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The EU's Response to the COVID-19 Crisis: A Game Changer for the International Role of the Euro?

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Heliodoro Temprano Arroyo

Abstract

This paper assesses the implications of the large issuance of euro-denominated bonds under the NGEU and SURE instruments, as well as of other measures taken by the EU in response to the pandemic, for the global role of the euro. It focuses on the impact of the new facilities on the supply of safe assets in euros, highlighted by the literature as one of the main constraints so far on the internationalisation of the euro.

After discussing this and other reasons why the euro is still punching internationally below the euro area's economic weight, the paper estimates the expected quantitative impact of the new facilities and other measures, including the euro area's national fiscal responses to the COVID-19 crisis, on the issuance of euro safe assets. It concludes that, although the NGEU and SURE facilities represent an important step, they are unlikely to sufficiently boost on their own the euro's global role, reflecting their temporary nature and the partly offsetting acquisition of safe bonds under the ECB's asset purchase programmes.

The paper argues that, if the EU wants to achieve its objective of strengthening the euro's global status, it should complement these efforts with other measures, as part of a comprehensive strategy. Ongoing structural changes in the world economy, including financial technology, and changes in the geopolitical environment create a more propitious context for this policy to bear its fruits because they make it more plausible that the world will move towards a true multi-polar currency system, overcoming the incumbency advantages that have protected the dollar's hegemonic position since World War II.

JEL Classification: F33, F31, E5, 052.

Keywords: international role of the euro, international currencies, international monetary system, safe assets, euro, US dollar, NGEU, SURE.

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ABBREVIATIONS

AF2019	European Commission's Autumn Forecast 2019
AF2021	European Commission's Autumn Forecast 2021
BIS	Bank for International Settlements
bn	Billion
BoP	Balance of Payments support instrument
CBDC	Central Bank Digital Currency
CFA	Communauté financière africaine
COVID-19	Coronavirus Disease 2019
ECB	European Central Bank
ECBCDs	European Central Bank Certificates of Deposit
ECU	European Currency Unit
EFSM	European Financial Stabilisation Mechanism
EFSF	European Financial Stability Facility
EGF	Pan-European Guarantee Fund
EIB	European Investment Bank
EMU	European Economic and Monetary Union
ESRB	European Systemic Risk Board
ESBies	European Safe Bonds
ESM	European Stability Mechanism
EU	European Union
EUR	Euro
G-20	Group of Twenty
GCEE	German Council of Economic Experts
GDP	Gross Domestic Product
GNP	Gross National Product
ICMA	International Capital Markets Association
IT	Information Technology
IMF	International Monetary Fund
INSTEX	Instrument in Support of Trade Exchanges
MFA	Macro-Financial Assistance
mn	Million
NGEU	NextGenerationEU
OMT	Outright Monetary Transactions
PCS	Pandemic Crisis Support
PEPP	Pandemic Emergency Purchase Programme
PSPP	Public Sector Purchase Programme
QE	Quantitative Easing
RRF	Recovery and Resilience Facility
SBBS	Sovereign Bond-Backed Securities
SSAR	Sovereign, Supranational, Agency and Regional issuers
SURE	Support to Mitigate Unemployment Risks in an Emergency
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TARGET	Trans-European Automated Real-time Gross Settlement Express Transfer System
tn	trillion
US	United States
USD	US dollar
UK	United Kingdom

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1. INTRODUCTION

When the euro was launched more than two decades ago it immediately became the second most widely used international currency. But its international status continues to lag, on most indicators, significantly behind that of the dollar and well below the economic and financial weight of the euro area. In fact, there is evidence that its international role has actually declined since the global financial crisis and subsequent euro area crisis.

One important reason for this relative international underperformance, according to most experts, is the insufficient depth and liquidity of the euro area's international capital markets. A specific aspect of this is the inadequate supply of safe assets denominated in euros. This is part of a more general shortage of safe financial assets that the world economy has been experiencing in the last few decades, and which intensified with the global financial crisis and the subsequent euro area crisis.

As part of its response to the pandemic-induced recession, however, the EU has created two important new financial facilities, namely the NextGenerationEU (NGEU) instrument and the Support to Mitigate Unemployment Risks in an Emergency (SURE), the combination of which will entail a massive issuance of safe securities in euros. Some observers have equated this to a “Hamiltonian moment” in the EU's efforts to move towards a more integrated fiscal and debt issuance policy, in reference to Alexander Hamilton, the first Secretary of the US Treasury, who famously engineered in 1790 a deal to convert the crippling debt of individual states into joint obligations of the federal union, in what proved a historical step towards the creation of the American system of government.

The envisaged maximum issuance of bonds under NGEU and SURE totals more than EUR 900 bn. To this, one could add the EUR 240 bn that can potentially be issued to finance the European Stability Mechanism (ESM)'s Pandemic Crisis Support and, at a much lower scale, the bonds issued to fund the Macro-Financial Assistance package for neighbouring countries and the guarantee scheme for businesses adopted by the EU and the EIB, respectively, in response to the pandemic. Moreover, the emergency fiscal packages adopted at national level by the euro area countries and the COVID-19 recession itself have considerably widened fiscal deficits, resulting in an increased issuance of safe assets by highly-rated euro area treasuries. The measures adopted by the ECB in response to the pandemic, in particular its new asset purchase programme and its new swap facilities for non-euro area central banks, could also have a bearing on the euro's international role.

Given all this, it seems warranted to investigate to what extent the EU's policy response to the pandemic could provide a boost to the international status of the euro, notably (though not only) by significantly increasing the supply of euro-denominated safe assets. While the EU has previously considered the possibility of agreeing on the common issuance of euro-denominated safe assets, and the European Commission presented in 2018 a specific proposal to that effect, these discussions and initiatives have not led so far to concrete results. Meanwhile, the EU has adopted in recent years a policy of actively promoting the international role of the euro, abandoning the policy of neutrality put in place when the euro was launched. This begs the question of whether the new facilities and other measures could contribute meaningfully to the implementation of this new policy.

This paper tries to answer these questions and is organised as follows: Section 2 provides a quick view of the international role played by the euro since its creation and summarises the debate on why the euro is punching below the euro area's economic weight. Section 3 discusses recent changes in the EU's policy towards the international role of the euro and puts them into historical perspective. Section 4 delves into one of the main constraints on the euro's international expansion stressed by the literature, namely the insufficient supply of high-quality euro-denominated financial assets, first by recalling the academic debate on the global shortage of safe assets and then summarising the EU's internal debate and initiatives on the matter. Sections 5 and 6 provide the core of the paper. Section 5 examines different aspects of the EU's response to the pandemic that are of relevance for the euro's

international reach, including certain actions taken by the ECB. It assesses, in particular, the quantitative impact of the new EU instruments and of the national fiscal responses to the COVID-19 crisis on the issuance of euro safe assets and compares it with relevant indicators such as the outstanding stocks of euro-denominated safe securities and foreign exchange reserves, as well as with the estimated impact of some recent safe asset proposals. Section 6 rebalances the discussion by introducing other considerations that warn about the limitations of the new facilities and the potentially offsetting effects of the ECB's asset purchase programmes. Section 7 argues that a more comprehensive strategy to promote the euro's international status is therefore needed and outlines its main possible elements. Finally, Section 8 puts these challenges into a global context, pointing to certain structural changes in the world economy that, by facilitating the transition towards a multi-polar currency system, might create a more propitious environment for this strategy to bear its fruits.

2. WHY IS THE EURO STILL PUNCHING BELOW ITS WEIGHT?

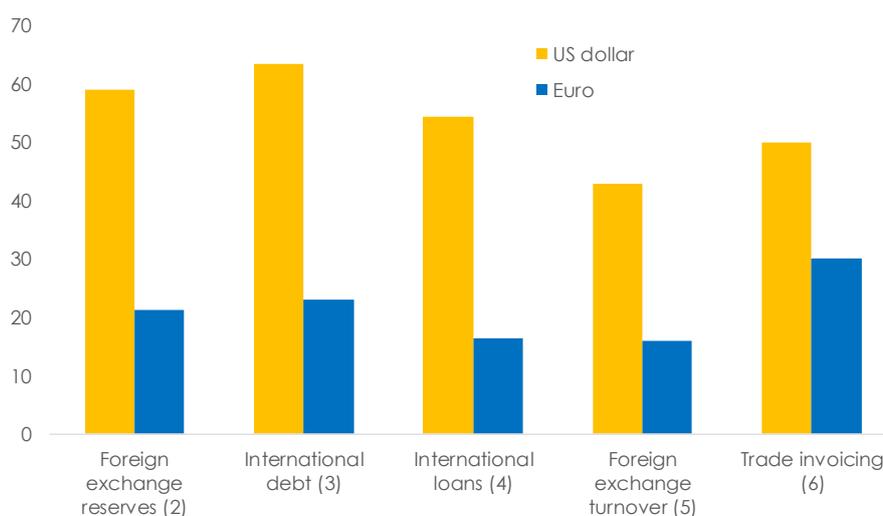
The launching of EMU was accompanied by a vivid debate about whether the euro would become a key international currency, perhaps even challenging the supremacy of the US dollar. Some experts (e.g. Frankel, 1995) argued that the US dollar would retain its dominant global role supported by incumbency advantages related to the existence of network externalities and economies of scale. Others (e.g. Alogoskoufis and Portes, 1997; Bergsten, 1997; and Mundell, 2000) predicted, instead, that the euro would soon develop into an international currency of commensurate importance and use to that of the US dollar, supported by the large commercial and financial weight of the euro area, its stability-oriented policy framework and the advantages of currency diversification.

But although the euro did quickly become the second most important international currency, moderately exceeding in its first years of existence the combined international weight of the former euro area currencies that it replaced (notably that of the Deutsche mark, the French franc and the ECU), it has never come close to challenging the global dominance of the dollar. While it has reached a high global share in certain international currency functions (notably in trade invoicing and as a currency of denomination of financial transactions), its shares remain in most cases well below those of the dollar (ECB, 2020a and 2021; Ilzetzki, Reinhart and Rogoff, 2020).¹ Figure 2.1 provides a snapshot of the euro's current role in the key international functions. The euro's underperformance occurs despite the fact that the euro area economy has a size that is not far from that of the United States. As Table 2.1 shows, while the euro area accounts for a lower share of world GDP and has a smaller financial system (measured by aggregating bank assets, stock market capitalisation and the stock of debt securities), it accounts for a larger share of world trade flows (even excluding intra-euro area flows) and its population (although, admittedly, this is not such a relevant indicator when it comes to the international potential of a currency) is somewhat larger than that of the United States.

The euro's global role is also characterised by a strong regional and institutional pattern. In other words, it remains concentrated, with some exceptions, in countries either neighbouring the euro area (e.g. other EU countries and the Western Balkans) or with special economic and institutional links with the euro area (e.g. the monetary unions of the CFA franc zone). Boz et al. (2020) illustrate this regional pattern, as noted, for trade invoicing. Ilzetzki, Reinhart and Rogoff (2020) illustrate it for the euro's role as anchor currency, which is largely confined to countries in Europe and some former French colonies in Africa (notably, CFA franc zone countries pegging their currency to the euro).

¹ This is particularly true for those currency functions in which network externalities and economies of scale are important, such as a currency's use as foreign exchange vehicle and as *numeraire* or pricing currency in international energy and commodity markets. Also, while the euro's share in global trade invoicing is somewhat above that of the dollar, it falls to about 30%, compared to 50% for the dollar, if intra-euro area transactions are excluded. In fact, the euro is not used much in trade transactions not involving at least one euro area country, except in Europe and some parts of Africa, where it dominates the dollar. See Boz et al. (2020) and ECB (2021).

Figure 2.1: **International roles of the euro and the US dollar: a snapshot¹**
(in percent of world's total)



Sources: BIS, ECB, IMF and Boz et. al (2020).

(1) For most currency functions, data refers to the fourth quarter of 2020. For foreign exchange turnover, data as of April 2019. For trade invoicing, annual data for 2019.

(2) In percent of reserves with disclosed currency composition.

(3) Based on "narrow" definition of international debt issuance, which focuses on foreign currency issuance and therefore excludes issuance in the currency of the country where the issuer resides, even if it takes place abroad.

(4) Shares in loans from non-euro area banks to non-euro area borrowers denominated in foreign currency.

(5) Actual shares have been divided by two to facilitate comparison with other currency functions because with each transaction involving two currencies, they would otherwise add up to 200%.

(6) Excludes intra-euro area transactions. Includes only countries for which currency invoicing data is available.

Table 2.1: **Key characteristics of major economies, 2020 (1)**

	Population (millions)	Share of world GDP (%) (1)	Share of world trade in goods and services (%) (2)	Size of financial system (3)	
				USD billions	% of GDP
Euro area	340	15.3	15.8	40336	318.3
US	329	24.6	12.9	79251	406.8
China (4)	1414	17.5	15.3	41198	335.9
Japan	126	5.9	4.2	25253	527.0
UK	67	3.2	3.3	14043	527.0

Sources: IMF *World Economic Outlook Database*, October 2021; IMF *International Financial Statistics*; World Bank *Financial Development and Structure Dataset*, September 2019; BIS; and World Federation of Exchanges.

(1) GDP measured at market exchange rates.

(2) Excluding intra-euro area trade.

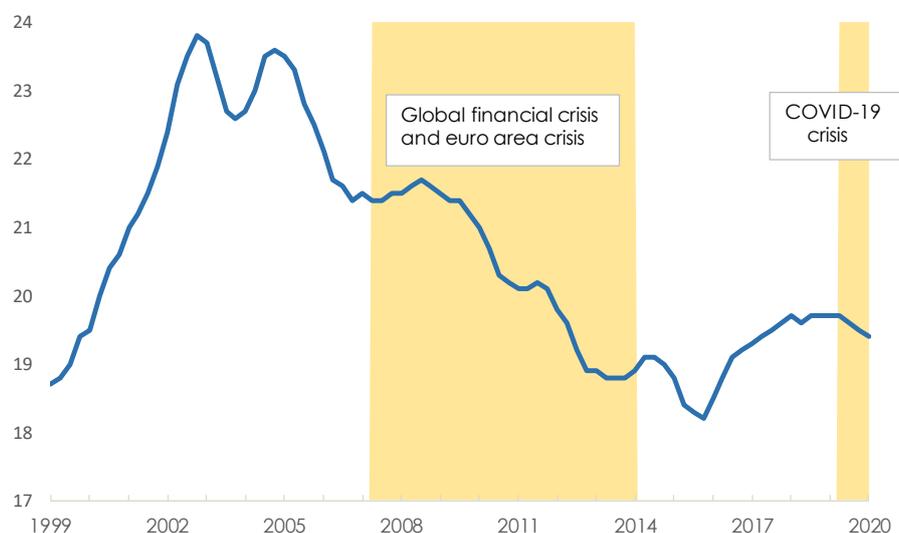
(3) Sum of stock market capitalisation, stock of debt securities and deposit money bank assets. Data for 2017.

