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Article

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Deposit Insurance: System Design and Implementation Across Countries

INTRODUCTION

Deposit insurance systems (DISs) are initiatives aimed at addressing threats related to the failure of deposit-taking financial institutions.[2] In practice, deposit insurance systems guarantee deposits and thus minimize or eliminate the risk that a depositor placing funds at a financial institution will suffer a loss (Ketcha 1999). As such, it is more of a guarantee against a loss than insurance (Anginer et al. 2014). In most countries across the world, governments (or private initiatives) have adopted such systems, starting with the United States in 1933 and continuing up to South Africa, which is expected to adopt a DIS within the foreseeable future.

As this article will point out, DISs around the world have different objectives and operate in different ways. Demirgüç-Kunt et al. (2014) provide an excellent framework and extensive data for discussing these variations across countries (and time). As their most recent data is from 2013, the majority of the article will discuss data from the most recent survey of the International Association of Deposit Insurers (IADI). This worldwide organization for deposit-insuring institutions promotes cooperation and encourages contact among deposit insurers and other interested parties (IADI 2018a). The survey participants are the legal entities administrating the DIS, referred to as deposit insurance agencies (DIAs).

The article is structured into five sections. Firstly, we briefly consider the theoretical literature to understand the design features of DISs considered in subsequent sections. Secondly, we give an overview of DISs around the world and discuss several essential features of DISs in OECD, EU, and BRIC countries. Thereafter, we consider the mandate and governance structure of DIAs. Subsequently, we discuss the way of financing of deposit insurance funds (DIFs). And finally, we identify some recent trends in DISs in the countries considered. Throughout the article, we emphasize a few important themes and examples in the world of deposit insurance.

MOTIVES FOR DEPOSIT INSURANCE

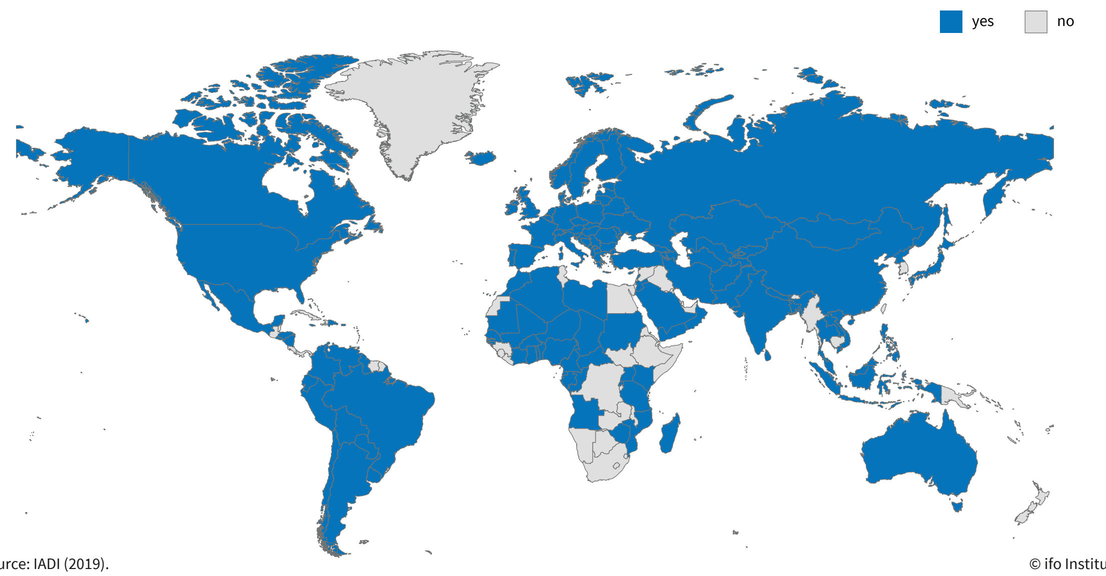
The most predominant argument in favor of deposit insurance systems arises from their ability to prevent bank runs, which usually lead to asset liquidation and potentially to bank failure. By preventing losses for individual depositors, their incentive to withdraw deposits before other depositors do so is limited if a DIS is in place (Diamond and Dybvig 1983). DISs help to keep the problems of one bank from spreading to the whole sector. As banks are a country's main source of finance, having a stable and well-functioning banking sector (Anginer et al. 2014) is important for a country's economic development. Furthermore, in today's world of globally integrated capital markets, a country without a DIS might encounter outflows of deposits (Kleimeier, Sander, and Xu 2019). Without deposit insurance, state-owned and large banks might have a comparative advantage due to implicit guarantees (Fecht and Weber 2019). The presence of deposit insurance provides a level playing field by increasing the trust in private and smaller banks, and increasing competitive pressure in the banking sector (Ketcha 1999). From the depositor's perspective, a key argument in favor of DISs is that with their implementation, deposits in checking and savings accounts form a risk-free asset for small savers and hence a low threshold for access to banks and financial products of the formal banking system (Demirgüç-Kunt and Detragiache 2002).

[1] ifo Institute (all) .

[2] Although in terms of deposit insurance "deposit-taking financial institutions" is the most comprehensive term for the institutions in question, in some sections we refrain from using it in the context of banking crises and supervision, and use "institution" or "bank" instead.

