSs began evolving early in the 20th century. The national Federal Deposit Insurance Corporation (FDIC) was established in the US in 1933 (a predecessor to the FDIC emerged in the 1920s).[4] Discussions on building efficient DGSs intensified before and after the Savings and Loans crisis in the 1980s in the US and after the asset price bubble burst in Japan in the early 1990s. The first fundamental studies on the subject appeared at that time: estimating deposit costs and insurance premiums (Merton, 1977, 1978; Buser et all., 1981; Ronn and Verna, 1986); the effect of deposit insurance on bank runs and bank liquidity (Diamond and Dybvig, 1983; Chari and Jagannathan, 1988); the relationship between public and private DGSs (Ely, 1985); the effect of participation in a DGS on bank capitalization (Dowd, 1993); an analysis of relations within a DGS in a “principle-agent” framework (Kane, 1995; Calomiris, 1996).

Debates on the introduction of risk-based premiums in deposit insurance also started in the late 1980s (Scott, 1987; Hall, 1990; Berger, 1994). In 1992, the US became the first jurisdiction to implement that type of framework.

[3] Studies show that DGSs in general did this during the global financial crisis (Demirgüç-Kunt et al., 2014).
[4] M. Friedman in 1959 named it “the most important structural change in our monetary system in the direction of greater stability” (Friedman and Schwartz, 1983).

In response to the crises in the late 1990s, international financial institutions began recommending explicit[5] DGSs (Folkerts-Landau and Lindgren, 1998; Garcia, 1999). The concept of "financial safety nets" also emerged at that time (Kane, 2000), which was also promoted by the IMF and the World Bank.

The global economic crisis of 2008-2009 propelled a new discussion of the spread and modernization of DGSs and of their role in financial stability nets. Several authors offered a holistic approach to building/transforming DGSs based on analyses of the empirical experience in a growing number of countries (Demirguc-Kunt and Kane, 2002; Demirguc-Kunt et al., 2007, 2008; 2014). A consensus began building around the notion that the DGS target size, its funding, coverage scope and caps must ensure a balance between protecting depositors and preventing bank runs on one hand and limiting moral hazard on the other. In other words, most retail depositors must be protected but, given a cap on coverage, large depositors must evaluate and take risks themselves.

The crisis of 2008-2009 also drove Ukrainian researchers to analyze the impact of DGSs on financial stability. Baldych (2009) examined information asymmetry risks in the banking sector, while Dovgan (2012) examined the issue in terms of banking system resilience. Other researchers analyzed the compliance of national DGSs with International Association of Deposit Insurers (IADI) recommendations (Serpeninova, 2014), EU standards (Kovalenko, 2013), and the practices of the EU and US (Karcheva et al., 2016). These and other Ukrainian researchers mostly recommend the EU model as key anchor for a reform of the domestic system.

III. DEVELOPMENT OF DEPOSIT GUARANTEE SYSTEMS IN EUROPE AND AROUND THE WORLD

Starting in the 1990s, DGSs had spread actively globally, including in Central and Eastern Europe. The 2007-2008 crisis (and partially the 1997-1998 crisis before that) tested the resilience of DGS models. Their ability to weather the crises was analyzed and the outcomes supported international recommendations on the frameworks, mandates, funding, and coverage of DGSs.

After the crises of the late 1990s, the IMF reviewed best practices for the design of DGSs (Garcia, 1999; Garcia, 2000), but the review only yielded general conclusions and recommendations.

In 2009, the Basel Committee on Banking Supervision and IADI proposed 18 core principles for effective deposit insurance systems. The principles outlined institutional aspects (public policy objectives, mandates, independence, moral hazard), issues of cooperation (within the financial safety net and cross-border issues), coverage levels and scope (*inter alia* exposing large deposits to market discipline), membership, funding, public awareness, efficient resolution, reimbursement, and DGS cost recovery. In 2012, the Financial Stability Board (FSB) reviewed the progress in the implementation of those principles and proposed additional recommendations, including the transition to an explicit DGS. In 2014, IADI updated and reinforced some of the principles (governance, funding, reimbursement), enhanced the role of the DGS in the bank resolution process, and strengthened the emphasis on moral hazard.

In 2011, the FSB published *Key Attributes of Effective Resolution Regimes for Financial Institutions* (updated in 2014). The document stressed the need for cooperation between authorities responsible for deposit insurance and bank resolution as well as for protecting the rights of depositors and creditors during the resolution process.

The regulation of DGSs in the EU followed global trends, but the essence of the union pushed the harmonization deeper. The first EU Directive on DGS was approved in May 1994 (94/19/EC); it required deposit insurance at all credit institutions, defined the scope of eligible deposits and types of non-eligible deposits (e.g., deposits from other financial institutions), set time limits for reimbursement and single coverage cap – ECU 20,000 (European Currency Units, a basket of European Community member currencies). In 2009, amendments to the directive raised the cap to EUR 100,000.

In April 2014, EU Directive on DGS 2014/49/EU replaced Directive 94/19/EC. The new directive outlined a unified approach to funding for DGSs through regular risk-based contributions from participating banks, coverage of both the principal and accrued interest (irrespective of the currency of deposit), decreasing terms for reimbursement (to 7 days from 2024), wider depositor awareness, and the establishment of a single DGS at the EU level.

The EU Directive on bank recovery and resolution (2014/59/EU, BRRD) named the protection of covered depositors as a key factor defining the resolution option and regulated cooperation of deposit insurance and bank resolution authority.

Those recommendations and the regulations of international authorities outlined the basic guidelines that shaped the development of DGSs.

