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Joint Debt Arrangements in EMU: From NextGenEU to Eurobonds

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* The views expressed are those of the authors and do not necessarily represent those of the Bank of Lithuania.

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ABSTRACT

EU's landmark Next Generation EU programme is an important step forward in both European crisis response and, more generally, EMU deepening, given that the package features elements of both joint debt issuance and fiscal transfers. This paper analyses the programme in comparison to other most prominent joint EMU debt proposals and provides a comparative Scoreboard of the arrangements discussed. It concludes that Next Generation EU falls short of filling in key gaps in the current architecture of the EMU – in particular, the gap laid bare by the lack of a genuine European safe asset. A true "safe haven" instrument – a Eurobond with joint and several guarantees – could move the EMU into a closer alignment with the Optimum Currency Area (OCA) criteria and help compensate for the macroeconomic intra-euro area imbalances. The guarantee structure of the Eurobond, working as an insurance mechanism for Member States' sovereign debt, would allow for joint debt to significantly strengthen the euro area's macroeconomic and market stability, the financial sector, or the international role of the Euro. However, issuance of the Eurobond is associated with important moral hazard, political and legal risks, and would most of all require an unprecedented level of trust by Member States.

Keywords: *Economic and Monetary Union (EMU), Optimum Currency Area (OCA), joint debt, safe asset, fiscal union, Eurobonds, Blue and Red Bonds, Sovereign Bond-Backed Securities (SBBS), European Stability Mechanism (ESM), Next Generation EU, moral hazard, fiscal transfers, international role of the Euro*

SANTRAUKA

Europos Sąjungos „Next Generation EU" programa – reikšmingas žingsnis į priekį tiek ekonominių krizių valdymo srityje, tiek apskritai „gilinant" Ekonominę ir pinigų sąjungą (EPS), kadangi paketas numato bendros skolos emisiją ir fiskalinius pervedimus tarp šalių narių. Šiame straipsnyje „Next Generation EU" analizuojama lyginamajame kontekste kartu su kitais pagrindiniais bendros EPS skolos pasiūlymais, pateikiant analizės rezultatų suvestinę. Straipsnyje prieinama išvados, kad susitarimas dėl atsigavimo fondo neužpildo pagrindinių dabartinės EPS institucinės architektūros spragų, atsiveriančių visų pirma dėl bendros saugaus turto priemonės nebuvimo. Bendrų Euroobligacijų su solidariomis garantijomis emisija prisidėtų prie geresnės Ekonominės ir pinigų sąjungos atitikties Optimalios valiutos erdvės kriterijams ir padėtų sprendžiant vidinių euro zonos makroekonominių disbalansų keliamus iššūkius. Bendrų Euroobligacijų garantijų struktūra, veikianti kaip valstybių narių valdžios sektoriaus skolos draudimo mechanizmas, leistų bendrai skolai reikšmingai sustiprinti euro zonos makroekonominį ir rinkų stabilumą, finansų sektorių ar tarptautinį euro vaidmenį. Kartu Euroobligacijos kurtų neigiamas paskatas valstybėms narėms didinti išlaidas ir keltų susijusias politines ir teisines rizikas. Apskritai Euroobligacijų emisija visų pirma pareikalautų precedento neturinčio valstybių narių tarpusavio pasitikėjimo lygio.

Raktiniai žodžiai: *Ekonominė ir pinigų sąjunga (EPS), optimali valiutos erdvė, bendra skola, saugus turtas, fiskalinė sąjunga, Euroobligacijos, „Mėlynosios" ir „Raudonosios" euroobligacijos, valstybės obligacijomis užtikrinti vertybiniai popieriai (angl. SBBS), Europos stabilumo mechanizmas (ESM), Next Generation EU, moralinė rizika, fiskaliniai pervedimai, tarptautinis euro vaidmuo*

CONTENTS

INTRODUCTION

The launch of the Economic and Monetary Union (EMU) in 1999 marked an important milestone in the history of European integration. However, the global financial crisis (GFC), the ensuing European sovereign debt crisis, as well the COVID-19 pandemic laid bare the gaps in its institutional architecture. Arguably, one of the key missing pieces in the EMU jigsaw has been the lack of a single euro area-wide safe asset.

Ability to issue a "safe haven" public debt instrument may be particularly beneficial in the presence of asymmetric shocks, whereby joint debt can reduce borrowing costs for stressed sovereigns in a currency union, with gains at the aggregate level. At the same time, issuing risk-free debt may also help prevent asymmetric transmission of symmetric euro area-wide shocks (as has arguably been the risk with the COVID-19 pandemic crisis).

Beyond macroeconomic stabilisation and insurance against interest and liquidity shocks that can threaten debt sustainability, a genuine European safe asset could increase financial stability (through eliminating the sovereign-bank nexus), strengthen the international role of the Euro, facilitate the transmission of the single monetary policy, and pave the way for higher long-term growth.

Therefore, a safe asset could help address vulnerabilities of the present euro area's institutional architecture and compensate Member States for the lack of national monetary policy, wage and price stickiness, lack of labour mobility, unsynchronized business cycles, or differences in wage-setting institutions – factors that induce imbalances, reduce options available for adjustment to shocks, or transform short-term shocks into long-term sluggish growth outcomes.

Various proposals to create a common EMU-wide public debt security have been put forward since the heyday of the GFC. These efforts gained further traction in the context of tackling the economic effects of the COVID-19 pandemic. These options differ with regard to the proposed degree of debt mutualization (or lack thereof), the proposed degree of substitution of national issuance with joint issuance, and other design elements.

This article reviews several proposals and arrangements featuring joint debt issuance, ranging from the original proposal to issue jointly-and-severally guaranteed Eurobonds to the Next Generation EU (NextGenEU) instrument, financed by joint EU borrowing. The arrangements under discussion also include creating a federal fiscal union with a Federal Eurobond; Blue and Red Bonds; the "synthetic" Sovereign bond-backed securities (SBBS); and the Pandemic Crisis Support credit line of the European Stability Mechanism (ESM).

An indicative joint debt Scoreboard of the different proposals is presented at the end of the paper in Table 9. Each arrangement is evaluated along nine dimensions, with a score from -2 (the worst score) to +2 (the greatest score). The dimensions represent the inherent trade-offs that producing safe assets necessarily entails: macroeconomic stability or breaking the sovereign debt nexus on the one hand; and fiscal transfers among Member States or the increased risk of moral hazard on the other.

The NextGenEU instrument represents an important step towards bolstering a market for European safe assets. Under the arrangement, the European Commission has been authorized to raise up to EUR 800 billion in current prices, amounting to 7 % of euro area's GDP. Backed by the EU budget, this borrowing will significantly increase the outstanding EU debt.

However, the analysis presented in the article and the Scoreboard concludes that the NextGenEU programme in many respects falls short of the idea to issue genuine Eurobonds, backed by several and joint guarantees. Rather than constituting a temporary crisis measure, Eurobonds would help address a number of long-term issues pertinent to the EMU, such as the sovereign-bank nexus or the relatively minor international role of the Euro compared to the US Dollar. Eurobonds would also remove the risk of intra-euro

area flight-to-safety in times of crisis, and provide a benchmark European risk-free yield curve to increase capital market efficiency. Key with respect to the Optimum Currency Area (OCA) theory, Eurobonds would likely help achieve a better business cycle synchronisation within the currency union. The guarantee structure of the Eurobond works as an insurance mechanism for Member States' sovereign debt – and does not imply fiscal transfers *ex ante*. In fact, joint and several guarantees may well *guarantee* that Member States will not run into liquidity crises that can morph into solvency crises and that in turn would require fiscal transfers under the Eurobond framework.

At the same time, Eurobonds would also significantly increase risks related to moral hazard, which would have to be addressed through some form of constraints to national fiscal sovereignty. In short, the stronger the safety net, the greater the incentive to free ride. If such moral hazard went unchecked, confidence in the entire euro area may falter. With countries carrying each other's debt burdens, a contagion of default decisions becomes possible in an extreme scenario.

A question one may wish to address in joint borrowing discussions may be the following: ***is issuing joint debt and creating a safe asset still a relevant issue in the context of the current role of the ECB and the yield compression through central bank sovereign debt purchases?*** In 13 March, 2020 Phillip Lane, Member of the Executive Board of the ECB, stipulated in his ECB blog entry (Lane, 2020):

> *"We will not tolerate any risks to the smooth transmission of our monetary policy in all jurisdictions of the euro area".*

In the long-term, this statement may potentially prove to be as consequential as Draghi's "whatever it takes" in 2012. Arguably, the ECB has in some respects took on the role of the "lender of last resort" in sovereign bond markets. The flexible nature of the Pandemic Emergency Purchase Programme (PEPP) has allowed the ECB to restore monetary policy transmission and perform the market stabilisation function during the pandemic period.

However, European policy makers have been urged repeatedly not to put the entire weight of adjustment and accommodation on the ECB's shoulders. The ECB will remain guided by the primary mandate of medium-term aggregate price stability in the euro area. The OMT programme, which allows unlimited purchases in secondary sovereign debt markets, can only be activated in conjunction with assistance from the ESM, and thus requires a political decision to undergo an adjustment programme. Meanwhile, the PEPP, which entails flexibility of purchases across asset classes and among jurisdictions, is a temporary measure and will be ended when the pandemic crisis phase is over.

In this light, monetary policy may not be enough to ensure favourable economic outcomes for all Member States. Divergence in growth or financing conditions (e.g. between the core and the periphery) remains a risk in the medium-to-long term, especially after the pandemic – a risk that may not be easy to address with the single monetary policy. Moreover, one cannot rule out the possibility of "bad inflation" emerging in the euro area – a cost-push rise of the price level or a significant increase in inflation expectations with a lack of corresponding GDP growth. This may necessitate some form of monetary tightening which would not be optimal in the more vulnerable Member States.

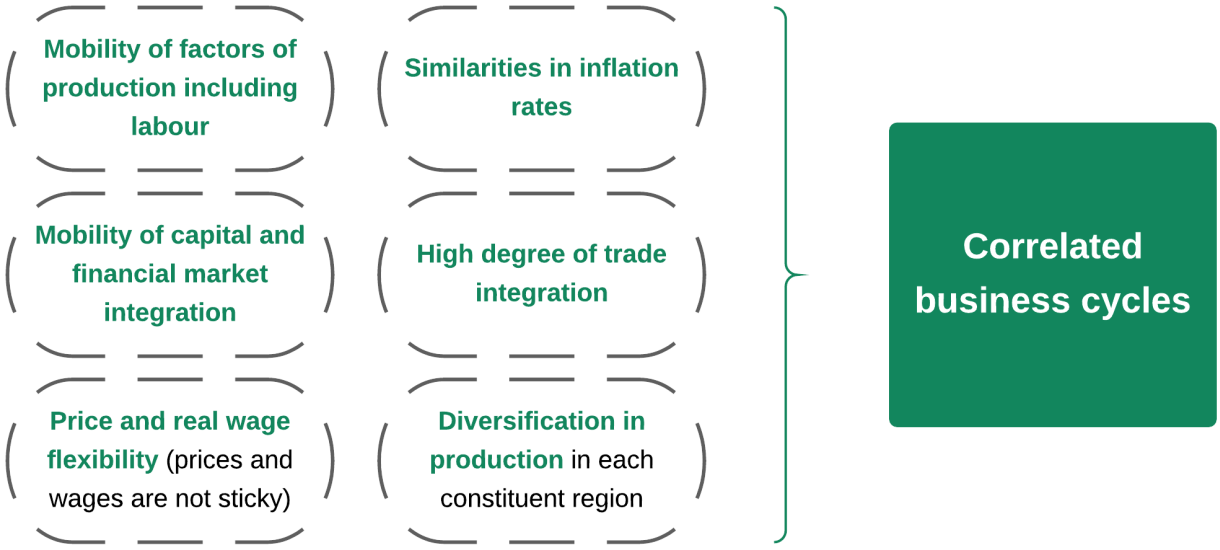
Should these types of risks materialize, a genuine European safe asset could facilitate the adjustment and provide accommodation where needed. Joint debt would in any case also deliver other important benefits, such as alleviating the sovereign-bank nexus or strengthening the international role of the Euro, providing "exorbitant privilege" for the monetary union. In this light, the discussion on joint debt instruments in the EMU is likely to continue in the foreseeable future.