(4) China is mainland China (excluding Hong Kong).

Perhaps more importantly, and as shown in Figure 2.2, which displays the composite index of the international role of the euro calculated by the ECB, the euro's global reach has actually declined significantly since it peaked in the mid to late 2000s. The global financial crisis, which originated in the United States, in combination with concerns over its large current account deficit and international net debtor position, had initially led some economists (e.g. Doehring and Temprano Arroyo, 2008) to believe that it could favour the euro's international usage to the detriment of the dollar. However, the subsequent euro area sovereign debt crisis, and the associated fear of a break-up of the euro area, had a strong negative impact on the euro's international status. The composite indicator, measured at constant exchange rates, declined from 23.5% in mid-2006 to a trough of 18¼ % in mid-2016, before recovering to 19¾ % just before the pandemic. On a more positive note, the COVID-19 crisis has not

had an appreciable effect on the euro’s global role, which has remained broadly stable, a resilience that the ECB partly attributes to the policy response examined in this paper (ECB, 2021).

Figure 2.2: **Composite Index of the International Role of the Euro**
(at constant exchange rates; four-quarter moving average)



Source: ECB.

Note: Arithmetic average of shares of the euro at constant exchange rates in global foreign exchange reserves, stocks of international bonds, loans by banks outside the euro area to borrowers outside the euro area, deposits with banks outside the euro area from creditors outside the euro area, global foreign exchange turnover and global exchange rate regimes.

Now why has the euro been underperforming internationally? Although there is a rich literature attempting to explain the reasons for the euro’s stall, the main factors can be summarised as follows:

Incumbency advantages: the first argument, already alluded to before, is the fact that the dollar, as the incumbent dominant currency, enjoys a number of advantages related to its wide use, something like a natural monopoly. Similarly to an international language, a widely used international currency derives much of its value from the fact that many agents use it, and the wider the network of users the more valuable it is. This network externality is reinforced by economies of scale that tend to reduce the cost of transacting in dollars compared other currencies. These first-mover advantages produce an inertia that tends to prolong the international role of a currency well after the circumstances that led to its global expansion have changed. It has been argued that the survival of the pound sterling as the dominant international money until the 1930s, well after the UK had lost its economic hegemony, provides a historical example of this. Authors such as Swoboda (1969), Krugman (1984) and Rey (2001) have stressed these inertial forces.

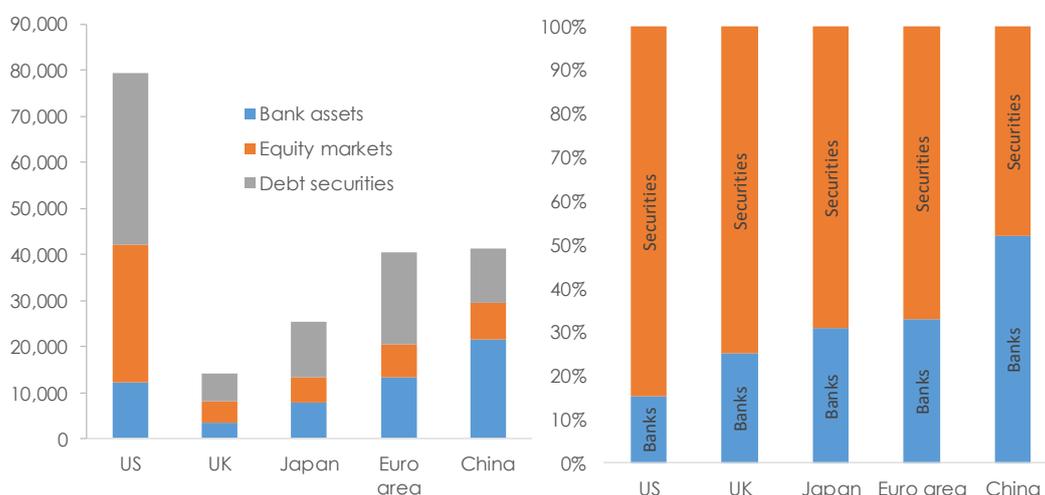
More recently, however, some authors (e.g. Eichengreen, 2011 and 2016; Chitu, Eichengreen and Mehl, 2014; Eichengreen, Mehl and Chitu, 2017) have questioned what they see as an exaggerated view of the incumbency advantages. This so-called new view of international currency status argues that network effects are not as strong as previously thought. It points to the fact that the interwar period was actually characterised by a sterling-dollar duopoly and that in the period before 1914 other European currencies in addition to sterling also played a non-negligible international role. This view contends that a similar multi-polar currency system might develop again, suggesting that the euro (and perhaps the Chinese renminbi) might have an opportunity to gain further ground as international currency, provided that other factors hindering its global role are addressed.² It notes that innovations

² Eichengreen (2011) predicts that a tripartite international currency system shared by the dollar, the euro and the renminbi is likely to emerge in the not-too-distant future.

in financial technology reduce the interchangeability costs that tended to protect the status quo of the dollar, while financial and capital account liberalisation across the globe helps other countries develop the deep, liquid and accessible capital markets that are needed for competing currencies to become attractive for international investors.

Depth, integration and efficiency of the euro area’s capital markets: Most experts agree that the existence of open, deep, liquid and efficient capital markets is a pre-condition for the development of an international currency and see the lack thereof as a key reason why the euro is punching below its weight. We have pointed out that the euro area’s financial system is considerably smaller to that of the United States. But even more important is the fact that this is entirely explained by a much smaller size of the euro area’s equity and debt securities markets, reflecting the bank-based nature of the euro area’s financial model. Indeed, it is the securities markets that matter most for a currency’s international use (for example, central banks hold their reserves mainly in securities, not as bank deposits). As shown in Figure 2.3, this bank-based financial structure is also observed in China, which does not bode well for the renminbi’s international potential neither, and contrasts with the securities markets-based structure of the financial systems of both the United States and the UK.

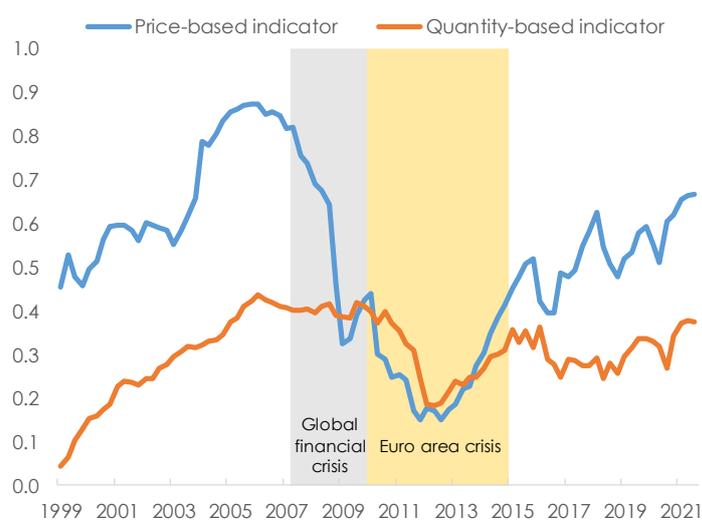
Figure 2.3: **Financial structure: banks versus securities markets, 2017**
(left panel: USD billions; right panel: in percent of total financial system)



Sources: World Bank, *Financial Development and Structure Dataset*, September 2019; BIS; and World Federation of Exchanges.

The relative underdevelopment of the euro area’s security markets used to be associated with weaker efficiency and higher transaction costs. Indeed, when the euro was launched, several authors argued that the euro area’s security markets still lagged significantly behind those of the United States in terms of financial market efficiency, as measured by indicators such as average spreads reported by dealers and market turnover ratios (Portes and Rey, 1998). However, this factor seems to have become less important over time. There is evidence that, partly reflecting the effect of EMU, transaction costs in euro area financial markets have been converging towards those of US markets (Papaioannou and Portes, 2008). Still, the insufficient degree of integration across euro area national capital markets continues to harm the euro because it limits the breadth, depth and liquidity of its securities markets. Despite substantial progress since the mid-2010s towards a banking and capital markets union, the euro area’s capital markets remain heavily segmented along national lines (see Sapir, Véron and Wolff, 2018, Coeuré, 2019, and ECB, 2020b), with the global and euro area crises having actually led to a partial reversal of previous integration efforts. Figure 2.4, which displays the evolution of the composite indicators of euro area financial integration produced by the ECB, illustrates this. It shows that, after having progressed substantially in the first seven years of EMU, both the quantity-based and the price-based indicators declined markedly during the global and euro area crises. While both indicators have recovered substantially since 2013, they remain substantially below their pre-crisis peaks and rather low in absolute levels.

Figure 2.4: Trends in financial integration in the euro area (indices)



Source: ECB, *Financial Integration and Financial Structure Indicators*.

Note: Composite indicators aggregating several available indicators. They can vary between zero (full fragmentation of national markets) and 1 (full integration).

An insufficient supply of safe assets in euros: a crucial manifestation of the capital markets problem constraining the euro's global reach, and the one on which this paper focuses, is the insufficient availability of high-quality assets denominated in euros, i.e. bonds of the highest credit rating issued in euros by euro area sovereigns and EU supranational institutions.³ As elaborated in Section 4, the US supply of safe assets still dwarfs that of the euro area. The existence of a large supply of high-quality assets is key for a currency to develop internationally, particularly when it comes to the reserve and investment currency functions, and it depends on the issuing country having good institutions, large and deep public debt markets and sovereign bonds with a track record of stable and reliable behaviour (Habib, Stracca and Venditti, 2020). Moreover, in a world characterised by a shortage of safe assets, the capacity to supply such assets in large and predictable amounts has become even more important for the internationalisation of a currency.

Complementarities between assets and different currency functions: the shortcomings in the euro area's capital markets and supply of safe assets are exacerbated by the fact that there are strategic complementarities in the currency denomination of financial assets, as well as between the currency denomination of trade and financial assets. Thus, using a model of safe asset determination, He, Krishnamurthy and Milbradt (2019) show that an investor's valuation of a safe bond depends on the number of investors that purchase the bond. Up to a threshold, which increases with the soundness of the issuing country's fundamentals, investor actions are complements: the more investors invest in a public debt market (the deeper and more liquid the market is), the more other investors will be incentivised to follow suit. Gopinath and Stein (2018), for their part, show that trade invoicing in a given currency encourages borrowing by corporates and banks in that same currency, as they try to hedge exposures, and increases the demand for safe assets in that currency, including by central banks managing their foreign exchange reserves.⁴ There is also a feedback loop from a wider financial use, including through the investment in safe assets, to trade invoicing. All this tends to increase the use of the currency in the foreign exchange market.

³ Many authors have stressed the limitations the insufficient pool of euro-denominated safe assets imposes on the euro's global role. See, for example, Coeuré (2019), Leonard et al. (2019), Ilzetzki, Reinhart and Rogoff (2020) and ECB (2021).

⁴ The spread over the last few decades of global supply chains has further reinforced the strategic complementarities of invoicing in the dominant currency, as exporters prefer to invoice their products and financing in the same currency as their inputs (Bacchetta and Wincoop, 2005).

These findings have two obvious implications for the euro's global role: first, the limited use of the euro for trade invoicing in transactions not involving euro area countries discourages its use as currency of denomination of international bonds (including safe bonds), loans, deposits, reserves and foreign exchange operations.⁵ Second, the insufficient availability of safe assets denominated in euros is likely to have negative spillover effects on other international currency functions of the euro, including trade invoicing. Third, the insufficient size and depth of the euro area's safe asset market compared to that of the United States discourages international investors, contributing to perpetuate the problem.

Lingering doubts about macro-financial stability and the EMU architecture: a major factor constraining the euro's international development are the persistent misgivings among investors about the EMU architecture and the future of the euro as a single currency. These fears have weakened the perceived stability and anchor properties of the euro. During the euro area crisis, they reached a climax and seem to have contributed, as previously noted, to a marked decline in the international role of the euro observed during that period. In particular, doubts about the fiscal and debt management framework, about the bank and capital markets aspects of EMU, and about the dynamism of the euro area economy have taken a toll on the euro's international status. While EMU initially led to a historical compression in sovereign bond spreads among its member countries, which suggested that investors came to treat European sovereigns almost as perfect substitutes, this was subsequently unwound, first gradually and then abruptly, as doubts about the solvency of some euro area governments and about the EMU project itself emerged. The crisis brought to the fore the short supply of euro-denominated safe assets and, in particular, the lack of a reliable supranational safe asset. The existence of such asset would have probably eased pressure on both euro area sovereign debt markets and the international role of the euro. Although the EU has made considerable progress since then in perfecting the EMU architecture, notably in the banking and capital markets area and by creating the ESM and other financial facilities, fine-tuning the Stability and Growth Pact and introducing the Macroeconomic Imbalances Procedure, misgivings about the fiscal framework and the effectiveness of the structural reform strategy under the European Semester process, and the lack of a well-developed common euro safe asset, continue to weigh on the perceived anchor properties of the euro.⁶

Foreign and security policy, and the advantages of speaking with a single voice: finally, some authors, e.g. Coeuré (2019) and Pisani-Ferry and Posen (2019), have pointed to the lack of a cohesive foreign and security policy, including the fact that the euro area still struggles to speak with a single voice in international economic and financial fora such as the G20 or the IMF, as a factor restricting the euro's capacity to rise internationally. Indeed, Eichengreen, Mehl and Chitu (2019) find empirical evidence suggesting that the US dollar benefits from having a strong foreign and defence policy. They conclude that countries depending on security arrangements with the United States tend to hold a much higher share of US dollars in their reserves than predicted on the basis of economic fundamentals. Similarly, Ilzetzki, Reinhart and Rogoff (2020) argue that "although it is possible to be a dominant financial centre without being dominant militarily [...], dominant military powers [are] best able to produce safe assets, and to enforce financial contracts," which tends to support the safe haven attribute of assets denominated in their national currency. Beyond the relevance of these security aspects, there is the fact that, despite significant progress since the introduction of the euro, the euro area's external representation remains fragmented, weakening its capacity to speak in a cohesive manner and exert leadership in international economic, financial and monetary affairs. As discussed in the following section, one of the aims of the EU's new policy of actively promoting the international role of the euro is precisely to strengthen the EU's "open strategic autonomy." While the

⁵ On this point, see also Eichengreen and Gros (2020; p. 22).

