

SOVEREIGN BOND-BACKED SECURITIES AS EUROPEAN REFERENCE SAFE ASSETS:  
A REVIEW OF THE PROPOSAL BY THE ESRB-HLTF

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## SOVEREIGN BOND-BACKED SECURITIES AS EUROPEAN REFERENCE SAFE ASSETS: A REVIEW OF THE PROPOSAL BY THE ESRB-HLTF

### Abstract

A High-Level Task Force (HLTF) of the European Systemic Risk Board (ESRB) has recently put forward a proposal aimed to increase the supply of low-risk financial assets in Europe through the securitisation of national euro area sovereign debt. This article reviews the proposal from different angles, including regulatory and financial stability considerations, as well as current market practices relevant to safe assets. We conclude that the proposal has some positive elements that would help to foster financial integration in the euro area, although it would also pose challenges related to financial stability in times of stress. All the pros and cons of the proposal should be properly accounted for if further steps are taken to develop this proposal.

### 1 Motivation

Low-risk or *safe assets* – typically in the form of debt issued by countries with low-default risk – are a cornerstone of global financial markets and regulations, playing a fundamental role in several areas [International Monetary Fund (2012)]. First, they can be pledged as collateral in derivatives markets and private and central bank repo agreements. Second, the lower credit risk and higher liquidity that they offer compared to other assets allow them to play an outstanding role in prudential regulation. In fact, holdings of safe assets in banks' balance sheets enhance their liquidity while containing the level of risk weighted assets. Third, they are used to discount future cash-flows in the valuation of risky assets. Last, they are used as a reliable store of value and to aid capital preservation in portfolio build-up. Due to these properties, the availability of a sufficient amount of safe assets is key. This is especially the case during crises, when the absence of reliable sources of collateral may lead to severe disruptions in the functioning of financial markets.

Within the Euro Area (EA), the existence of such low-risk assets, as well as their availability in sufficient amounts, has triggered contentious discussions. The main reason behind these debates is the absence of a pan-European low-risk asset. Instead, individual EA Member States issue sovereign bonds with heterogeneous characteristics. These bonds are issued in the same currency – the euro – and they are treated as low-risk by prudential regulation and by the market, albeit with different degrees of confidence – depending on the issuing country – in the latter case. This different treatment by the market potentially generates an asymmetric distribution of low-risk assets across the EA.

The materialization of the financial and the sovereign debt crisis made evident that investors' confidence on EA national sovereign debt can be easily broken when sovereign tensions appear in certain countries. This risk of fragmentation is being addressed at the European level through an ambitious set of proposals to further the Economic and Monetary Union, including the significant steps already taken towards a Banking Union and, at European Union (EU) level, a Capital Markets Union. However, progress on a pan-EA low-risk asset has been limited, mainly because of the risk of mutualisation that such an asset might involve. In this context, a High Level Task Force (ESRB-HLTF, for short) chaired by Philip R. Lane, Governor of the Central Bank of Ireland, was set up in 2016 by the General Board of the European Systemic Risk Board (ESRB) with the mandate to study the feasibility and practical considerations of a proposal by a group of academics to develop a European low-risk asset with no mutualisation of risk [Brunnermeier et al. (2011 and 2016) and Brunnermeier et al. (2017)]. The outcome of the work by this ESRB-HLTF was published on 29 January 2018 [ESRB High-Level Task Force on Safe Assets (2018)]. In this technical report, the original proposal has been transformed into a feasibility analysis of

the denominated Sovereign Bond-Backed Securities (SBBS), whose senior tranche would meet the criteria to become the reference low-risk asset in the EA. It addresses a broad set of technicalities about the implementation, potential demand and risk profile of the different tranches or regulatory issues. Throughout this discussion, the ESRB-HLTF (2018) report also mentions several financial stability concerns related to the introduction of SBBS. However, its main focus is to study how to best develop a pan-EA low-risk asset with no mutualisation of risks, rather than whether such an asset would ultimately be desirable from a broader financial stability perspective.

This article reviews the work conducted by the ESRB-HLTF (2018) in order to highlight and discuss the main challenges for the development of SBBS from a broad financial stability perspective, as well as the benefits and potential costs that it might generate. The challenges may come from different sources, such as regulatory obstacles linked to the introduction of a totally new “lab-engineered” asset. When we discuss the benefits and costs in our analysis, we will pay especial attention to the valuable gained experience in the last European sovereign debt crisis. In this sense, we believe that analysing this proposal under the light of the painful Spanish experience during the last crisis may be particularly useful. As is well known, Spain has undergone a severe economic and banking crisis coupled with a sovereign crisis. Hence, an unavoidable question from our perspective is how the existence of SBBS would affect the likelihood and severity of events of a similar nature in the future.