Figure 1

Presence of Deposit Insurance Systems Across the World



Source: IADI (2019).

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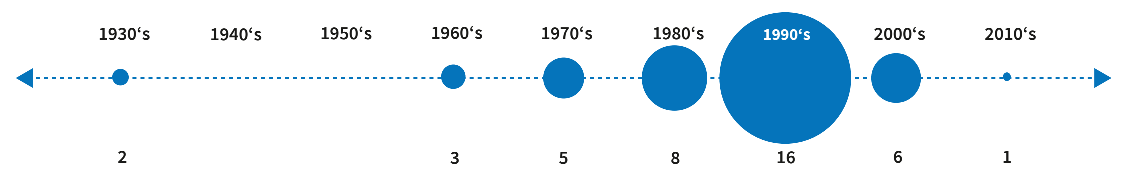
Figure 2

Timeline of Number of Countries Adopting Deposit Insurance



Source: IADI (2018a).

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Nonetheless, DISs come at a cost. When one is in place, banks' risk-taking becomes effectively risk-free for depositors. As banks do not have to pay a risk premium, they have an incentive to invest in high-risk assets. If risky assets fail, the costs are not borne by bank depositors, but by all contributors to the deposit insurance fund. Furthermore, people usually hold deposits because they want to be able to withdraw them very quickly. In cases where deposit insurance does not provide instant access to the guaranteed deposit, it may remain ineffective. Ultimately, deposit insurance might prevent the failure of inefficient banks that would otherwise be driven out of business. If there is no market discipline by depositors, banking supervision and DISs should be able to discriminate between inefficient and efficient banks (Ketcha 1999).

DEPOSIT INSURANCE SYSTEM ADOPTION AND COVERAGE

Worldwide, the majority of countries have adopted DISs as can be seen in Figure 1. The US and Germany were the first to introduce a DIS, in 1933 and 1934, respectively. Larger waves of adoption followed only later in the 1960s, 70s, and 80s, and many countries implemented a DIS in 1990 (see Figure 2).

Once implemented, DISs differ across countries in a few key characteristics. Table 1 gives an overview of such features for 38 OECD, EU and BRIC countries,[3] showing the year of introduction of the first DIS, the number of participating institutions, whether there are multiple systems in place, the maximum amount covered, the amount covered relative to per capita GDP, and the coverage of temporary high balances.

Currently, only three of the countries covered in this article do not have a DIS, namely New Zealand, Israel, and South Africa. However, in South Africa, the introduction of a DIS has been recently proposed by the central bank (SARB 2017). In all countries implementing a DIS, several types of financial institutions (such as commercial or savings banks) are required to participate in it.[4] The number of insured institutions varies greatly between countries, partially due to large differences in country size as well as the concentration of the banking sector. Nine countries employ multiple systems, namely Canada, Germany, Italy, Japan, Korea, Mexico, Brazil, the US, and Portugal. Except for Canada and Germany, the DISs in the countries differ solely in the subsectors of the financial sector that they cover, with separate DISs for commercial, savings, and cooperative banks or credit unions. Canada differentiates geographically, and employs several provincial DISs for trust and loan companies, credit unions, as well as a national DIS for commercial banks. The German system of voluntary additional insurance is explained in Box 2.

For all systems, except for Australia, the maximum amount covered refers to deposits per institution per depositor. In Australia, the main limit refers to a more detailed amount: it covers AUD 162,474 per depositor per institution per insured product type (see the product types in Table 2). The maximum amount covered in the other countries ranges from EUR 1,303 in India to an unlimited amount in Chile and voluntary schemes in Germany. Chile and Germany have unique insurance structures that are discussed in more depth in Boxes 2 and 5, respectively. To facilitate comparison between countries that have different levels of income, we report the maximum limit divided by per capita GDP. It ranges from 0.29 in Iceland to 14.96 in Bulgaria, disregarding the schemes in Chile and Germany. The relative coverage for some Eastern European countries is high due to their – mandatory – participation in the Deposit Guarantee Schemes Directive (DGSD; see Box 1). In addition to the maximum coverage limit, many countries specify increased coverage for temporary high balances in special cases – for example, buying a house with a

[3] Country information is provided based on data availability. There is no recent data on Austria, China, Latvia, Slovakia, or Spain; we have included Taiwan in Table 1 in addition to OECD, EU, and BRIC countries.

[4] At least one type of financial institution is obliged to take part in the DIS. For an overview of the types of institutions, please refer to Table 4.