⁶ In February 2020, the Commission launched a review of the EU's system of economic governance, focusing on the fiscal rules, the Macroeconomic Imbalances Procedure and, more broadly, the European Semester (European Commission, 2020a). While this Economic Governance Review was interrupted due to the pandemic, the Commission relaunched the process in October 2021 by opening a public consultation and debate on the future of the EU's economic governance framework (European Commission, 2021a). This exercise will also draw on the fiscal governance review conducted in 2019, which included the presentation of a comprehensive report and recommendations by the European Fiscal Board (2019).

direction of causation here is the opposite, i.e. from a stronger international role of the euro to a more assertive and independent voice in global affairs, an implication of the research just mentioned is that this could, in turn, have a positive feedback effect on the euro's international reach.

The combination of these factors probably goes a long way towards explaining the euro's relatively disappointing international performance. This paper stresses, however, one aspect that is of particular relevance to assess the potential impact of the new facilities and other measures taken by the EU in response to the pandemic, namely the insufficient supply of euro-denominated safe assets.

Now, a legitimate question is why the EU should care about the international status of the euro and try to do something about it and, in this respect, the EU's policy stance on the matter has gone through significant changes over the last few years. Before zooming in on the euro area's safe asset problem and its global context, therefore, it is perhaps worth recalling recent changes in the EU's policy on the internationalisation of the euro and putting them into historical perspective. This is done in the following section.

3. THE EU'S POLICY TOWARDS THE INTERNATIONAL ROLE OF THE EURO

In recent years, the EU's policy on the euro's global role has moved from an attitude of neutrality or "benign neglect" to one of pro-active encouragement of such role that stresses its potential benefits.

During the first 10 years of EMU, the EU adopted a neutral policy towards the internationalisation of the euro, neither promoting nor hindering its global status, as stressed by ECB President Duisenberg in a speech in January 1999 (Duisenberg, 1999). It has sometimes been argued that the ECB and the EU had inherited the Bundesbank's historical reluctance, on monetary control grounds, to see the Deutsche mark play any significant international role.

This policy of benign neglect regarding the euro's global role began to be reconsidered at the end of the 2000s. A landmark development was the adoption by the Commission in 2008 of the EMU@10 Communication and accompanying staff report, which marked the tenth anniversary of the introduction of the euro (European Commission, 2008a and 2008b). While falling short of recommending an active policy of promoting the euro's global role, these documents concluded that the benefits of the euro's international status were likely to outweigh the costs, especially over the long run, and called for a consolidated and stronger representation of the euro area in multilateral financial institutions and fora to help the euro area rise up to its new global responsibilities. The EMU@10 proposals did not result, however, in a fundamental change in the EU's policy on the euro's international use. Prepared in a climate of optimism about the achievements of EMU, they would soon be taken over by the developments and concerns associated with the global and euro area financial crises. And this period would see, as noted, a significant retrenchment of the euro's global role.

The "Four Presidents' Report" (European Council, 2012a, 2012b) and the Commission's blueprint for a deep and genuine EMU (European Commission, 2012) were entirely focused, understandably, on addressing the monetary union's internal challenges. While the "Five Presidents' Report" on completing EMU (European Commission, 2015a), the Commission's proposals on external representation (European Commission, 2015b and 2015c) and its Reflection Paper on deepening EMU (European Commission, 2017) all stressed the need to reinforce the euro area's external representation, including by unifying its representation at the IMF, no connection was made to the euro's global role. Nor did the documents, among those just mentioned, that called for bolstering the supply of euro area safe assets connect this to the euro's international status.

It was only at the end of 2018 that the Commission came up with a bold "Communication on Strengthening the International Role of the Euro" that represented a quantum leap towards a new

policy (European Commission, 2018a). The new Communication stressed macro-financial stability and the need to complete EMU, including by perfecting the banking and capital markets union and fostering the supply of euro-denominated safe assets. It also proposed some practical steps to stimulate the international use of the euro, including improvements in the payments and clearing system, measures to develop interest rate benchmarks, the expansion of the ECB's swap lines with non-euro area central banks and an active European economic diplomacy to encourage the use of the euro by key partners, notably in the EU's neighbourhood and Africa (see Papadia and Efstathiou, 2018). It was accompanied by a Recommendation advocating a wider use of the euro in international energy contracts (European Commission, 2018b), and was followed by five sectoral dialogues on the role of the euro in, respectively, the foreign exchange markets, energy, raw materials markets, agriculture and food commodities, and transport.

This 2018 Communication was followed in January 2021 by the "Communication on the European Economic and Financial System" (European Commission, 2021b), which saw the promotion of the international role of the euro as a key ingredient of a new approach aimed at strengthening the EU's open strategic autonomy. Indeed, an important motivation behind this Communication was the feeling, partly provoked by the use at the time by the US administration of access to dollar liquidity as a foreign policy tool, that the EU is excessively reliant on foreign financial institutions (including central clearing counterparties) and foreign currencies, which unduly exposes it to the extra-territorial application of unilateral sanctions by third countries. This had led, for example, several European countries, as mentioned by the Communication itself, to create a special purpose vehicle based on the euro (INSTEX) to facilitate payments for legitimate trade between the EU and Iran, following the unilateral imposition by the United States of new sanctions on this country.

The 2021 Communication suggested to promote the euro in EU trade agreements, energy and commodity markets and strategic sectors, noting that since the adoption of the 2018 Recommendation on the use of the euro in energy pricing the share of natural gas contracts signed in euros had risen markedly. It recommended reaching out to public and private partners in third countries to better understand the obstacles for a wider use of the euro, and reiterated the usefulness of the ECB's swap and repo facilities with third countries. In the financial area, it identified a number of regulatory reforms that could help EU financial markets become deeper and more attractive for international investors and underlined the relevance of the EU's Digital Finance Strategy and of the possible introduction of a digital euro, welcoming the ECB's report on the matter (ECB, 2020c) and inviting the ECB and the Commission to take this work forward. It also stressed the significant expected impact of the NGEU and SURE instruments on the issuance of common safe assets denominated in euros, encouraged EU institutions, governments and development banks to maximise the use of the euro in their international borrowing, and called on the EU to consolidate its position as a "green finance hub" by promoting the issuance of green bonds, supported by the plan to issue at least 30% of the NGEU bonds as green bonds. Finally, it argued that strengthening Europe's capacity to speak with a single voice on the world stage should also help buttress the euro's global outreach.

Perhaps more importantly, the Council endorsed explicitly the new proposed policy. The Euro Summit of December 2018 and the European Council meeting of March 2021 welcomed the Commission's Communications of December 2018 and January 2021, respectively, reaffirmed the Leaders' support for the objective of strengthening the global role of the euro and invited the Commission to work to that end (European Council, 2018 and 2021a). The European Parliament has also put its political weight behind the new policy, notably through its resolution of March 2021, supporting steps to prop up the international role of the euro (European Parliament, 2021).

In its letter of 19 March 2021 to the President of the Council, the Eurogroup's President listed the main elements that, in the Eurogroup's view, can help realise the euro's global potential: ensuring a strong economic recovery from the pandemic; boosting the pool of euro-denominated safe assets through the roll-out of the NGEU and SURE bonds; completing the banking and capital markets union; supporting the development of pan-European financial market infrastructure and payments; exploring the possible introduction of a digital euro; making the euro the currency of the green

transition (including by attaining the NGEU’s green bond issuance target); and continuing, where appropriate, to enlarge the membership of the euro area (European Council, 2021b).

Behind the new policy shaped since 2018 is the recognition that the benefits of a wider international use of the euro outweigh the costs. In fact, in its 2019 Annual Report on the International Role of the Euro, the ECB (2019) argued that the cost-benefit calculus has been changing over time in favour of a stronger global status of the euro. There seems to be now a consensus among EU institutions and policy makers, though not necessarily among economists, that the benefits of an international euro, in terms of seigniorage revenue, liquidity and safety premium on government borrowing (the “exorbitant privilege”, using President Giscard d’Estaing’s term), lower transaction costs for euro area enterprises and banks and geopolitical advantages, outweigh the costs in terms of potential monetary and exchange rate volatility (the Bundesbank’s traditional concern) and monetary policy responsibilities towards the rest of the world (what the recent literature has referred to as “exorbitant duty”), which may interfere with domestic objectives.⁷ Geopolitical developments in recent years have led the EU, as noted, to further emphasise the strategic autonomy advantages of a stronger global role of the euro.⁸

4. THE SAFE ASSET SHORTAGE PROBLEM

Section 2 argued that the relative lack of safe assets denominated in euros is one of the main reasons for the euro’s disappointing international performance, while Section 3 noted that boosting the supply of this type of assets is one of the ingredients of the EU’s new policy of actively promoting the euro’s international use. And, indeed, it is largely because of their impact on the supply of safe assets in euros that it is hoped that the new financial facilities introduced by the EU in response to the COVID-19 crisis could help develop the euro’s global role. It is now time to delve into this crucial aspect affecting the euro’s capacity to gain international stature. This section does that, first by placing the euro area’s problem into its global context and then by describing the European debate on the matter, which although driven by considerations other than the international role of the euro, has led to a variety of proposals for the issuance of common assets denominated in euros.

4.1. THE GLOBAL CONTEXT

There is evidence that the world has been experiencing an overall shortage of so-called safe assets over the last few decades, a phenomenon that has produced a significant economic literature.⁹ By safe asset, it is meant “a simple debt instrument that is expected to preserve its value during adverse systemic events” (Caballero, Farhi and Gourinchas, 2017). Safe assets can be sold at low cost in large quantities without moving prices.¹⁰ Using the classification developed by international rating agencies, safe assets typically enjoy a credit rating in the triple A level – or very close to it. They are said to be “information insensitive,” in the sense that they are little affected by new macroeconomic or political developments and can, therefore, be transacted without much concern for adverse selection. This makes them particularly attractive as a refuge during economic crises and episodes of financial

⁷ For a recent attempt to quantify the exorbitant privilege for the euro area that suggests that it has increased over time, see Gräß, J., Kostka and Quint (2019). For the concept of exorbitant duty and its possible contradiction with domestic policy objectives, see Gourinchas and Rey (2022), McCauley (2015) and McGuire and von Peter (2009). For a less sanguine view of the net benefits the euro area may reap from an expanded global role of the euro, see Eichengreen and Gros (2020) and Beckmann et al. (2020).

⁸ Schwarzer (2022) argues that in the new geopolitical and geo-economic world of the 21st century, in which currencies are often used to put pressure on governments, a stronger international euro increases the EU’s capacity to act in times of geo-economics conflicts. On this point, see also the concluding section of this paper.

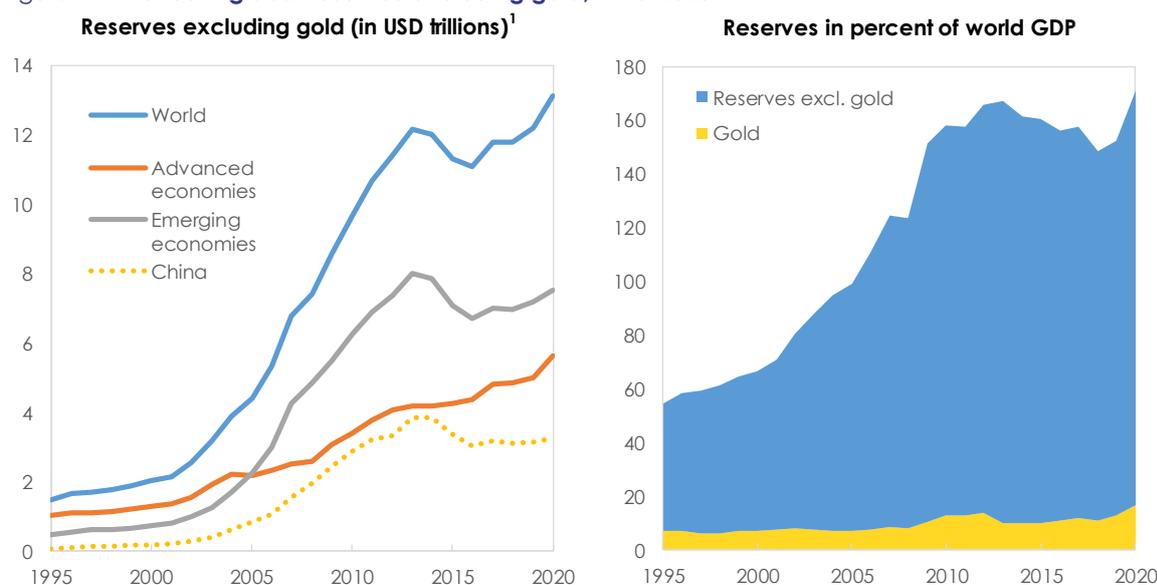
⁹ For an overview of the policy debate, see IMF (2012; Chapter 3) and Caballero, Farhi and Gourinchas (2017).

¹⁰ For the characteristics of safe assets, see also Gourinchas and Jeanne (2012) and Habib, Stracca and Venditti (2020).

turbulence since they maintain their nominal value while that of other assets falls.¹¹ And because of their exceptionally high stability and liquidity, and therefore, low risk, investors (in particular institutional investors managing large portfolios requiring diversification and liquidity, or obliged by law or their statutes to invest in low-risk assets) are willing to receive very low (even negative) yields for holding them. Having said that, safe assets are safe only for as long as investors expect them to be safe, which underlines the importance of reputation and history.

