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From Euro Crisis to Covid Pandemic: The Changing Universe of Safe Public Debt in Europe

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Abstract

This paper reviews the changes in the European universe of safe public debt since the introduction of the euro. The initial market perception of euro area governments as issuers of safe assets turned out to be vulnerable to an abrupt change in sentiment about their creditworthiness in the wake of the great financial crisis of 2008 and the sovereign debt crisis of 2010-2013. The regime switch from safe towards risky sovereigns led to a sharp drop in the stock of government debt securities still perceived as safe and caused a sharp fragmentation in euro area financial markets. Euro area authorities have since taken a range of confidence-building measures while rejecting the introduction of genuine eurobonds as risk-free assets as premature. Academic proposals to introduce high-rated E-bonds or synthetic eurobonds without relying (much) on common liability were received with mixed feelings. Meanwhile, the ECB's ongoing public sector bond purchases since 2015 secured government debt financing at record-low interest rates and created the perception of fiscal sustainability. Europe's policy response to the Covid-19 pandemic in 2020 unexpectedly gave way to a much higher level of common public debt issuance at the EU level, thereby expanding the universe of supranational safe assets. Euro area leaders also established an ESM pandemic credit facility as a safety net for fiscally-strained member countries. Their post-pandemic challenge is to create a permanent safe sovereign asset for the eurozone.

Key words: safe sovereign asset, sovereign debt crisis, supranational bonds, Covid-19
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1. Introduction

The European Economic and Monetary Union (EMU) combines a single monetary policy with the fiscal policies of 19 participating Member States of the European Union (EU). A euro area treasury with the power to issue its own public debt instruments with the recognised attributes of safety and liquidity so as to finance common public goods at an affordable interest rate has been missing from the start.[1] EMU had to function without this stable anchor for the financial system that has the power to durably integrate the open national capital markets and support an even transmission of monetary policy across the eurozone.

By way of alternative, the EU legal framework tried to promote the common status of euro area countries as issuers of safe and liquid debt securities. These legal enhancements of sovereign creditworthiness appeared to be effective in supporting a unified capital market. At the start of EMU, the universe of public debt looked simple and straightforward: market participants behaved as if the debt securities of all member countries had similar safety and liquidity attributes and soon demanded only very small country-specific risk premia. As the weaker national economies prospered during the first years of EMU, there was no apparent need for investors to compare the economic fundamentals of for example Germany and Greece. And why should they? Without a sovereign debt restructuring mechanism to resolve a national fiscal crisis the ban on bailing out a participating nation lacked credibility.

The market perception that the sovereign bonds of all euro area countries delivered a secure payoff and were of similar value turned out to be vulnerable in the wake of a big adverse shock. The great financial crisis of 2008 and the subsequent deep recession exposed the fiscal exuberance, banking sector weakness and structural rigidity of several euro area countries. Market participants realised again that the German bund was the eurozone's safe anchor in times of financial volatility, economic uncertainty and political risk. This reassessment triggered a sudden stop of capital inflows as foreign investors reverted back to safe countries, leading to volatile sovereign bond markets, bank funding problems and substantial output losses in the countries perceived as risky. The fragmentation of the EMU universe of public debt along national lines of creditworthiness showed the high costs of ignoring the 'safety trilemma': keeping a high-quality and liquid national sovereign asset (the German bund) as the cornerstone of the euro area financial system is incompatible with having both free capital

[1] Since no financial claim is absolutely risk-free under all circumstances, the definition of a 'safe' and 'liquid' asset in this paper must be understood as referring to an asset that provides relative safety and liquidity compared to other financial claims.

mobility and a stable EMU. The cross-border capital flows that are supposed to integrate financial markets and ensure an even monetary transmission could in this set-up always return to their safe haven at the first sign of trouble and this reversal risks tearing the eurozone apart (van Riet, 2017).

A single currency area that comprises a fiscal union naturally solves the safety trilemma by introducing a euro area fiscal authority that issues genuine eurobonds, i.e. a single risk-free reference asset which serves as a stable anchor for the euro area financial system. However, their common liability structure makes the introduction of eurobonds a final building block of EMU, for which there is no political agreement. Academic proposals to create E-bonds or synthetic eurobonds, which require limited public risk sharing if any, received no political traction. The alternative of expanding the existing but modest supply of EU bonds, guaranteed by EU budget resources, never received much attention. However, the outbreak of the corona virus disease (Covid-19) called for an EU-wide response. Member States agreed to an ad hoc EU debt issuance programme to finance the EU recovery from the pandemic. The large albeit temporary supply of EU bonds enriches the universe of public debt in Europe with a supranational safe asset, but lacks a euro area dimension. Taking an optimistic view, the move to a hybrid (national and supranational) model of public debt issuance could be considered as "an antechamber of a European fiscal federal solution" (Cabral, 2021).

This paper reviews the changes in the European universe of safe public debt since the start of EMU. Section 2 discusses the characteristics of a safe public sector asset. Section 3 reviews how the euro area crisis broke the perception of national government bonds as safe assets, how the subsequent political repair measures and monetary policy interventions stabilised sovereign bond markets, and how Europe's united response to the Covid-19 pandemic promises a large supply of supranational safe assets without providing for a fundamental eurozone solution. Section 4 discusses the options to enlarge the universe of safe sovereign assets with various options for common public debt issuance. Section 5 concludes.

2. Characteristics of a safe public sector asset

2.1 The attributes of a safe asset

A safe financial asset is a marketable financial claim that investors consider to offer a convenience yield because of its special attributes in terms of moneyness, liquidity, volatility, and in particular its safety. A marketable risk-free financial instrument has cash-equivalent properties (i.e. earning a money premium), circulates in a high-volume market (i.e. no or very

low liquidity risk), enjoys a high degree of market stability (no or very low volatility risk) and, in particular, has the highest credit quality (i.e. no or very low credit or default risk). Given the presence of this non-pecuniary convenience yield, the pecuniary return on safe debt securities is lower than that on non-safe assets reflecting the willingness of investors to pay a safety premium. These positive attributes are further extended if the return on a safe asset is stable in inflation-adjusted terms because the currency in which it is denominated has a stable purchasing power (characterised by a high degree of price stability). As a result, the value of safe assets will increase in volatile markets while the price of assets perceived as risky will fall, reflecting a flight-to-quality or safety (i.e. to a safe haven) among risk-averse investors.

A safe asset commonly takes the form of debt securities since these include a contractual promise to return a fixed nominal amount at maturity (or at the time when a conversion option is exercised) as well as regular interest payments (unless the coupon is zero) in the interim period (Gorton, 2017). The safe asset universe is dominated by sovereign debt, because it enjoys a distinct comparative advantage over private debt securities in connecting the safety that it offers with the desirable properties of moneyness, liquidity and stability. This comparative advantage is associated with the core powers of a nation state, which allow the sovereign to steer the allocation of scarce resources, support economic and financial stability, and distribute wealth in the interests of society, if needed with the force of arms (van Riet, 2017). Any investor that buys government debt implicitly receives a claim on future government revenues. Although the value of this claim is opaque, the fact that the government can use its fiscal capacity and coercive powers to access the resources in the economy to honour its debt obligations makes investors believe that public debt is de facto collateralised and hence safe. As long as all market participants adhere to the same belief that the debt securities are safe, the sovereign bond market will be stable and liquid.

The attributes of *moneyness* and *liquidity* are especially assigned to short-term debt instruments, issued by the treasury. Their short maturity limits investors' exposure to the arrival of new information on the creditworthiness of the issuer, for example in unsecured money market transactions. Moreover, in a liquid market, they can always be turned into bank deposits enjoying retail deposit guarantees or even better exchanged for cash, i.e. the ultimate liquid and safe asset that offers immediate payment services guaranteed by the central bank. The aspect of moneyness ensures conversion of an asset into payment money at par whereas liquidity refers to the ability to transfer it at par or not (Gabor and Vestergaard, 2018). For example, repurchase (repo) contracts used in secured money market transactions are not

tradable and hence not liquid, but their convertibility makes them close to money. The conveniences of *safety* and *stability* are mostly attached to long-term government bonds that pay off at par with a very high probability despite the longer horizon. They serve as a secure store of value over time, also in volatile markets, and earn an almost risk-free nominal return.

Considering the advantages of liquidity, the transaction volume in a safe asset is normally so large that investors can easily roll over their holdings at maturity, so that their roll-over risk is low (which is also of interest to the issuers). As the market is liquid, they also have the possibility to sell out any time at a negligible discount and without significantly affecting the market price. Accordingly, investors generally do not need to be concerned about their ability to find a buyer for their safe asset in case they suddenly wish to exchange it for money. Brunnermeier and Haddad (2014) refer to this feature as the "good friend analogy".

2.2 New information and the regime switch from safe to risky assets

Dang et al. (2011) and Holmström (2015) emphasise the *information sensitivity* of debt instruments, i.e. the incentive an agent has to produce private information about the payoff of a debt security. A safe asset can be taken at face value with 'no questions asked', meaning that buyers need to spend little if any time, effort or cost to discover its price. This positive information externality is a key requirement for an asset to acquire benchmark status in fixed-income markets as it gives investors a stable focal point for market-wide price discovery (Dunne et al., 2007). A benchmark status as safe haven for a wider market further enhances its liquidity attributes. In other words: the intrinsic qualities of a safe public debt instrument make it information-insensitive, similar to money. This desirable property also makes it a liquid asset, even in uncertain times – until news arrives that raises concerns about the value of the claim.