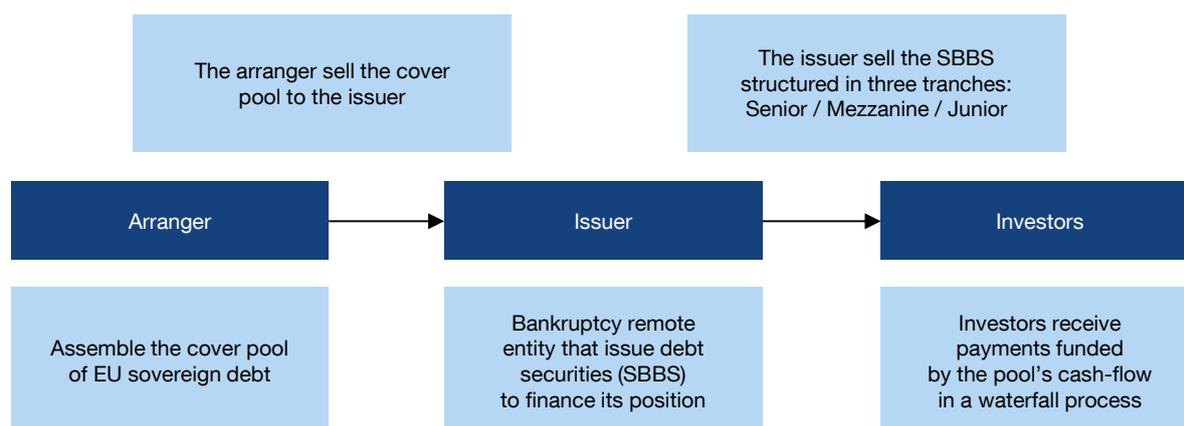
The rest of the paper is organized as follows. Section 2 describes the assembling process of SBBS. Section 3 studies the properties of low-risk assets and whether the senior tranche would meet those features. Section 4 addresses the differences between SBBS and standard securitisations, and their regulatory treatment. Section 5 describes the sovereign-bank nexus, and analyses how it might be mitigated by the introduction of SBBS. The impact of SBBS on financial stability and on the availability of collateral is addressed on Sections 6 and 7, respectively. Section 8 concludes.

## 2 What are SBBS?

SBBS are defined as claims on a portfolio of sovereign debt issued by EU Member States, as the result of a securitisation process. In this section, we sketch the issuance and payment process of SBBS.

Scheme 1 summarizes the SBBS issuance process in two main steps. First, a public or private entity (“the arranger”) would assemble the cover pool, which consists of sovereign debt issued by participating EU Member States. Once the pool has been assembled, the arranger would sell this pool to a bankruptcy remote entity (“the issuer”), which would issue asset-backed securities (SBBS) to finance the acquisition of the sovereign debt portfolio. ESRB-HLTF (2018) proposes that SBBS are structured in three tranches with different degrees of seniority: senior, mezzanine and junior.

These tranches would be sold to investors with potentially different risk appetites. These investors (SBBS holders) would receive regular fixed or floating payments, funded by the cash-flow received from the cover pool in a waterfall process. That is, at every payment date, investors who hold the senior tranche (i.e., the highest ranking tranche) would have preference over others to receive their due payments in the first place with the available cash-flow. The mezzanine holders would get paid next and, finally, the remaining cash-flow would be used to pay to the junior tranche holders. The waterfall payment process guarantees that different tranches embed different risks. The exact risk level depends on the relative thickness of the different tranches and the correlation between the assets in



SOURCE: Authors.

the cover pool. According to ESRB-HLTF (2018), a 70%-thick senior tranche would have risk characteristics similar to the lowest-risk EU sovereign bonds (i.e., the German Bund), even during stress periods. In addition, a 20%-thick mezzanine tranche could be purchased by relatively conservative investors with mandate restrictions, while a 10%-thick junior tranche would be marketed to high-yield investors. ESRB-HLTF (2018) emphasises that, ideally, banks would mainly buy the safest tranche (i.e., the senior tranche), leaving the lower tranches to other investors.

Before further proceeding with our analysis, the composition of the cover pool should be clarified. According to ESRB-HLTF (2018), the cover pool would consist of eligible euro-denominated central government debt instruments issued by participating EU Member States. This definition allows for the possibility that euro-denominated sovereign debt from EU Member States whose currency is not the euro is included in the pool. However, this would add additional risks to the underlying portfolio, most notably exchange rate risk. In fact, all the empirical computations carried out in ESRB-HLTF (2018) are based on the EA countries only. Thus, for the sake of simplicity, this article focuses on the impact of the SBBS at the EA level. In practical terms, the national debt of each EA country in the cover pool would be proportional to the size of its economy. This would be operationalized by using the European Central Bank (ECB) capital key as a reference to determine the share assigned to each national sovereign debt in the pool.<sup>1</sup> Finally, this weighting scheme is adjusted to accommodate Member States with very little outstanding debt.