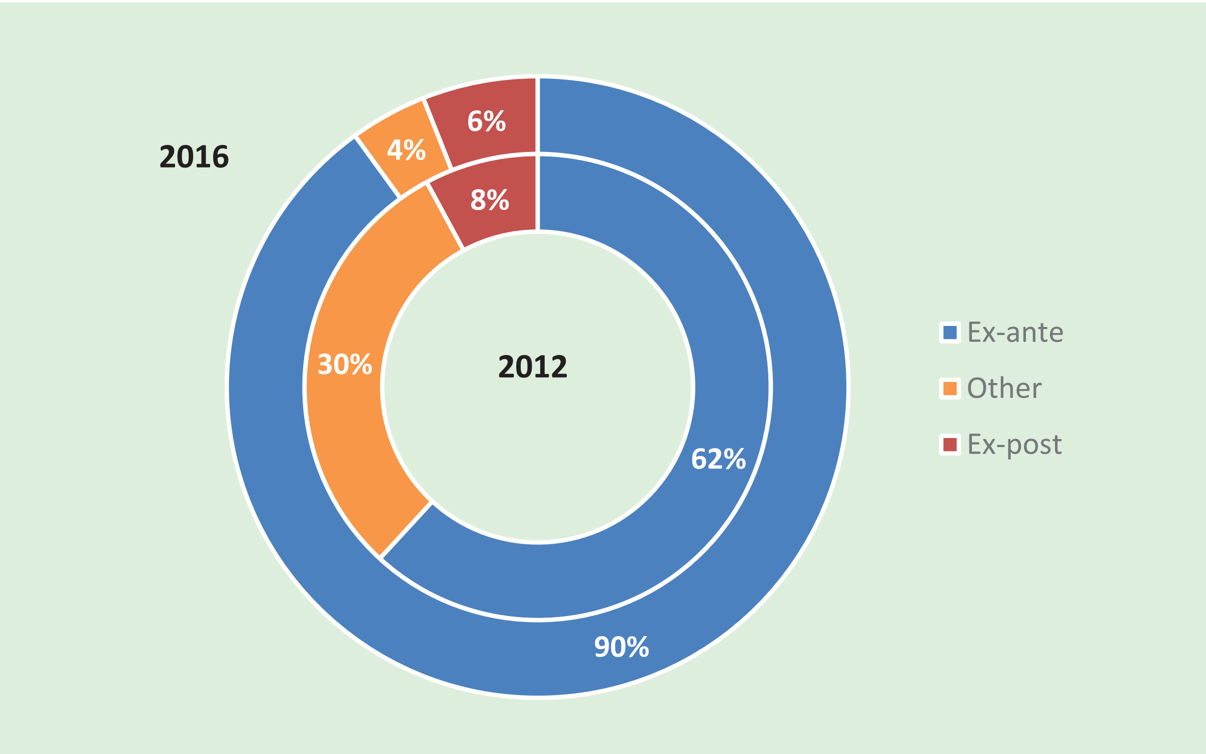
Predominantly explicit DGSs. Both approaches – expected state intervention during a crisis and an explicit DGS – have pros and cons. The first approach leaves the state room to maneuver in rescuing banks and assisting depositors; however, the rules

[5] Sources identify distinct implicit and explicit (institutionalized) DGSs. In implicit structures, the government does not formally commit to cover depositors, but does rescue banks and depositors when crises hit. In an explicit DGS, national deposit insurers have a clear mandate. Globally, the number of explicit DGSs is growing (Deposits, Deposit Guarantee Schemes and Bank Resolution (2013). Clifford Chance).

remain *ex-ante* unclear to market participants and depositors, and available funds may prove insufficient. If an explicit DGS is established, the necessary funds for depositor reimbursement and/or bank rescue should already be available by the crisis; however, this requires an appropriate framework and regular *ex-ante* contributions from banks.

Ex-ante funding. Ex-post implies that in the case of individual bank failures, remaining solvent banks establish a fund to cover actual reimbursements.[6] This approach is pro-cyclical as the contributions by solvent banks create pressure on their own balance sheets under unfavorable financial (post-) crisis conditions. In addition, more efficient banks (e.g., in terms of risk management) pay for insolvent banks (temporarily). In practice, that dilemma can be offset through required bank reserves (such as in Switzerland) or by combining *ex-ante* and *ex-post* elements in the DGS (such as in Poland) (see Figure 2). Two important advantages of *ex-ante* systems (where deposit guarantees funds are established in "good times") are their clear rules and the ability to set *ex-ante* requirements (including macroprudential requirements).

Figure 2. Approaches to funding DGSs by jurisdiction (76 jurisdictions in 2012, 100 jurisdictions in 2016)



Sources: IADI surveys in 2012 and 2016.[7]

All credit institutions participate in the DGS. In the EU, DGSs cover deposits at all credit institutions, including credit unions. In some countries, more products are guaranteed (e.g., insurance policies), meaning insurance companies and other financial institutions also participate in the DGS. This wider scope of participants helps mitigate threats to fair competition (by limiting the room for regulatory arbitrage) and expands the impact of a financial safety net.