1. VULNERABILITIES OF THE EURO AREA'S INSTITUTIONAL ARCHITECTURE

1.1. EURO AREA AND OCA

The canonical theory of optimum currency areas (OCA) has formed the backbone for the analysis of European monetary unification. The beginnings of the OCA theory trace back to the seminal contributions by Mundell (1961), McKinnon (1963) and Kenen (1969). An OCA can be defined as the optimal geographic domain of a single currency, or of several currencies, whose exchange rates are irrevocably pegged. The single currency (or the pegged currencies) can fluctuate only in unison against the rest of the world. The optimality is defined in terms of a number of OCA properties which can be considered as criteria for forming a currency union. Some of the most frequently analysed criteria are shown in the Figure 1 below (Mankiw, 2014; Mongelli, 2002, 2008; Tyrowicz, 2007). The criteria of correlated business cycles can be considered a *meta* OCA property capturing the interaction between the other lower-level properties.

Figure 1. Key properties of an Optimal Currency Area (OCA)



Source: Author's compilation, Mongelli, 2008

Sharing the properties pertinent to an OCA means that a geographical region in question can maximize economic efficiency by adopting a single currency and also limit the costs of a monetary unification. A single currency can reduce transaction costs, support price transparency and reduce price discrimination, minimize the exchange rate risk, increase the credibility of monetary policy, boost the international role of the currency in use, and lower interest rates. However, should the territory under a single currency not constitute an OCA, it becomes susceptible to asymmetric shocks, given that adjustment through monetary policy and the nominal exchange rate becomes unavailable for constituent areas. The territory in question also becomes susceptible to symmetric shocks if they result in an asymmetric propagation – as has been, arguably, the risk in the euro area during the COVID-19 shock.

Labour mobility is one of the key OCA criteria. Lack of labour mobility would mean that the impact of a negative shock cannot be addressed with the excess supply of labour migrating to other regions where labour demand is higher. In such case, the economic shock would be better counteracted through independent monetary stabilisation and exchange rate depreciation which is unavailable in a currency union. Therefore,

adopting floating exchange rates among the constituents is usually considered a first-best solution if the territory in question does not fulfil the OCA criteria.

The fact that **Europe did not satisfy the OCA criteria at the turn of the century** was employed as an argument against monetary integration in the continent (Dornbusch, 1997). Notably, labour has been "notoriously" immobile across the EU, with labour mobility lower *within* Member States than within the entire US (Mankiw, 2014). EU Member States also lacked production diversification at the conception of the EMU, making them likely to be destabilised by an asymmetric sector-specific shock (Eichengreen & Wyplosz, 2012).

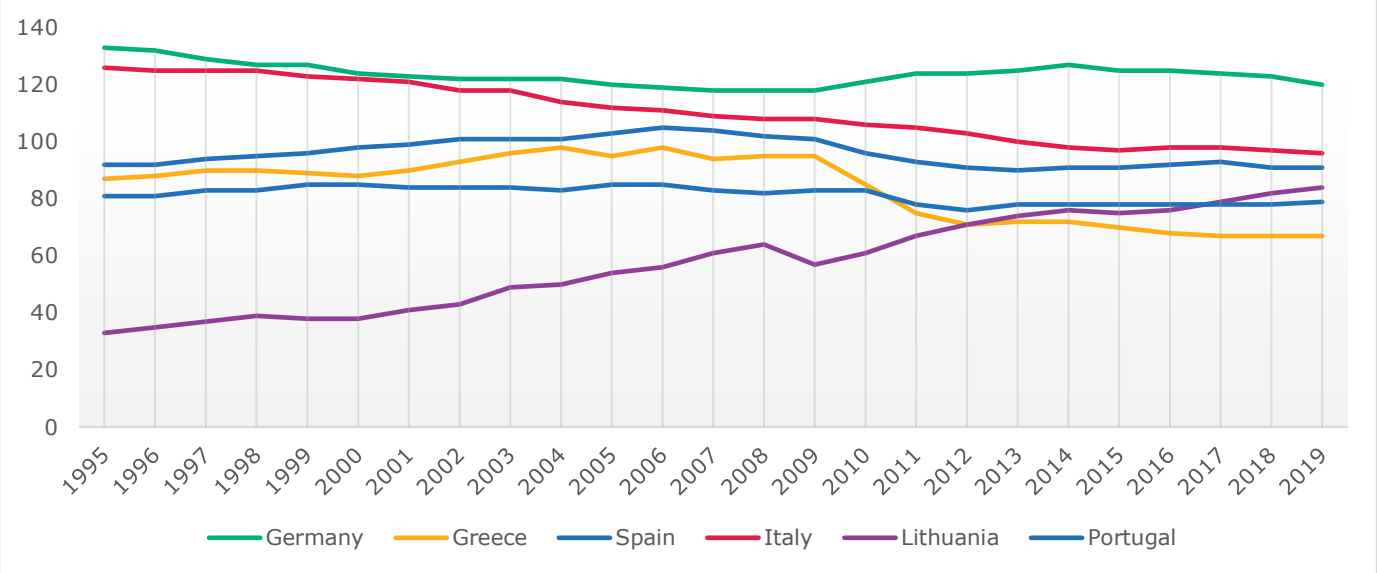
Nevertheless, **the rationale for monetary integration was provided by the hypothesis of an "endogeneity of OCA"** which gained traction running up to the establishment of the EMU; see e.g. Frankel & Rose, 1998. It was argued that the OCA criteria are rather economic outcomes, or *endogenous* properties determined by the creation of the currency union itself. This is because participation in the euro area can set in motion some virtuous processes, such as converging economic structures, economic integration, intensifying intra-country trade and increasing income correlation. Therefore, an expectation would prevail that the OCA criteria not satisfied ex-ante can ultimately be satisfied ex post, in particular the criteria of business cycle synchronicity. If interlinkages increased the symmetry of shocks, and the incentives were provided to carry out structural reforms, giving up an own monetary policy and the possibility of nominal exchange rate changes could be compensated (Buti & Turrini, 2015).

However, **the euro area today does not constitute an OCA** – this is the conclusion that an overwhelming majority of the analyses of European monetary integration have been arriving at over the past years. Overall, the predicted *ex post* alignment has been relatively slow. For instance, in terms of **labour mobility**, EU-28 movers represent only 4.2% of the whole population of the EU, according to the latest data (European Commission, 2020). Basso et al. (2019) find that, on average, following a shock lowering employment by 10%, only 2% of the population would move from the affected euro area country versus 8% in a US state. Similarly, **capital mobility** is also lacking in the EU, despite efforts to develop the capital markets union (CMU), the flagship initiative aimed at creating a single market for capital where investments and savings flow smoothly across Member States (for a comparison with the US, see Figure 3 Section 2).

The adoption of the single currency, though, has been associated with an increased business cycle synchronicity, in line with the implications of the endogenous OCA theory. Campos et al. (2019) used a meta-regression analyses based on 62 studies and found that, on average, business cycle synchronisation across European countries increased by 50% after 1999. Despite this, there continues to be more business cycle similarity across federal states in the US in comparison to the EMU (Aguiar-Conraria et al., 2016). In the euro area, at least 40 % of fluctuations is the result of idiosyncratic shocks. As assessed by the European Commission (2016), output gap correlation between Germany and Greece is only equal to 3 %, and it is only 7 % between Portugal and Lithuania. Moreover, it has not been clear whether increased synchronisation is due to globalisation rather than specifically the euro area-wide business cycle (Mongelli, 2008). At the same time, synchronicity of house price and credit cycles across euro area states is considerably lower than of GDP, with evidence of a north-south divide (European Central Bank, 2018). In fact, evidence suggests that financial cycle synchronization has been decreasing in the euro area (Oman, 2019).

Incompatibility with the OCA criteria – and, therefore, the lack of capacity to adjust – has been used as one of the explanations behind the asymmetric effects of the GFC on the euro area and the subsequent lack of sustained income convergence among Member States. The years preceding 1999 were characterised by a relatively strong record of real convergence. In a lot of respects, nominal convergence has been achieved since 1999, e.g. in terms of inflation rates. However, per capita incomes relative to the EU average have generally failed to converge since the GFC and the subsequent sovereign debt crisis, stagnating or falling in periphery members such as Portugal or Italy (see Figure 2 below). This refers to both the effect of asymmetric shocks, as well as asymmetric transmission of the common shock.

Figure 2. GDP per capita in PPS in selected Member States (1995-2019; EU27 2020 = 100)



Source: Eurostat (2020)

Note: The volume index of GDP per capita in Purchasing Power Standards (PPS) is expressed in relation to the European Union average set to equal 100. If the index of a country is higher than 100, this country's level of GDP per head is higher than the EU average and vice versa.

1.2. EURO AREA AND GROWTH MODEL LITERATURE

In line with the predictions of the OCA theory, the growth model literature provides an additional explanation of economic and financial divergence in the euro area (Baccaro & Pontusson, 2016; Hall, 2012, 2018; Johnston et al., 2014; Johnston & Regan, 2016). Such additional explanation is warranted provided that, after all, the euro area is not the only monetary union that has failed to live up to the criteria of OCA. For instance, as shown by Kouparitsas (2001), a number of states in the US do not fit into an OCA with the rest of the country as well.

The growth model literature analyses the sub-optimality of a currency union through the examination of the divergence of *institutions* that operate within its geographical entities. It argues that in a geographical region *compatibility* of diverse models of economic growth – themselves based on labour market regulation and other institutional areas – is contingent upon the prevailing monetary regime.

The growth model literature characterises the northern core economies of the EMU as running export-led models. These political economies generally possess co-ordinated wage-bargaining institutions that deliver nominal wage moderation, constraining the growth of unit labour costs and thus fostering external competitiveness. **Domestic demand-led model predominates in the periphery economies of southern Europe and is based on the domestic non-traded sector**. These political economies lack coordinated labour market institutions that could constrain unit labour costs.

Prior to the formation of EMU, these two different growth regimes with different wage-setting rules were able to co-exist without producing significantly excessive current account imbalances vis-à-vis each other. However, combining these economic growth models into a single currency led to increased external imbalances and asymmetric effects of the euro on financial resilience. Countries in the core began running persistent current account surpluses that were mirrored in the south's current account deficits. The periphery economies used foreign borrowing from the core primarily in non-tradable sectors (most notably in real estate), uncapable of producing export surpluses necessary to correct current account deficits

(Johnston et al., 2014). This ultimately led to the euro area's sovereign debt crisis, as markets judged the persistent imbalances as unsustainable and capital started flowing in an opposite direction.

The core reason behind the growth of external imbalances (surpluses in the north, deficits in the south) was that periphery economies under a single currency were no longer able to adjust their real exchange rates through nominal exchange rate depreciation (Costantini et al., 2014). Moreover, to align the real exchange rates, they were equally no longer able to execute monetary contraction and promote inflation convergence, as was done by their national central bank predecessors that enforced a hard-peg of the ERM. As a result of the introduction of the euro, the real exchange rate persistently diverged between EMU's export-led and domestic demand-led growth regimes.

The main argument made by Johnston & Regan (2016) is that these imbalances were not a result of wage inflation in periphery economies *per se* or excessive fiscal spending (e.g. Spain was in a better fiscal position than Germany up until the sovereign debt crisis; Johnston et al., 2014). Rather, **due to *severe wage moderation in the core*, southern Europe was not able to *adjust* in response**, as would have happened without the single currency.

Therefore, European monetary integration delivered current account divergence that was due to a *qualitative difference in labour market institutions* between the core and the periphery. Joining together distinct growth regimes resulted in asymmetric effects caused by wage and inflation differentials. The core was able to boost growth through increasing exports of goods and capital that was in part absorbed by the periphery economies, with core's wage moderation becoming a type of "beggar-thy-neighbor" policy. When the crisis hit, this current account divergence has been cited by many as an **underlying instigator of *speculative* divergence** among euro area sovereigns (Rogoff & Obstfeld, 2009).

This points to a fundamental and structural *adjustment* problem in the euro area, as currency union-wide compensating mechanisms have been lacking. EMU's periphery has been lacking macroeconomic adjustment tools. In response to the sovereign debt crisis, internal devaluation on a national level became the main adjustment mechanism inside the euro area, supported by lending conditionality and the EU's updated fiscal rulebook. One may argue that this was an attempt to develop an export-led growth model in the periphery. However, these attempts have not been successful in many regards, and led to persistently low growth and high structural unemployment in the periphery political economies leading up to the COVID-19 shock.

The unsuccessful performance of the export-led growth model in the periphery can be explained by the institutional set-up that is required for the successful functioning of the model. Wage moderation is often delivered bottom-up in the core rather than top-down, implemented through *strategic* country-wide cooperation between employers and employees sharing the common goal of competitiveness. This strategic cooperation is hardly present in the periphery where powerful trade unions are divided into competing confederations, while business associations are often weak and lacking organisational capacities (Hassel, 2014).