### 3 SBBS and low-risk assets

This section pays attention to the features that make low-risk assets particularly valuable, and then analyses whether SBBS would meet those features. Low-risk assets are more demanded to the extent that they satisfy the following features: i) low liquidity risk, such that they can be converted into cash quickly and with minimal impact to their price; ii) low volatility, so that their value remains relatively stable over time; iii) low default risk, in such a way that they embed a negligible credit risk even under stress episodes. In addition to the previous characteristics, which are objective and measurable, low-risk or safe assets have additional intangible attributes that are also appreciated by investors. Specifically, simplicity and transparency are highly valued. Moreover, the fact that the instrument is

<sup>1</sup> The ECB capital key is defined as a function of GDP and population of each Member State, and revised every five years.

issued by a government is also relevant, especially for those countries with better reputation for their fiscal discipline or the independence of their legal system.

As ESRB-HLTF (2018) convincingly argues, SBBS can be designed to comply with the set of more objective characteristics described above. Ensuring a sufficiently low liquidity risk would perhaps be the most difficult property to be achieved, since it might require the issuance of SBBS to achieve a minimum critical mass. Nevertheless, this might be solved more easily than the challenges that should be addressed to confer SBBS some of the intangible properties that we have described. To begin with, the construction of SBBS through a securitisation process would make these products more complex than national sovereign debt. Furthermore, SBBS would be the result of the aggregation of debt from governments with different degrees of reputation among market investors. The negative effects of this diversity might be counterbalanced if SBBS could benefit from some sort of European official seal. For instance, the initial name proposed by Brunnermeier et al. (2011), *European Safe Assets*, might have sounded as more reliable for investors. However, the explicit use of the term 'European' may not be agreeable for political reasons, as it might be misinterpreted as an open door to European support and mutualisation. Thus, although the tranching scheme of SBBS can mechanically generate a "super" safe asset, the lack of those intangible attributes cast some doubts on the potential usability of the senior tranche of SBBS as the reference low-risk asset in the EA. These additional elements were also mentioned by financial stakeholders, during contacts conducted by the ESRB-HLTF. For these reasons, they would favour a public entity issuing SBBS and providing some form of public guarantee.<sup>2</sup>

In this context, one may wonder whether senior SBBS would be better suited to become the EA-wide safe asset than other alternative proposals. For example, in November 2011 the European Commission published a Green Paper on possible options to finance public debt through Stability Bonds. The paper does not provide a closed-form for these bonds. Instead, it offers different options depending on the degree of substitution of national sovereign debt and the nature of the underlying guarantee: i) Full substitution by Stability Bonds of national sovereign debt, with several joint guarantees; ii) Partial substitution by Stability Bonds of national sovereign debt with several joint guarantees; iii) Partial substitution by Stability Bonds of national sovereign debt with several, but not joint, guarantees. Contrary to the SBBS, the Stability Bonds would have all the intangible attributes to become safe assets although they would pose other challenges, most notably some mutualisation risk.

SBBS might have more interesting properties from the perspective of diversification. Buyers of SBBS tranches would automatically gain exposure to sovereign debt from the whole EA, rather than just a single country. This would make the EA closer to the US. Investors in US federal bonds are backed by the ability of the US Federal Government to collect taxes, which in turn depends on economic activity at the different US states. The situation with SBBS would be relatively similar, except for the fact that SBBS would be backed by different, and imperfectly coordinated, fiscal systems instead of just one. Another similarity with the US would be the fact that the degree of diversification in terms of credit risk might be small. The diversification benefits earned from pooling sovereign debt issued by the 19 EA countries is very limited. Portfolio weights are very concentrated on a handful of countries. According to ESRB-HLTF (2018), four countries (Germany, France, Italy and Spain) would account for more than 77% of the cover pool of SBBS.

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<sup>2</sup> See pages 103 and 109 of the ESRB-HLTF (2018), volume II.

Furthermore, the increasing integration among EA countries makes it highly likely that they will be subject to the same shocks susceptible of generating sovereign tensions in the future. In this sense, since the beginning of the EA, sovereign debt yields have tended to converge, albeit with large reversals during the sovereign crisis. In this vein, Baele et al. (2004), Ehrmann et al. (2011), among others, document a strong convergence in the government bond markets of EA countries, where the adoption of a common monetary policy is found as the main driver of such convergence. Ehrmann and Fratzscher (2017) find a co-movement among all EA sovereign bond yields before the crisis and a widespread fragmentation during the European crisis. In addition, they find a general absence of contagion among the stressed countries, with the exception of Italy and Spain.