Sovereign debt issued in the national currency of advanced economies is information-insensitive and potential buyers normally have no reason to worry about credit risk or to dig deeper into the issuer's fundamentals. This stability is anchored in a high creditworthiness of the sovereign; its reputation as a trustworthy borrower is expected to ensure a full debt payoff in practically every state of the world. Given these outstanding features sovereign debt instruments are the cornerstone of any national financial system and have assumed a key role in monetary policy. They serve as high-quality liquid assets, for example, on bank balance sheets for meeting prudential capital and liquidity standards and as a stable store of value for institutional investors wishing to minimise credit risk in nominal terms. Moreover, they function as a benchmark for pricing other securities and as a credible form of collateral in

both derivatives and repurchase markets (see IMF, 2012; Castro and Mencía, 2014). The above attributes make sovereign assets also of great value for central banks' tender and outright operations as well as for the security of their payment and settlement systems. Moreover, the yield curve created by risk-free sovereign debt securities issued with various maturities functions as the benchmark vehicle for the transmission of the monetary stance to financing conditions throughout the economy (European Central Bank, 2014).

Yet, an sovereign asset's safety may be manufactured by financial regulation and other public policies that create incentives for market participants to disregard the inherent credit and liquidity risks (Gelpern and Gerding, 2016; Gabor and Vestergaard, 2018). Similarly, placing trust in a high credit rating may be dangerous in the presence of tail risks. The safety and liquidity of an asset based on the presumed intrinsic qualities of the issuer may in fact be fragile, i.e. a particular adverse shock can suddenly make the debt claim information-sensitive, of questionable safety, and thus illiquid (cf. Holmström, 2015; Gorton, 2017).

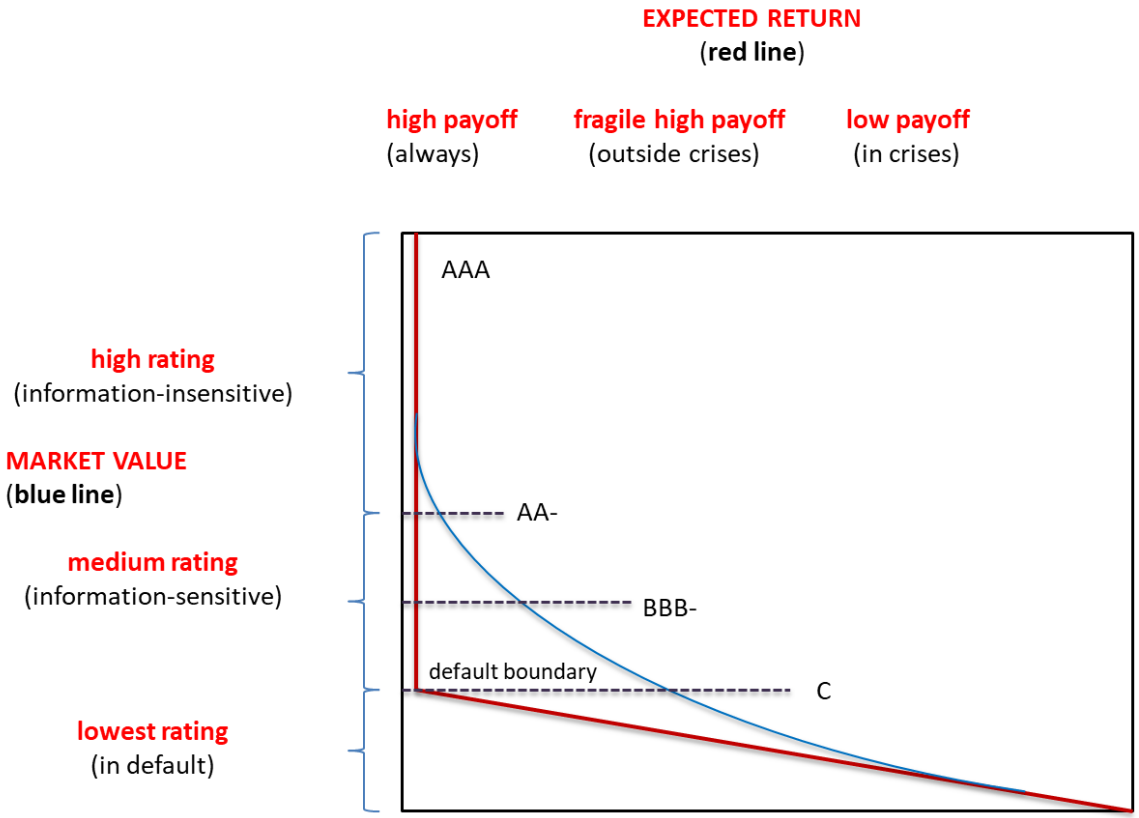
For example, market participants may come to see credit ratings as a reliable indicator of an asset's safety attributes, believing there is 'no need to question' the expected return on public debt securities with the highest (AAA) rating. But an asset with this label that was considered to be safe under normal circumstances may still be vulnerable to changes in market sentiment. The arrival of negative news may undermine the certainty of future debt service payments and trigger a downgrade to well below AAA, making it information-sensitive. The time, effort and cost for market actors of then having to collect private information about the riskiness of the asset (beyond the general information contained in the lower credit rating) set the scene for a regime change, whereby investors move from a risk-on to a risk-off strategy, making the market for that particular asset much less liquid. The price of assets whose safety unexpectedly turns out to be fragile will decline, especially in a context of fire sales. The sharp deleveraging and quick repricing may spill over to other assets suddenly perceived as vulnerable. Depending on the magnitude of the valuation losses the owners of these opaque assets may themselves get into trouble.

2.3 The market value and expected return of a safe asset

Figure 1 presents a framework to classify public debt securities according the expected return of a claim in different market conditions (associated with the solvency of the borrower) on the x-axis and its market value based on the credit rating as a proxy for the need to collect private information (affecting its liquidity) on the y-axis. The two criteria are taken from Holmström (2015), who uses them to describe how the combination of expected return (or payoff) and

market value (or liquidity) of a debt security evolves when news hits the market and changes its information-sensitivity, or not. An asset considered to be a safe haven always keeps its value and full return; its price will rise in volatile markets as it attracts risk-averse investors.

Figure 1 - The universe of public debt securities by their return and value



Source: Own presentation inspired by Holmström (2015) and Golec and Perotti (2017).

By contrast, the market value of a debt instrument from an issuer with a more fragile reputation will start to slide with the unexpected arrival of negative information (for example, when the borrower loses a high credit rating). As a result, it becomes susceptible to changes in market sentiment such that further negative news and rating downgrades will accelerate the decline along the blue line in Figure 1. A downgrade from a high to a medium credit rating (for example at AA-, the average for euro area countries) can be interpreted as a transition from information-insensitive to information-sensitive debt (Gorton, 2017). The debt claim gets junk status when the credit rating falls below investment-grade (BBB-). A further sliding of the credit rating brings the debt claim close to the default boundary; it could even be pushed into default. Although the expected return on the debt security becomes more fragile, actual debt service payments continue unchanged, following the red line, until a severe crisis leads to a credit event (the kink at the default boundary). The risk that a debt claim which is

information-insensitive outside crises becomes sensitive to incoming negative news before an imminent crisis is the highest for cases where its safety was engineered rather than intrinsic.

The fragile safety of some debt claims argues in favour of strengthening the contractual terms beyond the unconditional promise of repayment and the reliable enforcement of property rights. As pointed out by Golec and Perotti (2017), safety could be enhanced in three ways. First, by issuing debt with a *short maturity* that offers more near-term safety regarding the final payoff. This type of claim is less susceptible to default risk, because investors can demand repayment relatively quickly after dangers arise. Second, by giving claims a *senior status* by contract, i.e. priority of repayment over junior claims at default. While the senior claim is a liquid instrument, the liquidity of the junior claim is fragile, dependent on the collateral value of the issuer's assets, and may evaporate in a crash (Moreira and Savov, 2017). The priority of senior over junior claims may be violated among unsecured debtors who have no collateral for partial repayment in a default. Third, by giving creditors *full assurance* of repayment, which requires securing debt with sound and tradeable collateral or a solid guarantee as an insurance against possible negative events. This option allows creditors to take possession of the collateral or to call in the guarantee upon default in all contingencies.

Still, full compensation after the credit event requires that the market value of these assurances meet the original expectations. Asset-backed securities fit in this third category but the true value and safety of the underlying asset pool that functions as a safeguard may be opaque and the risk of contagion effects spreading through the pool indicates that a top-up guarantee may be necessary (see also Gabor and Ban, 2016). A larger pool of diverse assets with less correlated returns should in this respect do a better job in backing the safety of the security that is built on this pool. These three contractual enhancements – maturity, seniority and assurance – improve the value and safety of a debt security and place it closer to the top left-hand corner of Figure 1 (see also the matrix of Golec and Perotti, 2017).