However, wage moderation is only a part of a wider institutional structure of the core economies that is conducive to export-led growth strategies. For instance, producer groups in the core coordinate and facilitate collaborative vocational training schemes, while education of the labour force is geared towards fostering sector-specific rather than general skills. Thus, institutions characteristic of these political economies are well-suited for incremental innovation and the promotion of high-value-added exports (Hall, 2018; Iversen et al., 2016). These comparative advantages are not present in euro area's periphery, which is more heavily oriented toward the production of low-technology goods or services, meaning that it is more vulnerable to rising competition from the emerging market economies. At the same time, competing on price gains rather than quality may imply debt deflation which would be costly for high-debt periphery economies (Buti & Turrini, 2015).

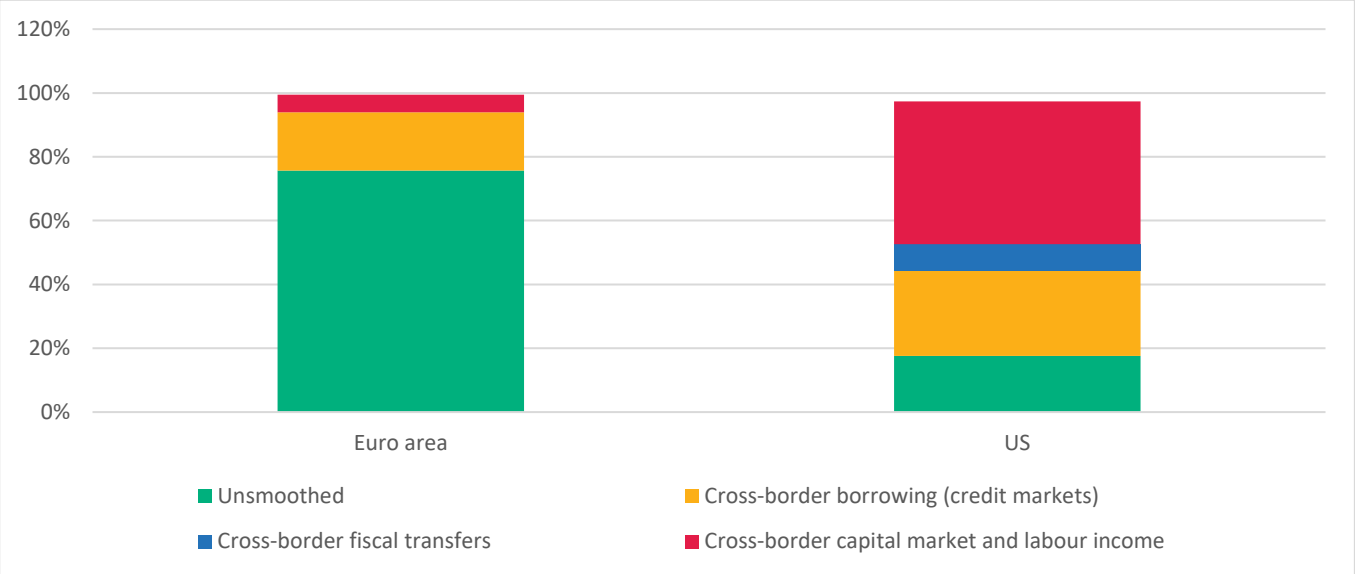
Therefore, **the growth model literature suggests that for the export-led model to be successful in the periphery, a major institutional overhaul would be required** which is extremely difficult to achieve in practice.

2. FILLING THE GAPS: JOINT DEBT ISSUANCE AND PUBLIC RISK-SHARING

Implications of both the OCA and growth model literature suggests that **the euro area remains in an unstable equilibrium**. There is broad acceptance that its current institutional architecture continues to be prone to shocks that due to sub-optimal level of stabilisation could negatively affect its functioning and even compromise its integrity (Bénassy-Quéré et al., 2018). This is despite the creation of ESM and the Banking Union in 2012.

Arguably, **strong risk-sharing arrangements (public and private) can help address the vulnerabilities of the euro area's institutional architecture and compensate Member States for the lack of national monetary policy**, wage and price stickiness, lack of labour mobility, or differences in wage-setting institutions – factors that induce imbalances, reduce options available for adjustment to shocks, or transform short-term shocks into long-term sluggish growth outcomes. As seen from Figure 3 below, **cross-border risk sharing among euro area Member States is lower than that across federal states in the US**, while cross-border risk sharing through fiscal means in the euro area is virtually non-existent. This shows that shock absorption in the euro area takes place almost exclusively through *national* fiscal stabilisers.

Figure 3. Cross-border risk sharing through different channels (in % of total asymmetric shock to output)



Source: European Commission (2016)

Notes: Time period for the euro area is between 2000 Q4 and 2015 Q4, while for the US it is between 1964 and 2013. Cross-border capital market and labour income refers to factor income, income from cross-border ownership of equity, rent income and cross-border labour compensation.

Kenen (1969), one of the pioneers of the OCA theory, stipulated very early on that **fiscal risk-sharing (or public risk-sharing) in particular can facilitate the adjustment to asymmetric shocks**, lowering the need for nominal exchange rate adjustments. Moreover, the more recent evidence shows that credible cross-border public risk-sharing can prevent *private* risk-sharing from having a pro-cyclical effect in times of crisis (Buti & Carnot, 2018).

This section overviews the idea and core modalities of **joint debt issuance**, and discusses the most prominent **proposals** or already **existing joint borrowing facilities**[1]. In most cases, joint debt issuance options discussed in section 2.3 imply **implicit** or **explicit** forms of fiscal redistribution – or *potential* fiscal transfers as a form of **insurance against self-fulfilling prophecies** – although some joint debt arrangements seek to circumvent the prospect of fiscal risk-sharing.

2.1. THE IDEA OF JOINT DEBT

The initial design of the EMU did not foresee a substantial role for cross-border public risk sharing. The EU budget has remained relatively small compared to the Member States' national budgets, and mainly aimed to support structural convergence rather than smoothing shocks across countries. When the idea of joint debt was floated in pre-GFC years, the rationale was mainly to reduce market fragmentation and thus obtain efficiency gains (see, for instance, the report by Giovannini Group, 2000).

However, the idea of joint EMU or euro area-level debt – which often implies public risk sharing – gained significant traction when a number of periphery Member States experienced liquidity constraints during the sovereign debt crisis. Proposals would not only stress that common debt would help reap a liquidity premia, possibly lowering borrowing costs for all, but would also be a possible crisis resolution tool. In December 2010, then-finance ministers of Luxembourg and Italy J.-C. Juncker and G. Tremonti published an op-ed in *Financial Times* titled "E-bonds would end the crisis" (Juncker & Tremonti, 2010). The authors proposed the creation of a European Debt Agency that would issue "European bonds" of up to 40% of GDP of each member state. The goal was to halt the disruption of sovereign bond markets, impede cross-country spill-overs, and create "the most important bond market in Europe" that could match the liquidity of the US Treasury market.

The Juncker-Tremonti op-ed provided an important impetus to EU-wide discussions on issuing joint sovereign bonds. In 2011, the European Commission (2011) published a Green Paper assessing the feasibility of common issuance. In 2015, the Five Presidents' Report (Juncker et al., 2015) set out a long-term vision for the euro area, including a medium-term objective of creating a fiscal stabilisation function, coupled with further steps toward reinforced central powers over budgetary and economic policy. In 2020, the COVID-19 pandemic re-invigorated the debate, and "Eurobonds have become fashionable again" (Smaghi, 2020).

2.2. OBJECTIVES AND MOTIVATIONS OF JOINT EURO AREA DEBT

Ever since the GFC, a plethora of arrangements have been suggested – and some, to some extent, implemented – to provide financing to Member States based on various forms of common debt. Some are aimed at specifically the euro area, while other common debt issuing mechanisms refer to the entire EMU. In a significant share of joint issuance proposals, the primary goal is **creating a safe asset**. Safe assets carry minimal credit risk across all types of market cycles and are highly liquid. They are particularly valuable during periods of stress in financial markets, given that they have stable nominal payoffs. Safe assets provide a vehicle for savers to store their wealth for the future; for financial institutions to satisfy capital and liquidity requirements; and for emerging market economies to invest their foreign exchange reserves (Caballero et al., 2017). The safe asset status of advanced economy government bonds primarily depend on quality of institutions of the issuing country as well as the size of the debt market (Habib et al., 2020).

[1] The issuance under discussion in this section differs from other lower-scale debt instruments issued by the EU, such as those financing external assistance to third countries under the Macro-Financial Assistance programme. These differences primarily stem from the much broader objectives assigned to the idea of pooling sovereign issuance, e.g. macroeconomic stabilisation or developing a single European yield curve; see section below.

The euro area does not have a homogenous monetary union-wide safe asset – in contrast to the US which issues US Treasuries. Although the euro area generally has high quality institutions, the current fragmentation in euro-denominated issuance means that US Treasury bonds are issued in higher volumes than any of the national euro area-level sovereign bonds. Hence, high liquidity is one of the key factors contributing to the prominent and privileged role of US Treasuries in the global financial system. In this regard, it is expected that high-scale joint euro area debt issuance could create a large, homogenous, and thus liquid pool of safe assets.

A safe asset would most benefit the currency area specifically, rather than the entire EMU. The joint debt would in any case be euro-denominated. It would thus deliver most benefits, and would contain more implementation options in Member States that transact and issue debt in euros. However, some common borrowing vehicles, such as Next Generation EU (see section 2.4.6), cover the whole EU.

Below are the key objectives that are the most pertinent to issuing safe assets:

MACROECONOMIC AND MARKET STABILITY

Joint debt would offer **a safe haven** for investors in times of crisis. It would also satisfy the global demand for risk-free assets and better compete with US Treasuries for the global financial flows. Moreover, **enhanced liquidity** by larger outstanding volumes would lower liquidity premia and thus lower yields for sovereigns, with greatest advantage for smaller and medium sized issuers (although the cost of funding for core Member States may increase depending on the type of the safe asset). The ECB would be able to purchase the safe asset in secondary markets, as is the case for debt issued by supranational EU agencies – this would further underpin the safe asset's role as a liquid, risk-free investment (Codogno & Noord, 2020).

More favourable access to financial markets for the more vulnerable Member States would help **stimulate aggregate demand** in the short run to counter economic shocks. In **asymmetric crises**, joint debt could finance macroeconomic stabilisation (e.g. new spending on wage subsidies, or equity support for firms) in individual Member States. This may prevent markets from pressing Member States to adopt procyclical fiscal policies (Ubide, 2015).

However, a common stabilisation capacity may not just be focused on asymmetric shocks, but may also help address **large symmetric shocks**, thereby also overcoming the limitations of coordinating the aggregate euro area fiscal stance (Buti & Carnot, 2018). In this vein, joint debt issuance could also help **asymmetric transmission of symmetric shocks**, whereby the more vulnerable Member States are unable to counter crises due to lower national general government fiscal space. **Overall, easier adjustment would in turn mean increased business cycle synchronization**, bringing the euro area to a closer alignment with the key OCA "meta" criterion (Bunyan et al., 2020).

Moreover, issuing a union-wide safe asset would help **curb speculative attacks against Member States *pre-emptively***, and would thus serve as a form of risk insurance. As described by De Grauwe & Ji (2013), members of the euro area issue debt in a currency over which they do not have direct and full control. Due to this, currency union governments cannot provide a guarantee that bondholders will always be repaid at maturity (given that their assets, such as claims on taxpayers, are mostly *illiquid*). In this context, movements of distrust and investor fears can trigger sudden stops and flight-to-safety episodes, generating liquidity pressures. This dynamic may take place *within* the monetary union itself, in part due to high substitutability across national financial systems. Flight-to-safety episodes can also become self-fulfilling prophecies, whereby liquidity pressures and a fear of default among investors lead to sovereign default becoming more likely. Presence of a union-wide safe asset would limit risks of such self-fulfilling dynamic; its supply in itself would increase investor confidence and shield Member States from market dominance. As a result, increased macroeconomic stability of e.g. peripheral Member States would help insure core euro area countries against a severe shock caused by solvency issues in other parts of the currency union.

FINANCIAL STABILITY

Euro area safe asset may also help **break the sovereign-bank nexus** (the interdependence between sovereigns and their banks). Banks in the euro area typically hold large amounts of home country sovereign bonds. They often serve as liquidity buffers and used as collateral in repos and inter-bank loans (Codogno & Noord, 2020). However, a significant home bias in sovereign holdings creates a link between the balance sheets of banks and the balance sheet of the domestic sovereign (described as the "doom loop"). The large-scale fiscal expansion which has taken place in an attempt to fend off the economic implications of the COVID-19 pandemic seems to have exacerbated the problem (Grund, 2020).