#### 4 Regulatory treatment of SBBS

The main difference between SBBS and standard securitisations lies in the cover pool. Standard securitisations typically assemble an underlying portfolio of opaque and non-liquid banks' assets, such as banks' loans. In fact, the goal of traditional securitisations is precisely to convert a pool of illiquid assets into liquid securities. In contrast, SBBS would consist of liquid securities covered by liquid and transparent sovereign debt. This makes SBBS totally different from the currently existing securitisations, since the underlying portfolio of SBBS would be constructed on a set of well-known and tradable instruments.

Despite these differences, SBBS would be treated in prudential regulation as a traditional securitisation product, which is rather punitive (compared to the prudential treatment that would apply to the pool of underlying assets) due to the complexity and the lack of liquidity of traditional cover pools. This would make the senior tranche of SBBS unattractive for banks. Under the current treatment of sovereign exposures, EA sovereign bonds are not subject to either capital or concentration charges. In this setting, it would be much cheaper in terms of capital for banks to invest in a diversified portfolio of sovereign bonds than in senior SBBS. This fact would justify the creation of an ad-hoc regulation for SBBS in order to ensure that the capital requirements imposed on senior SBBS are not higher than those imposed on the underlying sovereign bond portfolio.

Nevertheless, the creation of SBBS and their gradual implementation could alter the liquidity and transparency of the sovereign debt markets. First, the liquidity of sovereign debt could decrease due to the buy-and-hold strategy implicit in the construction of SBBS. That is, once the issuer of SBBS buys the cover pool, it holds the portfolio on its balance sheet, and those assets do not come back to the market. In this setup, the scale achieved in the issuance of SBBS would determine the liquidity of the sovereign debt markets. ESRB-HLTF (2018) proposes a limited scale. For the steady state, the proposal contemplates a maximum market size of €1.5 trillion.<sup>3</sup> In the case of Spain, whose indicative portfolio weight in the cover pool would be 12.56%,<sup>4</sup> the amount of national sovereign debt involved would be around €188 billion at most (around 16% of the Spanish GDP). However, if SBBS were launched to create a truly EA-wide low-risk asset, a larger volume might be required. With this goal in mind, Brunnermeier et al. (2017) envisaged the securitisation of EA sovereign bonds amounting to up to 60% of national GDPs. In this much more ambitious scenario, the risk that SBBS could hamper the price formation of national sovereign debt instruments, and decrease their transparency, would be much more apparent.

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<sup>3</sup> The rationale of this limit is the constraint imposed in the Eurosystem's public sector purchase programme, under which the Eurosystem shall not buy more than 33% of a country's total outstanding debt.

<sup>4</sup> This number is the result of adjusting the ECB capital key of Spain (currently 8.84%) to accommodate Member States with very little outstanding debt.

The magnitude of the impact of SBBS on the liquidity of the underlying sovereign bonds would also depend on how the cover pool is assembled. ESRB-HLTF (2018) contemplates the possibility of a public sector arranger, as well as multiple private sector arrangers, simply stating the pros and cons of each alternative. These arrangers could either purchase sovereign debt in primary or secondary markets. Each option would entail different effects on the liquidity of the sovereign debt market. For instance, multiple private arrangers buying sovereign debt in either the primary or secondary markets might, a priori, be less disruptive on price formation than a single large public arranger purchasing sovereign debt in the primary market. However, as previously mentioned, a unique public arranger might be preferred by investors, and it would better ensure the homogeneity of all the SBBS traded in the market.

Eventually, SBBS would coexist with national sovereign bonds and might affect their properties. In this context, the justification in favour of a specific regulation for SBBS that would put them on an equal footing with respect to national sovereign debt would need to be revisited ex-post. For its rationale to hold,<sup>5</sup> the cover pool would need to remain a set of liquid and transparent instruments after the introduction of SBBS.

## 5 Sovereign-bank nexus

The combination of banking and sovereign tensions in some countries in the last crisis, especially in the EA, sparked an intense debate on the so-called sovereign-bank nexus. In this section, we study this nexus and analyse how it might be affected by the introduction of SBBS.

