

Economics Synopsis

The Economics of The European Deposit Insurance Scheme

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After the systemic banking and sovereign crisis of 2010-2012, the European Union recognized the need to strengthen the Economic and Monetary Union by implementing a Banking Union, with the objective of further enhancing financial stability and risk sharing, and weakening the link between banks and national sovereign debts. To this end, the Four Presidents' Report (Van Rompuy *et al.* 2012) was the first to stress the need to “elevate responsibility for [bank] supervision to the European level, and provide for common mechanisms to resolve banks and guarantee customer deposits”. However, despite the acknowledgment of the importance of these three policies since the very beginning, the organization of the Banking Union started with the introduction of only two pillars: the Single Supervisory Mechanism (SSM) in 2014 and the Single Resolution Mechanism (SRM) in 2016.¹ In this context, a common deposit insurance scheme was considered to be tackled at a later stage. In 2012, the European Commission proposed the introduction of mandatory mutual borrowing and lending between national deposit guarantee schemes but the proposal was rejected by the Council, and in 2014 the Deposit Guarantee Scheme Directive was introduced to harmonize deposit insurance across the Union with respect to some critical characteristics, such as maximum coverage and period of reimbursement. However, some important differences still remain across member States (for example, on the conditions to declare deposits unavailable,

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1. The set-up of the SSM and SRM were also accompanied in 2013 by the Capital Requirement Regulation and the Capital Requirement Directive, to adopt the Basel III agreement in the EU legal framework.

on their eligibility, and on the financing and use of the funds) mainly due to the transposition of the Directive at national levels.

In November 2015 the European Commission published a technical report highlighting the need to go beyond these differences and complete the Banking Union with a European Deposit Insurance Scheme (EDIS). In the words of the “Five Presidents’ Report” (Juncker *et al.* 2015) this instrument would increase the resilience of the EMU “to large local shocks (in particular when the sovereign and the national banking sector are perceived to be in a fragile situation)”, break the *doom loop* between banking and sovereign crises, and create a level-playing field within the Banking Union for depositors and banks seeking to attract them. This would be achieved by progressively transferring funds and payout management away from national deposit insurance schemes to a common fund, administered by a Single Resolution and Deposit Insurance Board inside the Single Resolution Board. Nevertheless, the discussion in the European Parliament and the Council got to a stalemate due to disagreements about the design of the system at its final stage, the timing of the setting up, and the different degree of legacy issues and moral hazard present in the various national banking systems.

In the light of this narrative, the aim of the present synopsis is to outline the case for the EDIS coming from the economic literature. To this end, I will start by explaining the rationale for deposit insurance, as a necessary complement to other types of government interventions aiming at managing depositors’ self-fulfilling expectations that might trigger bank runs. I will also present the economic arguments that justify the introduction of a cross-border deposit insurance scheme like the EDIS, based on financial integration and several channels of financial contagion. In the second part of the synopsis, I will instead describe the European Commission’s proposal for the EDIS, and the issues that it allegedly raises. I will also analyze and compare two proposals to resolve them, by Gros (2015) and the so-called “Franco-German Group” (Bénassy-Quéré *et al.* 2019) and summarize an empirical analysis by Carmassi *et al.* (2018) on the possible extent of cross-subsidization across EU member states that EDIS might create. Finally, I will conclude.

The rationale for deposit insurance: self-fulfilling runs

The economic literature stresses that banks occupy a critical position among the financial institutions that populate the financial system: They operate as intermediaries between a vast public of savers (often small and unsophisticated) and borrowers, guaranteeing to the first a safe management of their resources, and to second a stable flow of funding. To this ends, banks engage in a very specific activity, that represents their very essence: liquidity and maturity transformation. In fact, the banks issue short-term liquid liabilities in the form of deposits for savers, and use them to finance

long-term illiquid assets in the form of loans to borrowers. In this way, the banking system can create value for the whole economy, by pooling the idiosyncratic liquidity risk of its depositors and collecting information and monitoring through time the activities of its borrowers (Diamond and Dybvig 1983; Diamond 1984; Holmstrom and Tirole 1998).