In case the fiscal position of the domestic sovereign deteriorates substantially, the quality of available collateral to the domestic banking system is inevitably reduced. This creates a negative feedback loop. The deterioration of sovereign creditworthiness in periphery Member States during the sovereign debt crisis reduced the perceived solvency of domestic banks and curtailed their lending activities. Moreover, banks rely on a national public safety net – in the form of deposit insurance or guarantees and recapitalizations. Therefore, risks to banks can translate into stress for the respective sovereigns.

A euro area safe asset would provide **a source of more robust liquidity and collateral** for all banks in the euro area, reducing their exposure to deteriorating credit ratings of individual Member States. A safe asset would also help the sovereign in solving banking crises (e.g. through provision of guarantees).

STRENGTHENING THE INTERNATIONAL ROLE OF THE EURO

A euro area safe asset would facilitate **portfolio investment in the euro**. Currently, the composite index of the international role of the Euro is hovering close to historical lows (European Central Bank, 2020). The larger issuance volumes and more liquid secondary markets implied by the euro area safe asset issuance would strengthen the position of the euro as an international reserve currency. This would foster a more balanced global financial system. By extension, stronger international role of the Euro would contribute to the goal of **European strategic autonomy**.

FACILITATING THE TRANSMISSION OF MONETARY POLICY

The sovereign debt crisis and the resulting market fragmentation along national lines impaired the transmission mechanism of monetary policy, as government bond yields diverged. A euro area safe asset would help ensure that the **monetary conditions set by the ECB pass smoothly and consistently** through the sovereign bond market to the borrowing costs of enterprises and households and ultimately into aggregate demand. Moreover, a safe asset would help **increase the coordination of fiscal and monetary policies**, as jointly issued debt instruments could be purchased by the ECB in the secondary markets as part of the central bank's asset purchase programmes. It would also open doors for ECB to consider **novel monetary policy instruments**, such as yield curve control, as a European safe asset would be an obvious long-term bond yield to target.

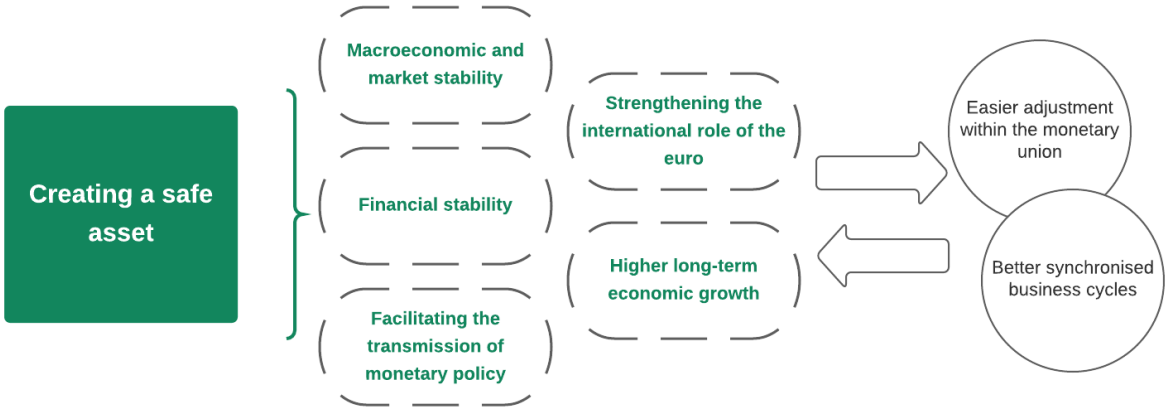
HIGHER LONG-TERM ECONOMIC GROWTH

Ability to boost aggregate demand in the short-term could help minimise hysteresis effects due to fiscal consolidation, **raising the path of the GDP in the long-term** (Fatás & Summers, 2018). More generally, due to lower interest rates, a safe asset can make it easier to pursue **long-term public investment** strategies aimed at boosting potential output. This is particularly relevant for the euro area which has seen a deterioration of net capital investment since the sovereign debt crisis.

Moreover, the euro area safe asset would enhance **capital market efficiency**: in contrast to the current situation of many country-specific benchmarks, a benchmark monetary union euro-denominated risk-free yield curve would be established. A single set of risk-free benchmark yields across the maturity spectrum would in turn help develop the euro area bond market more broadly, stimulating issuance by non-sovereign issuers. This would facilitate better market access for both the public sector and the private sector in the euro area and thereby underpin the longer-term growth potential of the economy.

Figure 4 ("the virtuous circle") is a graphical representation of main objectives of joint euro area debt. Creating a safe asset would help deliver macroeconomic and market stability by minimizing risks of liquidity constraints for Member States; strengthen financial stability by breaking the sovereign-bank nexus; and ensure higher long-term economic growth through lower hysteresis effects and a better capital market efficiency. It would also strengthen the international role of the Euro and facilitate the transmission of the ECB's monetary policy. This would in turn allow for easier adjustment within the monetary union where adjustment through nominal exchange rates and independent monetary policy is unavailable. By extension, this would smooth out cyclical fluctuations within the currency union, strengthening the correlation of business cycles. As such, this would further foster macroeconomic and financial stability, long-term growth, the international role of the Euro, and the effectiveness of the single monetary policy.

Figure 4. Objectives of joint euro area debt – the virtuous cycle



Source: Author's compilation

2.3. DESIGNING JOINT DEBT INSTRUMENTS

2.3.1. The guarantee structure

The key characteristic of common debt is its underlying **guarantee structure,** aimed at reassuring investors that interest will be regularly paid[2]. The proposals will be analysed based on whether joint debt is provided with several and joint guarantees or only several guarantees, and whether these guarantees are additionally earmarked with **credit enhancements** (see Table 1 below).

[2] Note that in some proposals, the joint debt issuance is backed directly by national or EU-level revenues, as well as the EU budget, rather than member state guarantees (Ubide, 2015).

Table 1. Guarantee structure of common debt

Several and joint guarantees	**Several (not joint) guarantees (or "capped" guarantees)**
– Each guaranteeing Member State is liable for the share of any other Member State failing to honour its obligations, implying a pooling of credit risk. – A claimant may pursue an obligation against any one Member State and it becomes the responsibility of the Member States to sort out their respective proportions of liability. – **Full mutualisation** would help achieve a higher credit quality (higher credit rating) than several guarantees only.	– Each guaranteeing Member State is liable for its fixed share of liabilities (debt servicing and principal redemption) according to a specific contribution key, and not for the debt of other issuers. – Could be rated equivalently with the lowest-rated Member State or produce an average rating, unless supported by credit enhance-ments.
Credit enhancements to reinforce the credit rating	
– Possible credit enhancements: senior status applied to joint debt instruments; collateral provision (e.g. cash, gold); cash buffers; loss-absorbing capital; over-guaranteeing the issuance size; additional revenue streams (e.g. new EU own resources, such as carbon taxes) earmarked to cover debt servicing costs. – Credit enhancements may strengthen several and joint guarantees in case a limited number of high-rated Member States would be required to guarantee large liabilities of other lower-rated Member States.	

Source: European Commission (2011), author's compilation

The guarantee structure as well as possible credit enhancements have a large effect on the **credit rating** of the joint debt instrument. High credit rating is needed to ensure that the debt instrument is considered a safe asset. Therefore the following implication is to be considered in designing a joint debt instrument:

The stronger the guarantees and underlying credit enhancements, the fuller the mutualisation of debt, the higher the credit rating of the jointly issued debt.

2.3.2. Options to reduce moral hazard

Moral hazard arises where credit risk stemming from individual lack of fiscal discipline is shared by all participants. This implies **disincentives to pursue sound fiscal policy making at the national level**, with markets no longer being able to discipline national fiscal authorities.

The risk of moral hazard is one of the key counterarguments against joint borrowing. In fact, most of the disagreements surrounding the joint borrowing debate stems from the inherent **trade-off between risk-sharing and moral hazard** (or market discipline). For instance, this tension has been deeply reflected by the 14 Franco-German economists in their joint compromise proposal on deepening the EMU (Bénassy-Quéré et al., 2018).

Therefore, considering a guarantee structure for joint debt instruments, a key trade-off to be solved can be identified:

The higher the degree of debt mutualisation (and the lower the market volatility), the lower the market discipline (and the higher the moral hazard).

For instance, pro-rata (only several) guarantees would result in a lower credit rating compared to several and joint guarantees; however, they would also imply a lower risk of moral hazard.

Given this, the design of joint debt instruments often includes **elements to reduce moral hazard**. These elements include:

FISCAL GOVERNANCE AND CONDITIONALITY

One option to reduce moral hazard is to develop a **robust framework for delivering budgetary discipline** and an overall reduction of macroeconomic imbalances at the national level. This implies reinforced surveillance and increased leverage of the EU in the design and implementation of national fiscal policies, including through the use of disciplinary sanctions (e.g. the EU's Excessive Deficit Procedure, or EDP).

Moreover, joint debt issuance could increase fiscal oversight via an **allocation mechanism** and therefore serve as a tool in enforcing the fiscal rules. For instance, **conditionality** could be attached to the funds obtained through joint borrowing, so that spending is directed to effectively countering short-term shocks or increasing long-term potential output[3].

Both options of reinforced surveillance and allocation imply **a loss of a degree of sovereignty** by Member States, and entail the difficult political choice of transferring sovereignty from the national to the EU level.

THE DEGREE OF SUBSTITUTION OF NATIONAL ISSUANCE

The proposals will be analysed based on whether the joint debt **fully substitutes for national issuance**, or whether the **substitution is partial**. Under full substitution, euro area government financing is fully covered by the issuance of joint debt with national issuance discontinued. Such approach would create a very large and homogenous market of safe euro area assets. However, this would increase risks related to moral hazard.

Under a partial substitution, more risk would be concentrated on the residual national issuance. Once the joint debt allocation is exhausted, the financing costs for the Member State could increase substantially. As a result, funding costs would be differentiated across Member States, in part depending on their fiscal position, reducing moral hazard.

SENIORITY CLAUSE

In case only partial substitution is selected, moral hazard may also be contained by introducing a clause for participating countries on **seniority of joint debt service** over servicing national issuance (whereby national debt is subordinated to the EMU bonds). This would ensure that joint debt is seen as an attractive investment for financial markets, raise the marginal cost of sovereign debt issuance and exert fiscal discipline (as proposed by Juncker & Tremonti, 2010). In a more stringent form, seniority may be imposed over any other spending in the national budgets.

2.3.3. Issuance level

Joint debt issuance could be either **centralised or decentralised**. Under a **centralized** approach, a central issuance agent – e.g. the European Commission, or a new debt management office (DMO) – issues joint debt in the market and then distributes the proceeds to Member States. The central issuance agent may also service joint debt by gathering interest and principal payments from the Member States, unless other resources (e.g. EU own resources) are earmarked for debt servicing. Under a **decentralized** approach, joint debt would be issued by national Treasuries or DMOs (directly by the Member States' governments; Grauwe & Moesen, 2009). Issuance would need to be conducted under uniform terms and procedures and would require a high degree of co-ordination. Such approach would likely present coordination issues.

[3] Typically, in highly-integrated federations, joint or central borrowing is combined with central control over spending.

2.3.4. Forms of funding distribution

In case a central issuing agency is established, a decision is to be made whether funds raised on a supranational level are to be **on-lent to Member States** or whether they are to be **distributed as grants**. On-lending can be carried out either through direct loans (where the Member State receives its funding through a loan agreement), or through the direct purchase of government bonds from Member States by the DMO in the primary market. Distributing the jointly issued debt as grants can help safeguard **long-term debt sustainability** of individual Member States, reinforcing long-term market stability. However, for the debt raised by the central agency not to be counted towards Member States' general government debt, **the central agency has to have capacity for initiative and an autonomy of decision** (in that it has to be a true European-level supranational agency; Eurostat, 2011).

Forms of funding distribution can also determine whether the joint debt will imply **fiscal transfers**. If funds are distributed in proportion of guarantees provided, such arrangement does not immediately imply transferring resources from one Member State to another. On the other hand, fiscal transfers can take place if a country receives a higher share of joint debt funding than its liabilities in the joint debt issuance.

2.3.5. Ensuring consistency with the EU Treaty

Consistency with the EU Treaty would be essential to ensure the successful introduction of joint debt. Article 125 of the Treaty on the functioning of the European Union (TFEU) prohibits Member States from assuming liabilities of another Member State (the "no bailout clause"). Therefore, some of the joint debt options would require changes in the relevant provisions of the Treaty.

The following part presents a discussion on previous proposals and present joint debt issuing facilities, overviewing the modalities of the different instruments.

2.4. PROPOSALS AND PRESENT ARRANGEMENTS OF JOINT DEBT ISSUANCE IN THE EMU

2.4.1. Federal Eurobonds

The highest degree of economic integration in the EMU would come in the form of a **federal fiscal union** (complementing the current monetary union), allowing for centralisation on both the revenue and the spending side.