DATABASE

Table 1

Overview of Deposit Insurance Systems in OECD, EU and BRIC Countries

	Year of Introduction	Number of Deposit-Taking Institutions Insured	Multiple Systems	Max. Covered Amount (EUR)	Amount Covered/GDP per Capita	Coverage of Temporary High Balances (EUR)
Australia	2008	104		162,474	3.62	
Belgium	1974	88		100,000	2.78	500,000
Brazil	1995	965	●	62,971	7.70	
Bulgaria	1999	23		100,139	14.96	127,500
Canada	1967	82	●	66,417	1.77	
Chile	1986	21		Unlimited	Unlimited	3,948
Croatia	1995	30		100,000	9.00	
Czech Republic	1994	32		100,000	5.89	200,000
Denmark	1987	145		100,000	2.13	1,300,000
Estonia	1998	9		100,000	6.09	
Finland	1970	9		100,000	3.12	
France	1980	362		100,000	3.09	500,000
Germany*	1934	1,102	●	100,000	2.70	
Greece	1995	21		100,000	6.44	300,000
Hungary	1993	45		100,000	8.42	
Iceland	1999	8		16,737	0.29	
India	1962	2,109		1,303	0.81	
Ireland	1995	297		100,000	1.72	
Italy	1987	466	●	100,000	3.76	
Japan	1971	1,352	●	78,427	2.45	Unlimited
Korea	1996	1,192	●	39,007	1.57	
Lithuania	1997	75		100,000	7.19	300,000
Luxembourg	1989	108		100,000	1.12	2,500,000
Malta	2003	22		100,000	4.46	500,000
Mexico	1999	241	●	100,329	13.51	
Netherlands	1978	36		100,000	2.49	500,000
Norway	1961	131		203,096	3.23	
Poland	1995	621		100,000	8.67	191,861
Portugal	1987	123	●	100,000	5.67	
Romania	1996	28		100,000	11.07	100,000
Russian Federation	2004	781		20,252	2.26	
Slovenia	2001	14		100,000	5.11	23,597
Sweden	1996	132		100,000	2.16	490,000
Switzerland	2005	298		83,320	1.25	
Taiwan	1985	401		83,744	4.13	
Turkey	1983	39		22,090	2.52	
United Kingdom	2000	764		95,706	2.89	1,130,000
United States	1933	11,252	●	208,300	4.20	

Note: ● stands for yes, an empty cell for no.
* Germany has four DIAs: for a more elaborate discussion on the German system, see box 2.
Source: IADI (2018a).

mortgage. This extended coverage enhances trust in the payment system.

Ultimately, the entire design of the reimbursement of depositors is important for the credibility of the system and in turn its ability to prevent bank runs. Therefore, quick and easy reimbursements, for example, are important. However, data on the public awareness of protection and credibility of DISs is not widely available and it is thus not covered in empirical studies. Box 3 summarizes selected findings on public awareness, implying that usually not more than 50 percent of the general population are aware of the existence of a DIS.

The scope of DISs differs per system and per country. As financial institutions offer many different financial products, DIAs need to consider which products and amounts to insure. Table 2 lists several types of products and indicates the coverage in the various countries for those products. Regarding the types of products covered, all DISs studied cover savings accounts, and only Croatia, Greece, Korea, and Mexico do not cover checking accounts. Annuity contracts are covered in only six countries. Certificates of deposits are covered in 24 out of the 38 countries. For these financial products, depositors get a risk premium as they are not able to access their funds at all times, which in turn makes these products less vulnerable to bank runs. Moreover, risky products that can be withdrawn at any time, such as guaranteed investment certificates, are covered by DISs only in Brazil, Canada, Denmark, and Iceland. If insured, depositors have an incentive to resort to these products with higher return, as they are now riskless. However, it is important to note that annuity contracts and guaranteed investment certificates do not legally exist in every country, which may blur the picture sketched above. Only six countries cover government deposits. Some other DISs cover only local governments' deposits.

Two types of products are interesting from a more systemic point of view: interbank and foreign currency deposits. DISs cover interbank deposits in only four countries (Australia, Canada, Mexico, and the US), whereas most countries cover foreign currency deposits.

MANDATE AND GOVERNANCE

DISs need to be regulated and administered to ensure they function properly. They are usually governed by institutions called deposit insurance agencies (DIAs), which can have various mandates. For example, their mandate could be limited to reimbursing depositors upon failure of a financial institution (referred to as *paybox*). However, their mandate could also be more comprehensive and include separating assets, opening a

Table 2

Deposit Insurance per Type of Deposit Product

Countries	Type of Product							
	Savings Account	Checking Account	Annuity Contracts	Certificates of Deposit	Guaranteed Investment Certificate	Foreign Currency Deposits	Inter-Bank Deposits	Government deposits
Australia	●	●		●			●	●
Belgium	●	●		●		●		
Brazil	●	●		●	●			
Bulgaria	●	●		●		●		
Canada	●	●		●	●		●	
Chile	●	●		●*		●		
Croatia	●			●		●		
Czech Republic	●	●				●		
Denmark	●	●	●		●	●		
Estonia	●	●		●		●		
Finland	●	●		●		●		
France	●	●				●		
Germany	●	●	●			●		●
Greece	●		●			●		
Hungary	●	●		●		●		
Iceland	●	●	●	●	●	●		
India	●	●		●		●		
Ireland	●	●		●		●		
Italy	●	●		●		○		
Japan	●	●						●
Korea	●	○	○			○		
Lithuania	●					●		
Luxembourg	●	●				●		
Malta	●	●				●		
Mexico	●	○		●		○	○	○
Netherlands	●	●	●	●		●		
Norway	●	●				●		
Poland	●	●				●		
Portugal	●	●		○		●		
Romania	●	●		●		●		
Russian Federation	●			●		●		
Slovenia	●	●		●		●		
Sweden	●	●				●		
Switzerland	●	●		●		●		●
Taiwan	●	●		●		●		
Turkey	●	●				●		
United Kingdom	●	●		●		●		
United States	●	●		●		○	●	●

*Other limits apply, see box 5 for a detailed description of the Chilean system.
Note: ● stands for yes, ○ for partially yes and an empty cell for no.
Source: IADI (2018a).