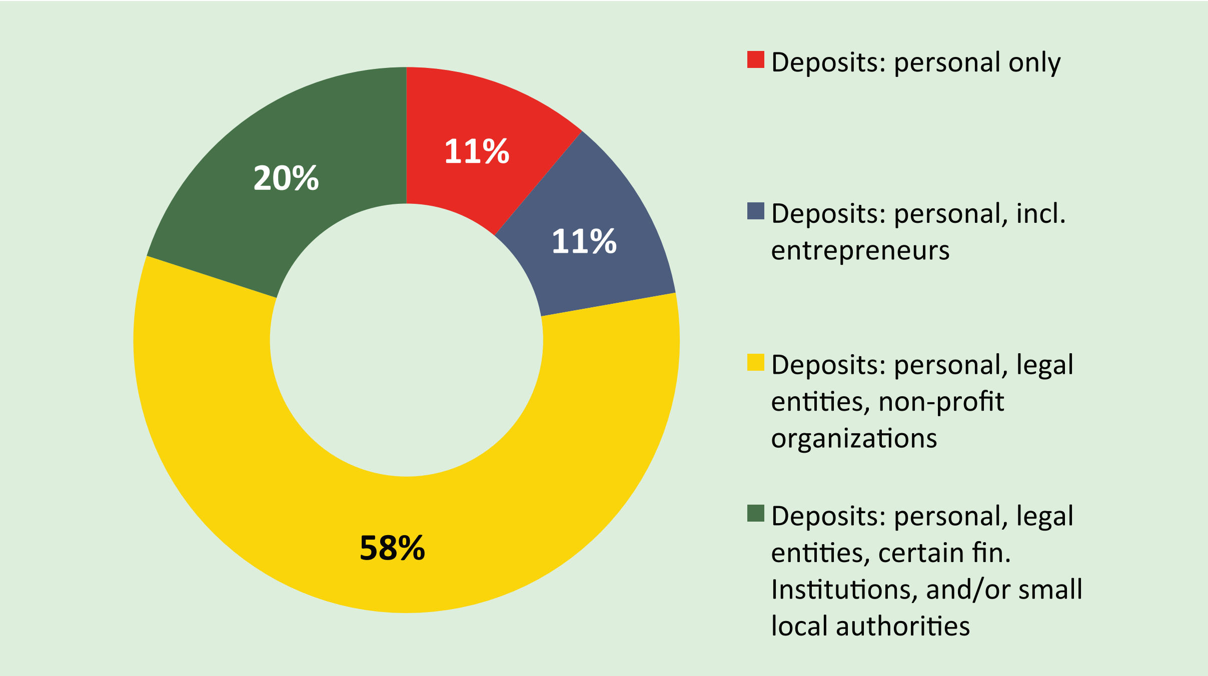
International levelling of covered amounts (at a higher level). Covered amounts have increased on average from pre-crisis rates (or they have appeared in jurisdictions that previously had no explicit DGS). With the outbreak of the global crisis, covered amounts surged or unlimited coverage was offered as a part of anti-crisis measures. In the aftermath of the crisis, some of these measures were eliminated; however, in many cases, the covered amounts exceeded pre-crisis levels and tended to converge to certain international standards, close to those adopted in leading economies. The EU was one of the main drivers of that process, unifying the approaches to deposit insurance (likely attempting to fight regulatory arbitrage) (see Appendix 1). The negative consequence of that trend is that covered amounts now are less correlated with per-capita income. Moreover, increasing the coverage cap in low income countries, if it is not supported by growth in the economy and wealth, may create moral hazard for better-off households.

[6] Research and Guidance Committee IADI (2009) Funding of Deposit Insurance Systems. Guidance Paper.
[7] IADI Deposit Insurance Survey (http://www.iadi.org/en/core-principles-and-research/deposit-insurance-surveys/) comprises IADI member jurisdictions. The 2016 survey reflects the period ending 31 December 2015; the survey results were published in August 2017.

Insurance coverage irrespective of the currency of deposit. Most jurisdictions with explicit DGSs cover deposits in the domestic currency and convertible currencies.[8] The reimbursement is typically offered in the local currency at the exchange rate at the time of the bank's failure (DGSs do not take on FX risks).

Wider scope of covered depositors. In accordance with the notion of protecting the deposits of those who are unable to evaluate risks, many countries (primarily advanced nations) extend deposit coverage to non-individuals. Most frequently, the insurance is extended to cover the deposits of SMEs, non-profit organizations, and sometimes non-financial corporations or small local authorities (see Figure 3). Since the coverage cap remains the same, that practice is congruent with the aforementioned notion: the compensation is still not material for large corporations.

Figure 3. Scope of deposit coverage by depositor type



Notes: For 45 jurisdictions.
Source: Financial Stability Report of the National Bank of Ukraine, December 2016.

Transition to regular risk-based contributions from DGS participants. That approach is already being used in EU member-states, Canada, Hong Kong, the US, Malaysia, Norway, Singapore, Thailand, Turkey, Russia, and Kazakhstan.

Approaches to calculation of risk-based premiums vary from relatively simple (as in Hong Kong[9] or Russia,[10] which have three rates depending on the risk category with relatively uncomplicated formula for defining categories) to more complex ones. The latter allow varying premium rates within a category and differentiation depending on bank size (as in the US).[11] The common feature of all the approaches is that premiums for institutions with high risks can be times (or even by order) higher than for institutions with low risk. Most regulators leave room to adjust premiums by assessing qualitative indicators for a financial institution.

We identify two patterns among the variety of approaches to risk-based premiums: formula-based risk-weighting (used in the EU) and scoring-based risk-weighting (used in the US, Canada, Kazakhstan, Malaysia, Taiwan).

In 2015, the European Banking Authority (EBA) introduced the formula used in the EU for calculating contributions to the DGS. The annual contribution for a member institution (Ci) is a product of the contribution rate (CR, identical for all member institutions in a given year),[12] the aggregate risk weighting for the member institution (ARWi), the amount of covered deposits for the member institution (CDi), and the adjustment coefficient (μ, identical for all institutions in a given year). The coefficient allows the regulator to adjust the amount of contributions each year.