Most safe assets are produced by the governments, central banks and financial sectors of advanced economies. However, over the last few decades, the combined growth rate of the developed economies that issue safe assets has fallen short of the world's growth rate and, in particular, of that of the high-saving emerging economies, such as China, that generate much of the increase in the demand for safe assets partly because they account for the bulk of the increase in the world's official foreign exchange reserves. Central banks are a key source of the global demand for safe assets and, as Figure 4.1 illustrates, there has been an unprecedented rise in their reserve holdings over the last two decades.¹² Much of it is explained by emerging markets (led by China), which have seen their share in global foreign exchange reserves increase markedly. With the global supply of safe financial assets not keeping up with the demand for them, their price has tended to rise (their yields to fall) in order to restore market equilibrium. This helps explain the marked fall in global interest rates on safe assets (and the concomitant increase in the equity risk premium) observed since the global financial crisis and until the recent spike in interest rates.

Figure 4.1: Trends in global reserves excluding gold, 1995-2020



Source: IMF (*International Financial Statistics*).

(1) Official foreign exchange reserves, holdings of SDRs and reserve position at the IMF. China refers to mainland China (excluding Hong-Kong). Emerging economies includes China.

¹¹ Moreover, this benefit seems to have been growing over time as safe assets have become scarcer. Thus, according to Gavin et al., 2012, as the global shortage of safe assets intensified during the 2000s, safe assets became more (negatively) correlated with risky assets, providing an additional diversification advantage.

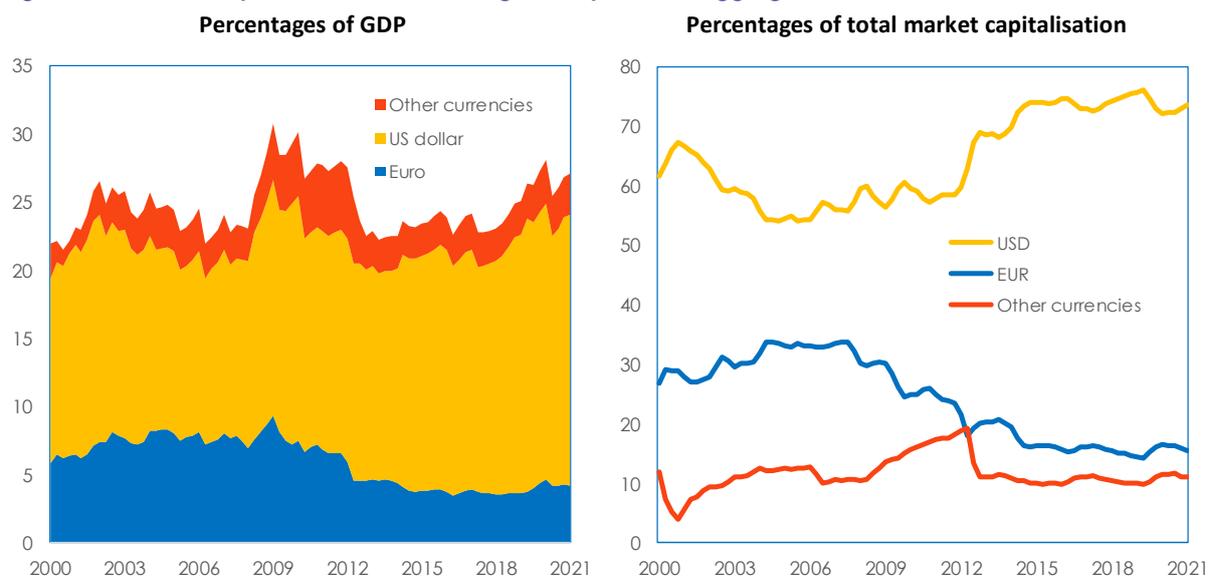
¹² In fact, the increase in foreign exchange reserves underestimates the surge in overall reserve holdings since gold reserves, another safe asset, have also been rising faster than GDP, particularly since the global financial crisis (see right panel of Figure 3.1). Since that crisis, central banks have consistently increased the share of reserves that they hold in gold, reflecting a combination of factors, including diversification benefits, the decline in the opportunity cost of holding gold in a low interest rate environment and a marked increase in the price of gold. See ECB (2020a) and Chitu, Gomes and Pauli (2019).

In the decade leading to the global financial crisis, the scarcity of safe assets also contributed to the explosion in the issuance of asset-backed securities by the private sector, which tried to emulate public safe assets through financial engineering. And it allowed certain highly indebted sovereigns with significant macroeconomic imbalances, including in the euro area, to issue debt at very favourable yields. These aberrations were suddenly unwound when the US subprime market and euro area sovereign debt crises erupted (Gavin et al., 2012; Caballero, Farhi and Gourinchas, 2017). And as those pseudo-safe assets suddenly lost their perceived safe status, this made the shortage of safe assets, notably in the euro area, worse by simultaneously contracting their supply and increasing their demand as fears of a financial meltdown pushed investors to deleverage and search for shelter.

But while the global and euro area financial crises exacerbated the world’s safe asset shortage, the latter preceded both of them. Indeed, already in 2005, the then Chairman of the Federal Reserve, Ben Bernanke, had warned about the existence of a global “saving glut” in a famous speech in which he argued that an excess of global savings, led by developments in China and other high-saving emerging economies, was pushing down interest rates in advanced countries and creating large current account imbalances (Bernanke, 2005). Although Bernanke’s argument was about a more general shortage of assets, not limited to safe assets, much of the process he was referring to was taking place through the massive investment of surplus savings in US treasuries by official reserve managers from emerging economies.

Using a measure of global safe assets that he calls international liquidity, which includes, in addition to AAA and AA rated government and supranational bonds, gold and high-powered money issued by central banks, Eichengreen (2016) estimates that the world’s stock of safe assets rose rather consistently (with some temporary interruptions) as a percentage of global GDP between 1980 and the global financial crisis but has fallen sharply since then. Moreover, much of this decline is explained by euro-denominated safe assets. Figure 4.2 displays the currency composition of the Bloomberg Barclays index of global market capitalisation of AAA assets, in percent of world GDP. It shows that most of the decline in the world’s safe assets recorded since 2009 has been driven by the fall in euro-based assets, mainly reflecting the credit downgrades of many euro area sovereigns, which made their assets fall out of the index. Indeed, the crisis reduced from eight to three the number of triple A-rated euro area governments, making both the global shortage of safe assets and the particular shortage of euro safe assets much worse, with negative implications for the international role of the euro.

Figure 4.2: Market capitalisation of Bloomberg Barclays Global Aggregate of AAA assets



Sources: Bloomberg, IMF and author’s calculations.

Note: The Bloomberg Barclays Global Aggregate - Aaa Index includes a series of triple A fixed-income securities issued by treasuries, other government-related institutions, as well as corporations. Quarterly data.

The impact of the credit downgrades of euro area sovereigns on the supply of euro area safe assets is illustrated in Table 4.1 and Figure 4.3. Table 4.1 shows the ratings of euro area sovereigns granted by the three main international rating agencies at their best moment of the mid-2000s, in the worst moment of the euro area crisis and in 2021. Figure 4.3, for its part, shows the implications of these credit downgrades for the total stock of euro area triple A-rated sovereign assets.¹³ It shows that, after rising quite consistently between 1999 and 2011, the stock of euro area safe sovereign securities declined markedly during the euro area crisis even in nominal terms (the decline was even more marked in percent of GDP) and has only recovered partially since then. The downgrades of euro area sovereign issuers pushed down the euro's share in the Bloomberg Barclays index from a peak of nearly 34% in 2008 to a trough of just over 15% in 2017. By contrast, during this period the US dollar increased markedly its share in the index, from about 56% to nearly 75%.

Table 4.1: Euro area sovereign credit ratings
(long-term ratings, end of year)

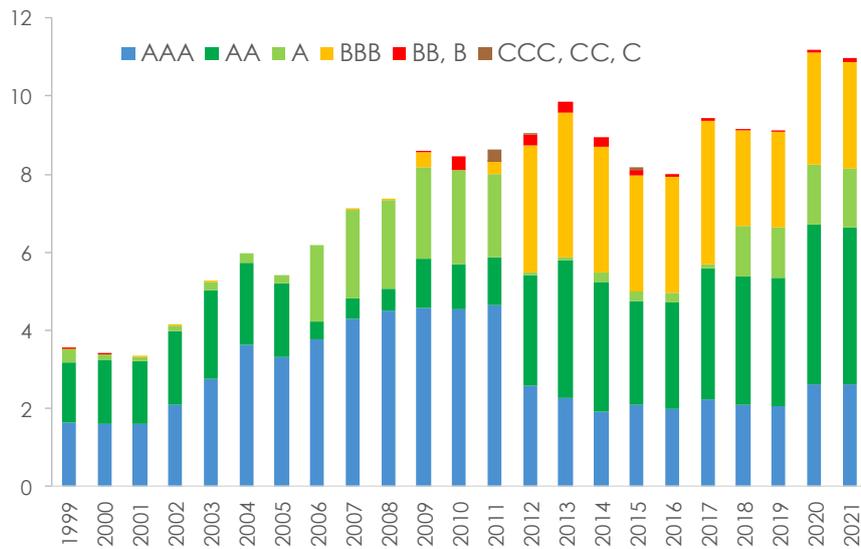
	2005			2014			2021		
	S&P	Moody's	Fitch	S&P	Moody's	Fitch	S&P	Moody's	Fitch
Germany	AAA	Aaa	AAA	AAA	Aaa	AAA	AAA	Aaa	AAA
Luxembourg	AAA	Aaa	AAA	AAA	Aaa	AAA	AAA	Aaa	AAA
Netherlands	AAA	Aaa	AAA	AA+	Aaa	AAA	AAA	Aaa	AAA
Austria	AAA	Aaa	AAA	AA+	Aaa	AAA	AA+	Aa1	AA+
Finland	AAA	Aaa	AAA	AA+	Aaa	AAA	AA+	Aa1	AA+
France	AAA	Aaa	AAA	AA	Aa1	AA+	AA	Aa2	AA
Ireland	AAA	Aaa	AAA	A	Baa1	BBB+	AA-	A2	A+
Spain	AAA	Aaa	AAA	BBB	Baa2	BBB+	A	Baa1	A-
Belgium	AA+	Aa1	AA	AA	Aa3	AA	AA	Aa3	AA-
Slovenia	AA-	Aa3	AA-	A-	Ba1	BBB+	AA-	A3	A
Italy	AA-	Aa2	AA	BBB-	Baa2	BBB+	BBB	Baa3	BBB
Portugal	AA-	Aa2	AA	BB	Ba1	BB+	BBB	Baa2	BBB
Estonia	A	A1	A	AA-	A1	A+	AA-	A1	AA-
Slovakia	A	A2	A	A	A2	A+	A+	A2	A
Malta	A	A3	A	BBB+	A3	A	A-	A2	A+
Lituania	A	A3	A	A-	Baa1	A-	A+	A2	A
Latvia	A-	A2	A-	A-	Baa1	A-	A+	A3	A-
Cyprus	A	A2	A+	B+	B3	B-	BBB-	Ba1	BBB-
Greece	A	A1	A	B	Caa1	B	BB	Ba3	BB

	S&P	Moody's	Fitch
Prime grade	AAA	Aaa	AAA
High grade	AA	Aa	AA
Upper medium-grade	A	A	A
Lower medium-grade	BBB	Baa	BBB
Non-investment, especulative grade	BB	Ba	BB
Highly especulative grade	B	B	B
Very near default grade	CCC/CC/C	Caa/Ca	CCC/CC/C
Default grade	SD/D	C	RD/D

Sources: Standard & Poor's, Moody's, Fitch, and Trading Economics.

¹³ To simplify the presentation, Figure 4.3 only uses the ratings of Standard & Poor's, but the results would be nearly identical if the ratings of the other main rating agencies were used.

Figure 4.3: **Stock of euro area sovereign debt securities, 1999-2021**
(USD trillions)

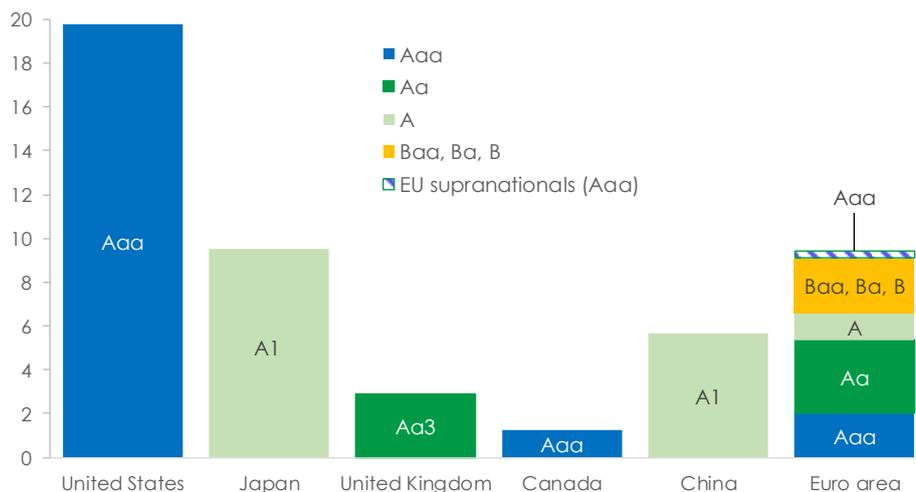


Sources : Standard and Poor's and Trading Economics, for the ratings. Eurostat for government debt securities.

Note: Includes securities issued by the current 19 euro area sovereigns.

To complete the analysis, Figure 4.4 provides a snapshot of the stock of public assets issued by the main world economies and EU supranational institutions at the end of 2019, less than a year before the launch of the new EU facilities examined in this paper. It shows that the euro area trailed considerably behind the United States as a supplier of global safe public assets, although it retained its position as the second most important supplier of such assets. It also shows that the contribution of EU supranationals to the stock of euro area safe assets, while significant (in the order of USD 0.3 tn), was still a small part of the total supply of euro area high-quality public securities.

Figure 4.4: **Safe and other assets: euro area versus other large economies, 2019**
(USD trillions; outstanding debt securities issued by general governments and EU supranationals)



Sources : BIS, Eurostat, European Commission, ESM and EIB.

Note: Moody's credit ratings. The United States is currently rated AA+ by Standard and Poor's and AAA by Fitch. EU supranational institutions include the EU, the EFSF, the ESM and the EIB.