However, liquidity and maturity transformation have a “dark side”. In fact, they create a mismatch in banks’ balance sheets, in terms of both liquidity and maturity of their assets and liabilities. This mismatch, which is necessary for the correct functioning of the banking system itself, has the unfortunate consequence of making it subject to financial fragility. This can happen for two reasons. First, the depositors might receive bad news about their banks, for example about the borrowers to which they have lent, that press them to withdraw their deposits. Second, the depositors might expect that, independently of the state of the banks, all the other depositors will withdraw, and are afraid that the banks might completely liquidate their asset portfolios to serve them, thus leaving little or nothing if they do not withdraw as well. The first case is what the economic literature calls a “fundamental” run, while the second case represents a panic-based “self-fulfilling” run. The difference between the two is critical. In fact, absent any other friction that might distort the banking system, fundamental runs are Pareto-efficient: there is no way in which a regulator can intervene in the economy and make some agents better off while keeping all the other agents at least as well off as without the intervention (Allen and Gale 1998, 2004). In contrast, self-fulfilling runs are coordination failures among atomistic depositors who cannot perfectly infer the behavior of their peers. Therefore, a government can and should intervene to calm depositors’ expectations, and coordinate the economy on a “good equilibrium”.

How can a government calm depositors’ expectations and rule out self-fulfilling runs? Historically, the first type of intervention in that direction was a commitment of central banks to intervene as lenders of last resort for illiquid but solvent banks, possibly at penalty rates and against good collateral (Bagehot 1873).² However, the required speed of intervention during a run makes a clear distinction between illiquid and insolvent banks almost impossible, and the need to avoid financial contagion might force a central bank to help as many banks as possible (Goodhart 1987). Moreover, the anticipation of such an intervention might increase bank risk taking (Repullo 2005; Acharya and Yorulmazer 2007; Ratnovski 2009) and hinder incentives for peer monitoring among banks (Rochet and Tirole 1996). For these reasons, governments have also introduced interventions that could prevent the effects of self-fulfilling runs instead of just curing them *ex post*.

2. In the words of Tucker (2015), “If “no monetary financing” is the golden rule for a credible nominal anchor, so “no lending to irretrievably insolvent borrowers” should be the golden rule for the liquidity reinsurer”.

These types of interventions can be implemented in several ways. First, the government could announce a commitment to suspend the convertibility of deposits and block excessive depositors' withdrawals. By doing that, the government induces in all depositors the belief that the banks will have sufficient resources in the future to keep financing the corporate sector and repay them, thus calming their expectations. However, the success of this intervention crucially depends on the commitment of the government to suspend convertibility as soon as a run starts. In fact, if the government is not committed (or cannot commit) to this strong intervention, the depositors will anticipate it and run anyway. This is not a mere possibility, because the government commitment to an immediate suspension of convertibility is time inconsistent, in the sense that it makes sense from an *ex ante* point of view, but not *ex post*: if a run really takes place, the government might be willing to postpone suspension, for fear of leaving some depositors without withdrawals. Thus, suspension of convertibility rarely resolves self-fulfilling runs (Ennis and Keister 2009).

The second *ex-ante* intervention that might prevent self-fulfilling runs is liquidity regulation: The government can force the banks to hold liquid reserves to repay the depositors, even in the case of a complete run. In that case, the depositors would anticipate that there is no reason for them to withdraw, and a run would not be triggered in the first place. However, this intervention, while being effective at stabilizing depositors' expectations, works only if it forces banks to hold sufficiently large reserves. The most extreme case of such a liquidity regulation is one that forces the banks to be "narrow" and invest 100 percent of their liabilities in safe liquid assets. However, this policy would destroy liquidity and maturity transformation (Wallace 1996). Moreover, it might distort the allocation of savings to the corporate sector, and generate a credit tightening with potentially large effects on the real economy. That is the reason why liquidity regulation is generally implemented but is never tight enough to completely rule out self-fulfilling runs.

All these arguments provide a rationale for complementing government intervention against self-fulfilling depositors' runs with deposit insurance. According to the IMF (Demirguc-Kunt *et al.* 2015), around 111 countries in the world have introduced such a scheme, most of them in the last thirty years (with the notable exception of the U.S., which introduced it in 1933). In most cases (87 countries) deposit insurance is privately funded. However, insurance premia are generally tiny,³ and not sufficient to cover potential self-fulfilling runs, especially if systemic: the average coverage-to-GDP ratio in the sample is of more than 600 percent. That is the reason why in 29 out of those 87 countries

3. In an older version of the IMF database, the highest insurance premium was 3.2 percent in Slovenia, but in most countries was between 0.01 and 0.8 percent of total covered deposits.

with privately funded schemes, deposit insurance also has a public backstop, and 53 countries in total have either a publicly or jointly funded scheme or a backstop. Moreover, 98 out of 111 schemes are administered either by a public authority or by a joint private-public one.