[8] 91% of 57 jurisdictions surveyed by IADI in 2016 cover the deposits in both foreign and domestic currencies.
[9] Hong Kong Deposit Protection. Board Guidance Note for Payment of Contributions: http://www.dps.org.hk/en/download/guideline/20060817e1a1.pdf
[10] Deposit Insurance Agency of Russia. On setting rates of insurance premiums: https://www.asv.org.ru/for_banks/documents/#
[11] Federal Deposit Insurance Corporation: https://www.fdic.gov/deposit/insurance/calculator.html
[12] For example, the rates for some EU members in Eastern Europe in 2015 were (in per cent to covered deposits): Hungary – 0.14%, Romania – 0.3%, Slovakia – 0.03%; Latvia – 0.2%.

The risk-based approach to contributions has the largest macroprudential effect as it encourages financial institutions to pursue more prudent market strategies (risky behavior makes funding with deposits costlier).

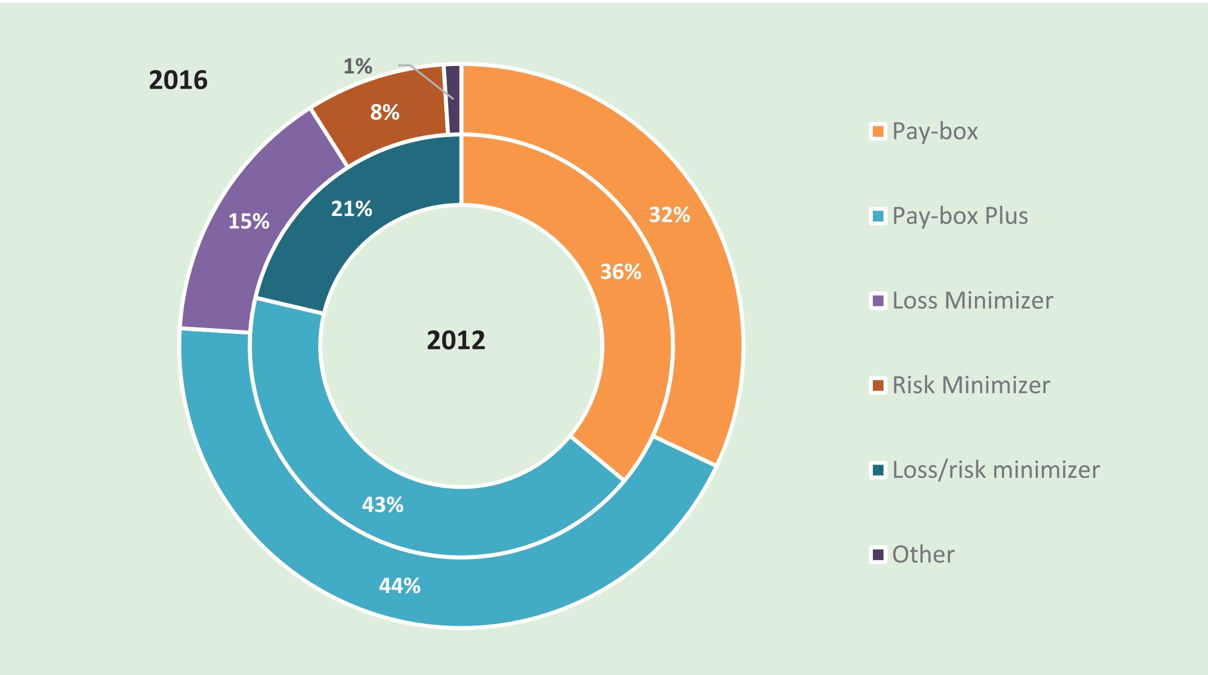
Enhanced responsibility of bank owners and related parties for bank failures. In most jurisdictions, the shareholders (owners) and managers of a bank, as well as related parties are not eligible for compensation if a bank fails. This encourages more responsible risk-taking in making credit decisions.

The optimal size of a deposit insurance/guarantee fund. National decisions on the optimal DGS size vary greatly from 0.25% of covered deposits in Hong Kong to 10% of deposits at banks in Russia. The target size of the deposit insurance fund in the EU is 0.8% of covered deposits. The Single Resolution Fund of the EU, which will reach 1% of covered deposits by the end of 2023, should be added on top of 0.8% of the EU deposit insurance fund. These funds can be used for lending to or resolving failing banks that would otherwise fail and increase reimbursement amounts. The process of levelling of fund sizes is on-going in Europe (see Appendix 2).

However, a deposit guarantee fund's resources typically suffice only to counter a limited crisis. The Bank Guarantee Fund of Poland assessed that in early 2015 its funds would be only sufficient to rescue the 9th largest bank by assets.[13] However, requiring larger contributions from banks to make a DGS more resilient is not a viable alternative as that would ultimately lead to a contraction of lending activity. Therefore, two aspects are important in defining DGS size. First, to ensure crisis preparedness of a level that does not harm economic growth. Second, to establish cooperation among members of the financial safety net. This includes preventing the failure of systemically important institutions, effective information exchange, and instruments of DGS support from the government and/or central bank.