To summarise this section, there is an unsatisfied global demand for safe assets and the euro area bears significant responsibility for their dwindling supply, with negative implications for the euro's international reach. Moreover, as highlighted by the literature surveyed above, this global scarcity of safe assets is here to stay unless its root causes are addressed. On the positive side, all this means that if the euro area gets its act together and helps supply the demanded safe assets, both by addressing the fiscal imbalances that led to the downgrade of euro area governments and by expanding the issuance of common safe assets, it could increase the international attractiveness of the euro as well as mitigate the global safe assets problem. In other words, the global shortage of safe assets provides a window of opportunity for boosting the international development of the euro.¹⁴

4.2. THE EUROPEAN DEBATE ON CREATING A COMMON SAFE ASSET

The scarcity of safe assets in the euro area has of course not escaped the attention of European policy makers and experts. In fact, within the EU, there has been since the global financial crisis, and in particular since the euro area's sovereign debt crisis, a very lively debate on the convenience of creating a common euro-denominated safe asset.¹⁵ But, while the advantages of developing a common safe asset for the international role of the euro have been stressed by some of the proposals (e.g. European Commission, 2011 and Giudice et al, 2019), the literature and the policy debate have been driven by other considerations. The main motivation behind these proposals has been to promote financial stability and financial integration in the euro area. In particular, it is hoped that the issuance of a common European asset denominated in euros will help sever, or at least weaken, the direct nexus between banks and sovereigns (the excessive "home bias" in banks' portfolios), thus mitigating the negative feedback loops between sovereigns and domestic banks that were a major factor behind the euro area's sovereign debt crisis. By allowing banks in the euro area to replace part of their local government bonds with a common safe asset, it is argued, it will be possible for them to diversify their portfolios in a sound and smooth manner, thus addressing the sovereign-bank contagion channel that exacerbated the crisis. It is also contended that the creation of a common safe asset in euros would foster financial integration and risk-sharing within the euro area, thus helping correct the reversal in integration seen during the sovereign debt crisis, and buttress the development of deeper and more liquid security markets in the euro area. It could even propel the development of a more efficient payments systems within the euro area.¹⁶ Other potential benefits of a common safe asset highlighted by the literature include its implications for the conduct of monetary policy operations by the ECB (Brunnermeier et al, 2017; ECB, 2020b) and, depending on its design, for fiscal discipline in the euro area (Leandro and Zettelmeyer, 2018; Giudice et al., 2019).

There has been a proliferation of safe asset proposals since the introduction of the euro and in particular since 2009, with intriguing names such as ESBies, SBBS, E-bonds, Eurobonds, Eurobills, Stability Bonds, Redemption Fund Bonds and Blue Bonds.¹⁷ But the debate has moved overtime, largely reflecting political feasibility considerations, from proposals involving some degree of mutualisation of debts, which encountered opposition from some core euro area countries and fiscally

¹⁴ The same could in principle be true for other currencies in search for international status, provided that the relevant authorities create the appropriate conditions for investing in a safe assets. The renminbi, the other main potential competitor to the dollar, however, seems to remain some way from satisfying the conditions for competing as an issuer in the internationally market for safe assets, reflecting the insufficient liberalisation, development and liquidity of China's capital markets as well as the perceived macroeconomic and political risks of investing in Chinese assets.

¹⁵ Good surveys of the literature are provided by ECB (2020b; pp. 103-121), Leandro and Zettelmeyer (2018; 2019) and Giudice et al. (2019). For an analysis of the early proposals, see Claessens, Mody, and Vallée (2012).

¹⁶ For example, ECB (2020b) argues that a common safe asset could support the development of a pan-European service within the euro liquidity framework of TARGET.

¹⁷ Leandro and Zettelmeyer (2018; 2019) provide a comprehensive review of these proposals, focusing on the most recent ones. They conclude that none of the evaluated proposals fully dominates the others in terms of their different benefits and risks.

conservative economists (see, for example, Issing, 2009), to proposals not entailing the explicit provision of guarantees by the euro area member states.¹⁸ In some of the recent initiatives, the development of the safe asset is actually left to the private sector, although in the context of a regulatory framework created by the authorities.¹⁹

The authorities in the EU have followed a similar evolution in their thinking and proposals. Although the first ideas launched by EU policy makers during euro area crisis tended to assume some degree of debt mutualisation,²⁰ the proposals made by the European Commission in recent years, starting with the ideas contained in its 2017 “Reflection Paper on the Deepening of EMU” and culminating with its 2018 proposal of a “Regulation on Sovereign Bond-Backed Securities” (SBBS), do not entail the granting of joint guarantees among euro area member states, something that would run against the non-bail out provision of the EU Treaty (Art. 125).

Most of these ideas would have implied the creation of some kind of common European safe asset. To date, however, none of them has seen the light. Although the Commission did adopt its SBBS proposal following a favourable report by the European Systemic Risk Board (ESRB, 2018), and the proposal was endorsed (with some amendments) by the European Parliament in first reading in April 2019 (European Parliament, 2019), it has yet to be considered by the EU Council.

Of course, the crisis also resulted in the creation of a number of macro-financial stabilisation facilities –the Greek facility, the European Financial Stabilisation Mechanism (EFSM), the European Financial Stability Facility (EFSF)–or institutions (the ESM) that issued substantial volumes of common safe assets. But these facilities, because of their crisis-management and, in some cases, temporary nature were not enough to provide a regular and sufficiently sizeable new source of common safe assets.

By contrast, the common safe asset proposals previously mentioned, if implemented, would result in the creation of a macroeconomically large pool of safe and liquid assets. Take, for example, the ESBies/SBBS and E-bonds proposals, on which much of the recent European debate on safe assets has focused. Giudice et al. (2019) estimate, using a simulation model, that their E-bond proposal would allow an issuance volume of common assets equivalent to between 15% and 30% of the euro area’s GDP, while ensuring a common asset of a creditworthiness equal to, or even greater than, that of the German bund. Using the 2021 GDP of the euro zone, this yields a volume of common safe assets of between EUR 1.8 tn and EUR 3.7 tn. Assuming an expected loss rate similar to that of the German bund, Leandro and Zettelmeyer (2019) estimate that the volume of E-bonds issued could range between EUR 2.2 tn and EUR 2.3 tn (or between 19% and 21% of the euro area’s 2018 GDP), depending on the assumptions regarding the allocation of lending by the issuer of E-bonds to each euro area sovereign. Extrapolating their estimates to 2021 values using 2021 GDP, this implies a total issuance of safe assets of between EUR 2.3 tn and EUR 2.5 tn.

The Commission’s SBBS proposal would generate a somewhat smaller but still substantial new issuance of common safe assets. Thus, using the assumption by Brunnermeier et al. (2017) of a five-year expected loss rate as low as that of the German bund (0.5% under an adverse calibration

¹⁸ Opposition from countries with strong fiscal positions, such as Germany and the Netherlands, to proposals with debt mutualisation reflected concerns about their possible free riding and moral hazard implications and their effects on fiscal discipline.

¹⁹ This is the case of the European Commission (2018c)’s SBBS proposal and of the private sector-led variant of the ESBies proposal put forward by Brunnermeier et al. (2011).

²⁰ This was the case of some of the options envisaged in the Commission’s “Green Paper on the Feasibility of Introducing Stability Bonds” (European Commission, 2011), in the Four Presidents’ Interim Report of October 2012 on how to move “Towards a Genuine EMU” (European Council, 2012a), and in the Commission’s “Blueprint for a Deep and Genuine EMU” (European Commission, 2012). These last two documents went as far as recommending exploring the common issuance of short-term debt (Eurobills) and the introduction of a Redemption Fund to take over the debt held by euro area members in excess of the 60% of GDP ceiling imposed by the Maastricht Treaty and issue bonds to fund its gradual redemption and new borrowing by euro area countries. The Redemption Fund idea had been floated by the German Council of Economic Experts the previous year (GCEE, 2011). None of these proposals was, however, supported by the EU Council.

scenario) and an implied 30% subordination level (i.e. the ratio between the subordinated tranches and the total face value of the bond), Leandro and Zettelmeyer (2019) estimate that the SBBS proposal would allow an issuance volume for the senior tranche (the “ESBies”) of between EUR 0.6 tn (6% of 2018 GDP), under the version of the regulation approved by the European Parliament, and EUR 2.5 tn (21% of 2018 GDP), under somewhat more flexible rules suggested by the authors.²¹ Applying 2021 GDP, the estimated issuance of common safe assets ranges between EUR 0.7 tn and EUR 2.6 tn.

Some of the early safe asset proposals, which implied some form of debt mutualisation, would increase the pool of safe assets by even more. For example, the now abandoned Redemption Fund proposal (GCEE, 2011) would create, after the roll-in phase, a pool of common safe bonds equivalent to the difference between the euro area’s debt-to-GDP ratio and the 60% of GDP Maastricht limit. Taking the euro area’s 2021 debt-to-GDP ratio, the common safe bonds issued would amount to 40% of GDP, or EUR 4.9 tn. But this scheme is of a temporary nature, and after the affected debt would have been fully redeemed, its impact on the supply of safe assets would vanish. Delpla and Weizsäcker (2010)’s Blue Bond proposal entails an even larger issuance of safe assets. Under this proposal, euro area debt would be broken down into a senior (“blue”) tranche, backed up by joint and several guarantees from all participating euro area countries, up to the 60% Maastricht threshold, and a junior (“red”) tranche for any additional debt above that threshold. Using 2021 GDP data, this would imply the issuance of EUR 7.3 tn in Blue Bonds, if all euro area countries participated in the scheme. However, since much of the mutualised debt under this proposal was already safe debt, given that it applies to the debt below the 60% threshold, the Blue Bond proposal entails limited risk sharing and the estimated issuance volume therefore exaggerates the actual creation of new safe public assets. By contrast, the Redemption Fund proposal covers the riskier part of the debt and implies a de facto higher degree of debt mutualisation and, depending on the prevailing debt ratios, may entail a larger real addition to the supply of safe assets, even if the total amounts involved are lower.²²

Table 4.2: **Estimated Impact of Selected Common Safe Asset Proposals on the Supply of Safe Assets**

Proposal	Authors	Volume of safe assets issued		
		% of GDP	EUR trillions (based on 2021 GDP)	% of euro area public debt (2021)
Blue Bonds	Delpla and Weizsäcker (2010)	60%	7.3	60%
Redemption Fund	German Council of Economic Experts (2011)	40%	4.9	40%
E-bonds	Giudice et al. (2019)	15%-30%	1.8-3.7	15%-30%
E-Bonds	Leandro and Zettelmeyer (2019)	19%-21%	2.3-2.5	19%-21%
SBBS	European Commission (2018c; 2018d); ESRB (2018)	13%	1.6	13%
SBBS	Leandro and Zettelmeyer (2019)	6%-21%	0.7-2.6	6%-21%

Sources: Authors of the proposals or estimates.

Note: Shares over GDP and over public debt coincide in 2021 because the euro area’s debt-to-GDP ratio was exactly 100% in that year. In the European Commission’s SBBS proposal, actual issuance depends on the instrument’s attractiveness for the market. Two extreme scenarios were considered to cater for a wide range of possible outcomes: a limited volume scenario, with an issuance of EUR 100 bn, and a steady-state scenario, with an issuance of EUR 1.5 tn. The Table shows the steady-state volume after scaling it up with 2021 GDP.

²¹ The steady-state scenario considered in the impact assessment accompanying the Commission’s SBBS proposal (see European Commission, 2018d) implied an issuance volume of ESBies of EUR 1.5 tn. But the volume issued depends on the actual response of the SBBS issuers, which are private entities, to the regulatory incentives created by the SBBS framework.

²² I am indebted to Daniel Monteiro for this point.

Table 4.2 summarises the estimated impact of these proposals on the volume of euro area safe assets. While these estimates remain hypothetical as none of the proposals is currently being implemented, the table provides a useful reference for assessing, in the next section of this paper, the quantitative importance of the supply of safe assets expected to be produced by the facilities introduced by the EU in response to the pandemic and, therefore, their potential effect on the euro's international role.

The actual volume of safe assets issued under these proposals depends, as hinted, on the assumptions made about certain key parameters, and there is always a trade-off between size and the degree of safety of the issued common asset. The larger the amount of safe assets issued compared to the subordinated debt the more risky the safe asset will be. An excessive issuance of safe assets relative to the subordinated debt could also have negative implications for the subordinated national debt markets. There is obviously a balance to be stricken but what these studies show is that, under reasonable assumptions, it is possible to issue a very large volume of safe assets of very high quality while having a limited impact on national bond markets. And as suggested by Giudice et al. (2019), there might be a case for starting with a prudent approach in order to test the ground and then expand the issuance scheme based on the experience gathered.

From the viewpoint of the euro's global role, the creation of such a large pool of common euro area assets would be attractive not only because there is a global shortage of safe assets but because international investors, and in particular central banks, seem particularly interested in holding euro-area common safe assets, as opposed to national safe assets. Table 4.3 and Figure 4.5 help illustrate this point. Table 4.3 shows the share of sovereign debt securities of different euro area countries held by international investors. The fact that German and French bonds are held in significantly higher proportions by non-euro area investors reveals the latter's preference for highly rated and very liquid public securities. But what is more striking is that Figure 4.5 shows even higher shares of international investors among the holders of bonds issued by EU supranational entities such as the ESM and the EFSF. For international investors, supranational assets in euros might be particularly attractive because they provide them an exposure to the euro area as a whole rather than to individual member countries. This allows them to diversify risk in a simple manner, reducing the information and transaction costs associated with building a diversified portfolio of euro area national government bonds.²³ These advantages would also apply to other common euro area safe assets that might be issued in the future, even if issued by private intermediaries, such as in the SBBS proposal. The only problem with the existing European supranational assets is their insufficient depth and liquidity. But this would be solved if the EU was to create a common safe asset that resulted in the development of a large pool of liquid assets.