The sovereign-bank nexus is the term employed by many analysts to indicate that there is a special relationship between banks and sovereign debt. This relationship is considered special because banks hold significant amounts of sovereign bonds. According to the ESRB-HLTF (2018), EA banks hold 21% of EA general government debt, compared to 5% held by EA non-financial firms. This feature is shared with other financial institutions, such as insurance companies (holding 17% of EA government debt) or investment and pension funds (11% and 3%, respectively), but the larger size of the banking sector and the central role played by the banking system in the economy make the nexus with banks particularly relevant. Furthermore, banks' sovereign exposures are generally tilted toward domestic sovereign debt (i.e., debt from the country or countries in which banks operate), a feature known as "home-bias" in sovereign exposures. Once again, this home bias tends to be shared with other financial institutions. Home bias is also an issue of concern for some commentators, especially home bias within the EA. Ideally, as it has been argued, no national bias should be observed in a fully integrated monetary union.

Some analysts emphasise the negative aspects of the sovereign-bank relationship. In particular, they emphasise that banks' domestic sovereign exposures are a means through which sovereign tensions can be transmitted to the banking system. In their view, these problems are exacerbated by the current regulatory treatment of sovereign exposures, which imposes no capital charge and no concentration limit on banks' sovereign debt holdings. They believe that this treatment may be crowding out financing to the private sector.

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<sup>5</sup> That is, the justification for a specific regulation for SBBS is that both the underlying bonds and the SBBS remain liquid and easily tradable in the markets. If this condition is not satisfied, then SBBS would become much closer to traditional securitisations, and the usual regulatory treatment of these latter products might be much more appropriate.

Despite this gloomy view of the sovereign-bank nexus and home bias, it can be noted that these features also entail some positive aspects for financial stability. For example, during the last crisis domestic investors from countries under sovereign stress (and, notably among them, banks) stepped in by increasing their exposures to domestic sovereign debt as foreign investors left those markets. This contrarian investment strategy actually had a stabilising role, by limiting the centrifugal forces that drove the EA close to breaking up [Castro and Mencía (2014)]. It is questionable that this phenomenon has been limiting access to credit of viable private investment projects. In practice, those projects may be quite scarce in a crisis context. It is also questionable that there are not fundamental reasons for some degree of home-bias in the euro-area, especially in extreme events in which investors still fear market fragmentation and the continuity of the EA itself. Moreover, it can also be argued that the sovereign-bank nexus is not limited to sovereign debt holdings. Eventually, sovereign tensions generally reflect problems in economic activity, which hit banks through non-sovereign exposures as well. In fact, Angelini, Grande and Panetta (2014) show that a sovereign-non-financial-firms nexus also exists. Finally, it is unclear that even a fully integrated monetary union would generate the conditions for a perfect diversification of sovereign debt holdings, as national sovereign bonds would be likely to retain different characteristics. Perhaps for all these reasons, the Basel Committee on Banking Supervision (BCBS), which in 2015 set up a High-Level Task Force to review the global standards on the regulatory treatment of sovereign exposures and recommend potential policy options, has not reached a consensus to make any change [BCBS (2017)].

The introduction of SBBS might affect certain aspects of the bank-sovereign nexus. One of these aspects would be home-bias. SBBS would be by construction diversified across EA countries. Hence, if banks shift their sovereign portfolios toward SBBS (ideally, mainly the senior tranche), their home bias would be automatically reduced. However, the incentives for such a move might depend on the regulatory treatment of SBBS (see Section 4), and indirectly on the treatment of sovereign exposures. A stronger incentive to hold SBBS in banks' portfolios might arise if a consensus is reached on a reform of the regulatory treatment of sovereign exposures. ESRB-HLTF (2018) explores several reform alternatives, including the current situation, the introduction of a flat risk-weight, a risk-weight proportional to credit risk (measured by credit ratings) and a concentration charge growing with the ratio of sovereign bond holdings from a single issuer to capital. The main result is that the concentration charge scheme would offer the strongest incentives in favour of the senior tranche of SBBS, due to their diversification properties. Although the scenarios are similar in spirit to those considered by BCBS (2017), in practice the numbers on which each policy option is calibrated are different. For instance, the concentration charges are more severe in ESRB-HLTF (2018) than in BCBS (2017). Hence, the potential incentives generated by a reform of the regulatory treatment of sovereign exposures might in practice be smaller. In any case, as ESRB-HLTF (2018) notes, such a reform should only be evaluated on its own merits, and not as a means to improve the appeal of SBBS.