Enhanced role of deposit guarantee funds in bank resolution. Already in 2011, 65%[14] of deposit guarantee funds around the world played a role in bank resolution. Since then, the proportion of deposit guarantee funds that participate in resolutions has grown gradually. The proportion of "loss minimizers"[15] and "risk minimizers"[16] is on the rise (see Figure 4). There is no clear correlation between the development of a nation's economy or financial system and the resolution mandate level. For example, EU member states like Belgium and the Czech Republic have "pay boxes"[17] while Kenya and Nigeria have "risk minimizers".

Figure 4. Evolution of DGS mandates in terms of engagement in the resolution of credit institutions



Notes: *Changes to the methodology resulted in the split of risk minimizer and loss minimizer mandates in the 2016 survey.
Source: IADI surveys of 2012 and 2016.

[13] Maria Sitkowska (2015) Setting the Target Fund Size: Poland country case.
[14] IADI Core Principles for Effective Deposit Insurance Systems, (November 2014): http://www.iadi.org/en/assets/File/Core%20Principles/cprevised2014nov.pdf
[15] A Mandate in which the Deposit Insurer actively engages in a selection from a range of least-cost resolution strategies (IADI).
[16] A Mandate in which a Deposit Insurer has comprehensive risk minimisation functions, including risk assessment/ management, a full suite of early Intervention and resolution powers, and in some cases, prudential oversight responsibilities (IADI).
[17] A Mandate in which the Deposit Insurer is only responsible for the reimbursement of insured deposits (IADI).

Banking crises in Iceland (2008) and Cyprus (2012-2013) and the depositor problems they caused raised the issue of *cross-border cooperation between DGSs*. In the absence of proper interaction between DGSs, the protection of the rights of a depositor who placed money in a foreign bank branch may prove problematic (many host DGS do not cover those deposits). International cooperation may lower the risk of external shocks for depositors from countries with open financial systems.

Wider depositor awareness. The EU Directive on DGS from 2014 devoted a chapter to depositor awareness of their rights and the opportunities and limitations of DGSs.

Enhanced institutional capacity and operational efficiency of DGSs. EU norms require that a DGS be stress-tested every three years to measure its institutional and financial capacity to withstand adverse scenarios and continuously perform key functions.

Therefore, the evolution of European and global DGSs involved greater focus on crisis preparedness (explicit DGS with predominantly ex-ante funding, extended scope of participation and coverage risk-based contributions, search for optimal Fund sizes, depositor awareness) and crisis management ability (enhanced institutional capacity of deposit insurers, greater role in bank resolution). This resulted in rising contribution of DGSs to financial stability.

IV. CURRENT CHALLENGES FOR THE UKRAINIAN DGS

Ukraine's Deposit Guarantee Fund (DGF, or "the Fund") together with other members of the national financial safety net had to deal with the results of the financial and banking crises of 2008-2009 and 2014-2016, as well as the clean-up and reform of the banking sector since 2014.

By 1 December 2017, the Fund paid out UAH 87.7 billion in total to depositors from insolvent banks. That was a substantial burden on the Fund, which forced it to turn to the government and the NBU for financial support. That request for support came despite the Fund's size (2.5% of deposits) was in-line with the best regional standards (e.g., Poland) and exceeded the EU average. The share of banks withdrawn from the market (approximately 50% by number and 30% by assets in pre-crisis terms) was high by national and international standards. That challenge also raised the issue of enhancing the Fund's institutional and financial capacity. That would primarily require an increased efficiency in the sale of assets of liquidated banks.

A few factors complicate that objective now: internal factors (the Fund's lack of resources, including staff, given the scale of the crisis) and external factors, including the slow recovery of economic activity in the aftermath of the crisis and the poor legal protection for creditors. The latter stems mostly from the inefficient judiciary and law enforcement, which hinders asset recovery by lawful owners. As of 1 August 2017, the Fund filed 4,453 lawsuits related to various violations at insolvent and liquidated banks, with over UAH 429.83 billion in claims.[18] Investigations of the cases and court proceedings on most of these cases are ongoing.

Ukraine ranks last globally in terms of asset recovery (post-bankruptcy). According to a World Bank study (2016), a creditor in Ukraine recovers just 7.5 cents per dollar of assets. Europe and Central Asia average 38.2 cents, while high-income OECD states average 73 cents.[19]

The efficiency of recovery in Ukraine has started to increase, but only gradually. For example, in 2016, the DGF generated UAH 3.2 billion in proceeds by selling the assets of insolvent banks, and UAH 4.01 billion in the first 11 months of 2017. The DGF paid out UAH 21.78 billion to covered depositors from insolvent banks in the same period of time.[20]

The international agreements Ukraine has signed are another important engine of change to Ukraine's DGF. The most important of those agreements is the EU-Ukraine Association Agreement, under which Ukraine committed to implement EU Directive 94/19/EC from 1994. In addition, Ukraine is working to introduce international best practices and IADI principles. Some of Ukraine's international commitments have time-based benchmarks (e.g., end-2018 for Directive 94/19/EC).

The Fund has been implementing international best practices for several years. The Law of Ukraine *On the System of Guarantees on Personal Deposits* from 2012 enhanced the Fund's mandate from a "pay box" to a "loss minimizer" by granting it receivership rights and expanding its liquidation rights. That law was later updated and brought closer to EU standards. In 2014, the law enhanced the requirements on depositor awareness of the DGS and their access to bank reports. In 2015, amendments to the law aimed to streamline payouts to depositors and raise the efficiency of the management and sale of insolvent banks' property. From 1 January 2017, the Fund's coverage was extended to entrepreneurs.

However, the current DGS still does not allow risk-based contributions from banks (the only differentiator is the deposit currency). Therefore, banks with riskier business models do not contribute more to the Fund even though they are statistically more likely to become insolvent. Therefore, the larger portion of an insolvent institution's risks is covered with public money and (potentially) transferred to solvent banks.