DATABASE

BOX 1 – DGSD

In 1994; the European Union adopted its first directive on deposit insurance to harmonize the domestic DISs within its borders. In the aftermath of the recent financial crisis, a new directive required EU countries to adopt a DIS of at least EUR 100,000 in 2010. In 2014, Directive 2014/49/EU was adopted, requiring countries to introduce at least one mandatory deposit guarantee scheme (DGS) that all financial institutions are a member of. Branches in other EU countries are covered under the DGS of the home country of the institution, if it is an EU country (see also Azevedo and Bonfim 2019). The Directive states that financial institutions themselves should contribute to the fund that is responsible for reimbursing depositors of failing institutions. It also requires EU countries to ensure that by July 3, 2024 the available financial means in the DGS reach at least 0.8 percent of the covered deposits. Also, depositor reimbursements must gradually become faster, taking a maximum of seven days from 2024 onwards. During the transitional period, depositors in need may ask for a "social payout," which is a limited amount covering their living costs. Deposits made by other financial institutions are not covered (European Union 2014).

BOX 2 – Germany and Voluntary Additional Insurance

Germany's DIS differs from that of other nations: deposit protection is organized into four different schemes depending on the bank category (private, public sector, savings, and credit cooperatives) of the respective banking association. These associations operate both statutory and voluntary schemes. Deposits in private banks are covered by the compensation scheme of the Association of German Banks (EdB), deposits in public banks by the compensation scheme of German public banks (EdÖ). Savings banks and cooperative banks are members of the institutional protection schemes of the German Savings Banks and Giro Association (DSGV) and the National Association of German Cooperative Banks (BVR), respectively. The main aim of the institutional protection scheme is to protect the institutions themselves. They are also recognized as statutory deposit guarantee schemes. The statutory deposit guarantee schemes are supplemented by the voluntary deposit insurance scheme established by the Federal Association of German Banks (BdB) and the Association of German Public Sector Banks (VÖB). Deposits are guaranteed by voluntary insurance schemes only if these are not already covered by a statutory compensation scheme. Since January 1, 2015, the coverage limit has been set at 20 percent of a member bank's own funds (Deutsche Bundesbank 2019).

BOX 3 – Public Awareness

The Financial Stability Board (FSB 2012) has listed various means countries use to raise awareness of their DISs, ranging from communication through banks, public advertisement through media, and the use of call centers and information websites. As public awareness is essential to the effectiveness of DISs, it is worthwhile to consider evaluations performed by DIAs. In 2017, surveys showed that only around 55 percent of Dutch and 40 percent of German citizens know what deposit insurance entails (DNB 2017; Bankenverband 2017). Prior to the financial crisis, a German survey indicated that although there was a lack of knowledge about DISs, there was strong confidence that deposits were safe (Sträter et al. 2008). Interestingly, a 2014 survey in New Zealand found that 75 percent of term-deposit holders thought that their deposits were guaranteed (FMA 2014), although in fact New Zealand had no DIS in place at this time, as the temporary scheme had been abolished in 2011.

bridge bank, providing open bank assistance, performing a bail-in, or even terminating an institution's license (Basel Committee 2019; Al-Jafari 2006). DIAs could also have the direct mandate to minimize loss or risk: loss minimizers aim to minimize the costs of resolution in case of bank failure, and risk minimizers aim to minimize the risks for the financial system as a whole. These more extensive mandates are referred to as *paybox plus, loss minimizing,* or *risk minimizing*.

The mandate of deposit insurers is closely intertwined with that of other safety net participants, such as banking supervisors, the central bank, and the government. This characteristic is amplified if the government implicitly prevents bank failure and overrules the current system of deposit insurers and banking supervisors.

The governance of DIAs includes the definition of mandates, public policy objectives and the checks and balances to ensure the execution of its mandate. Important characteristics are the organizational structure, its legal basis and its resolution tools (IADI 2009).

Table 3 provides a summary of the mandate of the DIS and the legislative and governance characteristics. Around two-thirds of the countries studied have a system with a mandate that goes beyond a simple paybox system. All DISs in scope are legislated by the government, except for the voluntary schemes in Germany (see Box 2). For a slight majority of countries, DISs are administered within the government. However, the actual legal status of the DIA may not be governmental: in around two-thirds of the countries, it is independent and executes its mandate without government involvement. Only in Chile and Belgium is the DIA part of the Ministry of Finance. In slightly less than half of the countries, the DIA is completely independent of the government and the central bank. As the mandate of DIAs might reach beyond reimbursing depositors, the DIA may be an active part of the resolution and liquidation of assets of a failed financial institution. Some of the DIAs are allowed to function as liquidators of failed institutions, whereas some are allowed to function as a receiver of the funds of a failed institution. As expected from the mandate, none of the DIAs with only a paybox mandate have those policy instruments.