## 6 SBBS and financial stability

In this section, we address one of the main motivations for the introduction of SBBS, which would be their impact on financial stability. Let us start our analysis in “normal times”, under which no EA country would be suffering sovereign tensions. In this context, let us assume that SBBS are successful, so that banks from all EA Member States choose to fully substitute their holdings of domestic sovereign debt for SBBS. In parallel, other investors become regular buyers of the lower tranches. It is clear that this situation would constitute an improvement in terms of diversification and de-risking. To begin with, EA banks would effectively become more European, rather than purely national banks, by diversifying their holdings of sovereign debt across the EA. In addition, holding only the

senior tranche of SBBS would shield them from the direct impact of sovereign stress in a subset of EA countries, although the indirect impact through other components of the balance sheet would remain. Hence, banks would be better diversified and prepared to withstand sovereign shocks, as least from a partial equilibrium perspective.

Nevertheless, sovereigns are exposed to shocks of different nature that may materialize in crisis periods. When that occurs, SBBS might amplify the initial shock and hamper the recovery efforts. Thus, from a general equilibrium perspective, the benefits of the introduction of SBBS might be less clear once a sovereign crisis arrives. Note that, according to the ESRB-HLTF (2018) report, only liquid national sovereign debt with access to the markets would be eligible to enter the cover pool of SBBS. In this setup, market concerns about a particular country might actually impair that country through a kind of self-fulfilling prophecy. Specifically, market fears about the sustainability of the debt of an EA country might damage its access to the markets. In turn, this might make the sovereign debt of this country ineligible for the cover pool of SBBS. This would suddenly leave the country without the possibility to channel part of its debt through SBBS, and force it to drastically increase its issuance of sovereign debt outside the pool of SBBS, precisely at a moment in which investors are less willing to buy it. If sovereign tensions were due to fundamental reasons, this might not be a totally undesirable outcome. However, if these tensions were only due to temporary liquidity or market-fear problems, then the situation would be different. In this latter case, it is not clear who would be willing to act as contrarian investors in order to stabilise the market. We must remember at this point that domestic banks would no longer be regular buyers of national sovereign debt. It would remain to be tested whether they would suddenly return to act as contrarian investors, since the starting point would be completely different.

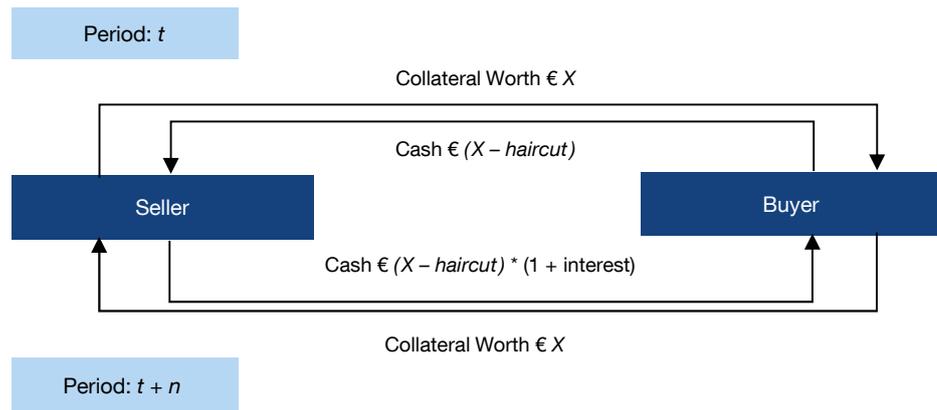
In addition, there would be other effects worth considering. If investors perceive a risk of contagion to other countries, then the demand for the mezzanine and junior tranches might be impaired. As a consequence, it might become more difficult to issue SBBS under this stressed situation, since the three tranches must be sold in order to avoid mutualisation risk. In turn, an irregular issuance of SBBS, or even an irregular cover pool continuously changing as countries leave it when they face problems, might make SBBS less useful as a reference low-risk asset. Lastly, for similar reasons, the amount of collateral coming from SBBS might also change in a procyclical fashion, a feature that is at odds with the expected behaviour of safe assets.

All in all, SBBS might, a priori, provide valuable benefits in normal times. By fostering more integration across the EA, they might indirectly generate more market-driven fiscal discipline on national EA governments. This might be the strongest benefit of SBBS on financial stability, as this effect could make systemic crises in the EA rarer events. However, once a systemic crisis arrives, the presence of SBBS might undermine the efforts to absorb the shock.

## 7 SBBS as collateral

As previously discussed, safe assets are usually pledged as collateral in derivatives markets and private and central bank repo agreements. In fact, government bonds are the most common type of collateral in the repo market. According to the International Capital Market Association (ICMA) survey of the European repo market, government bonds account for about 86% of EU-originated repo collateral.