[18] http://www.fg.gov.ua/news/17794-osnovni-pokaznyky-diialnosti-fondu-harantuvannia-vkladiv-fizychnykh-osib-stanom-na-pochatok-serpnia-2017-roku
[19] http://www.doingbusiness.org/data/exploretopics/resolving-insolvency
[20] Total proceeds, including repayment and service of loans, were UAH 7.22 billion in 2016 and UAH 7.73 billion in 11 months of 2017. However, those figures are not directly comparable, as a large proportion of the UAH 15 billion as compensation for around UAH 66 billion in total spent by the DGF since the outbreak of the crisis for payouts to depositors. A lack of public data impedes a deeper analysis of the proportions of insolvent bank debt and asset recovery.

Currently, all banks except one participate in the DGF. Oschadbank is the exception and the state provides an unlimited guarantee on all retail deposits at the bank. This contradicts both IADI principles and EU norms that require that all credit institutions participate in DGS. 'The Guidelines for Strategic Reforms of State-Owned Banks' (backed by the Government in 2016), Oschadbank was to have joined the DGF in early 2017. That has not taken place. A material barrier has been the need for Oschadbank to make a one-off contribution to the Fund of 1% of share capital. Meanwhile, extending coverage to retail deposits at other credit institutions (like credit unions) is not currently on the agenda. The expected reform of financial regulations that should transfer supervision over credit unions and some other non-bank financial institutions to the NBU may promote that extension of coverage.[21] Proper prudential supervision for these institutions will promote better risk management and provide the rationale to guarantee the deposits they will attract.

The cap on deposit coverage increased from the pre-crisis UAH 25,000 as of February 2007 to UAH 150,000 as of August 2008 and later to UAH 200,000 from October 2008. This is an equivalent of around EUR 6,500. The coverage is low by EU standards and compared with regional peers (lower than in all Central and Eastern European countries except Moldova), but is proportionate to the current income level in Ukraine (see Appendix 3).

The crisis highlighted deficiencies in the Fund's work (a lack of ex-ante focus on the riskiness of bank models or readiness to administer and resolve failing banks and efficiently sell their assets), its interaction with other financial regulators (such as the exchange of information on failing banks and assets at insolvent banks), and other factors that undermine its effectiveness. To ensure the Fund contributes more effectively to financial stability, these issues must be resolved.

V. RECOMMENDED CHANGES TO UKRAINE'S DEPOSIT GUARANTEE FUND

The transformation of Ukraine's DGS should be based on proven European standards and international best practices, and the changes must strengthen financial stability in Ukraine. We recommend the following steps:

Transition to risk-based contributions. The current system of deposit insurance premiums does not encourage banks to more prudent risk taking. Deposit-taking by riskier banks is not restrained by higher contributions to the Fund. To check risky behavior and spread contributions more equitably, we recommend that Ukraine introduce risk-based differentiated contributions.

To select a model for calculating risk-based contributions, we recommend the EBA-designed formula applied in the EU as a benchmark, which has several advantages:

- Transparent calculations that allow a participating financial institution to plan expenses and for the Fund to forecast contributions;
- The formula contains no essentially new elements in terms of banking regulation in Ukraine, which would aid in its implementation;
- Limiting the contribution base to covered deposits will make contributions more equitable for banks and depositors (a depositor will not contribute for the uncovered proportion of a deposit).

Gradually increase the covered deposit amount. Ukraine's current deposit coverage level is among the lowest in Europe, it does not meet EU standards, and remains on par with the lowest-income countries.

However, an increase of the covered deposit amount would have to consider the positions of all members of the financial safety net and the capacity of banks to pay higher premiums, and rise in-line with growing incomes in Ukraine. Eastern European DGSs serve as an example that the process can be split into two stages.[22] In Ukraine, the increase can also be completed in stages (for example, by raising the coverage to the equivalent of EUR 20,000, EUR 50,000, EUR 100,000 – as countries like Poland, Romania, and Slovakia did). Each stage may take several years and should start with a re-launch of active bank lending and deposit-taking. However, the process must follow a clear timeframe for banks, regulators, and European partners to follow. The moral hazards that can emerge because of higher coverage must be offset with rising household wealth.[23] An increase in coverage can boost deposit inflows (thus broadening the funding base for lending to the real economy), which can motivate the authorities to raise the coverage limit.

Improve cooperation within the financial safety net, primarily through an exchange of information. Despite continuous efforts, the Fund and the NBU do not have full effective access to necessary supervisory data from the other body. The Fund should receive timely information about banks that may turn problematic and it should also receive access to the relevant results of the NBU's stress tests. Financial regulators must discuss key decisions for the DGS (e.g., changing to a different con-

[21] The Verkhovna Rada adopted the Law of Ukraine *On Amendments to Certain Legislative Acts of Ukraine on Consolidating the State Functions of the Regulation of Financial Services Markets* in its first reading on 7 July 2017.
[22] NBU Financial Stability Report, December 2016, p.57 https://bank.gov.ua/doccatalog/document?id=44001454
[23] Co-insurance procedures, which were deemed one of the ways to reduce this moral hazard, were abolished in the EU and some other countries. The procedure had some effect and was later seen to undermine the idea of protecting individual depositors.

tribution model, changing insurance premiums, funding, etc.) as they have a direct effect on monetary, fiscal, and micro- and macroprudential policy. For example, higher contributions to the Fund will raise the cost of deposits as a funding cost for banks and may constrain lending.