A fiscal union could be founded by creating an EMU-level finance ministry, treasury or other budgetary institution that would conduct supranational-level fiscal policy. This would include debt raising – issuing **a federal Eurobond** (Duff, 2020). Fiscal union implies creating or enhancing EMU-level powers of taxation, whereby the joint borrowing is serviced through federal own resources (a central tax base generating autonomous European tax revenues; Smaghi, 2020). European taxes may include a plastics tax, a digital tax, or proceeds from the carbon emissions trading scheme, and may be extended to various other economic areas. Collecting revenues on an EMU-level could create conditions for the fiscal policy to be conducted on the EMU-level as well (based on shared European policy objectives), rather than through fixed allocation to Member States. A federal budget would imply **fiscal transfers** between different regions in the Union, as the revenues collected and spent will not be distributed in equal proportions across countries.

This type of a centralized federal arrangement could bring significant benefits to the EMU. It would allow having a more coherent economic policy mix, as it would solve the currently asymmetric degrees of integration in monetary and fiscal policies. It would also allow **issuing a true monetary union-wide federal safe asset backed by a federal budget**. Moreover, joint debt issuance would not be expected to serve as a redistribution mechanism in the long run. It would hence reduce risks related to moral hazard which mainly arise from the skewed incentives at the national-level decision-making.

However, this high a level of fiscal policy centralisation on both the revenue and spending sides would require a significant step in economic, financial and political integration. In an end-state fiscal union, areas such as unemployment insurance or welfare could become a European competence. A wide range of federal fiscal policy areas (and large federal fiscal spending) would be needed to ensure that the federal bond debt market is deep and liquid enough. However, the fully-fledged fiscal union would imply far-reaching Treaty changes (as well as changes to national Constitutions) to transfer significantly more national sovereignty to the EMU.

Table 2. Pros and Cons of the Federal Eurobonds

Pros	Cons
• Creation of a European safe asset • No moral hazard	• Fiscal transfers • Requires Treaty and Constitutional change

2.4.2. Eurobonds (2009-2010), Coronabonds (2020)

Various proposals were put forward on issuing Eurobonds in the aftermath of the GFC – see, for instance, Favero & Missale, 2010; Grauwe & Moesen, 2009.

EUROBOND 1

A "genuine" Eurobond (Eurobond 1) would be issued with joint and several guarantees. Each participating Member State would guarantee the totality of the liabilities, thereby the common debt instrument would be an indivisible legal object, ensuring a high credit rating (Favero & Missale, 2010). **The interest payments and principal redemption obligations of each participating Member State would be specified *in relation to the amount of funding obtained***. However, the nature of the joint and several guarantees would give an investor legal recourse to all the participating issuers should not all the obligations were fully met.

Such guarantee structure does not necessarily imply outright fiscal transfers. As pointed out by Claessens et al. (2012), the appeal of Eurobonds relies on the expectation that fiscal transfers will not actually have to take place as long as:

- All Member States honour their respective liabilities (Member States repay as much as they have borrowed, same as in the national issuance), so that other Member States do not have to make good on their guarantees;
- The share of the Eurobond funds distributed to a Member State equals its repayment share in the Eurobond issuance (the default solution).

In other words, **Eurobonds can work as government bonds and collective euro area liability at the same time**. Should Member States have to foot the bill of one of the sovereigns (and make good on the guarantees), only then would this result then in actual fiscal transfers. Fiscal transfers would also take place if a country receives a higher share of the Eurobond funds than its repayment share in the Eurobond issuance.

A "genuine" Eurobond would be a true safe asset, increasing liquidity and lowering borrowing costs, significantly mitigating the sovereign-bank nexus, curbing speculative attacks and intra-euro area flight-to-safety episodes.

Therefore, the Eurobond would be expected to serve as a preventive function against speculative attacks in sovereign debt markets that are not justified by fundamentals. By lowering liquidity risk, the Eurobond activates a positive feedback loop where solvency of Member States is strengthened and insolvency risk is reduced. **Due to this, the risk of fiscal transfers is minimized** (Member States can always refinance the debt due to the strong guarantee structure).

Fiscal transfers and even contagion of defaults may materialize under extreme stress where the confidence falters with regard to the entire euro area. If the other Member States do not have enough

resources to absorb the debt that cannot be serviced by a troubled Member State, the guarantee structure of the Eurobond 1 may lead some Member States to default (given the shared liability) even though they are individually solvent.

At the same time, the "genuine" Eurobond can decrease borrowing costs and volatility of interest rates for *all* euro area Member States. As shown by the two-country model by Tsiropoulos (2019), yields decrease significantly in the long run after the introduction of Eurobonds, not only for the Periphery (country 1) but also for the Core (country 2). The mean interest rate spread against the risk-free interest rate of 1.7 % drops to 0.1 pp for both countries, while in the benchmark economy it is 0.5 pp for the Core and 1.9 pp for the Periphery. The volatility of interest rate drops to 0.002 %, while in the benchmark economy it is 0.019 % for the Core and 0.042 % for the Periphery.

At the same time, a "genuine" Eurobond would involve the greatest risk of moral hazard, in that Member States could effectively free ride on the fiscal discipline of other Member States.

If unchecked, moral hazard may lead to euro area-wide stress, as joint liability introduces the potential for **contagion of default decisions**, where some countries default even though they are individually solvent.

In this context, decisions to issue Eurobonds may have to be transferred to a European body (Schäfer & Bigus, 2016); **otherwise, strict fiscal rules would have to be enforced.** In any case, fiscal sovereignty of national Member States would have to be curtailed, with potentially a more centralised fiscal decision-making. However, should strict rules be enforced, this may contain the amount of spending allowed, but not necessarily the composition of government expenditures.

Issuance of genuine Eurobonds under joint and several guarantees would *a priori* represent a breach of the "no bailout clause", **therefore an amendment to the Treaty would be necessary**. An amendment could be carried out under the simplified procedure if a euro area common debt management office were constructed under an intergovernmental framework. However, Eurobond issuance would most likely require the use of the ordinary procedure if it were placed directly under EU law (extending the competences of the EU implies a unanimous vote of the Council and the consent of the European Parliament). In addition, such issuance would require changes to the national law in a number of Member States. At the same time, a substantially more intrusive euro area economic governance framework would also require separate changes to the Treaty and the national legal frameworks.

A genuine Eurobond, in its original design, would fully substitute national issuance with joint debt issuance. This means that joint debt would be used to finance all government spending. Full substitution would eliminate the risk flight-to-safety within the euro area, and would allow for an easier macroeconomic adjustment in times of crisis or low growth periods.

Eurobonds could be introduced in an accelerated fashion or under a gradual approach (European Commission, 2011). Under an accelerated phasing-in, new issuances would be entirely in Eurobonds, while outstanding government bonds could be converted into the new Eurobonds (the downside is that the operation could induce market disruption). A more gradual approach would imply new gross issuance for each Member State in Eurobonds, while the outstanding euro area government bonds would remain in circulation on the secondary market (the downside is that this implies market fragmentation and less immediate benefits).

Under a **partial substitution**, Eurobonds would have to receive **seniority** over national sovereign bonds to ensure the highest credit rating possible. In this instance, Eurobond issuances could be attributed specific functions, such as deficit spending for macroeconomic stabilisation. For an often referred-to variant of Eurobonds with partial substitution, see the proposal on **Red and Blue Bonds** (Delpla & Weizsäcker, 2010) below, which is based on partial substitution.

Table 3. Pros and Cons of the Eurobond 1

Pros	Cons
• Creation of a European safe asset • No fiscal transfers (unless the tail risk scenario materializes where the entire monetary union is under extreme strain)	• Moral hazard • Requires Treaty and Constitutional change

EUROBOND 2

A Eurobond could be issued with several (capped) guarantees only (Eurobond 2), with obligations divided between participating issuers in specific fixed proportions according to a contribution key (as proposed by Grauwe & Moesen, 2009).

Eurobonds 2 could also be enhanced by collateral and other credit enhancements (such as seniority status) to ensure that bonds will always be repaid (see Table 1). While the Eurobond would trade as a single debt instrument, each Member State would be liable only for the interest payments and principal redemption corresponding to its share of the bond (Favero & Missale, 2010). The proceeds of the bond issue would be channelled to each government. Under the baseline approach, this would be done using the same weights as the guarantee structure.

For an investor, Eurobond 2 would be equivalent to a diversified portfolio of national sovereign bonds. The downside of Eurobond 2 is that its **credit rating would likely be close to average of the credit standings of the participating Member States** (weighted by their relative shares).

The described difference in yields could be interpreted as a fiscal transfer among member countries (from low-yielding to high-yielding), and thus create political issues. Note than in the case of the Eurobond 1, it can be expected that yields would converge to a lower level for all participating Member States.

Eurobond 2 would still contain a risk of moral hazard, although somewhat lower, as not all Member States would be benefiting from a possibly higher previous credit quality of other Member States.

Relatedly, **Eurobond 2 would technically make most sense only if it replaced some but not all national sovereign bonds** (partial but not full substitution)[4], **which would also help contain moral hazard**. The continued issuance of national bonds would expose Member States to market scrutiny and higher national borrowing costs on the margin, possibly introducing some market fragmentation.

As argued by Favero & Missale, 2010, **although Eurobond 2 could help prevent speculative attacks against particular Member States, it not reach a true "safe haven" status**. This is because countries with a better credit standing would remain liable only for the interest payments and principal redemption corresponding to their share of the bond, and not for the debt of the other issuers. In other words, the Eurobond 2 would continue to carry credit risk for the investors.

Moreover, the continued national issuance may make it more difficult for sovereigns to finance their national debt individually, as the marginal cost of debt would likely rise. Therefore, under stress, the issuance of Eurobond 2 rather than national issuance would have to be preferred, which would require that **hard cap is not introduced on Eurobonds 2.**

[4] Under full substitution, the Eurobond 2 issuance would result, under a baseline scenario, in the same fiscal stance across all the members of the euro area (as liabilities in case of the Eurobond 2 are divided between participating issuers in proportion to the funds received).

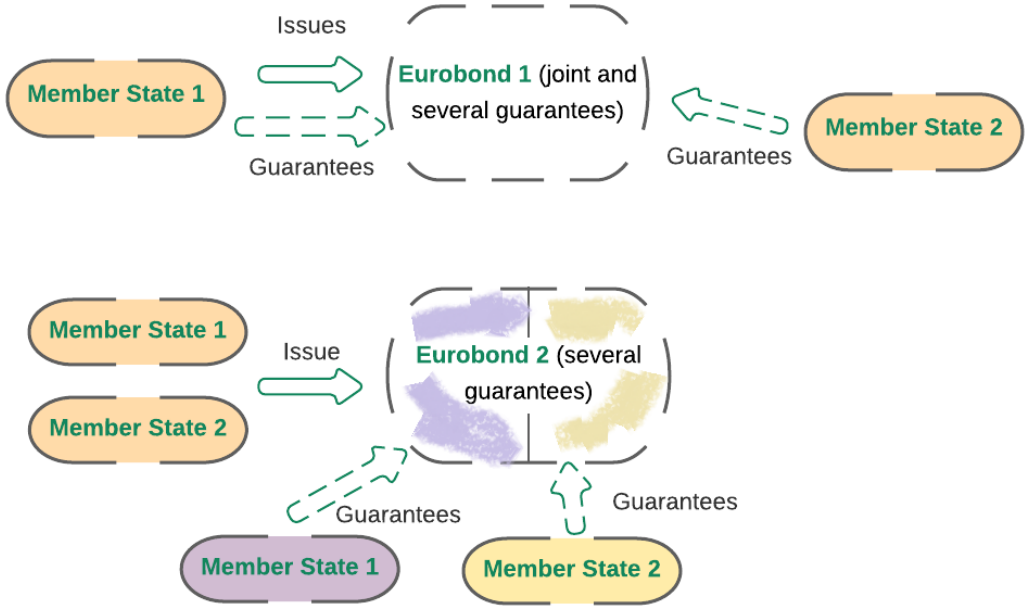
Issuance of Eurobond 2 under several but not joint guarantees would be possible within the existing Treaty provisions, as it does not introduce joint liability (European Commission, 2011). Therefore the Eurobond 2 solution would be more easily and more rapidly deployable.