These numbers highlight the fact that the government plays a critical role to ensure the credibility of deposit insurance. In turn, the government credibility to guarantee deposits raises one further issue: a self-fulfilling run, especially if systemic, might be too costly for a government to counteract, and threaten sovereign solvency as a consequence (Schoenmaker 2018). On top of that, the channel of causation can go in the opposite direction: a sovereign debt crisis might impair the ability of a government to credibly guarantee deposits, and therefore trigger a self-fulfilling run. Put differently, there exists the possibility of a “doom loop” (Farhi and Tirole 2017), i.e. a two-way feedback mechanism between self-fulfilling runs and sovereign debt crises. As a consequence, an increase in the level of guarantees might have a positive or negative effect on financial fragility depending on the specific characteristics of the economy, such as the size of the banking system, its productivity relative to the public sector, the level of public expenditure and the tax burden (Leonello 2018).

The rationale for the EDIS

The previous section summarized the economic rationale for the introduction of deposit insurance, and highlighted the role of government commitment in guaranteeing its credibility, thus connecting the possibility of self-fulfilling runs to sovereign debt crises. Still, this is not sufficient to justify the introduction of an international deposit insurance scheme like the EDIS. Indeed, the fact that a country is hit by a self-fulfilling run on its banking system does not justify per se that other countries should share a deposit insurance scheme with it. For that, one or more channels of cross-border financial integration must be present.

Completing a banking union

The first economic argument that justifies the introduction of an international deposit insurance scheme on the base of financial integration is the need to complete a banking union. The typical motivation for that lies in the observation that financial integration justifies the centralization of bank regulation and supervision, as the simple coordination among local authorities might break down during financial crises (Freixas 2003).⁴ In turn,

4. In this respect, the case of Fortis is instructive. Fortis was a systemically-important bank for both the Netherlands and Belgium, two highly integrated economies. Nevertheless, when the

regulatory and supervisory centralization might create conflicts between local deposit insurance and the central authority (Repullo 2018) or agency problems between them (Carletti *et al.* 2019) that only the further centralization of deposit insurance can solve. In fact, on the one hand the authorities responsible for local deposit insurance might have a tendency to blame an “unfair” central authority for not recognizing the strength of their banks. On the other hand, a central authority might not fully internalize the fiscal costs of financial distress on local public finances (Gros and Schoemaker 2014). Moreover, the absence of a common deposit insurance scheme might distort the corporate governance of multinational banks (Grubel 1979). In fact, a local deposit insurance authority might tend to encourage the cross-border expansion of domestic banks through subsidiaries rather than through branches, based on the fact that subsidiaries are subject to the deposit insurance of the destination country, while branches are subject to the deposit insurance of the country of origin (Valle-e-Azevedo and Bonfim 2019).

Financial contagion

The economic literature highlights a second channel through which financial integration justifies an international deposit insurance scheme: because financial integration creates financial contagion. Broadly speaking, financial contagion is a situation in which financial troubles in one entity (a bank, a region or a country) are transmitted to other entities. In that sense, in the same way as self-fulfilling runs are the dark side of maturity transformation, financial contagion is the dark side of financial integration.

In support of this argument, the economic literature focuses its attention on three channels of financial contagion of self-fulfilling runs that might be critical. First, financial contagion might arise when banks are integrated among themselves, either as a consequence of cross-border consolidation (Allen and Gale 2000) or in the interbank market to hedge against idiosyncratic liquidity shocks (Brusco and Castiglionesi 2007) or in the payment system (Aghion *et al.* 2000; Freixas *et al.* 2000). Then, a self-fulfilling run on the banking system of a country might spread across borders if it conveys information about impairments in the balance sheets of the banks in other countries (Dasgupta 2004).