3. The safety promise of euro area sovereigns

3.1 The regime switch from safe to risky sovereigns

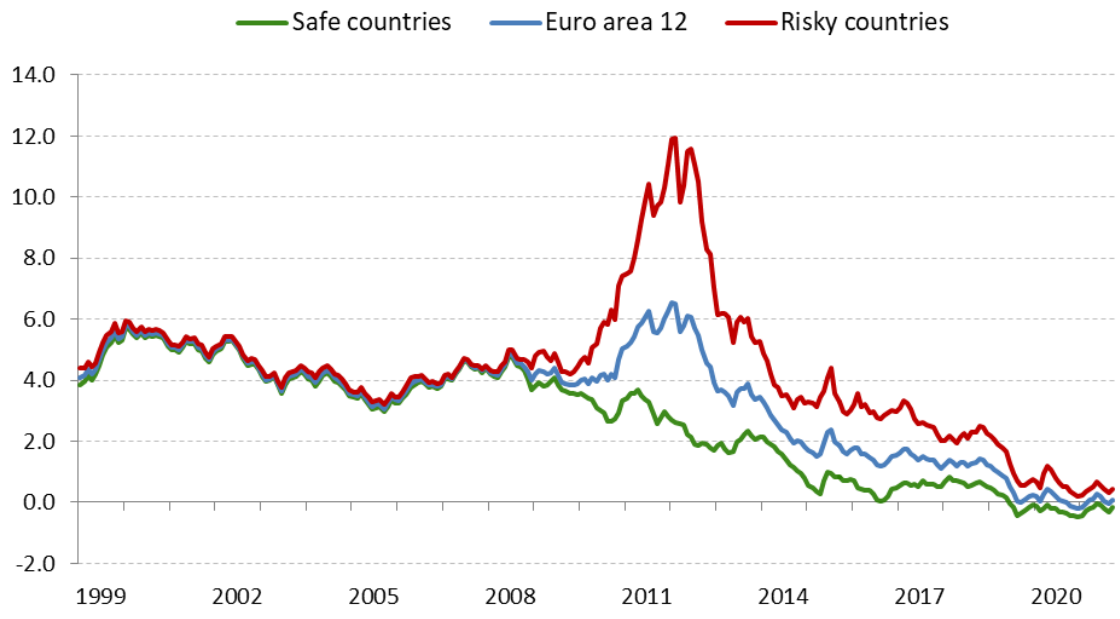
After the introduction of the euro in 1999, all participating countries had the opportunity to access a much wider capital market and the ability to issue debt in a single currency, enhanced their capacity to borrow. Public debt managers targeted their bond supply increasingly at international investors, seeking to minimise the cost of government borrowing while reducing rollover risk by extending the average maturity of outstanding debt. This attracted buy-and-

hold investors such as euro area pension funds and life insurers as well as global investors and foreign official institutions (central banks and sovereign wealth funds) interested in expanding their assets across the whole single currency area (Blattner and Joyce, 2016).

France and Germany competed for the benchmark status of their sovereign yield curve for the whole eurozone (Gabor and Vestergaard, 2018). Based on its previous credibility as monetary anchor and its low interest rates, the German bund assumed the role of pricing benchmark in the euro-denominated sovereign bond markets. Based instead on a reputation of minimum idiosyncratic movements, French government bonds asserted benchmark status for market-wide price discovery across most of the sovereign yield curve (Dunne et al., 2007). The other euro area countries saw a rapid further convergence of their sovereign bond yields towards the corresponding German/French yields – which over time declined in line with international trends (Figure 2). A more or less single sovereign interest rate curve arose across the eurozone, suggesting that national government bond markets were closely integrated (Ehrmann et al., 2011; Minenna, 2016).

Figure 2 - Government bond yields of the first 12 euro area countries, 1994-2021

(monthly data in percentages)



Notes: Long-term interest rate for convergence purposes, 10-year maturity. Euro area 12: Simple average of the first 12 EU countries that adopted the euro. Safe countries: Simple average of Germany, France, Austria, Belgium, Finland, Luxembourg, Netherlands. Risky countries: Simple average of Italy, Spain, Greece, Ireland, Portugal.
Sources: Eurostat and ECB. Latest observation: September 2021.

The vulnerabilities in the euro area countries on the receiving side of the capital flows were masked by the rise in asset prices, the strong growth performance and the regulatory under-pricing of country risk. Moreover, the credit boom eroded the national governance institutions supporting reforms. While the supply of cheap credit from abroad might have helped to fund structural reforms, in reality it allowed politicians to 'kick the can down the road' (Santos, 2015). The first concerns already appeared in the mid-2000s. For example, while Standard & Poor's (S&P) raised the credit rating for Spain to the highest level, around that time it downgraded Greece, Italy and Portugal (Figure 3).

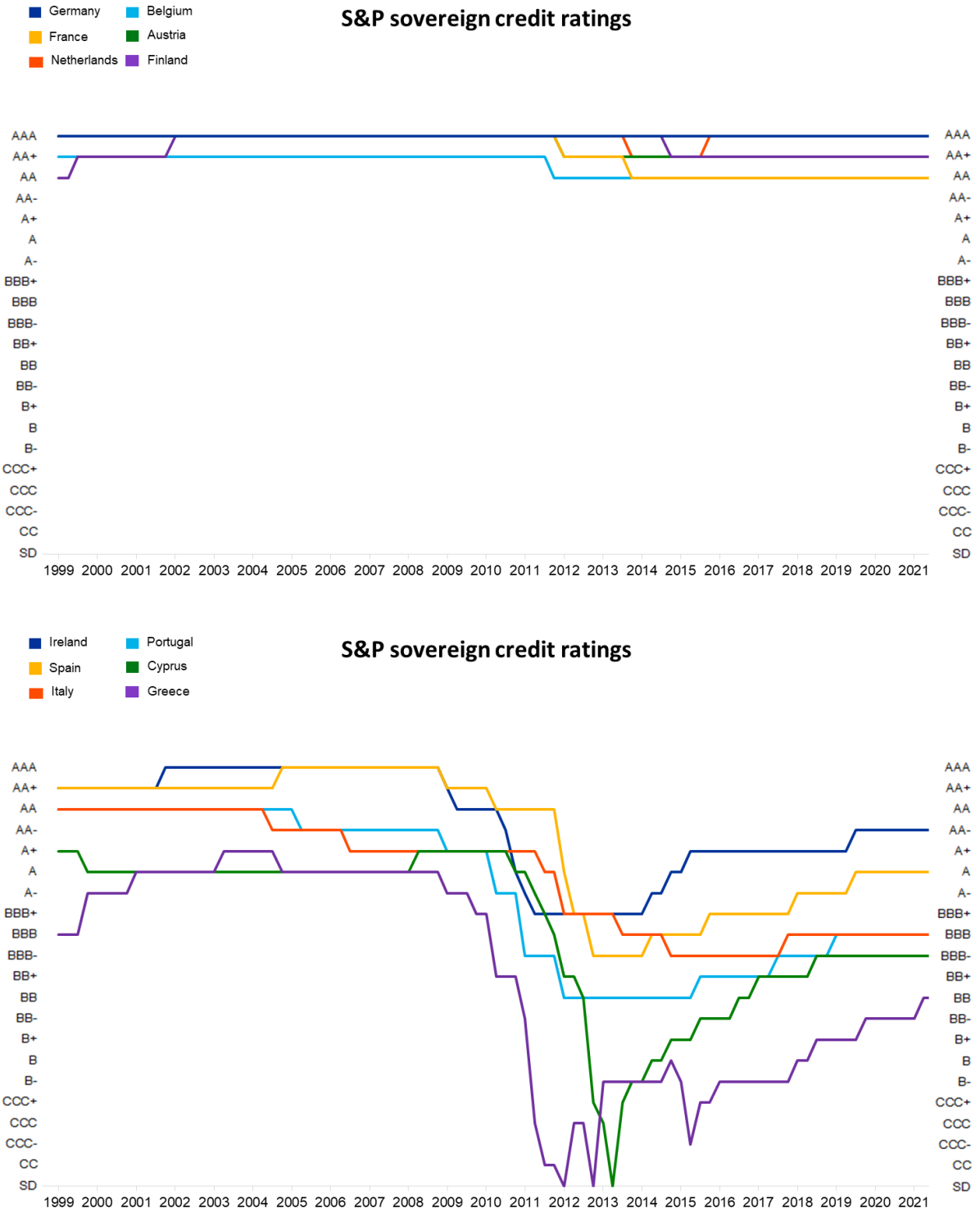
When the great financial crisis broke out in 2008 and spilled over to Europe, governments stepped in to rescue their banks and counter the deep recession, setting the stage for unexpected negative feedback loops between fragile banks and overburdened sovereigns at the national level. With the onset of the Greek sovereign debt crisis in 2010 market participants and rating agencies quickly lost confidence in the ability and willingness of all vulnerable countries to secure the credibility of their "sovereign signature" in economic and financial policies (Trichet, 2013). Moreover, creditor countries were very hesitant to provide financial assistance to Greece and other debtor countries, pointing out that the Maastricht Treaty explicitly excluded a sovereign bail-out.