Table 3

Deposit Insurance System Mandate and Governance

Country	System Mandate	Administration	Legal Structure	Conservator of Failed Bank	Receiver of Proceedings*
Australia	Risk minimizer	Government	Bank supervisor	●	
Belgium	Pay-box	Government	Ministry of finance		
Brazil	Pay-box plus	Private	Bank association		
Brazil	Pay-box plus	Private	Central bank		
Bulgaria	Pay-box plus	Government	Independent		
Canada	Loss minimizer	Government	Independent	●	●
Chile	Pay-box	No agency	Ministry of finance		
Chinese Taipei	Risk minimizer	Government	Independent	●	●
Croatia	Loss minimizer	Government	Independent	●	●
Czech Republic	Pay-box plus	Government	Independent		
Denmark	Pay-box	Government	Resolution authority		
Estonia	Pay-box	Government	Independent		
Finland	Pay-box plus	Government	Resolution authority	●	
France	Loss minimizer	Private	Independent	●	●
Germany	Risk minimizer	Private	Bank association		
Germany	Pay-box plus	Private	Independent		
Germany	Risk minimizer	Private	Bank association		
Germany	Pay-box	Private	Independent		
Greece	Pay-box plus	Private	Independent		
Hungary	Pay-box plus	Private	Independent		
Iceland	Pay-box	Private	Independent		
India	Pay-box	Government	Central bank		
Ireland	Pay-box	Central bank	Central bank		
Italy	Loss Minimizer	Private	Bank association		
Japan	Loss Minimizer	Private	Independent	●	●
Korea	Risk Minimizer	Government	Independent	●	●
Lithuania	Pay-box Plus	Government	Independent		
Luxembourg	Pay-box Plus	Government	Independent	●	
Malta	Pay-box Plus	Private	Independent		
Mexico	Loss Minimizer	Government	Independent	●	●
Netherlands	Pay-box Plus	Government	Central bank		
Norway	Risk Minimizer	Private	Bank association		
Poland	Loss Minimizer	Government	Independent	●	
Portugal	Pay-box Plus	Private	Independent		
Romania	Pay-box Plus	Government	Independent	●	●
Russian Federation	Loss Minimizer	Government	Independent	●	●
Slovenia	Pay-box Plus	Central Bank	Central bank		
South Africa	Pay-box Plus	Government	Central bank	●	
Sweden	Pay-box Plus	Government	Independent		
Switzerland	Pay-box	Private	Independent		
Turkey	Loss Minimizer	Government	Independent	●	●
United Kingdom	Pay-box Plus	Private	Independent		
United States	Risk Minimizer	Government	Independent	●	●

* The details displayed for Germany refer to private (P) and cooperative (C) banks, and their statutory (S) and voluntary (V) scheme. The table follows the order, PV PS CV CS. In addition, there is a protection scheme for savings banks and public banks which is not considered in this table.
Please refer to box 2 for additional information.
Note: ● stands for yes, ○ for partially yes and an empty cell for no.
Source: IADI (2018a).

Table 4

Number of Countries in Which a Type of Financial Institution Is Covered by at Least One DIA

Type of DIA Members	Number of Countries
Commercial banks	38
Savings banks	22
Credit unions	18
Financial cooperatives	16
Investment banks	10
Rural banks/Community banks	12
Islamic banks	2
Micro finance institutions	2
Insurance companies	4
Securities companies	5

*In case of multiple DIS, it is counted if at least one of the DIS covers the category of institution.
Source: IADI (2018a).

Another important characteristic of governance is the part of the financial sector to which the DIA applies. We discussed that most DISs require mandatory participation of financial institutions, but this may not apply to all legal forms of financial institutions. However, the different institutional statuses might strongly correlate to financial products, as specific institutions are tailored to market a specific type of deposit instrument.[5]

Table 4 lists the number of countries that demand certain types of deposit-taking financial institutions to be part of a DIS. All 38 countries cover normal commercial banks, most cover savings banks (although some countries have no legal difference between the two and thus do not specifically mention savings banks). Furthermore, some DISs cover credit unions and financial cooperatives. Some countries cover institutions that are characterized by higher-risk products, such as investment banks, rural banks, and pension funds (e.g., Russia[6]). Some DISs cover insurance products such as life insurance in Belgium (Vlaanderen 2018) as well as non-investment deposits at brokerages/securities companies.[7] Mexico and Brazil DISs also cover development and microfinance institutions, whereas the DISs in the UK and Turkey cover Islamic banks.

[5] For the types of products, see Table 2.
[6] This was not covered by a question in the IADI (2018a) questionnaire, but indicated separately by the Russian DIA.
[7] Such as in Australia, Belgium, Sweden, and Switzerland (IADI 2018a).

FINANCING DEPOSIT INSURRANCE SYSTEMS AND FUND SIZE

Deposit insurers have various ways of financing their systems. Funds can be gathered either in advance or after bank failure, risk premiums can be levied, up-front funds can have a target size set either by law or the DIA itself, and an explicit fiscal backstop may be in place for cases when the funds are depleted. Table 5 lists the main features of the financing side of DISs.