Table 4. Pros and Cons of the Eurobond 2

Pros	Cons
• May help prevent speculative attacks and self-fulfilling prophecies • Moral hazard risks contained and fiscal prudence likely incentivised • No Treaty change required	• Not a genuine safe asset • Fiscal transfers • Risks of market fragmentation

The figure below illustrates the differences in the guarantee structure of the Eurobond 1 and Eurobond 2:

Figure 5. Eurobond 1 and Eurobond 2: illustration of the guarantee structures

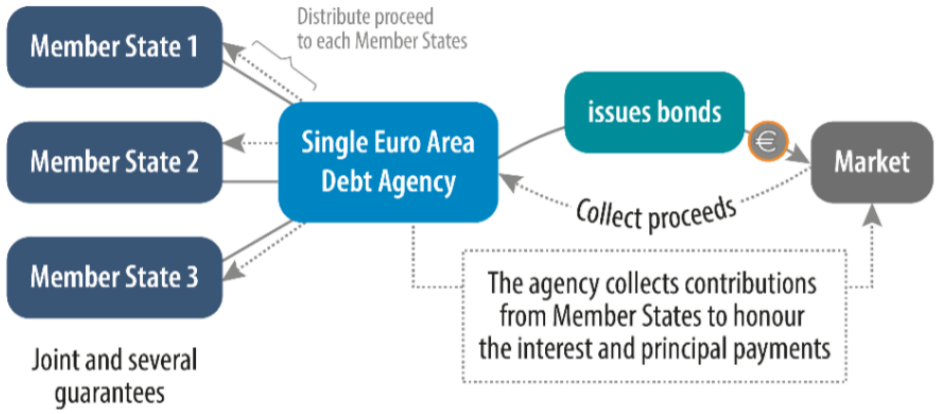


Source: Author's compilation.

ISSUANCE LEVEL

The most feasible way to implement Eurobonds would be through a centralised issuance as shown below, whereby national issuance is discontinued and debt is issued by a central DMO. However, this would reduce flexibility in the pursuit of country-specific debt management objectives, requiring a transfer of sovereignty from national to the supranational level. However, **issuance of Eurobonds could also remain decentralised at the national level** via a coordinated procedure.

Figure 6. Centralised issuance of Eurobonds



Source: Delivorias & Stamegna, 2020

CORONABONDS (2020)

The idea of Eurobonds re-emerged in 2020 with calls to issue so-called Coronabonds. For instance, in March 2020, nine euro area members sent a letter to the President of the EU Council, Charles Michel, asking for a common debt instrument to respond to the symmetric COVID-19 shock[5]. Bruno Le Maire, French finance minister, proposed a common issuance of bonds secured against the joint and several guarantee of the Member States (Government of the French Republic, 2020). Most proponents argued for a **one-off issuance** of jointly and severally guaranteed euro area debt instruments to address the costs of the pandemic with equal strength across the monetary union (independent of national fiscal space). As with Eurobonds, Coronabonds would very likely have required Treaty change. As they would feature partial substitution of national issuance, they would be **similar to the Red and Blue Bonds discussed below**.

2.4.3. Red and Blue Bonds (2010-2013)

In May 2010, Delpla & Weizsäcker (2010) proposed to reconstruct the basic Eurobond concept (Eurobond 1) into a two-tier structure by dividing the sovereign debt of euro-area countries into two parts – Blue and Red. Under this approach, Eurobond (or Blue bond) issuance would be underpinned by **joint and several guarantees**, but would replace only **a limited portion of national issuance**.

Blue bonds would have senior status and would be extremely liquid and safe. Each Member State could be entitled to an amount of Blue bonds equal to 60% of GDP (using the Maastricht criterion as reference). This sets a limit to the obligations that the other Member States would have to guarantee and be liable for in the event that a sovereign would default. Considering that the Blue bonds would be jointly and severally guaranteed, it would also almost certainly require Treaty changes.

National debt beyond the proposed threshold would be issued as national Red Bonds with junior status; thus the default risk would concentrate on the Red Bonds. The Red Bonds could never be guaranteed by another country and could not be bailed out by EU rescue mechanisms (the no-bail out clause would apply explicitly to the Red debt). The junior status of Red bonds implies that countries would be able to default on the national sovereign debt. To ensure an orderly default on Red Bonds, authors suggest keeping the Red debt out of the entire banking system through regulatory means, such as imposing high capital requirements for banks holding the Red debt or making it not eligible for ECB refinancing operations

[5] See more at: https://www.euractiv.com/section/economy-jobs/news/nine-member-states-ask-for-eurobonds-to-face-coronavirus-crisis/.

(Weizsäcker, 2012). Consequently, the Red debt would be concentrated with investors having better loss absorption capacity than banks in case any problems with the Red debt were to arise.

In terms of Blue Bonds, joint liability of all Member States and, thus, fiscal transfers can be factually avoided except for severe tail events. The fact that Blue Bonds have a priority over the national debt and are limited in their volume means that each Member State would be able to service Blue Bonds even in times of severe crisis.

One of the key strengths of the proposal is that it features a mechanism to contain moral hazard, **due to partial reliance on markets for signalling and disciplining**. Given that Member States would issue Eurobonds up to 60% of GDP, the marginal cost of further junior national debt would rise and would be strictly higher than in the scenario without Eurobonds because national bonds are junior (Schäfer & Bigus, 2016). Therefore, the pricing of Red bonds would create incentives for governments to keep the budget under control.

Moreover, the proposal contains a form of conditionality to contain moral hazard. Participating Member States would not be automatically allowed to borrow up to that 60% limit in Blue Bonds. The exact annual allocation of Blue Bonds would be proposed by a newly established body – an **Independent Stability Council (ISC)**, staffed by independent professionals. Access to Eurobonds would then depend on countries being able to convince the ISC "…that their fiscal policy is credible enough to be insured (via the joint and several liability) by the most credible countries of the euro area. For example, one could imagine that a country would not be allowed into the Blue Bond pool if it did not have a binding fiscal rule, analogous to the one inserted by Germany into its constitution" (Delpla & Weizsäcker, 2010). The ISC proposal for the allocation would have to be approved by national parliaments of participating euro area countries to ensure the parliamentary control of the Blue borrowing. Any country voting against the proposed allocation could decide neither issue, nor guarantee any of the Blue bonds for the upcoming year. Withdrawal of any major participating country would undermine confidence in the Blue bond scheme as a whole; therefore, the ISC would be highly incentivized to act cautiously.

Nevertheless, the proposal would likely carry less benefits in comparison to more ambitious approach of full substitution of Eurobond issuance for national issuance. **The market would less liquid than if all issuances were in Eurobonds** as the residual national bonds would also hold a certain market share. Yet the authors of the proposal argue that even with the above-mentioned threshold, the Blue Bond market would be safe and liquid enough to strengthen the international role of the Euro (Delpla & Weizsäcker, 2011).

Moreover, given that Blue Bond provides a new market to existing national markets, this may increase rather than reduce market fragmentation. Banks that hold the Blue Bond would be insulated from national sovereign risks – but that would also mean **higher financing costs for heavy issuers of Red debt**, as the demand for such bonds would likely be lower.

The effect on flight-to-safety risks in crisis is uncertain. The risk of flight-to-safety from one specific sovereign to another could be reduced, as each sovereign would be able to issue Blue debt. However, during crises, interest rate spikes on Red Debt are likely (with flight from Red to Blue bonds) – and this may prove particularly problematic if the issuance of Blue Debt (60 % of GDP) is exhausted. **Market fragmentation between the Blue and Red markets may also challenge the transmission of the single monetary policy**.

As the Red Bond would make borrowing more expensive at the margin, it could result in persistent political pressures to increase the Blue Bond ceiling – especially during crises. As Gilbert et al. (2013) point out, the dependence on market financing for debt above 60% of GDP also implies that even countries with a solid starting position can have difficulties raising debt at short notice following a large adverse shock. Therefore, political pressures can emerge, and unless there are strong safeguards against such

pressures, anticipation of a "soft" ceiling could largely eliminate the disciplining effects of the Blue-Red approach.

Table 5. Pros and Cons of Red and Blue Bonds

Pros	Cons
• Safe asset • Moral hazard risks contained and fiscal prudence incentivised • No fiscal transfers (limits on Eurobond issuance means that MS should be able to service Blue Bonds even in deep crisis)	• More limited liquidity (up to 60 % of GDP) • Fragmentation and flight-to-safety risks, contagion scenarios, especially when Blue Bond issuance is exhausted • Possible political pressure to increase the ceiling

2.4.4. Sovereign Bond-Backed Securities/European Safe Bonds (2011, 2017)

The concept of the Sovereign Bond-Backed Securities (SBBS) was originally proposed by Brunnermeier et al. (2011, 2017) and later developed in more detail by the European Systemic Risk Board (ESRB) High-Level Task Force on Safe Assets (2018). In 2018 the European Commission (2018) proposed the Regulation on SBBS on the back of the original proposals. The aim of the SBBS initiative is to support further integration and diversification within Europe's financial sector by helping banks diversify their sovereign exposures and alleviating the safe asset scarcity in Europe.

Under the proposal, a public or private special purpose entity (or entities) would purchase and pool sovereign bonds (in the primary or in the secondary markets) from all euro area sovereigns. Shares in the portfolio would be weighted according to a moving average of Member States' GDPs or contributions to the ECB capital to represent the relative size of the Member State. The diversification of such portfolio would likely be relatively low if the ECB capital key was used for sovereign debts' allocation, with almost 80% being invested in the four biggest sovereign bond markets of the euro area – Germany, France, Italy and Spain (Deslandes et al., 2018).

The pooled bonds would be used as collateral to finance the portfolio by issuing two types of SBBSs (in two tranches). The first security, called **European Safe Bonds (ESBies), would be a *synthetic* euro area-wide safe asset**. The incoming payments (for interest or redemption) from the national sovereign bonds would first serve to meet the payments of the senior bonds. Once all senior bondholders have received their payments, the rest of the national sovereign bonds payments are used for distribution to the junior bondholders.

The subordinated tranche, referred to as European Junior Bonds (EJBies), would also be issued against the portfolio of euro area sovereign bonds. They would **take the hit when losses are posted on this underlying portfolio**. EJBies would be sold to investors looking for higher risk-return investment.

ESBies would be safe assets with yields expected to be similar to or below German Bunds, thus solving the scarcity of euro-denominated safe assets. The issuance of ESBies may generate a risk-free rate benchmark curve against which other securities could be priced. Losses arising from sovereign defaults would first be borne by holders of the junior bond and only if they exceed the subordination level, ESBies would begin to take losses. Brunnermeier et al. (2017) claim that a subordination level of 30% – such that the junior bond represents 30%, and the senior bond 70%, of the underlying face value – would ensure that ESBies have an expected loss rate similar to that of German bunds.

There would be an upper limit of a country's outstanding bonds that SBBS can encompass (at most 33% of the total outstanding stock of sovereign bonds), so that a sufficient share of a given country's debt is traded on open markets.

The proposal would not require any changes to the Treaty as it entails no joint liability among sovereigns and no risk of fiscal transfers (a key feature of the proposal), instead relying on

financial engineering to produce safe assets. Each Member State would keep full responsibility for managing the issuance of its own debt, including a default. The proposal also significantly mitigates risks related to moral hazard in relation to other joint debt proposals, as governments would continue to issue all bonds, facing their own credit spreads.

The purpose of the SBBSs is to mitigate the market's tendency to amplify crisis. Any flight to safety would be expected to be from the EJBs to the ESBies without geographic disruptions (not from one sovereign to another). In other words, capital flights to safety would take place from high-risk to low-risk European assets rather than from vulnerable to non-vulnerable countries.

SBBSs could help reduce the sovereign-bank nexus. Banks holding ESBies would no longer be exposed to national sovereign risks, but to a combined euro area risk. More specifically, euro area banks would be expected to be significant holders of SBBS senior tranche as it would diversify banks' sovereign bond portfolio, thus making them more immune to the default risk of their own sovereign. For this purpose, SBBS would need to be introduced on a large scale and would require significant regulatory changes to make ESBies the preferred asset for banks to hold for liquidity purposes and refinancing operations (Brunnermeier et al. 2011). Notably, in the absence of this regulatory framework there would be no guarantee that a sizeable SBBS market emerges.

However, as Claeys (2018) argues, the maximum issuance of SBBS at some point would be constrained by countries with lower levels of debt (especially those carrying more economic weight); **this may upset the functioning of national bond markets, raising sovereign borrowing costs**. If securitization was based on the debt-to-GDP ratio or the ECB's capital key, there would be differences in which countries bonds were included, potentially creating problems for peripheral countries (European Parliament, 2018). Namely, SBBS may significantly reduce the secondary market for some sovereign issuers while altering the relative availability of the bonds of the remaining sovereigns. The spread on the unsecuritised debts could further increase if collateral demand by banks were satisfied by the ESBies.