As a result, investors' earlier beliefs about sound public finances and fiscal solidarity were shattered; their earlier indifference about country-specific sovereign default risk ('no need to ask questions') proved unjustified. They reassessed their sovereign exposures and asked for corresponding risk premia in interest rates (Delatte et al., 2017). Their more cautious attitude turned into extreme risk aversion following the Franco-German Declaration of Deauville of October 2010, which demanded a private sector involvement in resolving the Greek sovereign debt crisis before any official financial assistance could be considered. This regime switch triggered highly asymmetric capital market dynamics (Monteiro and Vašíček, 2019) and made the government bonds of all vulnerable countries and by implication the claims on their financial intermediaries and corporate sector information-sensitive.

The German bund naturally emerged as the preferred destination of investors looking for safety, liquidity and stability in volatile euro area markets. The general flight-to-safety had the effect of easing relative financing conditions for both the public and private sector in Germany as well as in other high-rated nations that were still deemed safe. By contrast, the most vulnerable countries were confronted with a 'sudden stop' and reversal in private capital inflows, bouts of illiquidity and a rapid rise in public and private bond yields, which in

interaction with falling credit ratings aggravated their economic and financial situation. Without effective backstop mechanisms the prospect of ever-rising public debt of ever-lower quality amid falling GDP growth prospects seemed to escalate into an unstoppable default, a situation described as the "systemic fragility" of the eurozone (De Grauwe, 2012).

Figure 3 - Sovereign credit ratings of 12 selected euro area countries, 1999-2021



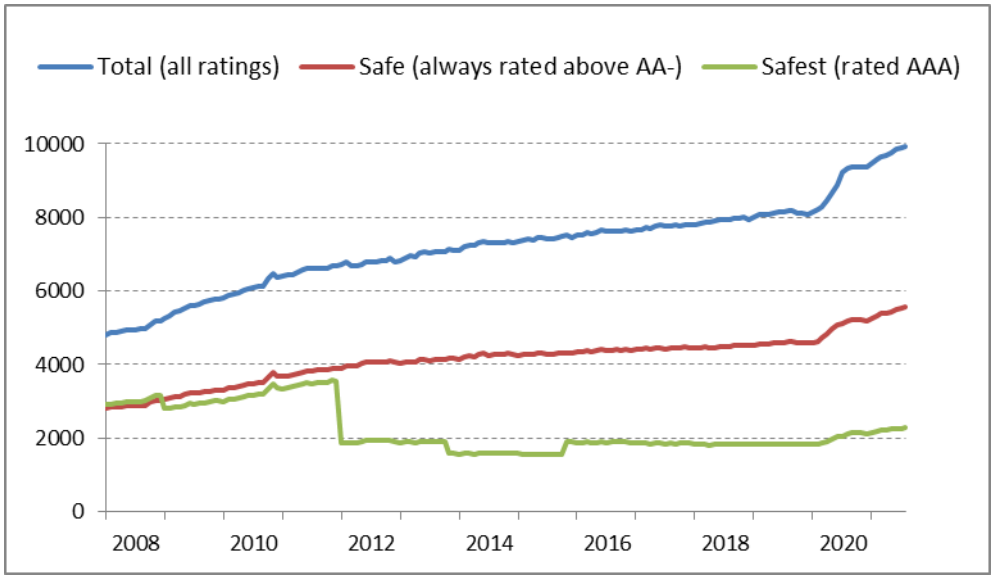
Source: Standard & Poor's Global Ratings. Last observation: 2021 Q3.

After Greece in early 2010, also Ireland and Portugal lost access to capital markets in late 2010 and early 2011, respectively, and had to call in EU/IMF financial support. Spain and Italy struggled with elevated interest rates and low market liquidity. While Spain received an ESM loan to fund bank resolution measures, Italy was in fact 'too big to rescue' and relied on domestic investors to help it ride out the storm. Greece finally entered into a large public debt restructuring in early 2012 and a small one in late 2012 as part of its second official rescue package. Cyprus in turn lacked the fiscal space to rescue its two largest failing banks, which held a large portfolio of Greek government bonds, and received EU/IMF loans when it went into default. The authorities even had to introduce temporary capital outflow controls.

On balance, the re-assessment of sovereign strength led to a sharp drop in the stock of euro-denominated government debt securities with the highest (AAA) credit rating in the euro area (Figure 4). Over the period since 2008, only seven euro area members always maintained an S&P credit rating above AA-, showing that the sudden regime switch from safe to risky sovereign assets is persistent. The deep fragmentation of the euro area universe of public debt and of financial markets more generally along national lines of creditworthiness in turn hindered the even transmission of monetary policy across the eurozone (see also Ehrmann and Fratzscher, 2017). Market participants even began to contemplate the possibility of a euro area break-up, which triggered a general repatriation of funds focused on matching domestic assets and liabilities to address the emerging currency redenomination risk.

Figure 4 – Euro area government debt securities by credit rating, 2008-2021

(stock of euro-denominated debt securities in billion euro for 19 member countries)



Note: Based on S&P ratings.
Source: ECB and Standard & Poor's Global Ratings. Latest observation: August 2021.

3.2 A stronger EMU framework for sovereign safety

Only from mid-2012 onwards (foreign) investors regained confidence in the future of the euro and sovereign bond markets gradually calmed down. This positive trend was supported by a range of confidence-building interventions at the supranational level that were successful in coordinating markets around a return to financial stability in the euro area as a whole (see van Riet, 2016 for details).

First, a strengthening of European economic governance sought to make claims on national governments truly safe again in terms of their fiscal fundamentals. As from end-2011/early-2012 European leaders reinforced the Stability and Growth Pact, introduced a new Macroeconomic Imbalance Procedure and signed a Fiscal Compact.

Second, new official fiscal backstop facilities effectively guaranteed the continued safety of claims on national governments, albeit under strict conditions. The euro area authorities created in mid-2010 a temporary European Financial Stability Facility (EFSF) and opened recourse to a European Financial Stability Mechanism (EFSM) to provide conditional financial assistance to member countries that lost market access. The permanent European Stability Mechanism (ESM), which became operational in October 2012, offers various tools to address a temporary liquidity crisis hitting individual countries and/or their fragile banks.

Third, to limit the moral hazard for sovereigns now having access to a common fiscal backstop, euro area countries included as from January 2013 euro area collective action clauses (CACs) in the terms and conditions of government bond series. These should allow all debt securities issued by a country to be considered together in negotiations and thus make it easier to get a qualified majority of bondholders to accept a debt restructuring offer rather than to hold out against it.

Fourth, in June 2012 European leaders initiated steps towards a European Banking Union in order to break the vicious feedback loop between vulnerable sovereigns and fragile banks. This agreement led to the transfer of banking supervision to the ECB and a role for the ESM as a temporary fiscal backstop for the single bank resolution fund, whereas a common retail deposit insurance scheme is still under discussion.

Finally, following a key speech by Draghi (2012) in July 2012, the ECB set up a programme of Outright Monetary Transactions (OMTs) and pledged to undertake conditional, yet unlimited purchases in secondary sovereign bond markets were price formation was distorted by currency redenomination risk, if needed for monetary policy transmission purposes.

The whole package of confidence-building measures, and in particular the credible ECB commitment to act as a potential 'buyer of last resort' for sovereigns (De Grauwe, 2020), removed market fears of a euro area break-up and was successful in countering flight to safety in dysfunctional sovereign bond markets (Ehrmann and Fratzscher, 2017). Markets saw a clear and transparent official commitment to preserving the safety of sovereign bonds and, hence, financial stability in the euro area as a whole (Gourinchas and Jeanne, 2012; Eijffinger et al., 2018). This market stabilisation also reflected concrete progress made by crisis-hit euro area countries with reforming their economies, which improved their fundamentals. The tighter post-crisis economic and financial governance framework of EMU and the new fiscal and monetary back-up mechanisms reinforced the safety of national sovereign bonds in terms of their fundamentals and correspondingly their market liquidity.

As a result, the crisis-hit countries enjoyed a substantial narrowing of their interest rate spreads relative to Germany (Figure 2). After the sovereign debt crisis appeared to be under control, investors awarded euro area countries again with an interest-rate bonus for their EMU membership, estimated at half the size of the pre-crisis premium (Wiegand, 2017). The increase in the market value of their sovereign bonds on the balance sheet of fragile banks in turn made countries with weak public finances less exposed to additional bank rescue operations and mitigated the bank-sovereign nexus (Acharya et al., 2016).

Markets were gripped by renewed fears in mid-2015 about Greece leaving the eurozone. The Greek government suddenly announced a referendum about accepting the tight policy conditions of a third euro area rescue programme with uncertain prospects about a possible write-down of unsustainable Greek debt owed to the official sector. To stem capital flight it introduced administrative measures and capital controls. Markets calmed down when the Greek government reached an agreement with its euro area partners and these in turn committed to debt relief measures. Sovereign bond spreads of other vulnerable euro area countries relative to Germany temporarily increased due to contagion effects but were held in check by the ECB's public sector purchase programme that was initiated in March 2015 to counter disinflationary pressures in the eurozone.