Most deposit insurers are financed up front (*ex ante*), whereas others gather funds in case of a bank failure (*ex post*). The latter has the disadvantage that funds are required when financial institutions might already be in bad shape, worsening concerns over contagion. Only Australia, Chile, and Switzerland have a purely *ex post* system, whereas Estonia, Poland, and the UK have systems that are partially *ex post* financed. An important consideration is the ratio of the amount to be collected to the total amount of deposits covered by the system. Firstly, we consider the relative fund size, and secondly, we consider the presence of a fund size target. We report fund sizes as a proportion of total deposits from 2010 (Demirgüç-Kunt et al. 2014) and from 2018 (European Banking Authority 2018), if available. Typical fund sizes correspond to a moderate percentage of total deposits, from 0.16 percent in Italy and Ireland up to 6.20 percent in Brazil. A remarkable figure is that of the US, where the number is negative. The FDIC, which is the DIA of the US, has a line of credit at the federal government, which enables the DIA to refinance (Ellis 2013).

Contributions to the deposit insurance funds are usually made on a yearly basis. This implies that after periods with a significant number of bank failures, the fund size is usually substantially lower (IADI 2018b). Some countries have a target ratio in place, which is either stated in law or left to the DIA to decide. Most target rates are stated in terms of covered or eligible deposits, but Japan is an exception: the target is set as a nominal amount.

An essential design characteristic of DIS financing is the relative rate that contributing financial institutions pay. Therefore, levying premiums that are risk-adjusted might mitigate the moral hazard problem associated with deposit insurance. A flat rate depends solely on the total covered deposits a financial institution has on its balance sheet. The majority of countries actually levy a differential rate based on various risk indicators. For example, the DIA in the Netherlands takes into account the following factors to determine the risk-dependent quarterly contribution rate: capitalization, liquidity, asset quality, management quality, and the extent of potential losses for the DIS (Ministerie van Financiën 2015).

The last column of Table 5 shows whether there is a fiscal backstop in place, meaning that if the DIS funds are empty, the government resupplies them, usually by issuing government bonds (DemirgüçKunt et al. 2014). Apart from this backstop, the government can refinance or bail out financial institutions as well, which is a form of implicit deposit insurance: this occurred, for example, in Belgium, Denmark, Germany, Greece, Iceland, Ireland, Luxembourg, the Netherlands, Spain, the

BOX 4 – EDIS

In November 2015, the Commission proposed setting up a European Deposit Insurance Scheme (EDIS) for bank deposits in the Eurozone. This proposal builds on the system of national deposit guarantee schemes (DGS; see Box 1). While DGSs already ensure the protection of deposits up to EUR 100,000, EDIS aims to provide a "stronger and more uniform degree of insurance cover" (European Commission 2019). This would limit the vulnerability of national insurance schemes to large local shocks, ensuring that the level of depositor confidence in a bank would not depend on the bank's location and weakening the link between banks and their national sovereigns. Similarly to DGS, EDIS would apply to deposits below EUR 100,000 of all banks in the banking union. Its implementation would proceed in stages and the contributions will progressively increase over time (Carmassi 2018). Jokivuolle and Pennacchi (2019) provide a proposal on how to set up EDIS so as to capture systematic risk.

Table 5

Deposit Insurance Fund Financing Characteristics

Country	Fund contribution timing	Fund size as a percentage of covered deposits	Total deposits as percentage of GDP (2010)	Target size status	Target	Financing rate	Explicit fiscal backstop
Australia	Post	NA	107.1	None		Flat	●
Belgium	Ante	1.16	149			Differential	●
Brazil	Ante	6.2	43.5	Law	2% of eligible	Flat	
Bulgaria	Ante	0.96	66.7	Law	1% of covered		●
Canada	Ante	0.32	111.7	DIA	1% of covered	Differential	
Chile	Post	0	NA	-	-	-	
Chinese Taipei	Ante	NA	NA	Law	2% of covered	Differential	
Croatia	Ante	2.5	NA			Differential	●
Czech Republic	Ante	1.33	65	Law	1.5% of eligible	Differential	
Denmark	Ante	1.21	96.6			Differential	●
Estonia	Both	2.64	56.5	Law	2% of eligible	Differential	●
Finland	Ante	2.1	59.9	Law	0.8% of covered	Differential	
France	Ante	0.33	67.8	Law	0.5% of covered	Differential	
Germany	Ante	0.4	102.5	None		Differential	
Greece	Ante	1.45	126	None		Differential	
Hungary	Ante	0.35	69.1	Law	0.8% of covered	Differential	●
Iceland	Ante	2.46		None		Differential	
India	Ante	1.4	68.1	None		Flat	●
Ireland	Ante	0.16	128.1			Differential	●
Italy	Ante	0.16	99.6	Law	0.8% of covered	Differential	
Japan	Ante	0.04	202	DIA	5 Trillion Yen	Flat	
Korea	Ante	1.61	93.7	DIA	0.825-1.1% of eligible	Differential (Flat for cooperatives)	
Lithuania	Ante	0.42				Differential	
Luxembourg	Ante	0.51	1634.5			Differential	
Malta	Ante	1.01	694			Differential	●
Mexico	Ante	0.5	17	None		Flat (Differential for cooperatives)	
Netherlands	Ante	0.19	154.4			Differential	
Norway	Ante	2.72		None		Differential	
Poland	Both	1.71		Law	2.6% of covered	Differential	
Portugal	Ante	1.29	118.6			Differential	●
Romania	Ante	3.17	56.9	DIA	3% of covered	Differential	●
Russian Federation	Ante	1.8	45.4			Differential	●
Slovenia	Ante	0.18	65			Differential	●
Sweden	Ante	1.76	126.9	None		Differential	
Switzerland	Post	0	269.7	None		Flat	
Turkey	Ante	5.41	54.6	None		Differential	
United Kingdom	Both	0.65	138.6			Differential	●
United States	Ante	-0.12	52.7	DIA	2% of covered	Differential (Flat for credit unions)	●