Second, there can be financial contagion of self-fulfilling runs through national sovereign debts. This can happen if banks hold a portfolio of sovereign debts of different countries to diversify sovereign risk (Bolton and Jeanne 2011). Moreover, the sovereign debts of different countries might be connected by a common institutional background. This can happen if

global financial crisis took the bank to the verge of insolvency, the Belgian authorities wanted to save the whole bank, while the Dutch authority wanted to split the bank to return the control of the Dutch part under national control.

countries share a common currency and high sovereign risk on one of them put that into strain, thus creating redenomination risk (De Santis 2018). On top of that, the common institutional background monitors and directs government intervention against self-fulfilling runs, and eventually against run-induced sovereign crises. Thus, a self-fulfilling run on the banks of one country might signal how other governments are going to intervene in future crises, thus possibly spreading self-fulfilling uncertainty.

Third, financial contagion might happen even if national banking systems or sovereign debts are not internationally integrated, when capital markets are integrated. Then, self-fulfilling runs might generate information externalities (Chen 1999) and shrink the common pool of liquidity, thus triggering an aggregate liquidity shortage (Diamond and Rajan 2005) or fire sales (Cifuentes *et al.* 2005). Similarly, a self-fulfilling run might spread to other countries because the resulting wealth loss suffered by the investors might make them more risk averse and willing to withdraw from their investments in other countries too (Goldstein and Pauzner 2004) or because it might trigger a portfolio rebalancing (Lagunoff and Schreft 2001) or a “flight to quality” (Bernanke *et al.* 1996).

Evidence

In the light of the previous theories, we can evaluate which channels of financial integration justify in practice the introduction of the EDIS. On the one hand, the first argument is the strongest. In fact, in the current EU regulatory framework bank supervision and resolution are centralized via the first two pillars of the Banking Union, but the consequences of bank failures are still essentially borne at national level. For example, had the Spanish bank Banco Popular Español failed in 2017, instead of being bought by Banco Santander, the Portuguese deposit insurance scheme would have had to refund depositors in the local subsidiary, even if the bank was supervised and resolved at EU level (Nouy 2017). Hence, there exists the need to complete the Banking Union in order to avoid possible conflicts of jurisdictions across different cross-border regulatory levels.

On the other hand, not all the aforementioned channels of financial contagion have been significant during the 2010-2012 crisis, or will be significant in the incoming future. First, there is little evidence of bank cross-border holdings of government bonds. To the contrary, there is evidence of home bias among banks in more vulnerable countries (Horvath *et al.* 2015). Moreover, domestic government bonds represent around 60 percent of the total bank sovereign exposure also in large EU countries (Craig *et al.* 2019). On top of that, publicly-owned, bailed-out and poorly capitalized banks in the euro area seem to have increased their holdings of domestic government bonds more than other banks in 2011 and 2012 (Altavilla *et al.* 2017). Clearly, there is instead a strong connection between national sovereign debts because

of the institutional background that the member states share inside the EU. In that respect, the irreversibility of the euro ruled out redenomination risk. However, Constâncio (2012), talking about the start of the 2010-2012 crisis, still argues that the rise in bond yields for Ireland, Portugal, Spain and Italy “can be largely explained by the concerns raised by the scope and possible extent of the private sector involvement in Greece, which was set as a condition for a second programme [sic] at the euro area summit of 21 July [2011]”.

Second, bank integration has not been particularly strong in the EU in the past decades, from different points of view. Fostering cross-border bank consolidation for example has been a matter of debate at the EU level. In fact, on the one hand there is the recognition that it has the potential to create economies of scale and enhance cross-country risk sharing and the resilience of the financial system to aggregate shocks, while preserving competition in the local markets (European Central Bank 2017). On the other hand, consolidation could also represent a threat to financial stability, not only because it could create institutions that are “too-big-to-fail” (Kareken and Wallace 1978) or “too-interconnected-to-fail” (Drehmann and Tarashev 2013), but also because it might disproportionately penalize smaller banks and harm diversification, which policymakers believe to be a key feature to guarantee financial stability (European Parliament 2018).

In a similar way, bank integration via interbank markets was not particularly strong during 2010-2012, as interbank markets were still recovering from the considerable dry-up that they suffered during the preceding global financial crisis. Yet, interbank markets are currently regaining their role for the circulation of liquidity in the European banking system. Finally, also capital market integration has not been particularly strong in the EU in the past decades, essentially due to regulatory barriers across countries. The European Commission has been addressing this point in the last years, with several proposals aiming at building a Capital Markets Union that could complement bank financing, unlock and put into work capital around Europe, give to savers more investment choices and to non-financial corporations larger funding at lower costs, irrespective of their location (European Commission 2019).