Against this background, the potential return of a crisis in one or more of the risky countries and the risk of contagion to other relatively weak nations remains an ever-present threat to economic and financial stability in the euro area as a whole. A big negative shock could again trigger destabilising private capital flight, rising sovereign bond spreads and financial disintegration of the eurozone, even with the EMU's reinforced governance, the ESM's fiscal

backstop and the ECB's monetary backstop now being in place. This explains why according to many observers further reforms to strengthen the EMU architecture are needed, including the introduction of a safe sovereign asset for the eurozone (see also Benassy et al., 2018; Berger et al., 2018).

3.3 Yield compression in fragmented financial markets

Despite the renewed convergence of sovereign bond yields since mid-2012 and the diminishing stress in bank funding markets, the ECB judged in June 2014 that additional monetary accommodation was warranted to further relax credit conditions, revive credit growth and push euro area inflation back up to a level near 2% over the medium term.

The ECB's monetary policy announcements, in particular the negative interest rate policy, the forward guidance on policy rates, and the large-scale asset purchase programme of public and private sector securities, contributed to lowering and flattening the euro area average sovereign yield curve over the period 2014 to 2019. The combined cumulated impact of these three monetary policy instruments reduced the 10-year sovereign bond yield (averaged across the four largest euro area countries) by around 220 basis points, of which 150 basis points was accounted for by the asset purchases (Rostagno et al., 2021). At the country level, a large proportion of government bonds with medium- to long-term maturities recorded negative yields in 2016 and again since 2019. However, the decline in sovereign bond yields was stronger, the lower the country's credit rating (Fendel and Neugebauer, 2019).

The more significant interest-rate decline for more risky sovereigns can be explained inter alia by the fact that the ECB's public sector purchase programme (PSPP) treated all eligible national and supranational public sector bonds as equal without discriminating between euro area countries or supranational institutions according to their creditworthiness (subject to the ECB's capital key, issue and issuer limits, conditional waivers for countries in an EU/IMF adjustment programme, and allocating most national public sector bond purchases to the respective NCB). This broad-based quantitative easing was aimed at lowering duration risk but also extracted sovereign risk; it induced investors to search for higher returns on national public sector bonds further along the term structure as well as lower-rated sovereign instruments across the eurozone in order to rebalance their portfolios.

Public debt managers (in particular of the more vulnerable countries) responded to the unusual euro area capital market environment of a steady central bank demand, falling long-term bond yields and subdued price volatility by shifting their debt issuance to longer

maturities in order to lock in the record-low cost of borrowing and reduce rollover risk (Wolswijk, 2020; Plessen-Mátyás, et al., 2021). For all euro area countries (apart from Italy) the average interest rate paid on outstanding government debt declined to below the nominal GDP growth rate, making even high debt-to-GDP ratios appear as unproblematic.

Still, sovereign credit ratings never fully returned to pre-crisis levels (Figure 3). Market participants continue to be attentive to country-specific risks, such as the crisis-legacy of a high public debt, the macroeconomic situation, the extent of non-performing bank loans, an outsized exposure of financial institutions to own government bonds, the accumulation of large net external liabilities and growing political uncertainties. Controlling for central-bank asset purchases, Pamies et al. (2021) find that the sovereign bond spreads of euro area countries are responsive to such fundamentals, especially public debt, in a non-linear fashion. At the same time, higher potential output growth and stronger public institutions serve as mitigating structural factors. Hence, governments with less solid fundamentals generally face higher borrowing costs than others and are exposed to higher risks of market disruption.

On balance, the return of sovereign bond yields to narrow spreads relative to Germany occurred on the backdrop of a renewed search for yield across the eurozone with less attention being paid to credit quality as long as the ECB's exceptional monetary accommodation supported financial integration and the economic recovery.[2] The compression of sovereign bond spreads created the impression of fiscal sustainability, but was driven by the ECB extracting sovereign risk rather than by fiscal consolidation and structural reforms.

3.4 Euro area sovereign bond markets in the pandemic

An existential test of the resilience of euro area sovereign bond markets arrived with the first wave of the Covid-19 pandemic in March 2020. The symmetric nature of this exogenous shock was evident in the fact that long-term interest rates and CDS premia spiked all across Europe, reflecting market perceptions of higher global risk and expectations that the necessary economic lockdown and massive public support measures would lead to persistently lower output growth and higher public debt-to-GDP ratios. Market actors were for example quick to withdraw their money from investment funds, which in turn were forced to sell their most liquid assets, namely government securities, to meet these redemption pressures. The scale and duration of the negative market reaction turned out to be asymmetric and closely related

[2] Calculations suggest that the ECB's ongoing quantitative easing almost halved the risk of severe sudden stops in net private capital inflows, reflecting that its large-scale asset purchases helped to mitigate investor concerns about tail risks in euro area countries with weak macroeconomic fundamentals (Fabiani et al., 2021).

to each country's perceived creditworthiness, with risky sovereigns witnessing a stronger and more durable adverse impact than safe sovereigns (Carnazza and Liberati, 2021).

The initial monetary policy response involved an intensification of the ongoing monetary easing measures and was accompanied by the message of the ECB president that "we are not here to close spreads" (Lagarde and De Guindos, 2020). When the market sell-off intensified, the euro area risk-free sovereign yield curve moved higher and sovereign bond spreads rose markedly, the ECB quickly changed its attitude. The Governing Council pledged to do as much as necessary and for as long as needed within its mandate to stabilise financial markets in the interest of monetary transmission and to deliver extra monetary accommodation to ensure favourable financing conditions for the whole economy, private and public sectors alike (Lane, 2020).

Most importantly, it announced a flexible ECB pandemic emergency purchase programme (PEPP) covering both public and private sector debt instruments of at least investment-grade (with a waiver for Greece), starting with an envelope of €750 billion but raising it in two steps to €1.85 trillion. The ECB would continue with pandemic asset purchases for at least two years, until March 2022, reinvest maturing assets for as long as necessary, while promising a future reversal without disturbing capital markets. Together with the other pandemic measures (such as bank credit operations at subsidised interest rates and a higher risk tolerance on pledged collateral), this monetary intervention served to counter upward pressure on the risk-free sovereign yield curve for the euro area. At the same time, the flexible execution of the PEPP helped to reduce sovereign risk premia especially for the more vulnerable countries with lower credit ratings and to address non-fundamental volatility in sovereign bond spreads (Corradin et al., 2021; Hondroyiannis and Papaoikonomou. 2021).

Alongside the ECB's pandemic monetary easing, the EU Council activated the general escape clause of the SGP and suspended the normal budgetary requirements for 2020, 2021 and 2022 in view of the expected severe economic downturn affecting the EU as whole and the need to coordinate a supportive fiscal stance. However, the apparent lack of fiscal space in the vulnerable countries that were hit very hard by the pandemic (notably Italy and Spain) constrained them in taking sizeable countermeasures against this exogenous shock. Moreover, at the end of April 2020, Fitch Ratings lowered the Italian credit rating by one notch to BBB-, the minimum for investment-grade instruments. Against this background, Member States agreed to establish common safety nets for firms, workers, and sovereigns, with a total value of €540 billion.

First, the European Investment Bank (EIB) activated emergency funds up to €40 billion and created a guarantee fund of €25 billion to support €200 billion of corporate financing with a focus on small and medium-sized enterprises. Meanwhile, EU banking supervisors released countercyclical buffers and encouraged the banking sector to use capital and liquidity reserves to sustain the flow of credit to the private sector. Second, Member States could request EU funding for national short-time work schemes until end-2022, or with a later end-date if the pandemic persisted. This temporary support to mitigate unemployment risks in an emergency (SURE) could reach €100 billion in total and was financed by issuing EU debt. Third, fiscally constrained euro area countries could draw on a new ESM credit line to receive Pandemic Crisis Support of up to 2% of their GDP (which could add up to nearly €240bn.). This ESM loan was to be used specifically to cover the healthcare costs related to the pandemic and to be repaid within 10 years; there were no further conditions attached.