Note: ● stands for yes, ○ for partially yes and an empty cell for no. For other columns, empty means no data available. A differential financing rate can also imply a flat rate and a differential part. For countries with multiple DISs, we report the total fund size over all deposits.
Source: Demirguc et al. (2014); IADI (2018b); European Banking Authority (2018).

DATABASE

BOX 5 – Chile

Chile has a very different system than many other countries: their fund is *ex post* financed, the DIA is not a separate entity but part of the ministry of finance, and certificates of deposit held by households are co-insured for 90 percent up to a limit of around EUR 4,000 (IADI 2018a). The financing of the Chilean DIS relies completely on the central bank and occurs only *ex post*. Whereas other countries have *ex post* financing, Chile is the only one where the central bank supplies the funds. However, financial institutions in which the covered deposits exceed 2.5 times the capital reserves of the institution face an extra requirement of holding short-term central bank or government securities.

UK, and the US between 2007 and 2013 (Demirgüç-Kunt et al. 2014).

TRENDS

To consider recent changes in DISs, we turn to the surveys of IADI (2018a) in 2018 (end of 2017) and 2014 (end of 2013). We report changes in nominal coverage amount, mandate, financing, and coverage for 33 countries.[8] The EU countries are grouped together since the 2014/49/EU directive synchronizes the amounts covered (see Box 1). We find that in most countries, the nominal amount stayed the same: only Mexico (+4.9 percent), Russia (+100 percent), and Canada (+7.6 percent) altered the nominal amount covered per depositor per institution. However, Russia also saw high inflation rates between 2014 and 2017. Norway and four EU countries increased the mandate of the DIS from a simple paybox to a paybox plus system, Italy and the Netherlands introduced *ex ante* rather than *ex post* financing, and coverage for various products was abolished or introduced in several countries. Furthermore, the coverage of government deposits was abolished in Norway, Czech Republic, Denmark, Germany, and Sweden, and introduced in Switzerland. Ultimately, a clear trend can be observed in the contribution rates: Iceland, Korea, Russia, and 11 EU countries opted for a (partially) risk-dependent differential contribution to the deposit insurance fund rather than a flat contribution rate. The trends considered here refer to a period of only few banking crises (Laeven 2018). Demirgüç-Kunt et al. (2014) states that sectoral and governmental actors do not exert a force towards a more comprehensive DIS when there is no turbulence in the financial sector.

CONCLUSION

In this database article, we describe important features of deposit insurance systems (DISs) from 38 OECD, EU, or BRIC countries related to DIS coverage, the mandate and governance of DIAs, and their financing. However, DISs cannot be viewed in isolation, as Anginer and Bertay (2019) point out, as their design and functioning are influenced by the larger institutional environment.

[8] For Austria, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Slovakia, and Spain, there was no data available in either the 2014 or the 2018 survey.

REFERENCES

Al-Jafari, M. (2006), General Guidance for Effective Deposit Insurance Mandate, http://www.dic.gov.jo/PublicationsFiles/general%20guidance%20for%20effective%20deposit%20insurance%20mandate.pdf. (accessed March 25, 2017).

Anginer, d. and A. C. Bertay (2019), "Deposit Insurance Design and Institutional Environment", *ifo DICE Report* 2019/01, vol 27.

Anginer, D., A. Demirgüç-Kunt, and M. Zhu (2014), "How deposit insurance affect bank risk? Evidence from the recent crisis", *Journal of Banking and Finance* 48, 312–321.

Azevedo, J. V. and D. Bonfim (2019), "Deposit Insurance and Cross-Border Bank", *ifo DICE Report* 2019/01, vol 27.

Bankenverband (2017), Finanzwissen und Finanzplanungskompetenz der Deutschen, https://bankenverband.de/media/files/2017-12-18_Umfrage_Charts_Finanzwissen.pdf (accessed March 25, 2017).

Basel Committee on Banking Supervision, International Association of Deposit Insurers (2019), *Core Principles for Effective Deposit Insurance Systems*, Bank for International Settlements, Basel.

Carmassi, J., S. Dobkowitz, J. Evrard, L. Parisi, A. Silva, and M. Wedow (2018), "Completing the Banking Union with a European Deposit Insurance Scheme: who is afraid of cross-subsidisation?", *European Central Bank Occasional Paper Series.*

Demirgüç-Kunt, A. and E. Detragiache (2002), "Does deposit insurance increase banking system stability? An empirical investigation", *Journal of Monetary Economics* 49(7), 1373–1406.