Moreover, the concept of SBBS only holds where all tranches - including the junior tranche - can be sold to investors, and this may not necessarily be the case. As pointed out by Demary & Matthes (2017), **if the market for the junior tranche broke down, the concept of SBBS would run into considerable risks**. The senior tranche could in principle be rendered as low risk if a sufficient "thickness" of the junior tranche is ensured. This is because ESBies are fully protected against individual or multiple defaults as long as total losses do not exceed the size of the non-senior SBBS tranches (Zettelmeyer & Leandro, 2018). However, the junior tranche may especially be vulnerable in crisis: first, because the number of asset types in the underlying portfolio is smaller (19 euro area countries) compared to other securitised instruments, so that the potential for risk-minimisation through diversification is limited; second, national sovereign bonds in the portfolio could suffer from sizeable contagion effects, and cross-correlations could become significant (especially given the concentration of risk, as four sovereign markets would represent the bulk of the portfolio).

Grauwe & Ji (2018) further disagree that ESBies would maintain its status of safe asset during crises due to their (even limited) complexity. This is because stress episodes are often characterised not only by flights-to-safety but also to flights-to-simplicity; meanwhile, the SBBS is a claim against the special purpose vehicle, which has claims against all euro area member sovereigns. This can make a difference in terms of investors' safety assessment. More generally, critics of SBBSs point to the fact that these instruments are based on a form of financial engineering ("it's just a CDO"), and thus cannot constitute a durable policy solution (Ubide, 2015).

It is thus argued that SBBS would play a somewhat limited role in managing systemic risks and stabilizing the euro area in times of crisis. The ESRB has concluded that "SBBS do not entail any built-in promise to offer a stable source of finance for governments during a crisis" (European Systemic Risk Board,

2018). A major crisis involving several defaults could make ESBies significantly less safe than initially assumed – high yields for all assets would follow as credit spreads in weaker countries widen.

Table 6. Pros and Cons of SBBS

Pros	Cons
• Creating a safe asset (although low diversification and complexity may undermine the safe haven status) • No fiscal transfers • Risks of moral hazard contained • Treaty change not required	• Liquidity constrained by members with low debt (33 % limit) • Risks to sovereign bond markets due to relative availability of large issuers increased • Vulnerable to large shocks given low diversification of the underlying portfolio • Complexity

2.4.5. European Stability Mechanism (2012) and Pandemic Crisis Support (2020)

ESM provides financial assistance to euro area countries experiencing or threatened by severe financing problems. The assistance is granted only if it is proven necessary to safeguard the financial stability of the euro area as a whole. ESM loans usually have **conditionality** attached to them, related to the need for borrowing countries to correct the imbalances that led them to losing financial markets access.

In April 2020, the European Council agreed to establish the Pandemic Crisis Support precautionary credit line. It is available to all euro area Member States with little conditionality to support domestic financing of healthcare, cure and prevention related costs due to the COVID-19 crisis. This credit line is available until the end of 2022. Access granted is 2 % of the respective Member States' GDP. If the precautionary line is drawn from, loans would have a maximum average maturity of 10 years.

ESM enjoys a high credit rating (AAA), which means that the funds are on-lent to Member States at favourable rates. The ESM issuance is backed by the subscribed capital of EUR 704.8 bn (against lending capacity of EUR 500 bn), underwritten by euro area Member States (over-guaranteeing the issuance size is a form of credit enhancement). Paid-in capital amounts to EUR 80.5 bn (not available for on-lending), and committed callable capital is EUR 624.25 bn. ESM Board of Governors may call in capital at any time.

The pro-rata nature of ESM's subscribed capital makes the ESM debt similar to that of a Eurobond with several but not joint guarantees (Eurobond 2). In essence, ESM bonds are guaranteed by governments up to specific amounts (or shares in the subscribed capital).

An ESM bond lacks the same type of strong guarantees as the Eurobond 1. In March 2020, the ESM Managing Director Klaus Regling stated that ESM bonds "is mutualised debt - I call it European debt"[6]. However, ESM bonds do not reach the same "safe haven" status that genuine Eurbonds could enjoy.

Relatedly, liquidity of ESM debt is too limited for the ESM bond to serve as a benchmark security. The ECB held around 46% or ~ EUR 112.2 billion of EFSF/ESM's outstanding stock of the eligible debt as of end-2018[7]. **Should all 19 euro area countries draw from the Pandemic Crisis Support credit line, this would amount to a combined volume of around EUR 240 bn** (less than 2 % of euro area's GDP). For ESM debt to become more liquid, a revision of ESM's capital structure would be required. In any case, the ESM is a crisis management mechanism, therefore it cannot constitute a permanent solution for Member States' financing.

[6] See the transcript of Klaus Regling's interview for the Financial Times (March 2020): https://www.esm.europa.eu/interviews/transcript-klaus-reglings-interview-financial-times.

[7] See more at: https://www.esm.europa.eu/sites/default/files/efsfesmnewinvestorpresentationfebruary2019_0.pdf.

Funds raised by the ESM are on-lent to Member States receiving financial assistance; **this increases the national debt-to-GDP ratio of the borrowing country**, thus lowering its debt sustainability prospects. This is the main drawback of ESM lending compared to obtaining grants from the NextGenEU.

Moreover, ESM to this day carries a stigma effect. The negative perception of ESM conditionality has been influenced by the strict conditionality of some past adjustment programmes attached to ESM loans.

Table 7. Pros and Cons of ESM Pandemic Crisis Support

Pros	Cons
• No fiscal transfers • Risks of moral hazard contained (although conditionality is weakened with the Pandemic Crisis Support instrument) • No Treaty change required	• Not a genuine safe asset • Low liquidity • Stigma associated with use • ESM and/or Pandemic Crisis Support not a permanent solution to finance long-term goals

2.4.6. Next Generation EU (2020)

In July 2020, the European Council agreed on the recovery plan for Europe, which combines the 2021-2027 multiannual financial framework (MFF) and temporary recovery instrument of EUR 750 billion – Next Generation EU (NGEU).

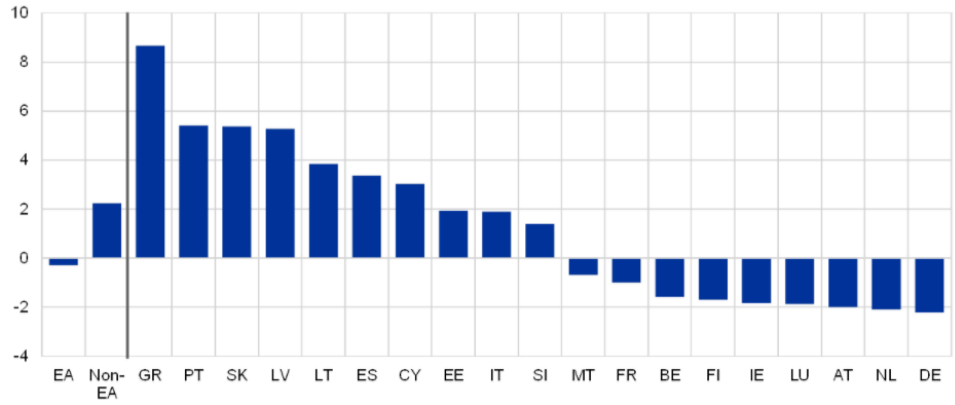
To finance NGEU, the European Commission has been authorized to raise up to EUR 750 billion (5 % of euro area's GDP) on the capital markets on behalf of the EU. The Commission will use the headroom – the difference between the Own Resources ceiling of the long-term budget and the actual spending – as a guarantee to back the borrowing. The additional annual responsibility of Member States, on top of its relative share to the EU budget, is capped at 0.6% of its GNI.[8] The grant repayments will be covered by gross national income-based contributions to the future MFFs by the end of 2058 at the latest, when the extra 0.6% cap is set to expire and all contingent liabilities relating to loans have ceased. **This means that the new common debt will not enjoy joint-and-several guarantees**, and that individual Member States are not liable for repayment if the issuer were to default.

New own resources are foreseen to repay EU borrowing. "New" own resources will add further sources of income to the budget. The Council committed itself to reforming the EU's financing system and plans to introduce new own resources for early repayment of EU borrowing. For instance, a new levy on non-recycled plastic packaging waste has already been introduced on 1 January 2021.

The borrowed funds will be used to provide Member States with loans of up to EUR 360 billion and grants with up to EUR 390 billion through the Recovery and Resilience Facility (RRF) at the heart of the NGEU proposal. **Grants represent a fiscal transfer among Member States**, as some Member States are set to receive more financial assistance than their contributions to repayment of the EU debt (see Figure 7). One of the biggest novelties of the proposal – using borrowed funds to finance budgetary expenditures – is agreed to be compliant with the Treaty.

[8] Own Resources ceiling refers to the maximum amount that can be called per year to finance EU expenditure. To ensure necessary headroom to fund NGEU, the Own Resources Decision foresees a temporary increase of the Own Resources ceiling by 0.6 percentage points up to 2 % (the Decision is yet to be ratified by all Member States in line with their constitutional requirements). An increased Own Resources ceiling means that, if needed, the Commission would be able to draw additional resources from the EU Member States, limited to 0.6 % of Member States' GNI.

Figure 7. Allocation of The RRF grants, net of expected repayments



Source: Giovannini et al., 2020. Repayments are assumed to correspond to countries' shares in EU GNI.

The debt securities issued by the Commission are in a way a euro area safe asset as they are backed by the EU budget to which all EU members contribute; however, these securities do not achieve a true "safe haven" status. Lehmann (2020) argues that the NGEU proposal has the potential to boost integration between national financial systems, reduce the risk of runs on national bond markets, as well as help detangle the doom loop. This could, in turn, contribute to strengthening the international role of the Euro. However, temporary nature of NGEU and the limited amount of bonds to be issued diminishes the benefits as compared to having a large pool of common highly-rated safe assets. Moreover, the bonds issued by the Commission do not enjoy "several and joint guarantees", as explained previously.

For instance, the European Commission bonds issued in the context of the EU SURE program yield higher than, for instance, German Bunds[9]. Similar to the NGEU, EU borrowing under the SURE instrument is underpinned by a system of voluntary guarantees from Member States. Each Member State's contribution to the overall amount of the guarantee corresponds to its relative share in the total gross national income of the EU, based on the 2020 EU budget.

NGEU will increase EU's outstanding debt by a multiple of around 15, constituting the largest ever euro-denominated issuance at supranational level, following the largest sovereigns (the existing infrastructure will be used for the new issuance).

The Commission bond issuance will not add upfront to countries´ general government debt, as the Commission is a separately legal entity. This is one of the main advantages of the NGEU financing in relation to the ESM.

The main objective of the NGEU is to support investment and reform in Member States to pave the way for a resilient recovery, while promoting the EU's green and digital agenda. To ensure that borrowed funds are deployed for productive spending and accompanied by growth-enhancing reforms, financial support under the RRF will be disbursed in instalments only when targets identified in national recovery and resilience plans are reached.

[9] For instance, in March 2021 the European Commission issued a EUR 9 billion single tranche bond due in June 2036 under its EU SURE programme. The 15-year bond was priced at a yield of 0.228%. Following the first five issuances, 16 EU Member States will have received a total of €62.5 billion under SURE. See more at: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_1063.

Table 8. Pros and Cons of NGEU

Pros	Cons
• Aimed at long-term growth (reforms and investments to raise potential output) → helps contain moral hazard • No Treaty change required	• Fiscal transfers • Not a genuine safe asset (several guarantees only with credit enhancements) • Low liquidity • Temporary measure (establishing permanence may require Treaty change)

3. JOINT BORROWING ARRANGEMENTS: INDICATIVE JOINT DEBT SCOREBOARD

Below is an indicative scoreboard of the different joint borrowing arrangements discussed in Section 2.4. Each arrangement is evaluated along nine dimensions, with a score from **-2** (the worst score) to **+2** (the greatest score). The dimensions represent the **inherent trade-offs** that joint debt issuance necessarily entails, referring to the pros and cons of issuing safe assets: macroeconomic stability or breaking the sovereign debt nexus on the one hand; and fiscal transfers among Member States or the increased risk of moral hazard on the other. Note that the **scoreboard represents a subjective opinion of the author**, based on the analysis provided in Section 2.4.

Note that the scoreboard analysis a baseline scenario, where extreme stress is contained. Otherwise, a number of these arrangements may prove to be less resilient than expected. For instance, under extreme euro area-wide stress where the viability of the Euro is put under question, the guarantee structure of the Eurobond 1 may lead to contagion of defaults, whereby joint debt leads some Member States to default (given the shared liability) even though they are individually solvent. Similarly, in severe crisis conditions, Member States would default on the national debt under the Blue and Red Bond proposal (given the introduced default mechanism) with drastic consequences, where they otherwise would not under the current regime.