As the Covid-19 pandemic intensified, European leaders reached agreement in July 2020 on a bold 'Next Generation EU' recovery plan worth €750 billion (in prices of 2018) to be financed by EU borrowing in the capital market. The total available amount was split into a maximum of €390 billion in conditional grants and up to €360 billion in concessional loans, channelled through EU budget programmes for 2021-2023, in particular to promote green and digital investments and finance structural reforms. Each Member State had to submit a recovery and resilience plan for scrutiny by the European Commission, explaining how it intended to use the EU funds allocated to them. The payment in tranches was made dependent on compliance with the agreed milestones and rule-of-law requirements (van Riet, 2020).[3]

This fiscal intervention and redistribution through the EU budget was hailed as a "state-contingent fiscal union", a fall-back option which could be used again to address new tail risks hitting Europe in the future (Lane, 2021). Fitch Ratings concluded that the EU recovery fund is a net supportive factor for EU sovereign ratings over the medium term, in particular for the main beneficiaries, and a step towards a more resilient eurozone. S&P Global Ratings also saw Next Generation EU as indicative of the EU's improved political cohesion.[4] As a

[3] For an overview, see the webpage of the European Council/Council of the EU on the collective economic policy response to the Covid-19 pandemic: https://www.consilium.europa.eu/en/policies/coronavirus/

[4] See Fitch Ratings, Comment of 5 August 2020 (https://www.fitchratings.com/research/sovereigns/correct-fitch-ratings-eu-recovery-fund-is-step-towards-more-resilient-eurozone-05-08-2020) and S&P Global Ratings, news article of 31 July 2020 (https://www.spglobal.com/marketintelligence/en/news-insights/blog/lockdowns-impact-european-linear-broadcast-performance).

further sign of strength, the flash Eurobarometer survey of public perceptions in the midst of the Covid-19 pandemic showed that support for the euro rose to its highest level since 2002.[5]

The EU's fiscal policy announcements during the pandemic demonstrated an unprecedented unity and solidarity among the Member States and stood in sharp contrast to the divided and nationalist reactions to the sovereign debt crisis of a decade before. As a visible consequence of this public risk-sharing, the credit ratings of risky countries were broadly stable as of mid-2020, despite the recurring corona virus infections, and their sovereign bond yields uniformly declined, complementing the more differentiated impact of the ECB's flexible monetary policy (Corradin et al., 2021). Yet, Next Generation EU missed a euro area dimension.

4. The quest for a safe sovereign asset for the eurozone

4.1 Genuine eurobonds as final building-block of EMU

Extending EMU with a fiscal union (as favoured by McNamara, 2015; Berger et al., 2018; De Grauwe, 2020) would enable a euro area fiscal authority to issue genuine eurobonds. The availability of such a 'risk-free' instrument, whose safety is based on a joint-and-several guarantee from all participating countries and/or its own tax capacity to service the common debt, would anchor the euro area financial system, create a euro area fiscal capacity for macroeconomic management, and facilitate the conduct of the single monetary policy.

A euro area fiscal authority issuing its own safe and liquid debt securities would enlarge the EMU's capacity to finance common public goods, stabilise the common component of the business cycle, absorb common economic and financial shocks and, if warranted, redistribute fiscal resources to individual member countries in distress. Common public debt issuance also assumes an insurance function against national output fluctuations, without involving an ex ante (expected) transfer of resources, if common debt service would be paid for by the member countries through a levy proportional to their national income (Gros, 2020).

A common funding instrument could give both safe and risky sovereigns symmetric access to patient public capital at the supranational level, which – in contrast to fickle private capital from abroad – would also be available at a relatively low interest rate during national episodes of market turbulence. Continuous access to supranational funding would remove the risk that private capital flows between safe and risky countries could lead to destructive capital market dynamics that could again trigger a prolonged financial disintegration of EMU (Cœuré 2016;

[5] See Flash Eurobarometer 488 report on the euro area based on fieldwork in March 2021 and published in May 2021 (https://europa.eu/eurobarometer/surveys/detail/2291).

Bini Smaghi and Marcussen 2019). All the participating countries would thus enjoy a more comparable cost of capital and acquire an equal opportunity to absorb asymmetric shocks and share portfolio risk more efficiently across the eurozone (van Riet, 2021).

Genuine eurobonds would also function as the sovereign benchmark asset for eurozone investors and also attract the interest of global investors. A euro area sovereign bond regarded as safe would help to meet the financial sector's rising demand for high-quality and liquid assets needed to comply with the EU's prudential capital and liquidity requirements. This makes it an effective tool to break the 'diabolic feedback loop' between vulnerable governments being exposed to fragile systemic banks in their jurisdiction and weak banks holding large portfolios of own sovereign bonds (Brunnermeier et al., 2016).

A 'risk-free' euro area sovereign instrument would further be an attractive form of collateral for secured interbank lending and may be pledged by banks drawing on the ECB's refinancing facilities. Monetary policy measures in the form of large-scale open market operations in government bonds would naturally concentrate on genuine eurobonds, which ensure an even monetary transmission across the whole eurozone. The ECB's capital market interventions could also contribute to countering the effects of climate change on inflation when supranational debt securities would also be issued as green bonds.[6]

A genuine eurobond would thus offer an extra safety, liquidity and stability bonus compared to any national anchor and this benefit would be shared among all the countries participating in EMU. While recognising its advantages, European leaders have excluded the introduction of genuine eurobonds at this stage, seeing debt mutualisation as the final building block on the road to a fiscal union / political union. This cornerstone of EMU can be put in place only after a level fiscal playing field has been achieved and most national fiscal sovereignty has been transferred to the new eurozone treasury to preserve sound and sustainable public finances. The political consensus for such fiscal integration is still out of sight, reflecting the prevailing public debt divergences and the legal constraints posed by the EU Treaty.

[6] Central banks are nowadays also able to construct a risk-free benchmark curve based on overnight index swaps (the so-called OIS curve) and could use swap interventions to steer market interest rates without having to undertake open market operations in safe government instruments. See also European Central Bank (2014).

4.2 Alternatives for euro area-wide safe sovereign bonds

The academic literature has come up with various alternatives to genuine eurobonds that lead to safe sovereign assets for the eurozone without having to move to a fiscal union.[7]

The benchmark option of making all national public debt truly safe requires a strong and credible commitment of all participating countries to maintain sound public finances and to honour their debt obligations in most, if not all states of the world. This option assumes a high degree of convergence and integration among euro area countries and a symmetric exposure to negative shocks with an arbitrary correlation which could still drive a country to default. For a monetary union like the euro area consisting of member countries with heterogeneous endowments (i.e. the ability to service public debt) and diverse political economies (i.e. the willingness to service public debt) this benchmark option appears unrealistic in the medium run. Even a multi-polar universe of safe national sovereigns is vulnerable to idiosyncratic shocks and common shocks with asymmetric consequences that could tear the euro apart. As demonstrated by the Covid-19 pandemic, large exogenous shocks may throw both safe and risky countries off course and undermine their fiscal sustainability, creating havoc in euro area financial markets. A common safe asset for the eurozone would significantly reduce this systemic vulnerability, relieving the burden on the ESM to function as fiscal backstop and on the ECB to deploy the OMT as a monetary backstop (van Riet, 2017).

Since the sovereign debt crisis of 2010-2012, many observers have suggested to pool a certain amount of national public debt into some form of market-stabilising eurobonds, with or without a collective guarantee. However, Germany and other creditor countries always feared that the implied debt mutualisation would turn EMU into a transfer union at the expense of their tax payers. These countries first wanted to see far-reaching public risk reduction whereby all euro area nations accept political restrictions that guarantee sound and sustainable public finances and a greater reliance on private risk sharing across euro area capital markets before taking any steps which would involve public risk sharing with debtor countries.

A feasible alternative was to create synthetic eurobonds whereby a European public institution issues common debt and invest the proceeds in a maximised portfolio of national sovereign bonds in principle of all member countries. These sovereign-bond backed common debt securities could be split into a ‘risk-free’ senior tranche that would be at least as safe as

[7] For surveys of the economic costs and benefits of various eurobond alterantives, as well as their legal constraints, see Claessens et al. (2012), Amtenbrink et al. (2016), Leandro and Zettelmeyer (2019) and Grund (2020).

the German bund and a 'risk-prone' junior tranche that would carry any losses on the underlying portfolio of national sovereign bonds. A common guarantee from the participating countries to secure the ultimate safety of the senior tranche would in theory be superfluous (Brunnermeier et al., 2017; ESRB Task Force on Safe Assets, 2018); otherwise, it could be guaranteed by a modest reserve fund to cover the credit losses, if ever the absorption capacity of the junior tranche was fully exhausted (Hild et al., 2014).

Political leaders could also give the ESM a mandate to issue so-called E-bonds to finance a maximised portfolio of loans to the euro area countries (Leandro and Zettelmeyer, 2018). The safety of the E-bonds could be secured by the ESM's capital base (with pro-rata contributions by the member countries) and/or its status as a senior creditor (with each member country guaranteeing that it will repay the ESM before other creditors, thereby subordinating national sovereign bonds).

None of the alternatives to genuine eurobonds received political traction. Governments generally feared the competition from a common safe asset in high demand that was likely to give their own debt securities a less attractive subsidiary status. A common safe asset could reduce the private sector's demand for national sovereign bonds, drain liquidity from their home capital market, and drive up their own interest rates. Moreover, the arrival of a common public investor with a mandate to keep in its portfolio a portion of each euro area sovereign's debt would extract national credit risk and thus lower market interest rates above all for the more risky countries. The continuous purchases to refinance maturing securities and buy new national sovereign bonds could also lead to moral hazard and weaken the market incentive for politicians to remove their public debt overhang. Safe sovereigns with the highest credit rating would hardly benefit, if at all, and could end up with a higher liquidity premium in their own interest rates. Credit rating agencies might even downgrade them if they had to carry the brunt of a collective guarantee for the common safe asset. These skewed benefits prevented political agreement on constructing a safe sovereign asset for the eurozone.