Taking stock

To sum up, the economic literature highlights that several channels of financial contagion have been at play in the EU during the 2010-2012 crisis. On top of that, further developments of cross-border bank integration and the Capital Markets Union have the potential to benefit the EU economy as a whole, but also bring about higher risk of financial contagion. These observations, together with the need to complete the Banking Union to avoid possible conflicts between different levels of decision making, rationalize from an economic point of view the need to go beyond a mere coordination of

national deposit insurance schemes, and complete the Banking Union with the introduction of the EDIS.

The European Commission's proposal for the EDIS

The European Commission's legislative proposal for the EDIS was laid down in two different communications (European Commission 2015, 2017). It prescribes the establishment of the EDIS in addition to the existing national insurance schemes, which would always remain operational in the future as part of the common scheme. The EDIS would cover all the deposits below 100,000 euros of all the banks affiliated to any of the current national insurance scheme in the Banking Union, and would intervene when a bank either is liquidated or is resolved and the transfer of the deposits to another institution needs to be supported so that deposit access is not disrupted.

According to the 2015 proposal, the introduction of the EDIS would follow three phases:

1. Three years of reinsurance, during which the EDIS would provide a specified amount of liquidity assistance and absorb a specified amount of losses of the national insurance schemes eventually in distress;
2. Four years of coinsurance, during which the national insurance schemes and the EDIS would jointly intervene, and the latter would absorb an increasing share of the costs of intervention;
3. A final phase of full-coverage, when the EDIS would substitute the national insurance schemes, and cover all liquidity needs and losses.

The Deposit Insurance Fund should be equivalent to 0.8 percent of the total covered deposits of all the banks in the Banking Union by the time it reaches the third phase, and it would be gradually built up over a period of 8 years. Banks' insurance premia would be set so as to achieve the coverage target of 0.8 percent, and be based on each bank's own share of covered deposits and risk profile, calculated with respect to the other national banks in the reinsurance phase and to all insured banks in the coinsurance phase.

In order to limit the liability for the Deposit Insurance Fund, reduce moral hazard at the national level and avoid a first-mover advantage, the proposal further advised for the introduction of several safeguards. In the reinsurance phase, the national insurance schemes would access the common fund only when the corresponding member State has fully complied with the 2014 Deposit Guarantee Scheme Directive. Moreover, in the first two phases the Deposit Insurance Fund would only intervene if the national insurance scheme in distress had first exhausted all its own funding, and contribute only up to a specified percentage of the shortfall, subject to an overall cap.

To address the divergences that emerged during the discussion with the European Parliament and the Council, in 2017 the Commission presented

a communication with some ideas of possible revisions. In particular, it suggested to slow down the introduction of the EDIS, and make the progress along the three phases less automatic. First of all, in the reinsurance phase the EDIS could not cover a national insurance scheme's losses, but only its illiquidity. This would be achieved with an increasing coverage of 30 percent of the total liquidity shortfall in the first year, 60 percent in the second and 90 percent in the third, and any transfer of resources from the EDIS would be treated as a loan to the national insurance scheme (and therefore be repaid in the years following the intervention).

To address concerns related to legacy risk and moral hazard, at the end of the reinsurance phase the move to coinsurance would depend on the realization of a set of conditions. These would include a targeted Asset Quality Review to assess non-performing loans and level-III assets, eventually followed by the solution of the identified problems. The Asset Quality Review should be conducted during the reinsurance phase, to ensure that banks address legacy risks within the banking sectors where they were generated. Once these conditions are met and the coinsurance starts, the EDIS would provide full liquidity assistance and also progressively cover losses starting from 30 percent of the total amount, provided that all conditions are continuously met. The national insurance schemes and the EDIS would contribute in parallel from the first euro of losses.

The economic debate on the EDIS

The proposed modifications by the European Commission showed that the original plan for the EDIS suffered from a fundamental weakness: some member States perceived it as proposing excessive risk sharing, in particular in the light of the heterogeneity still present across the banking systems of the Banking Union. Risk sharing was deemed excessive with respect to both the level of risk with which the member States would enter the first phase of the transition to a common insurance scheme (the so-called "legacy risk"), the speed and the automatism of the transition itself, and the moral hazard and resulting excessive risk taking that would entice in the future. On top of that, in practice the discussion on the EDIS became secondary in the priorities of the policymakers due to the improved economic conditions of the EU, and as time progressed additional layers were added to the discussions. Therefore, despite the general acknowledgement that the EDIS is necessary to complete the Banking Union, the process went on hiatus. Yet, these arguments did not stop the debate among policymakers and academics regarding the design of the EDIS, and the timing of its introduction.⁵