There is also evidence, including data from the IMF's Coordinated Portfolio Investment Survey and anecdotal information, that price-insensitive official investors, in particular central banks, account for a large and growing fraction of international investors' demand for euro area safe assets, both for national and supranational assets (ECB, 2020b). Indeed, estimates of the share of euro area AAA and AA sovereign debt held by foreign central banks, produced by combining information on sovereign debt stocks with information of the currency composition of foreign exchange reserves, shows a very rapid increase since the late 1990s, although with a temporary interruption during the global and euro area financial crises, which is consistent with trends seen in other G-7 government bond markets (see Figure 4.6 and Gräb, Kostka and Quint, 2019).

These final observations provide additional reasons to expect the development of a large and liquid pool of euro area common assets to have a positive impact on the international role of the euro, particularly on its use as official reserve currency.

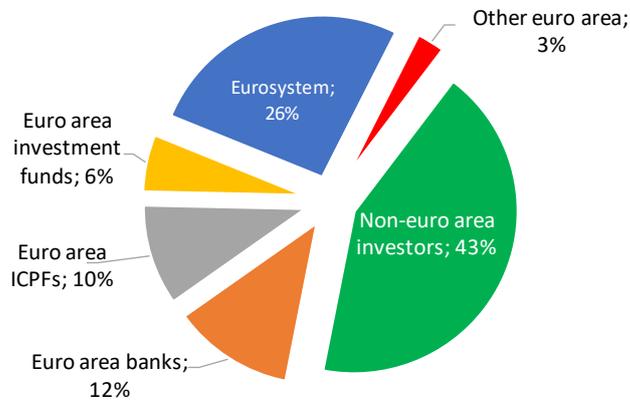
²³ On this point, see ECB (2020b).

Table 4.3: Share of non-euro area investors in sovereign bonds

Country	Rating	Share in %
Germany	AAA	30
The Netherlands	AAA	20
France	AA	37
Austria	AA	13
Belgium	AA	12
Spain	A	15
Italy	BBB	12
Portugal	BBB	3

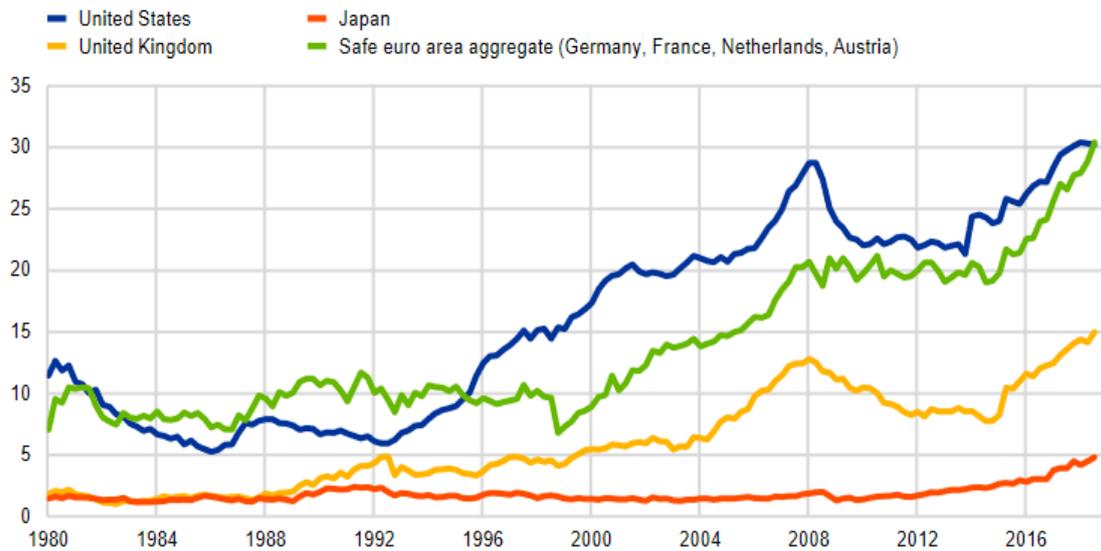
Source: ECB (2020b).

Figure 4.5: Share of non-euro area investors in EFSF and ESM bonds



Source: ECB, Securities Holdings Statistics.

Figure 4.6: Trends in foreign official holdings of outstanding sovereign debt (shares in percent)



Source: Gräß, Kostka and Quint (2019).

Note: Central bank holdings of foreign exchange reserves as a share of outstanding sovereign debt.

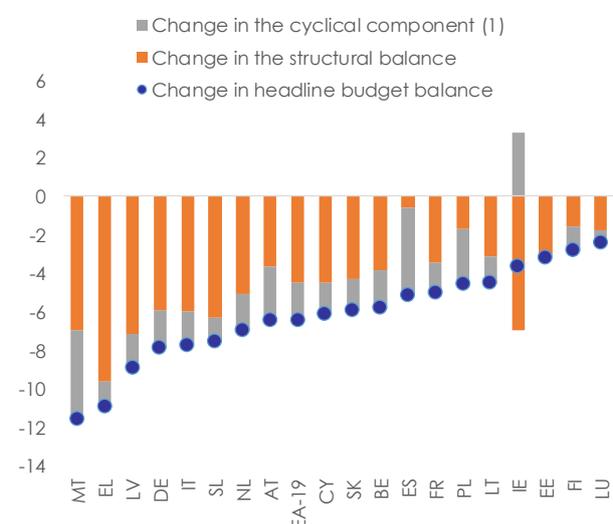
5. THE EU'S RESPONSE TO THE PANDEMIC: POSITIVE EFFECTS ON THE EURO'S GLOBAL ROLE

The debate on the global and euro area shortage of safe assets surveyed in the previous section provides a useful context for looking at the EU's response to the COVID-19 crisis and its potential implications for the international status of the euro. Indeed, the package of measures taken by the EU to address the crisis include, as noted, some that could help boost significantly the supply of euro area assets, even if that was not their main intended purpose. They also include other actions of relevance for the international reach of the euro. Let us look at all these different measures.

5.1. FISCAL RESPONSE AT NATIONAL LEVEL AND THE SUPPLY OF SAFE ASSETS

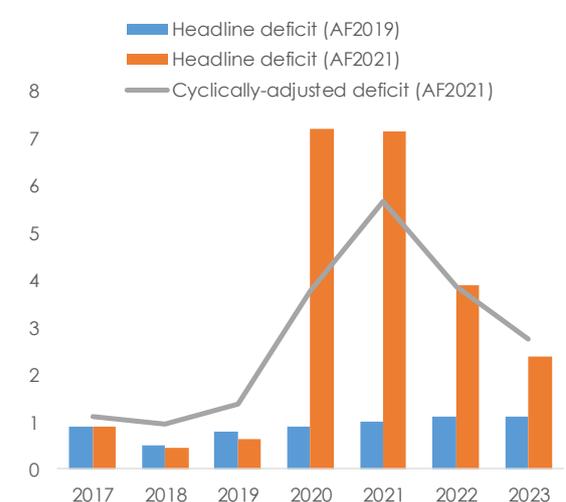
In response to the pandemic, euro area countries adopted emergency national fiscal packages of an unprecedented total size (see Haroutunian, Osterloh and Sławińska, 2021). The combination of these discretionary packages and the budgetary impact of the COVID-19 crisis through the operation of the automatic fiscal stabilisers has had a strong impact on national fiscal deficits and public debt levels. Between 2019 and 2021, the structural fiscal balance of the euro area deteriorated by 4.5 percentage points of GDP and the cyclical component added another 2 percentage points, resulting in an increase in the headline budget deficit of 6.5 percentage points of GDP (see Figure 5.1). For some countries, notably Malta, Greece and Latvia but also Germany, the increase in the deficit was even more marked. Figure 5.2 compares the evolution of the euro area's headline and cyclically-adjusted fiscal deficit, as estimated by the Commission in its 2021 Autumn Forecast, with what the Commission was projecting just before the pandemic, i.e. in its 2019 Autumn Forecast. It shows a pronounced deterioration.²⁴

Figure 5.1: Fiscal response to COVID-19 crisis, 2020-2021 (% of GDP)



Source: European Commission, Autumn 2021 Forecasts.
(1) Includes change in one-off and temporary measures.

Figure 5.2: General government deficit, euro area (% of GDP)

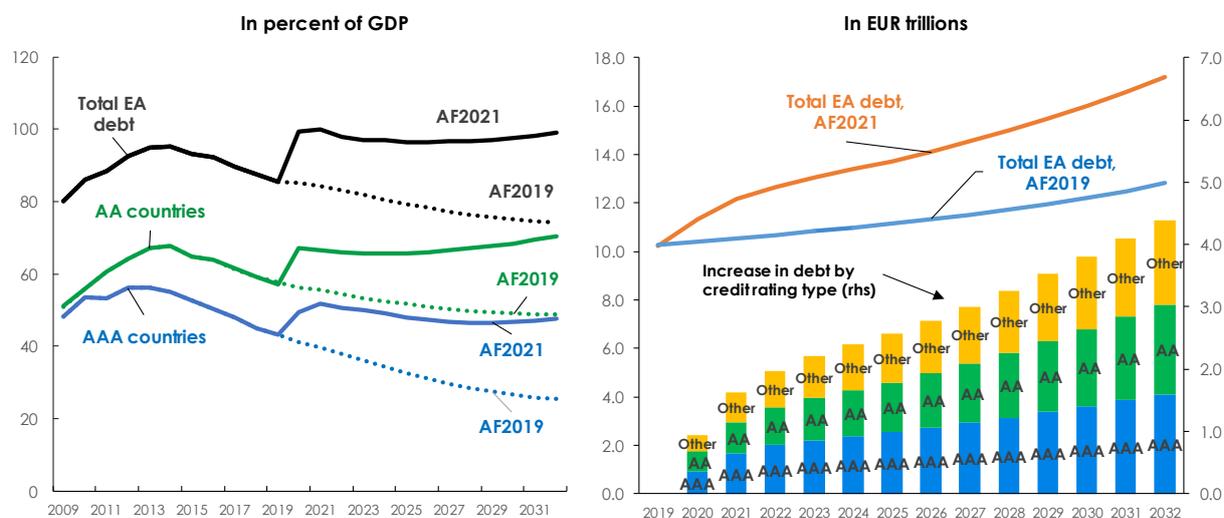


Sources: European Commission, Autumn 2019 Forecast (AF2019) and Autumn 2021 Forecast (AF2021).

²⁴ As can be seen in Figure 5.1, Ireland is somewhat of an outlier: it is the only euro area country to have experienced during this period a positive change in the cyclical component, which is explained by a strong growth in Irish GDP in both 2020 and 2021, driven by a boom in the IT, pharmaceutical and other sectors that benefited from the pandemic. This partly compensated for a marked deterioration in Ireland's structural deficit.

Provided that this fiscal deterioration does not worsen the credit ratings of AAA (and AA) countries or significantly delays the upgrading to the AAA (and AA) category of countries that lost such rating levels during the euro area crisis, this should lead to an increase in the total supply of euro-denominated safe assets. Figure 5.3 illustrates the effect of the pandemic-related increase in fiscal deficits on debt trajectories in the euro area, with particular focus on the supply of debt issued by AAA and AA governments. The comparison of the Commission Autumn Forecasts of 2019 and 2021 is again used to estimate the impact of the pandemic. But here the Autumn Forecasts, which only cover three years, are supplemented with the longer term debt projections published by the Commission at the beginning of each year building on the latest autumn forecasts.²⁵ Figure 5.3 shows that the COVID-19 crisis produces a jump in the euro area’s debt ratio of almost 16 percentage points of GDP by 2021 and of almost 25 percentage points by 2023, when compared to the autumn 2019 projections, interrupting the downward trends in debt ratios that had been previously anticipated.²⁶

Figure 5.3: Trends in euro area public debt prior to and after the pandemic



Sources: European Commission, Autumn 2019 Forecast (AF2019) and Autumn 2021 Forecast (AF2021); European Commission (2020b and 2022a); Standard & Poor's. Note: In the left panel, the blue and green lines show the simple average of countries that were AAA and AA, respectively, at the end of 2019. In the right panel, the lines show (in lhs) projections for total euro area public debt while the bars show (in rhs) the cumulative increase in debt broken down by credit category.

But what is more interesting from the perspective of this paper is the fact that triple A and double A rated countries, because of their size and, in some cases, because of the intensity of the fiscal deteriorations experienced, account for much of the increase in euro area debt caused by the pandemic. They are responsible for nearly 70% of the cumulative increase, compared with pre-pandemic projections, in the nominal value of euro area debt by 2032 (Figure 5.3, right-hand panel). Triple A rating countries alone, which are those supplying safe assets under the strictest definition, explain more than one third (36%) of the increase in euro area debt, making them the rating category that contributes most to the increase in debt. This is dominated by Germany, which accounts for over 80% of the euro area’s triple A sovereign debt and for about 20% of all euro area sovereign debt and which, as shown in Figure 5.1, undertook a relatively marked fiscal expansion during the pandemic. By 2026, the last year in which net debt can be issued under the NGEU instrument, the supply of assets by triple A euro area governments is expected to be almost EUR 1.1 tn larger than previously projected. This is somewhat larger than the NGEU and SURE instruments combined and is equivalent

²⁵ These long-term projections are published in the Commission’s Debt Sustainability Monitor and, once every three years, in a more comprehensive study known as the Fiscal Sustainability Report. See European Commission (2020b and 2022a).

²⁶ The long-term increase in the debt ratios also reflects other factors, including the revision of ageing-related fiscal expenditures in the context of the Commission’s new Ageing Report, published in May 2021. But comparing the two sets of projections still provides a good order of magnitude of the pandemic’s impact on euro area debt, as the pandemic and the policy response it generated were the main new macroeconomic developments occurring between the two forecasts.

to 58% of the stock of triple A euro area sovereign debt securities outstanding just before the COVID-19 crisis. Through its expansionary impact on the debt of highly qualified euro area treasuries, therefore, the pandemic-related increase in fiscal deficits has significantly boosted the supply of euro area safe assets, with potential implications for the international role of the euro.

5.2. THE NEW SUPRANATIONAL FACILITIES

Another component of the EU's response to the COVID-19 crisis that is of relevance for the euro's international status, and potentially the most relevant one, are the new financial facilities created at EU level. These facilities are expected to increase markedly the issuance of euro-denominated supranational safe assets, although on a temporary basis, and to transform fundamentally the European Commission's debt issuance strategy and infrastructure. Let us look at them in more detail.