We recommend that authorities discuss amending the law on the DGF to define its contribution to financial stability through the prevention of banks runs and ensuring the continuity of critical banking services during a resolution process.

We also recommend that the DGF regularly stress tests its systems per EBA Guidelines on stress tests of DGS[24] to prepare for crisis situations.

Expand the range of applied options for bank resolutions. Currently, liquidation is virtually the only viable option for a failing bank in Ukraine; finding a new investor is rare. Economic growth, the completion of the banking sector clean-up, and the implementation of European and global banking sector regulations (to level the playing field for international financial groups) should increase investor interest in domestic banks and assets. Along with the ongoing enhancement of Fund's institutional capacity, this should have a positive effect on potential resolutions also through the sale of banks as a going concern or as separate businesses. However, the transfer of bank ownership to the Fund and then to new investors must be efficient to mitigate the risks of growing liabilities or asset dilution by management.

Increase the efficiency of sales of insolvent banks' assets. The Fund's sells the assets of insolvent banks slowly and is too inefficient in asset recovery, primarily due to the shortcomings of the legal system (including the judiciary). Expanding Fund's public reports to include more detailed relevant information and introducing benchmarks could improve internal control and public control over the Fund's performance in this respect. The rate of asset recovery is one potential benchmark (short- and medium-term, in cents per dollar). However, setting benchmarks based on past performance can bring up the problem of asset quality misreporting by banks prior to the 2014 crisis. Another option can be to require all large banks to develop ex-ante recovery and resolution plans according to BRRD, and not only for systemically important banks as current legislation requires.

Extending coverage to Oschadbank and credit unions. Oschadbank's non-participation in the DGF violates the EU Directive and IADI principles, increases fiscal risks to financial stability, and may have a negative effect on competition in the banking sector. The competitive environment is also distorted as institutions operate under different regulatory and supervisory frameworks outside the DGS, but still compete with banks for deposits and in the lending market.

Ukraine's commitments to the IMF and its strategy for reforming state-owned banks provide for Oschadbank's participation in the DGF.[25] Finalizing the extension of NBU regulations and supervision to credit unions[26] can promote their participation in the DGF. This would promote a level playing field for deposit-taking institutions also in terms of participation in the DGF with risk-based contributions.

VI. CONCLUSIONS

Prompted by crises, advancements in research, and new economic thinking, deposit guarantee systems have been spreading globally and evolving. Through this evolution, regulators and other stakeholders identified the features and mechanisms that make DGSs more resilient and promote overall financial system stability. International and supranational organizations embedded those features in their best practice recommendations and new regulations.

The transformation of Ukraine's Deposit Guarantee Fund to date are not yet sufficient to contribute sustainably to the country's financial stability. To overcome challenges and introduce international best practices in terms of facilitating financial stability, the Fund, with support from other authorities, should transition to a risk-based contribution system, expand the scope of participation in the DGF, increase the covered deposit cap, improve cooperation with other members of the financial safety net, expand applied resolution tools, and improve the efficiency of the resolution process of insolvent financial institutions.

Implementing these recommendations would outline the further development of the DGF based on European rules, increase its resilience to shocks, and promote a greater contribution to financial stability.

Further research can focus on ways of assessing risk weightings in calculating risk-based contributions; exploring the trajectory of covered amount increases in Ukraine and measures to mitigate related moral hazards; the legal aspects of building effective insolvency recovery processes; timelines and requirements for extending participation in the DGF to credit unions and other non-bank deposit-taking institutions; ex-ante instruments for bank recovery and resolution; measuring the efficiency of DGF performance against key objectives – preventing bank runs and resolving banks, as well as bank insolvency recovery.

[24] EBA Guidelines on stress tests of deposit guarantee schemes under Directive 2014/49/EU (EBA/GL/2016/04).
[25] https://www.minfin.gov.ua/news/view/zasady-stratehichnoho-reformuvannia-derzhavnoho-bankivskoho-sektoru?category=derzhavni-banki-ukraini
[26] The financial sector reform includes splitting the mandate of the National Commission for State Regulation of Financial Services Markets, which currently regulates credit unions, between the NBU and the National Securities and Stock Market Commission. The draft law passed the first reading at the Ukrainian parliament.

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APPENDIX 1

Covered amounts in different jurisdictions, USD equivalent

Jurisdiction	Period			
	Sep 2008	Dec 2008	Jan 2011	Dec 2016
Australia	-	1,443,418	1,007,658	345,495
Austria	28,163	unlimited	137,121	105,226
Belgium	28,163	139,204	137,121	105,226
Brazil	31,196	8,639,309	11,947,417	76,800
United Kingdom	62,306	73,076	136,304	92,491
Hong Kong	12,875	unlimited	64,161	64,476
Denmark	56,629	unlimited	137,954	106,138
Estonia	28,163	69,602	137,121	105,226
Ireland	28,163	unlimited	unlimited	105,226
Spain	28,163	139,204	137,121	105,226
Italy	145,450	143,786	137,121	105,226
Canada	94,374	81,620	99,709	74,386
Latvia	28,163	69,602	137,121	105,226
Netherlands	28,163	139,204	137,121	105,226
Germany	28,163	unlimited	137,121	105,226
New Zealand	-	581,282	386,575	-
Norway	339,551	286,676	346,321	231,293
South Korea	41,421	39,526	44,664	41,416
Poland	31,684	69,602	137,121	105,226
Portugal	35,204	139,204	137,121	105,226
Romania	70,408	69,602	137,121	105,226
Singapore	13,951	unlimited	39,082	34,547
Slovenia	30,979	unlimited	137,121	105,226
United States	100,000	250,000	250,000	250,000
Thailand	unlimited	unlimited	1,619,119	418,877
Turkey	39,228	32,468	31,221	28,361
Hungary	35,443	unlimited	137,121	105,226
France	98,571	97,443	137,121	105,226
Czech Rep.	35,204	69,602	137,121	105,226
Switzerland	89,356	93,680	106,363	98,097
Sweden	35,204	69,602	137,121	105,226
Japan	94,398	110,152	122,003	85,492