5. A more general debate revolves around the question of whether deposit insurance creates bank moral hazard. Some studies find that the probability of banking crises is significantly

The Gros' proposal

In two early policy briefs (Gros 2013, 2015), Daniel Gros offers an argument about the best way to design the EDIS. On the one hand, he argues that it makes sense to centralize bank supervision and resolution, to limit a country's discretion in these matters and the possible spillovers to the whole Union that might come from it. On the other hand, deposit insurance applies to all banks automatically, and its benefits are rather local. Thus, there is no direct need to centralize deposit insurance, too. The only case in which a common insurance scheme would be helpful is when a systemic banking crisis hits a country, and its public finances are put in distress as a consequence. However, in that case, as the shock is probably idiosyncratic at the Union level, a mechanism of reinsurance across member States would be more appropriate than coinsurance.

According to Gros' proposal, the reinsurance scheme must be compulsory, to avoid stigma and adverse-selection biases. As for any reinsurance contract, it should include a "deductible" paid by the national insurance scheme, and explicit triggers that should target the losses from a banking crisis as a percentage of a country's GDP. Importantly, the reinsurance scheme should be able to cover a systemic banking crisis in a small- or medium-sized member State. For example, given that the average cost of a banking crisis is of around 5 percent of GDP, Gros calculates that covering a banking crisis in the Netherlands would require a disbursement of around 40 Billion euros. Therefore, around one third to one half of the total bank risk premia collected by the national insurance schemes should be devoted to reinsurance.

One crucial detail of the reinsurance proposal is the pricing of risk. As the system reinsures the national insurance schemes against the realization of systemic events, Gros argues that it should target macroeconomic conditions more than bank-specific risk parameters or a coverage ratio.⁶ In that sense, the management of a European reinsurance fund should require no expertise in bank management or accounting, but only in the analysis of macroeconomic risk, as the European Systemic Risk Board already does. Clearly, pricing the macroeconomic risk of an event as rare as a systemic banking crisis is problematic. For this reason, Gros suggests to introduce some elements of "experience rating": the premium that a national insurance scheme has to pay should increase after the occurrence of an insured event. This would

higher in countries where deposit insurance is into place, and justify this by showing that there exists a positive correlation between deposit insurance and bank moral hazard (Demirguc-Kunt and Detragiache 2002; Anginer *et al.* 2014). However, some more recent evidence, using a different method to date banking crises, shows that the probability of banking crises is predicted neither by the presence of deposit insurance nor by its generosity (Boyd *et al.* 2019).

6. Jokivuolle and Pennacchi (2019) further highlight that setting insurance premia according to a fund-to-deposit coverage ratio would imply countercyclical premia, which could exacerbate the volatility of the credit cycle.

essentially work as a clawback provision, and allow a national insurance scheme to repay its debt with the reinsurance fund in the long run. To account for the fact that systemic banking crises might be only partially a consequence of macroeconomic mismanagement or lack of bank supervision at the national level, the clawback might also be partial.

The Franco-German proposal

In a recent book published by the CEPR (Bénassy-Quéré *et al.* 2019), seven French economist and seven German economists propose a comprehensive reform agenda for the euro area. The rationale for the agenda is based on the argument that the current fiscal and financial architecture of the Economic and Monetary Union has not resolved its main issues: The “doom loop” between banking and sovereign crises still represents a threat; the Stability and Growth Pact is procyclical and not very effective; there is still no clear view of how to deal with member States with extreme budgetary problems, other than by offering liquidity assistance in exchange for fiscal adjustments. The debate over how to resolve these three issues revolves around the trade-off between risk sharing and incentives: on the one hand, some argue that risk sharing is crucial to mitigate future crises as much as possible; on the other hand, some others are afraid that excessive risk sharing would undermine market discipline, and further postpone overdue reforms at national level.

The main argument of the Franco-German proposal is the refusal of this trade-off, and the belief that risk sharing and incentives are complementary to one another. This is because a robust monetary union requires both crisis prevention (through incentives) and mitigation (through risk sharing). Moreover, risk sharing can be designed so as not to harm incentives, and is actually necessary for them to work properly.