Table 9. Indicative scoreboard of joint borrowing arrangements

	Federal Eurobond (federal fiscal union with own tax base)	**Eurobond 1** (joint and several guarantees, full substitution)	**Eurobond 2** (several guarantees only, partial substitution)	**Blue and Red Bonds** (with senior status)	**SBBS** (with senior status)	**ESM Pandemic Crisis Support**	**NGEU** (with credit enhancements such as EU-level taxes)
Macroeconomic and market stability	**+2**	**+2**	**+1**	**+1**	**+1**	**+1**	**+1**
Breaking the sovereign-bank nexus	**+2**	**+2**	**+1**	**+2**	**+1**	**0**	**0**
Strengthening the international role of the Euro	**+2**	**+2**	**+1**	**+1**	**+1**	**0**	**+1**
Facilitating the transmission of monetary policy	**+2**	**+2**	**+1**	**+1**	**+1**	**+1**	**+1**
Higher long-term economic growth	**+2**	**+2**	**+1**	**+1**	**+1**	**0**	**+1**
Risk of moral hazard	**0**	**-2**	**0**	**+1**	**0**	**0**	**-1**
Fiscal transfers	**-2**	**0**	**-1**	**0**	**0**	**0**	**-1**
Loss of fiscal sovereignty	**-2**	**-1**	**0**	**-1**	**0**	**0**	**0**
Treaty and constitutional change required	**-2**	**-1**	**0**	**-1**	**0**	**0**	**0**
Total score	**4**	**6**	**4**	**5**	**5**	**2**	**2**

Source: Author's compilation

Note: The proposals are assumed to have achieved their steady-state. For instance, with Eurobond 1, it is assumed that all sovereign debt in the euro area has been replaced with Eurobonds. In case of the Eurobond 2, it is assumed that a substantial amount of euro area debt has been replaced with severally-guaranteed joint debt, similar to the Blue and Red bonds proposal (where Blue Bonds amount to 60% of euro area's GDP).

Under this indicative assessment, Eurobonds with joint and several guarantees achieve the highest "score", meaning that they achieve the most optimal balance in terms of the trade-offs inherent in joint debt proposals:

- **Macroeconomic and market stability**. Genuine Eurobonds 1 are much more likely to achieve a true safe haven status than Eurobonds 2 with several guarantees only, the issuance of which is limited due to partial substitution (which make them difficult to employ in asymmetric shocks that require financing of a specific sovereign). The Eurobond 1, being a safe asset, would help provide fiscal accommodation where needed, cushion asymmetric shocks, as well as defuse asymmetric transmission of symmetric shocks, thus providing a safeguard against speculative attacks against particular Member States and related liquidity shocks. Same would arguably be true in case of a fully-fledged fiscal union. Blue and Red Bonds offer a lower level of insurance in comparison to genuine Eurobonds, given the increasing borrowing costs at the margin and the hard cap on the debt with joint and several guarantees, which may produce flight-to-safety from Red to Blue debt in stress episodes. SBBS, taking into account their synthetic nature, issuance constraints, reliance on the junior tranche, and related risks to national sovereign bond markets, also raise questions in terms of providing stabilisation in case of shocks (ultimately, financial engineering is a weaker device than joint liability and public risk sharing). ESM Pandemic Crisis Support and NextGenEU can increase macroeconomic stability and help cushion crises, but these instruments do not produce a true European safe asset that works throughout the cycle and provides strong *ex ante* insurance.
- **Breaking the sovereign-bank nexus**. Eurobonds would remove the home bias in the sovereign holdings of European banks. Same is true with Blue bonds if they replace current sovereign bonds in banks' balance sheets. SBBS would also contribute to breaking sovereign bank nexus, although to a more limited extent given their disadvantages. Removal of home bias is not achieved by the ESM's Pandemic Crisis Support credit line or NextGenEU, which are not aimed at solving financial stability issues; debt issued in the context of the NextGen EU is also too small in comparison to e.g. Blue Bonds proposal or the SBBS to make a difference in the composition of the banking sector holdings; moreover, debt issued under the NextGenEU initiative is not earmarked with joint and several guarantees as is the case with the Eurobond 1.
- **Strengthening the international role of the Euro**. The Federal Eurobond would likely provide the highest confidence to international investors as regards the viability of the Euro. However, genuine Eurobonds may have a very similar effect on the standing of the Euro as a reserve currency, both due to their cross-country guarantee structure, as well as due to the sheer size of the Eurobond market under full (not partial) substitution. Eurobonds with several but not joint guarantees would pose larger credit risk (Eurobond 2 is not a genuine safe asset) and would thus have a smaller effect on the international role of the Euro, especially if fragmentation risks were to materialize. Blue bonds and SBBS would likely create a substantial supply of safe assets, although smaller in comparison to a genuine Eurobond.
- **Facilitating the transmission of monetary policy**. A very liquid benchmark security such as the Federal Eurobond or the Eurobond with joint and several guarantees would greatly reduce the risk of financial fragmentation in the euro area. Under some scenarios, most of the other proposals, especially the Blue and Red bonds as well as the SBBS, may in fact increase market fragmentation and thus hamper a smooth transmission of monetary policy (although all proposals score at least 1 due to their potential benefits in promoting confidence in the euro area).
- **Higher long-term economic growth**. Genuine Eurobonds would facilitate long-term economic growth, as they would prevent large hysteresis effects from prolonged and unaccommodated crises; help finance long-term public investment; and significantly increase capital market efficiency by providing a single benchmark yield curve. Other proposals, except for the federal Eurobond, come short of creating as deep a market of safe assets. Next Generation EU scores in this regard as it foresees outright fiscal transfers to the more vulnerable parts of the EMU and is specifically aimed at ensuring a faster long-term recovery after the pandemic crisis.
- **Risk of moral hazard**. Genuine Eurobonds contain the largest risk of moral hazard, as Member States would face little consequences due to uncontained spending (this would also undermine incentives to undertake structural reforms). A high degree of moral hazard would pose significant risks, both economic (e.g. inflation) and political, to the European project, and may undermine the currency union as a whole (under the extreme scenario, the solvency of the entire euro area could be put under question due to the contagion effects introduced by the mutually guaranteed debt). However, this does not necessarily mean that Member States would rapidly indulge in excessive spending, as countries would still have to repay their respective shares in any Eurobond issuance (unless they chose to

default). Eurobonds with several guarantees only contain moral hazard risks as the yield on these instruments would likely be close to the average of Member States financing costs, and default risks would be priced in. Moreover, the supply of Eurobond 2 would have to be partial, which would likely increase sovereign borrowing costs on the margin. Note that the federal fiscal union does not imply the risk of moral hazard, as it stems from skewed incentives at the national level (whereas the fiscal union would decide on spending at the European level). Blue and Red Bonds score positively given that the proposal foresees a disciplining device.

- **Fiscal transfers**. Eurobonds with joint and several guarantees, in fact, limit the prospects of immediate fiscal transfers – this is one of the key strengths of the proposal. The cross-country guarantees can work as a form of an insurance against risk and speculative market attacks, while the distribution of revenue flows and actual debt-servicing costs linked to Eurobonds would reflect the respective issuance shares of the Member States. If one believes that fragilities in European sovereign debt markets result from overshooting financial markets that may turn liquidity problems into solvency issues, Eurobonds can *pre-emptively* protect individual Member States without permanent fiscal transfers (Gilbert et al., 2013). In this regard, the Eurobond 1 proposal seems more attractive than a fully-fledged fiscal union or even Eurobonds 2 with several guarantees only (which would likely result in fiscal redistribution, given the expected convergence of yields). However, fiscal transfers may happen under a tail risk scenario, and mutual guarantees may lead to contagion of defaults.
- **Loss of fiscal sovereignty**. National fiscal sovereignty would be significantly curtailed in the end-state federal fiscal union. For Eurobonds, reducing fiscal sovereignty at the national level and coordinating debt management decisions would also be needed to address moral hazard. However, space for national fiscal policy could be found within a strengthened European fiscal framework if political compromise and trust could be established between Member States.
- **Treaty and constitutional change**. Eurobonds would require a Treaty change, as Eurobond issuance would *a priori* breach the "no bailout clause". A federal fiscal union would, of course, require an even deeper reform in terms of the EU's economic and political governance. Other proposals do not contain several and joint liability for the debts incurred, except for the Blue Bonds proposal, and thus do not require changing the Treaties.

CONCLUSIONS

The EMU was set up on purpose as a monetary union without fiscal risk-sharing. However, during the GFC and the subsequent sovereign debt crisis such arrangement proved to have its shortcomings, given that the EMU is not an optimum currency area. The lack of fiscal integration may also pose the risk of asymmetric recovery outcomes among Member States after the COVID-19 pandemic is over.

The present architecture of the EMU has previously necessitated the construction of special financial assistance arrangements, including the ESM. In the summer of 2020, a landmark decision was made to establish the NGEU instrument, which foresees fiscal transfers and joint EU-level borrowing. Given its one-off nature and the goal of addressing an unprecedented external shock, the package has been assessed to be compliant with the EU Treaties. Despite this, in March 2021, the German Federal Constitutional Court paused for a short time the ratification process of the Own Resources Decision in Germany in order to examine an emergency appeal filled to the Court. The question remains whether a Treaty change would be required to turn the NGEU into a permanent instrument.

Despite the establishment of the Next Generation EU, the EMU still lacks its single benchmark European safe asset that could produce the "exorbitant privilege" (whereby the issuer enjoys lower external financing costs) and, through various channels, bring the EMU closer to the OCA criteria. In part due to the lack of the EU or euro area-wide safe asset, the ECB has employed non-conventional measures to address the divergence of financing conditions and to ensure an appropriate monetary policy transmission (e.g. through the announcement of the OMT programme or through the flexibility engrained in the PEPP).

The analysis at hand concludes that genuine Eurobonds (Eurobond 1) **with joint and several guarantees, in comparison to other joint debt proposals, may be the most effective way forward in**

multiple domains, such as ensuring macroeconomic and market stability, breaking the sovereign-bank nexus, strengthening the international role of the Euro, and other areas.

A large share of joint debt proposals are associated with some form of a fiscal transfer mechanism. For instance, the Next Generation EU foresees fiscal transfers based on indicators such as GDP per capita. However, **Eurobonds with joint and several guarantees would not result in fiscal transfers as long as euro area sovereigns remain solvent**. Crucially, Member States' solvency would arguably be strengthened by the introduction of a genuine Eurobond. A case can be made that Eurobonds 1 would safeguard against liquidity and interest rate shocks, and would thus reduce the probability that Member States will have to, in practice, bail out other sovereigns.

However, **at its core the Eurobond is a risk-sharing mechanism**, the actual use (or "activation") of which is contingent upon materializing risks. Should the euro area find itself under extreme stress, where the viability of the Euro is put under question, **the Eurobond 1 may facilitate the contagion of default decisions**: if Member States do not have enough resources to absorb the debt that cannot be serviced by a troubled Member State, the guarantee structure of the Eurobond 1 may lead some Member States to default (given the shared liability) even though they are individually solvent.

Nevertheless, a strong risk-sharing arrangement such as the Eurobond, through numerous advantages reflected in the Scoreboard, could help address vulnerabilities of the euro area's institutional architecture and compensate Member States for the lack of national monetary policy, wage and price stickiness, the lack of labour and capital mobility, or differences in wage-setting institutions – factors that induce imbalances, reduce options available for adjustment to shocks, or transform short-term shocks into long-term sluggish growth outcomes.

The introduction of genuine Eurobonds would at the same time require an unprecedented level of trust among Member States. Joint and several intergovernmental guarantees imply that participating sovereigns are all individually responsible for full repayment of debt. This creates open-ended commitments for sovereigns involved, and a fertile ground for moral hazard. On the back of proliferated spending, financing costs may soar for all participating Member States.

To overcome the issue of trust, Eurobonds would require powerful mechanisms to enforce fiscal discipline in a time-consistent manner. This could be extremely difficult to achieve politically, as shown by the EU's fiscal coordination experience up to the COVID-19 crisis (for instance, no country has ever received fines under the EU's Excessive Deficit Procedure). Given these difficulties, other joint debt proposals could also be considered, although all large-scale joint debt solutions come with difficult inherent trade-offs. Due to these complex trade-offs, other highly-rated solutions in the Scoreboard have also not been implemented (e.g. they may require Treaty change). At the same time, lower-scale and lower-scoring measures (that have already been implemented) might simply not achieve significant policy goals, as is the case with the ESM's Pandemic Crisis Support instrument which has so far failed to generate interest among Member States or play a relevant role during the pandemic shock.

The analysis could be further improved by assessing a wider range of joint debt proposals (of which there are many), **as well as by considering a more granular list of evaluation criteria** (such as phase-in requirements, as well as more specific legal and institutional challenges).

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