5.2.1. Description of the new facilities

The largest of the new facilities is the new **NGEU instrument**. Through this decision (European Council, 2020a and 2020b), EU Member States have effectively empowered the Commission to borrow in the international capital markets up to EUR 750 bn at 2018 prices, or **EUR 806.9 bn** at current prices, between 2021 and 2026. Of this amount, at least 30% will be raised in the form of green bonds. The bulk of the funds borrowed by NGEU (EUR 724 bn at current prices) will go to finance the new Recovery and Resilience Facility (RRF) and the rest will be used to fund other Community programmes such as InvestEU, Horizon Europe and the Just Transition Fund. The RRF is being used to support reforms and investments in a number of priority sectors, with particular emphasis on advancing the green and digital transitions (European Parliament and Council, 2021). The reforms are identified in the so-called National Recovery and Resilience Plans (RRPs), which must be first negotiated with the Commission and approved by the EU Council. While EUR 386 bn of the RRF funds are to be on-lent by the Commission to beneficiary EU countries in the form of loans, EUR 338 bn will be disbursed in the form of grants (both amounts at current prices). These are, of course, maximum amounts, which will only be released if all countries request the funds and comply with the associated reform and investment milestones and targets.

The loans provided under the NGEU instrument must be fully repaid by 2058. To protect its rating, the EU will use the so-called EU Budget Headroom as guarantee. This headroom is the difference between the maximum amount of revenue that the EU Budget can potentially call from EU Member States in a given year—known as the Own Resources Ceiling—and the maximum budgeted spending amounts. Moreover, the Own Resources Ceiling has been increased temporarily, until 2058, by 0.6 percentage point of the EU's GNI and the introduction of new own resources is being considered.²⁷

In addition, the Commission has been allowed to borrow up to **EUR 100 bn** to help EU countries finance short-term work schemes under **the SURE instrument** in order to limit the impact of the pandemic on jobs and workers' income. This instrument is of a shorter term nature, requiring all issuance to take place between 2020 and 2022.²⁸ SURE bonds are packaged as social bonds, in line with the EU SURE Social Bond Framework adopted in October 2020. They are guaranteed not only, like NGEU debt, by the existing headroom in the EU Budget but also by EUR 25 bn of direct, irrevocable guarantees provided by EU Member States.

²⁷ In December 2021, the Commission proposed three new permanent own resources, namely a share of the revenues collected by the Emissions Trading System, a Carbon Border-Adjustment Mechanism (CBAM) and a digital levy on large multinational companies. These new resources should help repay the grant component of NGEU borrowing.

²⁸ The SURE Regulation contains a "sunset clause" that makes the facility available only until 31 December 2022, with the possibility of an extension for (an) additional period(s) of six months, if justified by the persistence of the COVID-19 pandemic (European Council, 2020c).

Also in response to the COVID-19 crisis, the EU decided to use its existing **Macro-Financial Assistance instrument** in support of non-EU countries. Thus, in May 2020, the European Parliament and the Council approved an omnibus package of **EUR 3 bn** to help 10 countries in the EU neighbourhood deal with the macroeconomic implications of the pandemic (European Parliament and Council, 2020). The loans provided under the MFA facility are guaranteed by the EU's External Action Guarantee, which is currently being provisioned at 9% of any new loan exposure.

In addition to these facilities managed by the European Commission, the EU decided to make available loans at favourable conditions under the **ESM's Pandemic Crisis Support (PCS)** instrument for a maximum amount of **EUR 240 bn**. Under this facility, which is based on the ESM's Enhanced Conditions Credit Line, euro area countries can borrow funds to finance healthcare and health prevention costs related to the pandemic (ESM, 2020). As with other credit lines of the ESM, the funds are borrowed by the ESM, with its triple A rating, by issuing bonds in the international capital markets. All euro area countries are eligible for this support for amounts up to 2% of their respective GDPs, with the only requirement being a commitment, to be included in an individual Pandemic Response Plan, to use the financing received to support direct and indirect health-related costs. Requests for PCS may be submitted until 31 December 2022 and the initial availability period of each facility granted is 12 months, which can be extended for a maximum of another 12 months. In contrast with the three instruments managed by the Commission just mentioned, which only allow the issuance of euro-denominated bonds, the ESM issues in both euros and US dollars, although until now its issuance has been overwhelmingly denominated in euros (see Table A.1 in Annex I).

Finally, as part of the recovery package agreed by EU leaders in April 2020, **the EIB Group set up a EUR 25 bn Pan-European Guarantee Fund (EGF)** to help businesses get through and recover from the impact of the pandemic (EIB, 2020 and 2022). The fund is made up of voluntary guarantees set aside by EU Member States in proportion to their EIB capital shares and aims at mobilising EUR 200 bn in additional financing by allowing the EIB and the European Investment Fund to scale up their support, mostly for small and medium-sized enterprises. 22 EU countries have decided to contribute to the EGF, implying a total guarantee capacity of EUR 24.4 bn. Other things being equal, this initiative will imply additional issuance of bonds by the EIB in the international capital markets in order to fund the operations guaranteed by the EGF, thus contributing also to an increase in the supply of EU supranational safe assets. As for the other facilities discussed above, this scheme is temporary, with the initial investment period of the EGF having ended on 31 December 2021.

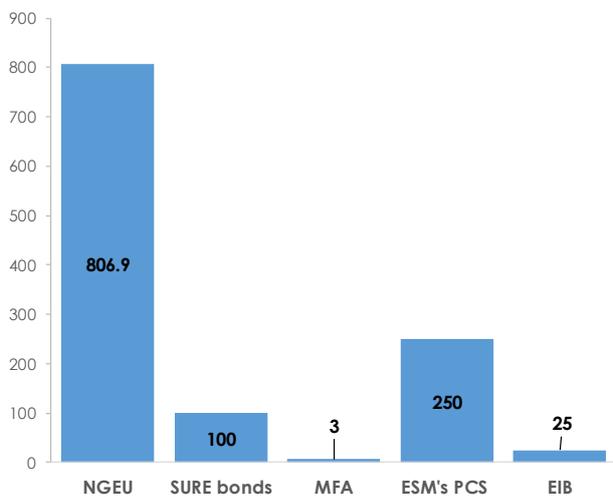
5.2.2. How big are the new facilities?

If the five supranational facilities are aggregated, the EU institutions could potentially be issuing, during the period 2020 to 2026, up to EUR 1.2 tn in additional euro-denominated assets in response to the pandemic (Figure 5.4). This implies an additional annual net issuance of about EUR 170 bn during that period and an even larger gross issuance given that the NGEU instrument and the ESM are allowed to issue short-term bills that must be regularly refinanced. This quantum leap in EU supranational issuance should prolong and reinforce the upward trend in the stock of bonds issued by EU supranational institutions observed since the euro area crisis, even assuming that there are no new stabilisation programmes financed by the ESM, the EFSM and Balance of Payments (BoP) support instruments and that other borrowing by the EU and the EIB remains at approximately the levels seen in recent years (Figure 5.5). The stock of supranational bonds increased quite sharply during the euro area crisis, driven by the bailout packages funded by the macroeconomic stabilisation facilities, as well as by a significant increase in EIB borrowing,²⁹ but its expansion had slowed down and nearly stagnated subsequently. The NGEU and SURE instruments have provided, and the former will

²⁹ Also, a significant increase in the volume of MFA operations since 2014, led by operations in Ukraine, Jordan and Tunisia, pushed up disbursements under this instrument to new historical records. See European Commission (2021c).

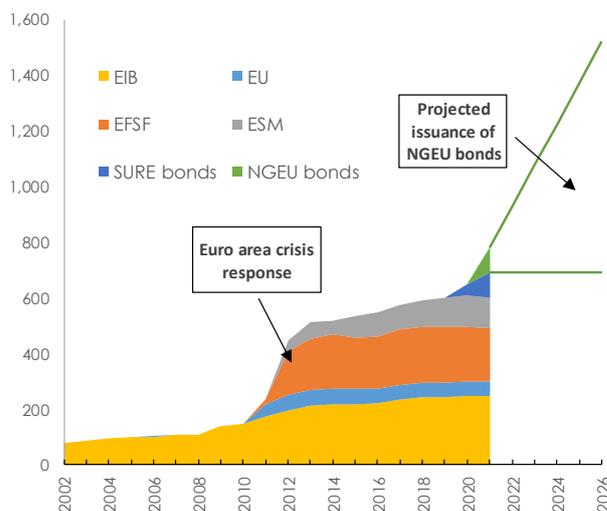
continue to provide for several more years, a new boost to supranational issuance, and one that will be much larger than what was ever witnessed during the euro area crisis.³⁰

Figure 5.4: Potential issuance under pandemic-related facilities (EUR billions)



Sources: European Commission, ESM and EIB.

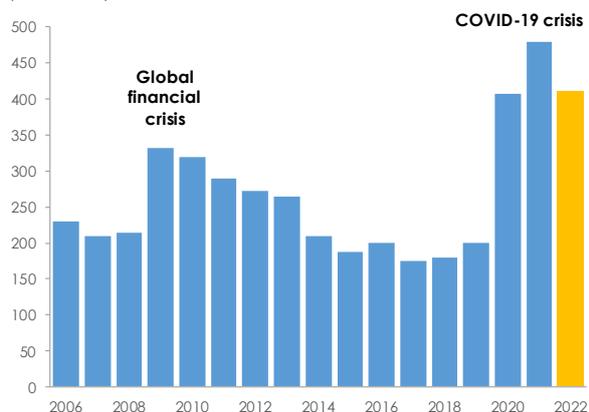
Figure 5.5: EU supranational debt denominated in euros (EUR billions, end of year stocks)



Sources: European Commission, ESM, EIB and author's calculations.

Note: For a breakdown of the data behind this chart, see Annex, Table A.1

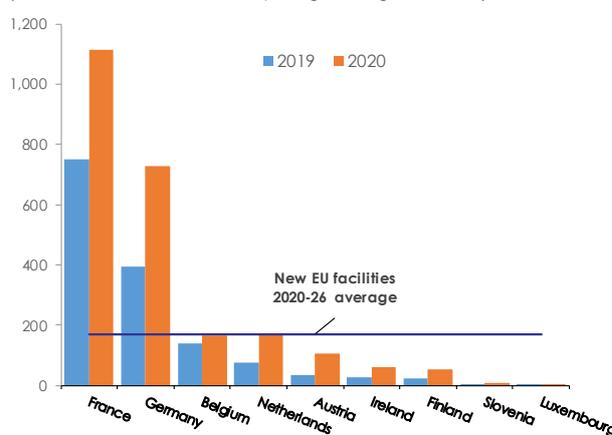
Figure 5.6: Gross issuance by German federal government (EUR billions)



Source: Germany's Finance Agency.

Note: For 2022, borrowing plan announced by the German federal government.

Figure 5.7: Gross issuance by AAA/AA euro area governments (EUR billions, annual issuance by the general government)



Source: ECB.

Note: Estonia, which has a AA rating, is not covered by these ECB statistics. For the EU facilities, the line shows the average maximum annual net issuance for 2020-26.

The large potential annual issuance of bonds under the new facilities (up to EUR 170 bn) places EU supranational borrowing at a level comparable to that of other major triple or double A sovereign issuers of the euro area. Thus, for example, the German federal government's annual issuance of securities in the five years preceding the pandemic averaged about EUR 190 bn, although it more than doubled as a result of the pandemic (see Figure 5.6). Figure 5.7 provides data on the gross issuance by

³⁰ Looking ahead, the war in Ukraine is expected to provide a further boost to the supply of EU supranational assets to finance stabilisation and reconstruction efforts. In May 2022, the Commission announced its intention to propose a new financial package including new MFA loans of up to EUR 9 bn in 2022, to address short-term stabilisation needs, and a new, so-called RebuildUkraine Facility, building on the experience of the RRF, to address longer-term reconstruction needs while supporting reforms accompanying Ukraine on its European path (European Commission, 2022d).

the general governments of selected triple and double A euro area countries, on the year before the pandemic and on the first year of the pandemic, and compares them with the average maximum annual net issuance from the new EU supranational facilities.

To put the issuance of NGEU and SURE bonds further into perspective, Table 5.1 compares their targeted maximum issuance volume with the stock of safe assets issued by the euro area and other advanced countries, the stock of international securities and the stock of official foreign exchange reserves outstanding just before the pandemic. The results are quite striking, underlining the macroeconomic importance of the planned volume of issuance and, therefore, its potential for buttressing the international role of the euro. The NGEU and SURE facilities, taken together, are one and a half times larger than the pre-pandemic stock of EU supranational bonds and are equivalent to nearly half of the stock of euro area triple A sovereign bonds and to almost half of the global stock of foreign exchange reserves held in euros. They also amount, depending on the breadth of the definition used, to between 10% and 30% of the global stock of international securities denominated in euros. So if one looks at these indicators at face value, and before entering into the qualifiers presented in Section 6, these facilities look indeed like a potential game changer for the international role of the euro, and in particular for its role as international investment and official reserve currency.

Table 5.1: How big are the NGEU and SURE programmes?

(in EUR billions and in percent; outstanding stocks at end-2019)

Indicator	Stocks EUR billions	Share of NGEU + SURE (EUR 906.9 bn)
Euro area safe assets	2427	37.4 %
AAA sovereign bonds	1829	49.6 %
Supranational bonds	598	151.6 %
Triple A bonds issued by other G-7 sovereigns	18709	4.8 %
International debt securities		
Narrow definition	14073	6.4 %
of which: denominated in euros	3060	29.6 %
BIS' broad measure	22128	4.1 %
of which: denominated in euros	8386	10.8 %
Global official foreign exchange reserves	10528	8.6 %
of which: allocated and in euros	2029	44.7 %

Sources: European Commission, BIS, Eurostat, ECB, IMF, and author's calculations.

The ratios in Table 5.1 would of course look even more impressive if the other EU supranational facilities announced in response to the pandemic, and in particular the sizeable ESM's PCS instrument, were added to their numerator, alongside the planned issuance under NGEU and SURE. Or if the additional issuance of assets by the triple A national treasuries of the euro area caused by the pandemic, estimated, as noted, at EUR 900 bn by 2026, were counted as well.