In the light of this argument, the authors suggest six areas of intervention, among which a critical role is played by the EDIS.⁷ In line with the idea of complementarity between risk sharing and incentives, the EDIS should be introduced in parallel with two more policies: a tighter treatment of non-performing loans, and a sovereign concentration charge. The first would have the effect of attenuating legacy risk during the first phases of the scheme. The second is to avoid that national governments exploit their local

7. The other five areas are: (i) replacing the current system of fiscal rule focused on “structural deficit” by a simple expenditure rule guided by a long-term debt reduction target; (ii) creating the economic, legal and institutional underpinnings for the orderly sovereign-debt restructuring of countries whose solvency cannot be restored through conditional crisis lending; (iii) creating a euro area fund, financed by national contributions, that helps participating member countries absorb large economic disruptions; (iv) creating a synthetic euro area safe asset that would offer investors an alternative to national sovereign bonds; (v) reforming the euro area architecture by creating an independent fiscal watchdog and assigning the Presidency of the Eurogroup to the Commission.

banking systems to get preferential access to credit. Moreover, a sovereign concentration charge would have the effect of breaking the doom loop by resolving the banks' home bias in sovereign bond holdings.

The Franco-German proposal further suggests, differently from Gros and in line with the European Commission, the gradual disappearance of the national insurance schemes and their substitution with a common EU-wide scheme that could ensure "country-blind protection". The rationale for this lies in the acknowledgment that only a common scheme can establish full trust in the EDIS. In fact, deposit insurance works only if it acts fast, and its commitment is credible. In that sense, a system that merely reinsures the national insurance schemes of its members would arguably be slow, and still be subject to uncertainties due to national policies or disagreements at the EU level, as the case of Cyprus in March 2013 illustrated.

Contrarily to the country-blindness of depositors' service, the proposal instead puts forward a country-specific funding mechanism, through which the EDIS could take into account the still-existing differences between the banking systems of its member States. In particular, the authors call for two approaches to differentiate funding across members. First, part of the fees should reflect country-specific characteristics, including the quality of a country's legal framework and creditor protection. These could be measured by several structural indicators, and be possibly evaluated by an independent agency or a reinforced European Systemic Risk Board. Second, in the case of a bank failure the corresponding payout should be levied on banks of the same country in the case of smaller idiosyncratic shocks, but mutualized in the case of systemic crises. Accordingly, the EDIS should consist of "national compartments", much like in the transition phase of the Single Resolution Fund. The system could instead achieve the mutualization of the costs of systemic crises in two ways: either by creating a common compartment, financed by each member with a fixed percentage of the premia, or by imposing a joint payout by each compartment in case one of them is depleted. In both cases, if a national compartment is depleted, the system will replenish it by levying fees on the banks of the corresponding country, irrespective of their individual risk profiles. If instead the common fund is depleted, the European Stability Mechanism will refill it with a loan, reimbursed *ex post* by the banks with an appropriate fee increase.

To sum up, the Franco-German proposal works "in the spirit of a reinsurance system", in the sense that the first losses are always covered by the country of the banks in distress. However, different from Gros (2015), this proposal suggests a different institutional setting based on the provision to depositors of a direct insurance for their deposits, rather than a reinsurance of the insurance schemes of their corresponding country. Moreover, the authors highlight that the country-level differentiation that the system incorporates "would have nothing to do with a country's sovereign credit, and would therefore not contribute to the bank-sovereign vicious circle".

Quantitative evaluation of the EDIS

While the preceding proposals are both based on sound economic reasoning and address the perceived issues of the European Commission's proposal, it is true that they miss empirical foundations. In a recent paper, Carmassi *et al.* (2018) try to provide them, by questioning whether the fear of cross-border subsidization of the banking systems in more vulnerable countries by less vulnerable ones is well-founded. To this end, they develop a quantitative early-warning model that accounts for bank- and country-specific risk factors, and use it to calculate the possible exposure of the EDIS to bank failures under different stress scenarios.⁸ Their findings highlight that a fully funded EDIS, targeting 0.8 percent of total covered deposits, would be sufficient to offset losses in banking crises even more severe than the 2007-2009 global financial crisis, without imposing excessive costs on either small or large banks. This result hinges only in part on the introduction of the EDIS *per se*, but more on the fact that European banks have already significantly reduced their risk profiles and increased their loss-absorbing capacity. In turn, this is a consequence of higher levels of bank capital, and of the recent introduction of the requirement on Total Loss-Absorbing Capacity (TLAC) for Global Systemically Important Banks (G-SIBs) and the new Minimum Requirement for own funds and Eligible Liabilities (MREL) for all European banks.