Also when Covid-19 struck, European leaders could not agree on the Italian proposal for common issuance of one-off 'coronabonds' to fund a sizeable joint fiscal response to this common enemy from outside (Grund, 2020).[8] The subsequent compromise on large-scale EU debt issuance to fund the EU recovery plan proved to be a turning point in terms of public risk

[8] Nine eurozone countries – apart from Italy also including Belgium, France, Greece, Ireland, Luxembourg, Portugal, Slovenia and Spain – signed a letter on March 25, 2020, to the President of the European Council, Charles Michel, asking for work on a common debt instrument to counter the damages caused by the Covid-19 pandemic.

sharing. Moreover, euro area leaders established an ESM pandemic credit line as a safety net for fiscally-strained member countries similar to the structure of E-bonds. Meanwhile, the ECB's exceptional monetary accommodation bought time for eurozone politicians to introduce a permanent common safe asset to stabilise a capital market union based on private risk sharing.

4.3 The potential of European supranational safe debt

Over the past few years, the European Union (EU), the European Investment Bank (EIB) as well as the euro area financial stability institutions (EFSF, ESM) have stepped up their securities issuance either to finance official assistance programmes for EU countries, euro area countries, and third countries, or to provide financing under a specific mandate assigned to them under the EU Treaties. These European supranational institutions have very high or the highest credit ratings – above the average AA- rating of their euro area shareholders – given the explicit fiscal backing from all the Member States, all the euro area countries, or the EU budget, and the de facto senior status of their debt (see Table 2).

Table 2 – European supranational and euro area government debt securities at end-2019

EU/EMU institution	**Total debt securities**	**o/w issued in euro**	**Lending capacity**	**Long-term credit rating**
	(€ billion)	*(€ billion)*	*(€ billion)*	*(S&P)*
EFSF	193	193	440 [2)]	AA
ESM	110	103	500	AAA
EU	52 [1)]	52 [1)]	1020 [3)]	AA
EIB	450	242	713 [4)]	AAA
Total	805	590	2210 (excl. EFSF)	
Euro area countries	**Total debt securities**	**o/w issued in euro**	**Lending capacity**	**Long-term credit rating**
	(€ billion)	*(€ billion)*	*(€ billion)*	*(S&P)*
EA-19 countries	8245	8078	n.a.	AA- on average [5)]
EA-7 countries [6)]	4715	4576	n.a.	Above AA-

Notes:

1) EU includes the EFSM (€47.4 bn.), the Balance of Payments Facility (€0.2 bn.), the Macro-Financial Assistance Programme (€4.7 bn.) and Euratom (€0.2 bn.).
2) The maximum capacity of the EFSF has expired.
3) Consists of €806 bn. for NGEU, €100 bn. for SURE, €60 bn. for the EFSM, €50 bn. for the BoP facility, and €4 bn. for Euratom. No ceiling for the Macro-Financial Assistance Programme.
4) Calculated as 250% of the EIB's subscribed capital plus reserves minus equity investments.
5) Average capital-key weighted long-term credit rating (based on Scope Ratings).
6) Covers Germany, France, Netherlands, Belgium, Austria, Finland, Luxembourg.

Sources: ECB and annual financial accounts from the European Union, EFSF, ESM and EIB.

The combined stock of European supranational debt securities in issue at end-2019 was about €805 billion. This figure compares with a non-consolidated stock of debt securities issued by all 19 euro area governments of over €8.2 trillion. Hence, the European supranational institutions together represented 9% of the total sum of public sector debt securities of about €8.9 trillion (not counting the debt securities of non-euro EU countries and avoiding double-counting of the EFSF's debt securities which are statistically reallocated to the euro area countries). Their debt securities accounted for a higher share, namely 15%, when the comparison is limited to the group of 7 euro area countries with an S&P credit rating above AA- (namely Germany, France, Netherlands, Belgium, Austria, Finland and Luxembourg) which had some €4.7 trillion of government debt securities outstanding at the end of 2019.

A point to note is that the ESM and in particular the EIB but also euro area countries issue some of their debt in other currencies than the euro (especially in the US dollar) in order to attract a larger pool of international investors. This currency diversification supports debt management but goes against the European political objective of expanding the pool of euro-denominated safe assets. Considering only the debt securities issued in euro, European supranational debt accounted for only 5% of public sector debt securities when including all 19 euro area countries and 8% when including only the seven high-rated euro area members.

Given their subscribed capital, reserves, guarantees and own resources, the maximum lending capacity of the European supranational institutions is up to €2.2 trillion. However, this gives an exaggerated picture of the possible 'float' of their safe debt securities to fund these activities. The capacity of the EFSF has expired since its tasks were taken over by the ESM. The EU and ESM official support facilities are only to be used on a temporary basis in a national or systemic crisis. The EIB's involvement has steadily grown over time, but its programmes also serve to finance a number of transitory projects. From this perspective, the actual and theoretical 'float' of these European supranational safe assets is too small to anchor the euro area financial system. Yet, the borrowing capacity of the EU has been expanded significantly to deal with the Covid-19 pandemic and might be a game changer (see also Delgado-Téllez et al., 2020).

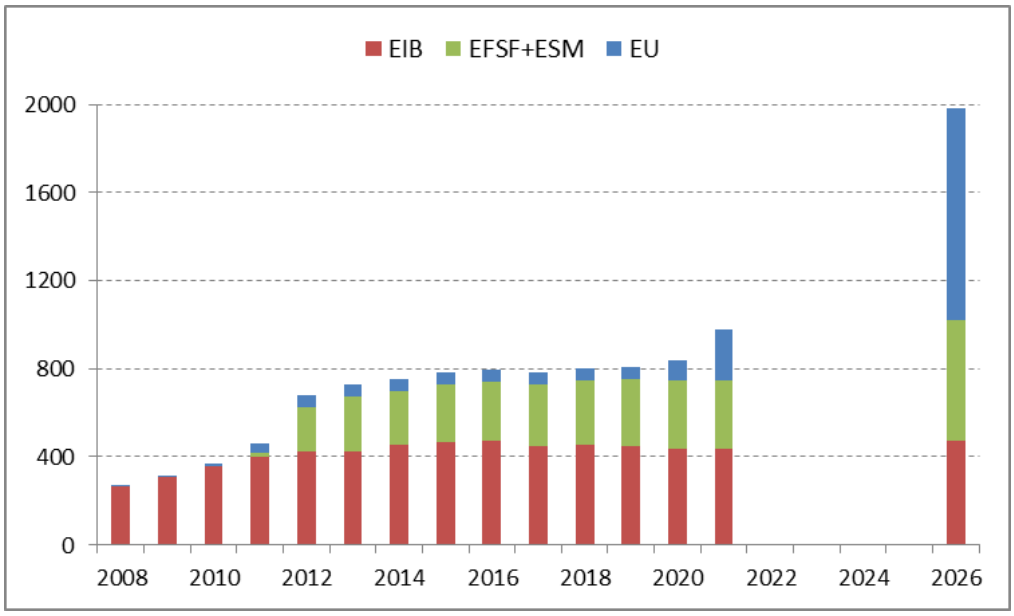
Ever since the mid-1970s, the European Commission has regularly accessed the capital market on behalf of the EC/EU to borrow relatively modest sums – guaranteed by the own resources of the EC/EU budget – which were passed on as financial assistance in the form of rescue loans to Member States and third countries (Horn et al., 2020). As described above, since the Covid-19 crisis, this borrowing activity also covers social bonds for the temporary

financing of the SURE instrument of up to €100 billion, which are backed up by at least €25 billion of bilateral guarantees voluntarily committed by Member States to the EU budget. In addition, the European Commission (2021) will tap the capital market in 2021-2026 at a range of maturities for a maximum of €750 billion (in prices of 2018, or €806 bn. in current prices), also by issuing green bonds, to finance Next Generation EU. As a result, the European Commission will be one of the biggest supranational issuers in the world. The repayment of these EU debt securities with accrued interest, in particular the part that is used for grants, will take place over a 30-year period until 2058 and is secured by a temporary increase in the EU's own-resources ceiling and by the introduction of EU taxes.[9]

Taking the (actual and potential) Covid-19 contributions of the EIB, ESM and the EU together, the total stock of European supranational debt securities could increase from €805 billion in 2019 to almost €2 trillion in 2026 (see Figure 5; disregarding the fact that the level is lower for euro-denominated debt securities).[10] From this perspective, the traditional predominance of national public debt issuance could be giving way to a hybrid model where public borrowing takes place both at the national and European level (Cabral, 2021).

Figure 5 – European supranational debt securities from 2008 to 2026

(actual and potential amounts in billion euro)



Note: Starting from the 2019 levels, the 2026 data further include the funding of potential Covid-19 support provided by the EIB (€40 bn.), ESM (€240 bn.), and the EU (€100 bn. for SURE and €806 bn. for NGEU).

[9] At the time of writing, the details of the new EU taxes needed for a timely EU debt repayment are still to be agreed.

[10] The combined EU and national fiscal responses to Covid-19 could raise the scarce supply of *euro-denominated* safe assets (rated AA- or above) by 50% from around €5 trillion in 2019 to about €7.5 trillion by 2024. See Scope Ratings, 'Europe's C-19 fiscal response to significantly raise euro-denominated safe asset supply', research report of 24 July 2020 (https://www.scoperatings.com/ScopeRatingsApi/api/downloadstudy?id=2bd752f9-b0c1-470c-8b21-f034817d0e1b).