A repo agreement is the sale of a security together with an agreement for the seller to buy back the security at a later date. Scheme 2 sketches the process of a bilateral repo



SOURCE: Authors.

agreement. At the start of the transaction (time  $t$ ), one party (the “seller”) sells an asset (the collateral of the operation) to another party (the “buyer”) where the purchase price is fixed by the risk-adjusted value of the collateral. Indeed, the seller commits to buy the asset back at a pre-specified price (purchase price plus an interest) on a pre-specified future date (time  $t + n$ ). If the seller defaults during the life of the repo, the buyer (as the new owner) can sell the asset to a third party to offset the incurred loss.

For repo sellers, a repo offers a cheap and plentiful source of funding. About 72% of repo transactions in the EA are conducted via Central Counterparties (CCPs) [ECB (2015)]. CCPs administer the transactions and the collateral, and carry out active collateral management in order to provide a robust level of protection. Among other tools, CCPs settle the risk-adjusted value of the collateral by means of haircuts/initial margins to account for unexpected losses that the buyer in a repo may face due to the difficulty of selling the collateral in response to a default of the repo seller. Haircuts/initial margins are not time-invariant, but they react to different risks in the underlying collateral securities such as market liquidity risk or default risk [see ICMA - European Repo Council (2012)]. In practice, this means that the markets determine for each asset which part can be considered as a low-risk asset.

In principle, it might appear that the introduction of SBBS would largely expand the supply of low-risk assets. In practice, though, this will not necessarily be the case. As we shall see, under pretty sensible assumptions the market-based identification of the low-risk part of each national sovereign bond ultimately may provide a larger amount of low-risk assets than an analogous approach with the same nominal amount of SBBS. In this section, we illustrate how the creation of SBBS might decrease the available funding in the repo market. In particular, we compare the purchase price (i.e., the cash received by the repo seller) that can be obtained by using as collateral a pool of sovereign bonds with the purchase price that would be obtained by using the same nominal amount of SBBS instead. In this second case, the underlying pool of sovereign bonds would be identical, but it would be used under the form of a securitisation, with three different tranches. The countries involved and their weights on the pool are taken from ESRB-HLTF (2018). For the sake of simplicity, we assume a uniform portfolio of bonds with 5-year maturities. We use the publicly available haircuts from LCH, one of the largest CCP in Europe, for this maturity.<sup>6</sup>

<sup>6</sup> <https://www.lch.com/risk-collateral-management/ltd-collateral-management/ltd-acceptable-collateral>.

Country	Portfolio weights (%)	Individual bonds		SBBS	
		Collateral haircuts to meet initial margin 5y - LCH (%)	Collateral worth €100	Collateral haircuts to meet initial margin 5y - LCH (%)	Collateral worth €100
AT	2.88	8.00	92.00		
BE	3.63	8.75	91.25		
CY	0.14	100.00	0.00		
DE	26.15	7.25	92.75		
EE	0.00	100.00	0.00		
ES	12.96	14.38	85.62		
FI	1.84	7.25	92.75		
FR	20.78	7.25	92.75		
GR	1.55	100.00	0.00		
IE	1.70	100.00	0.00		
IT	18.04	14.13	85.87		
LI	0.28	100.00	0.00		
LT	0.13	100.00	0.00		
LU	0.14	7.38	92.62		
MT	0.09	100.00	0.00		
NL	5.87	7.25	92.75		
PT	2.55	100.00	0.00		
SK	0.77	100.00	0.00		
SL	0.51	100.00	0.00		
SBBS - Senior	70.00			7.25	92.75
SBBS - Mezzanine	20.00			14.13	85.87
SBBS - Junior	10.00			100.00	0.00
<b>Purchase price €</b>			<b>83.36</b>		<b>82.10</b>

SOURCE: Authors' calculations.

Table 1 shows the purchase price that would be obtained from these two alternative sources of collateral. Since the final treatment by the CCPs of the senior and non-senior tranches (mezzanine and junior) is unknown ex-ante, we assume that it would be consistent with the credit loss simulations reported in the ESRB-HLTF (2018). Specifically, we pair each tranche of the SBBS with the EA country whose credit losses are most similar to those of that tranche in the simulations. As a result of this exercise, we assume that the senior tranche would have the same treatment in terms of haircuts as Germany, the mezzanine tranche would receive the same treatment as Italy and the junior tranche would receive the same treatment as Portugal. As of 30 October 2017, the last updated date, LCH does not accept as collateral bonds from Cyprus, Estonia, Greece, Latvia, Lithuania, Malta, Portugal, Slovakia and Slovenia, which account for the 7.72% of the pool. Thus, if Portuguese sovereign bonds cannot be used as collateral, by analogy, the junior tranche of SBBS would not be used either. As a consequence, the funding obtained by using a portfolio of sovereign bonds of €100 worth is around €83.36, whereas the funding that would presumably be obtained using the same amount of SBBS would be around €82.10. That is, the introduction of SBBS would reduce the post-haircut value of the collateral by close to 1.5%. Although this difference is small, it clearly shows that the introduction of SBBS might eventually result in a similar or even slightly smaller supply of low-risk assets for the market, contrary to what one might a priori expect.