In the second part of the paper, the authors instead calculate the bank-specific risk-based contributions to a common insurance fund based on different indicators, both at bank and country level, and compare them to the EDIS exposures developed in the first part of the paper. Importantly, the authors calculate the contribution of each bank relative to its peers in the whole Banking Union, and simulate aggregate as well as country-specific financial shocks. Under these assumptions, they find that a fully-fledged EDIS would create cross-subsidization among member States (calculated as the exposure-to-contribution ratio) only for extremely high loss rates, even higher than those that emerged during the global financial crisis.

Finally, the authors analyze cross-subsidization in mixed insurance schemes with national compartments, like in the Franco-German proposal. To this end, they modify the bank contributions by calculating them relative to national instead of union-wide benchmarks. Moreover, they assume that both the national compartments and the common compartment target a fixed 0.4 percent of total covered deposits, so that the overall target remains 0.8 percent. In other words, while inside each country the bank contributions change, the total contribution of each country to the common compartment is fixed at 0.4 percent of total domestic covered deposits. The results indicate that with

8. The stress scenarios are a simultaneous failure of the riskiest 3 or 10 percent of banks, in combination with different levels of bank losses, ranging from 5 to 25 percent of total assets in the case of resolution and 7.5 to 37.5 percent in the case of insolvency.

the introduction of national compartments Cyprus, Germany, Spain, Greece, Ireland, Italy and Portugal would pay less than under a fully-fledged EDIS, while Austria, Belgium, Finland, France, Lithuania, Luxembourg, Malta, the Netherlands and Slovenia would pay more. This would have in turn an effect on cross-subsidization, but only in extreme scenarios. Under a simultaneous failure of the riskiest 3 percent of the banks in the Banking Union, simulations show an increase in cross-subsidization limited to Spain and Greece for losses of 25 percent of total assets at resolution and 37.5 percent at insolvency. Under a simultaneous failure of the riskiest 10 percent of the banks in the Banking Union, the simulations instead show an increase in cross-subsidization also in Belgium and Cyprus.

To sum up, from their analysis the authors conclude that cross-subsidization can be seen as a form of desirable risk-sharing mechanism against severe crises. However, this is different from a systematic unwarranted transfer of resources from the less vulnerable to the more vulnerable countries of the Banking Union, for which there seems to be no evidence regardless of its design with or without national compartments.

Concluding remarks

The present synopsis summarized the economic case for completing the European Banking Union with a common deposit insurance scheme. It highlighted its role against self-fulfilling bank runs that might trigger sovereign crises in a doom loop, and spread across the Banking Union via several channels of financial contagion. In that respect, the main takeaways that one can draw from the economic literature are three. First, the mere coordination of national insurance schemes, or the institution of a reinsurance system among them, might not be sufficient to calm depositors' self-fulfilling expectations, because deposit insurance can be successful only if it acts fast and its commitment to intervene is perceived as credible. Second, there seems to be little evidence that a common deposit insurance scheme will generate an unwarranted cross-subsidization from the less vulnerable to the more vulnerable countries of the Banking Union. Third, there exist several mechanisms to correct bank incentives against the effects of legacy risk and moral hazard, and many of them (like tighter capital regulation, and the TLAC and MREL requirements) are already into place. Put differently, risk sharing and incentives are not incompatible, but can complement and mutually reinforce each other.

Finally, I conclude with some words of caution. As deposit insurance only aims at traditional commercial banking, it does not take into account that financial innovation and an increased regulatory burden might push investors and banks towards the unregulated shadow banking system. In

principle, institutions operating in this market also issue short-term money-like liabilities akin to bank deposits, thereby engaging in liquidity and maturity transformation. In that sense, they are prone to self-fulfilling uncertainty in the same way as traditional commercial banks (Gorton 2019) and might represent a further channel of financial fragility and contagion, as the global financial crisis famously showed (Gorton and Metrick 2012). Hence, the completion of the Banking Union with the introduction of the EDIS will most probably not resolve self-fulfilling uncertainty once and for all. More than ever, a continuous monitoring of the financial system, over and above standard banking supervision, will be necessary to guarantee financial stability in the future.

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