A number of qualifications with respect to this high figure for 2026 are in order, suggesting that in reality the supply of European supranational safe debt will likely be much lower.

First, the European supranationals' enlarged borrowing potential is directly related to the Covid-19 emergency. The restrictions in terms of size, duration and scope that apply to this additional supply of supranational debt make it less suitable for fulfilling all the functions of a safe public sector asset for the eurozone in the longer run.

Second, Next Generation EU is unlikely to reach its maximum amount because most Member States prefer to receive budget-neutral grants rather than debt-increasing loans from the EU. By contrast, the EU loans under the SURE instrument are in high demand and they are paid out relatively fast (at the time of writing, most of the available amount is already spent).

Third, the lower-rated euro area countries are reluctant to make use of the ESM's Pandemic Crisis Support because of a possible stigma effect and so far no requests have been made. The ECB's ongoing public sector asset purchases and its higher risk tolerance on collateral pledged for bank credit operations also made it attractive for the more risky countries to fund their high-rising budget deficits and roll over public debt in the capital market, offering longer maturities at record-low interest rates.

Fourth, the pre-Covid financial assistance granted through the EU, the EFSF and ESM is to be repaid in due course. Apart from Greece, all the euro area countries hit by the sovereign debt crisis have already returned the financial support received from the IMF and some have started repaying the loans received from European official creditors. The outstanding amount of safe debt securities issued by the EU, EFSF and ESM to finance these rescue loans back-to-back is therefore set to gradually decline (although the crisis-related loans may also be rolled over for some time).

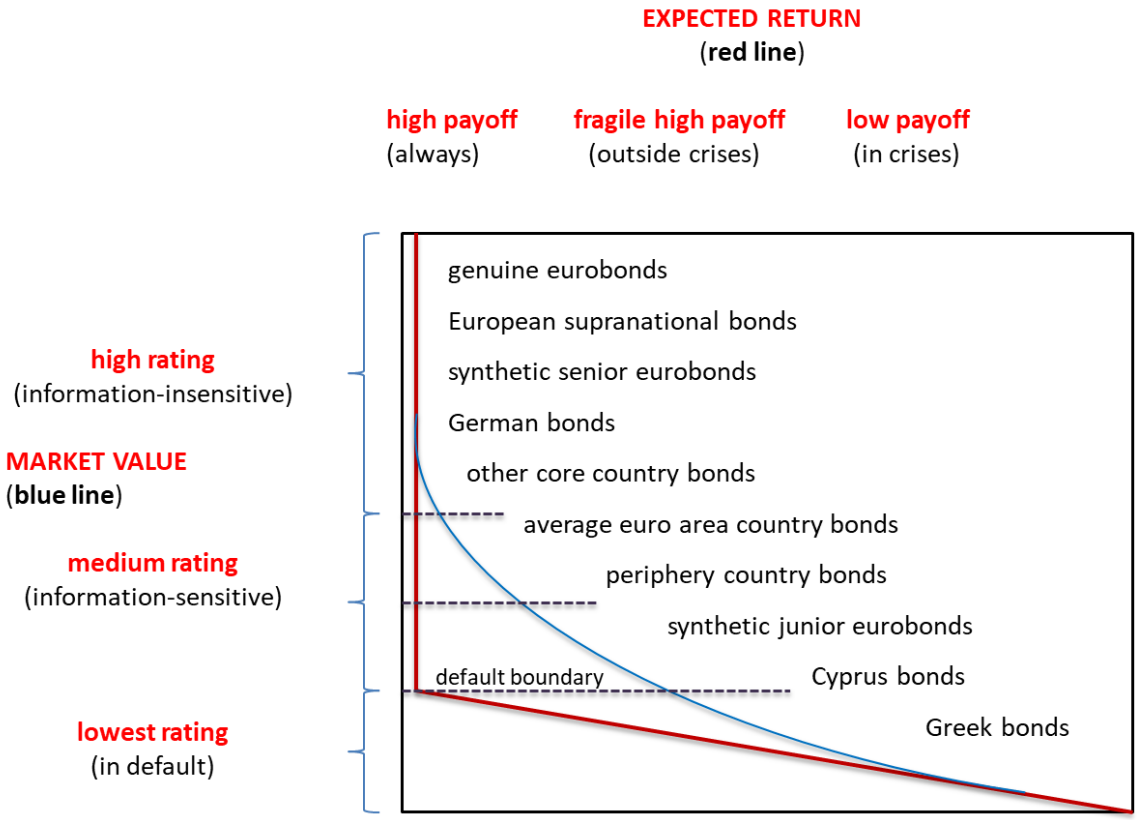
As a final remark, the SGP will be reactivated again in 2023, after the end of the pandemic emergency. Although the ongoing review of the EU's fiscal rules is likely to introduce more flexibility, Member States with a record-high public debt ratio may have little choice but to initiate a process of fiscal consolidation in order to maintain a semi-safe asset status after Covid-19. While this debt reduction could improve the credit ratings of vulnerable countries, it reduces the supply of government bonds of high-rated countries.

4.4 The European universe of public debt securities

The European universe of public debt securities can be introduced in Figure 1, combining the expected return (or debt service payments) on the x-axis and the market value (proxied by the

credit rating) on the y-axis (Figure 6). Given joint-and-several guarantees, genuine eurobonds would feature at the highest level of safety. European supranational bonds issued by the EIB, ESM and EU (as well as potential E-bonds) have a senior status over national government bonds, making them an attractive information-insensitive alternative to genuine eurobonds, i.e. to the extent that they can fulfil the eurozone's safe asset needs on a permanent basis and preserve their high credit ratings. Of course, any investor doubts about the EU's long-term survival and the future of the euro could lead their ratings to slide down (see also Kraemer, 2020). Goldman Sachs analysts argue that EU debt falls short of the insurance value offered by the German bund against extreme risk scenarios, including that of a euro-breakup.[11]

Figure 6 – The European universe of public debt securities by their return and value



Source: Own presentation, inspired by Holmström (2015) and Golec and Perotti (2017).

Under certain conditions, the senior tranche of a synthetic eurobond backed by a portfolio of national sovereign bonds could also succeed in underpinning financial integration and the stability of the euro. Thanks to their seniority over national government bonds and large-scale introduction to create a liquid market they could end up just above German sovereign bonds,

[11] See Ainger, 'Goldman Says EU's Joint Bond Sales Are No Match for Germany Debt', Bloomberg, 12 August 2020 (https://www.bloomberg.com/news/articles/2020-08-12/goldman-says-eu-s-supra-hero-bonds-are-no-match-for-germany)

provided that they earn and maintain the highest (AAA) credit rating. A large superstructure of synthetic eurobonds probably makes it necessary to introduce protective features that prevent the cascading of credit fears in the pool of national sovereign bonds used for the securitisation. After all, the synthetic junior eurobonds are by design a risky instrument, below investment-grade. They would rank relatively low in the EMU universe of public debt securities, although their exact position would depend on the contractual design of synthetic eurobonds. Credit enhancements like an reserve fund could give these junior claims a more secure payoff and higher value in the information-sensitive region.

Many EMU countries find themselves in the middle of this universe, as their medium credit ratings are fragile and only maintained in tranquil times. Without a safe sovereign asset for the eurozone, they face the ever-present danger that private capital inflows in search for yield might come to a sudden stop upon the arrival of negative news about their fundamentals. A debt run by foreign investors could easily push them towards or across the default boundary, as happened with Greece in 2012 and with Cyprus in 2013 (depicted in Figure 6).

5. Concluding remarks

EMU still lacks a single safe sovereign asset as a stable benchmark for the euro area capital market. European leaders assumed that the EU/EMU legal framework would be effective in enhancing market discipline and promoting stability-oriented policies. This would make all euro area government bonds equally safe financial instruments, irrespective of their country of origin. The pre-crisis convergence of sovereign bond yields to the low level of Germany, considered to be the benchmark state, reflected this integration of capital markets.

As long as national economies prospered, investors treated all sovereign bonds of euro area countries as safe assets and searched for the highest yield among them. This behaviour was consistent with the zero-risk label assigned to sovereign bonds in EU prudential and collateral legislation. The global financial crisis exposed the build-up of fragilities inside EMU and made investors flee to safe-haven countries, with Germany at the centre. The interventions by the EU and the ECB in response to the ensuing sovereign debt crisis in the end managed to restore market confidence in the euro.

The crisis experience showed that a safe asset concentrated in the German bund is incompatible with having free capital mobility and economic and financial stability in a monetary union. One necessary building block of a financially integrated EMU is a single safe sovereign asset that functions as the cornerstone of the financial system. The European

response to the Covid-19 pandemic, including large-scale EU debt issuance and an ESM pandemic credit facility, further demonstrated the importance of public risk sharing arrangements in stabilising sovereign bond markets and securing financial integration, in concert with the ECB's public sector asset purchases. The post-pandemic challenge for euro area leaders is to enrich the European universe of public debt with a safe sovereign asset of their own that has a permanent structure.

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