Notes: Equivalent at the end-of-month exchange rate; for calculation purposes, “unlimited” fields were replaced with rounded readings for the amounts deposited in the current and savings accounts for the upper quintile group of households by net wealth in 2014 (based on Bundesbank research).
Source: based on OECD, sites of respective DGSs X-rates portal.

APPENDIX 2

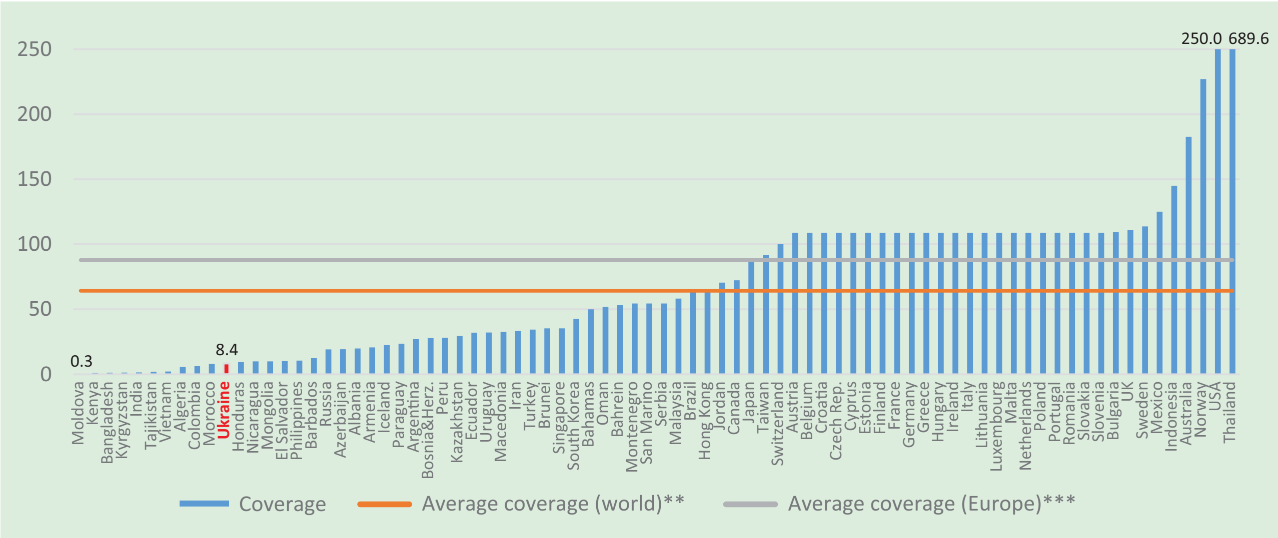
Size and funding of European DGSs, EUR million

Country	Total covered deposits	Available funds	Coverage ratio of covered deposits with available DGS funds	Target DGS size, % of covered deposits
Austria*	209,873	269	0.1%	0.80%
Belgium	284,403	3 061	1.1%	0.80%
Bulgaria	25,487	194	0.8%	1.00%
Cyprus	15,783	87	0.6%	0.80%
Czech Republic	79,380	1 032	1.3%	0.80%
Germany*	1,677,544	5 625	0.3%	0.80%
Denmark	97,100	1 186	1.2%	0.80%
Estonia	7,193	217	3.0%	2.50%
Greece	95,703	1 332	1.4%	1.39%
Spain	698,697	1 525	0.2%	0.80%
Finland	79,082	1 061	1.3%	0.80%
France	1,065,651	3 382	0.3%	0.50%
Croatia	24,075	542	2.3%	2.50%
Hungary	27,230	87	0.3%	0.80%
Ireland	94,075	93	0.1%	0.80%
Iceland	10,238	232	2.3%	n/a
Italy*	668,330	621	0.1%	0.80%
Lichtenstein	5,665	-	0.0%	0.80%
Lithuania	11,819	23	0.2%	0.80%
Luxembourg	29,159	76	0.3%	1.60%
Latvia	7,742	133	1.7%	0.80%
Malta	10,875	129	1.2%	1.30%
Netherlands	472,297	448	0.1%	0.80%
Norway	139,093	3 574	2.6%	0.80%
Poland	699,708	11 398	1.6%	2.60%
Portugal*	139,339	1 811	1.3%	0.80%
Romania	34,946	1 187	3.4%	3.43%
Sweden	176,092	3 987	2.3%	0.80%
Slovenia	17,063	16	0.1%	0.80%
Slovakia	30,773	203	0.7%	0.80%
United Kingdom	1,283,582	7 125	0.6%	0.80%

Notes: for countries marked with ‘*’ – total of national deposit insurers.
Source: EBA (data for end-2016), author’s calculations.

APPENDIX 3

Deposit coverage, USD thousand dollars per one person at one institution*



Notes: *As of end-2015, US dollar equivalent, calculated by national DGS authorities;
** - based on data from 98 jurisdictions;
*** - based on data of 40 European countries.
Source: IADI survey of 2016.