The intuition behind these results is as follows. CCPs perform active collateral management adjusting the haircuts/initial margins to different risks. Under the current haircuts, 7.72% of the total pool of sovereign bonds cannot be used as collateral. The remaining 92.28% of the pool is subject to haircuts that range from 7.25% to 14.38%. Indeed, more than half of the pool is subject to the 7.25% haircut. In contrast, under the SBBS scenario, 10% of the collateral would be non-eligible, while the 70% senior tranche of the collateral would have a haircut of 7.25%, and the 20% mezzanine tranche would be subject to a 14.13% haircut. Indeed, the mezzanine tranche would have to benefit from a haircut of 7.38% at most so that SBBS would be able to increase the availability of low-risk assets for collateral use. This number is far below the 14.13% haircut that would correspond to the mezzanine tranche according to its risk. Using LCH data, a 7.38% haircut for the mezzanine tranche would be similar to the one currently applied to sovereign debt from Luxemburg, one of the lowest haircuts in the EA. Hence, a 7.38% haircut would be very unlikely to be applied to the mezzanine tranche, as it would be incompatible with the risk level of this tranche. This shows that, in a context of active collateral management, the potential benefits of having a “super” safe asset might not compensate the fact that part of the portfolio might become non-eligible.

## 8 Conclusions

In this paper, we review the proposal of ESRB-HLTF (2018) to develop a market of Sovereign Bond-Backed Securities (SBBS). SBBS would result from the securitisation of a cover pool of EA sovereign bonds, whose weights would be given by the ECB capital key. This idea derives from a former proposal by Brunnermeier et al. (2011 and 2016) and Brunnermeier et al. (2017), whose original denomination was European Safe Assets. In contrast to the original proposal, the securitisation process of SBBS would contemplate three different tranches (senior, mezzanine and junior) instead of just two, in order to better target the different types of investors available in the market. Ideally, banks would mainly be holders of the senior tranche. This would ensure the diversification of their sovereign exposures across the EA, reducing the so-called home-bias and de-risking their portfolios, since the lower tranches should be primarily bought by other investors. Importantly, this proposal takes particular care to avoid mutualisation risk between EA countries.

We analyse to what extent SBBS could be qualified as low-risk assets. One of the motivations for their introduction are concerns about the scarcity of low-risk pan-EA assets. In this sense, the senior tranche of SBBS might achieve a credit-risk status similar to those of the safest EA countries, such as Germany. However, there might be a trade-off between ensuring sufficient liquidity for SBBS, and maintaining the liquidity of the underlying sovereign debt. A difficult equilibrium should be achieved to maintain both, and this would likely require the volume of SBBS to be capped at relatively modest levels. Likewise, it would remain to be assessed whether SBBS would be able to benefit from other intangible features that typically characterise low-risk assets. Lastly, according to our own analysis based on market driven haircuts on sovereign debt, SBBS might not change the level of low-risk assets available for collateral use.

In addition, we study regulatory aspects related to SBBS. The regulatory treatment of securitisations would heavily penalise the acquisition of SBBS by banks, since this regulation was not designed for securitisations of liquid and tradable assets. Hence, the introduction of a new specific regulation for SBBS would be needed as a starting point. In parallel, a change in the treatment of sovereign exposures in banks' portfolios might also affect the incentives to hold SBBS. However, we argue that such a change should only be evaluated on its own merits, and not as a way to foster a new experimental market for SBBS.

Finally, we study the role that SBBS might play on the sovereign-bank nexus and on financial stability in general. On the positive side, SBBS might improve diversification and de-risking in normal times, if banks decide to rebalance their portfolio towards the senior tranche of these new assets, instead of keeping their domestic sovereign debt holdings. Indirectly, this would improve EA financial integration and might create incentives for more fiscal discipline among EA Member States. The combination of these positive elements might reduce the likelihood of another sovereign crisis. However, once such a crisis occurs, the presence of SBBS could induce potential additional difficulties due to some of their properties. All in all, we conclude that SBBS contain some interesting aspects to improve financial integration and de-risking in the EA, assuming that banks would be interesting in buying SBBS, especially the senior tranche. However, their impact during sovereign stress events might undermine the efforts to absorb the shock. The last sovereign crisis is a good reminder of the potential dangers that systemic events may represent for the EA. Hence, all the elements related to the introduction of SBBS should be cautiously examined if the proposal makes further progress in the European policy agenda.

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