Demirgüç-Kunt, A. and E. Kane (2003), "Deposit Insurance: Handle with Care", Central Banking, Analysis, and Economic Policies Book Series, in: L. Ahumada & J. Rodrigo Fuentes & N. Loayza (series editor) & K. Schmidt-Hebbel (series editor), *Banking Market Structure and Monetary Policy*, edition 1, volume 7, chapter 12, pages 345–358 Central Bank of Chile.

Demirgüç-Kunt, A., E. Kane, and L. Laeven (2014), "Deposit Insurance Database", *IMF Working Paper* no. w20278.

Deutsche Bundesbank (2015), Die Einlagensicherung in Deutschland, Monatsbericht Dezember 2015, https://www.bundesbank.de/resource/blob/597954/fcf7328940de422b2bc0548fdcefe2a9/mL/2015-12-einlagensicherung-data.pdf (accessed April 23, 2019).

Deutsche Bundesbank (2019), Deposit Protection, https://www.bundesbank.de/en/tasks/banking-supervision/individual-aspects/deposit-protection/deposit-protection-622748 (accessed March 15, 2019).

Diamond, D.W., and P.H. Dybvig (1983), "Bank Runs, Deposit Insurance, and Liquidity", *The Journal of Political Economy* 91(3), 401–419.

Die Deutsche Kreditwirtschaft (2019), Einlagensicherung, https://die-dk.de/einlagensicherung/ (accessed March 5, 2019).

DNB (2017), DNBulletin: Nederlanders positief over depoitogaranitiestelsel, https://www.dnb.nl/nieuws/nieuwsoverzicht-en-archief/dnbulletin 2017/dnb363486.jsp (accessed March 15, 2019).

Ellis, D. (2013), "Deposit insurance funding: Assuring confidence", https://www.fdic.gov/deposit/insurance/assuringconfidence.pdf (accessed March 5, 2019).

European Banking Authority (2018), Deposit Guarantee Schemes Data, https://eba.europa.eu/-/eba-releases-updated-data-on-deposit-guarantee-schemes-across-the-eu. (accessed March 15, 2019).

European Commission (2019), European deposit insurance scheme, https://ec.europa.eu/info/business-economy-euro/banking-and-finance/banking-union/european-deposit-insurance-scheme_en (accessed March 15, 2019).

European Union (2014), Deposit Guarantee Scheme, https://eur-lex.europa.eu/legal-content/EN/LSU/?uri=CELEX:32014L0049 (accessed March 15, 2019)

Fecht, F. and P. Weber (2019), "What we Can Learn From the Introduction of Blanket Deposit Guarantees in Germany 2008 About the Benefts of EDIS", *ifo DICE Report* 2019/01, vol 27.

Financial Stability Board (2012), "Thematic Review on Deposit Insurance Systems", *FSB Peer Review Report*.

FMA (2014), FMA Money Week Survey 2014, http://www.fma.govt.nz/assets/News-releases/150128-FMA-Money-Week-Survey-2014.pdf (accessed January 14, 2019).

IADI (2009), "Governance of Deposit Insurance Systems", *IADI Guidance Paper, Basel*.

IADI (2018a), IADI Annual Survey 2018, https://www.iadi.org/en/core-principles-and-research/deposit-insurance-surveys/. (accessed March 15, 2019).

IADI (2018b), "Deposit Insurance Fund Target Ratio", *IADI Research Paper*, Basel.

IADI (2019), Deposit Insurance Systems Worldwide, https://www.iadi.org/en/deposit-insurance-systems/dis-worldwide/ (accessed March 15, 2019).

Jokivuolle E. and G. Pennacchi (2019) "Designing a Multinational Deposit Insurance System: Implications for the European Deposit Insurance Scheme", *ifo DICE Report* 2019/01, vol 27.

Ketcha Jr., N.J. (1999), "Deposit insurance system design and considerations", *BIS Research Papers no. 7.*

Kleimeier, S., H. Sander, and S. Qi (2019), "Deposit Insurance and Cross-Border Deposits in Times of Banking Crises", *ifo DICE Report 2019/01*, vol 27.

Laeven, L. and F. Valencia (2018), "Systemic Banking Crises Revisited", *IMF Working Paper* no. 18/206.

Ministerie van Financiën (2015), Besluit van 16 november 2015, https://zoek.officielebekendmakingen.nl/stb-2015-434 (accessed March 25, 2019).

Protection fund (2017), Tegemoetkomingsmodaliteiten van het Beschermingsfonds voor deposito's en financiële instrumenten, http://www.protectionfund.be/files/Tegemoetkomingsreglement-disclaimer2016.pdf (accessed March 15, 2019).

South African Reserve Bank (2017), Designing a deposit insurance scheme for South Africa – A Discussion Paper, http://www.treasury.gov.za/twinpeaks/Designing%20a%20deposit%20insurance%20scheme%20for%20South%20Africa.pdf (accessed February 11, 2019).

Sträter, N., M. Cornelißen, and A. Pfingsten (2008), Deposit insurance: An empirical study of private investors' knowledge and perception, http://www.fbv.kit.edu/symposium/11th/Paper/30Posters/Straeter.pdf (accessed January 25, 2019).

Vlaanderen (2018), Depositobeschermingsregeling, https://www.vlaanderen.be/consumentenzaken/depositobeschermingsregeling (accessed March 25, 2019).