These issuance volumes also fare well in comparison with those assumed by some of the common safe asset proposals discussed in Section 4.2. The proposals, summarised in Table 4.2, implied an issuance of common safe assets, scaled up using the euro area's 2021 GDP, ranging between EUR 0.7 tn, for certain variants of the SBBS proposal, and EUR 7.3 tn, for the Blue Bonds proposal, with most proposals yielding a volume of common safe assets within the EUR 1.5 -3.7 tn range. The maximum issuance volumes associated with the new pandemic facilities, including the ESM, EIB and MSA facilities, fall below this central range but not by much, and would fall within it if the additional national issuance by triple A euro area countries brought about by the COVID-19 crisis was added.

5.2.3. Implementation, and reception by international investors

Now, what has been the experience so far with the implementation of these facilities? The first SURE bonds were issued in October 2020 and, by end-April 2022, the Commission had issued EUR 91.8 bn of the EUR 100 bn allocated to the SURE facility, with the funds having been used to provide back-to-back loans to 19 EU countries. The first NGEU bonds, for their part, were issued in June 2021 and, by end-April 2022, about EUR 102 bn of NGEU bonds, with maturities ranging from 5 to 30 years, and almost EUR 48 bn of short-term NGEU bills, with 3-month and 6-month maturities, had been issued.³¹ The Commission has announced that it intends to issue, on average, about EUR 150 bn per year under the NGEU instrument until 2026 (European Commission, 2021d). The Commission had also issued by end-April 2022 EUR 2.5 bn of the EUR 3 bn COVID-19-related MFA package adopted in 2020, while the EIB had used by the end of 2021 all of the EUR 25 bn guarantee capacity of the EGF. By contrast, no euro area country has so far applied for the ESM's Pandemic Crisis Support and, therefore, no issues have taken place under this instrument.

The SURE and NGEU securities have been very well received by investors, as evidenced by large primary market demand (with several issues being vastly oversubscribed) and low yield spreads over German treasury bonds.³² Indeed, the SURE and NGEU bonds, which received a AAA rating from two of the three main international rating agencies, have been trading at spreads lower than those of previously issued EU supranational bonds, particularly in the shorter maturities (Monteiro, 2022). But what is more relevant for the international status of the euro is the fact that international investors have shown strong interest in these bonds, which suggests the existence of substantial latent global demand for safe assets in euros. About 44% of the SURE bonds and about 49% of the NGEU bonds issued by end-April 2022 were taken up by non-euro-area investors, with the share of international investors being particularly high (in the 60%-70% range) in the shorter end of the maturity structure, apparently reflecting the higher share of central banks and other official investors participating in those issues (see Figures 5.8 and 5.9 and Table A.2 in Annex I). As underlined by the ECB (2021), all this suggests that the issuance of these new EU bonds could indeed help strengthen the euro's role as international reserve currency.

The good reception given by foreign investors to the new bonds is partly explained by the increased liquidity and tradability associated with the new bonds. Thus, Monteiro (2022) finds that the market liquidity of NGEU and SURE bonds, measured by average bid-ask spreads, is superior to that of other EU bonds. And this seems to reflect not only the larger volumes issued but also changes in the European Commission's borrowing strategy. Indeed, the new facilities, in particular the NGEU instrument, are bringing about far-reaching changes in the EU's debt management strategy, which by enhancing liquidity, predictability and reliability, should increase the attractiveness of the new bonds for investors in search of risk-free assets. While until now the lending programmes managed by the Commission had essentially only allowed back-to-back financing,³³ under the new, "diversified funding strategy" adopted with the NGEU facility, lending operations have been decoupled from borrowing operations. This not only allows the EU to benefit from increased market-access flexibility but also facilitates the development of predictable issuing calendars (see Christie, Claeys and Weil, 2021). Since the NGEU instrument was launched, the Commission has been publishing on a six-monthly basis a Funding Plan that includes information about the total amounts of bonds it intends to issue as well as issuance calendars (European Commission, 2021e and 2021f). This diversified and more flexible funding strategy, which includes, as noted, the issuance of short-term paper, has also

³¹ The proceeds of NGEU bonds are mostly being used to provide loans and grants under the RRF to support the national RRFs. By end-March 2022, 26 such plans had been submitted, of which 22 had been approved. See European Commission (2022b and 2022c).

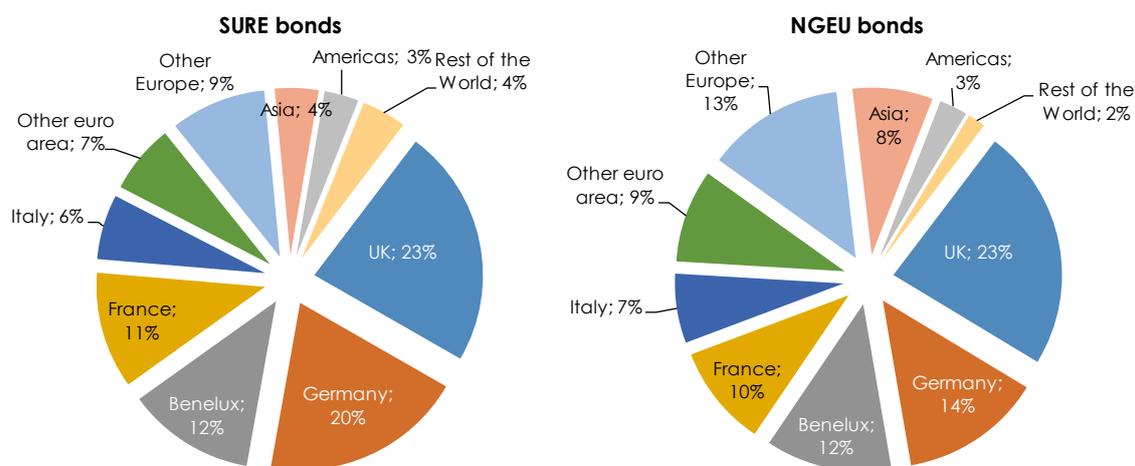
³² The first SURE transaction, a combination of a 10-year bond and a 20-year bond totalling EUR 17 bn, was record-breaking: it attracted an order book of EUR 233 bn, the largest in the history of the global bond markets. The EUR 20 bn, 10-year bond that kick-started funding for the NGEU programme was the largest ever plain-vanilla single-tranche euro deal and attracted a book order of EUR145 bn (see Table A2 in Annex I).

³³ This is also true for the SURE bonds.

allowed the development of a full benchmark yield curve. Moreover, the Commission has developed a network of primary dealers that act as market-makers in the secondary market, which is also contributing to enhance liquidity (European Commission, 2021g).

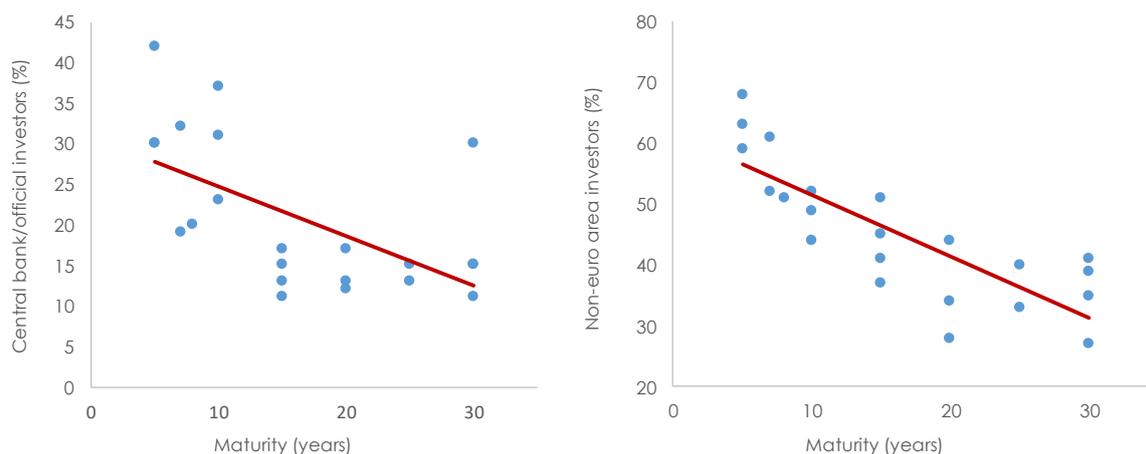
These changes in the Commission’s funding strategy might help overcome the reluctance that some international institutional investors, including central banks and sovereign wealth funds, still have to invest in euro-denominated assets. The positive implications of the new facilities for the international role of the euro are, therefore, not limited to their impact on the volume of euro-denominated safe assets issued. As significant as their quantitative impact is the fact that they are contributing to an overhaul and modernisation of the European Commission’s approach to debt management.³⁴

Figure 5.8: **Geographical breakdown of investors in SURE and NGEU syndicated bonds**
(transactions undertaken between October 2020 and end-April 2022)



Source: European Commission.

Figure 5.9: **SURE and NGEU bonds: maturities and participation of central banks and foreign investors**
(syndicated bond transactions by end-April 2022; shares over volume issued, in percent)



Source: European Commission.

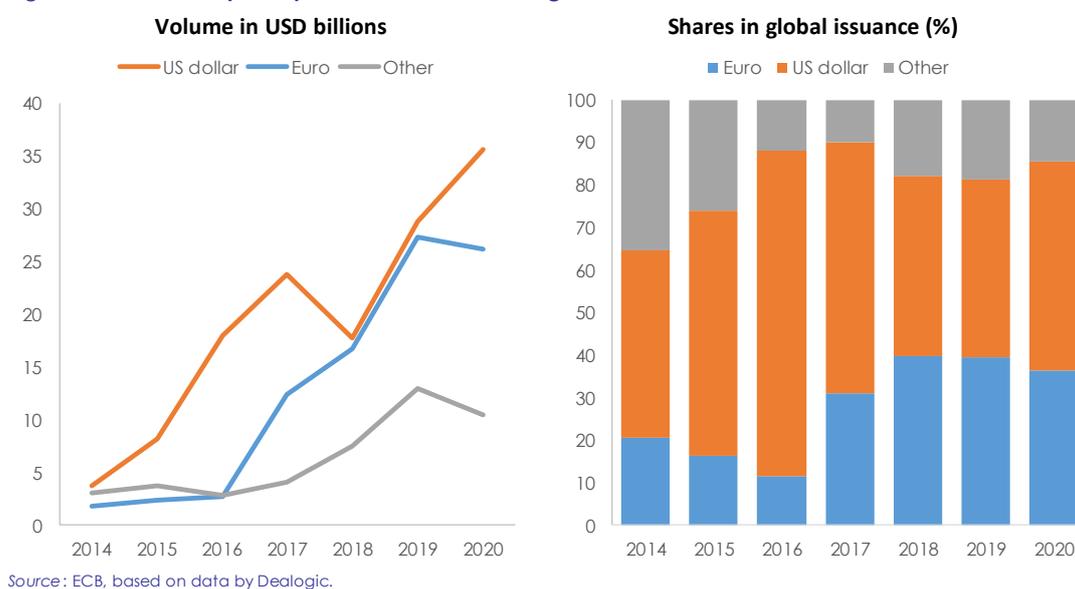
³⁴ The Commission’s new funding strategy was rewarded both in 2022 and 2021 with the Best SSAR Issuer of the Year prize, delivered by the International Financing Review to the most successful and innovative among sovereign, supranational and other public borrowers (<https://www.ifre.com/story/3197097/ssar-issuer-european-union-rty0dh29xt>).

5.3. OTHER RELEVANT ASPECTS OF THE EU'S RESPONSE TO THE PANDEMIC

It has been argued that to the extent that NGEU financing helps foster not only a vigorous recovery from the pandemic but also structural reforms enhancing productivity and making EU growth more dynamic and sustainable, it could increase the attractiveness of euro area assets over time (ECB, 2021, Claeys and Wolf, 2020). By encouraging a shift to a new growth model and a more cohesive and resilient EU economy, these reforms could increase the global appeal of euro assets and could also help upgrade the ratings of some sub-triple A euro area countries, which would further boost the supply of euro area safe assets.

Another channel through which the new supranational facilities could support the internationalisation of the euro is the massive planned **issuance of green bonds** under the NGEU instrument. The argument here is that although incumbency advantages favour the maintenance of the dollar's dominant global role, the emergence of new segments of the capital markets where the dollar's supremacy has not yet been established, like the green bond market, could provide a window of opportunity for the euro (or other currencies, for that matter) to reinforce its international status. Indeed, the euro already plays a leading role in green bond issuance. Global issuance of green bonds has been expanding rapidly, recording a seven-fold increase since the middle of the previous decade, and the euro accounts, together with the US dollar, for much of this issuance (ECB, 2020a and 2021). Although a significant part of this issuance in euros was done by euro area issuers, which is less relevant from the point of view of the euro's global role, the share of the euro in the *international* issuance of green bonds, i.e. in the issuance denominated in currencies other than that of country in which the issuer has its headquarters, has also been increasing rapidly. As shown in Figure 5.10, the euro accounted in 2020 for over one third of international issuance in 2020, which is well above its share in total international debt issuance and implies a three-fold increase compared to 2016.³⁵

Figure 5.10: **Currency composition of international green bond issuance**



The EU's plan to issue at least 30% of the NGEU instrument (or close to EUR 250 bn over the period 2021-2026) in the form of green bonds, means that the European Commission could become in the coming years the world's largest issuer of green bonds. This huge green bond programme was inaugurated in October 2021 with the very successful issuance of a EUR 12 bn green bond, which was

³⁵ Much of the international issuance of euro-denominated green bonds has been done by borrowers from non-euro area EU countries and other advanced economies. By contrast, international issuance of US dollar-denominated green bonds remains dominated by emerging market borrowers, led by China (ECB, 2021). This suggests that a further development of the euro's role in international green bond issuance hinges on increasing its attractiveness for emerging market issuers.

the largest ever green bond transaction and was 11 times oversubscribed, attracting an order book of EUR 135 bn. By end-April 2022, EUR 23 bn in NGEU green bonds had been issued.

International green bond issuance in euros should also be supported in the future by the leading role the EU is playing in the development of sustainable finance standards. The EU has adopted strict criteria for tagging investments as green, in order to avoid greenwashing, in the context of its Sustainable Finance Disclosure Regulation (Regulation (EU) 2019/2088 of 27 November 2019), the Taxonomy of Sustainable Economic Activities (Regulation (EU) 2020/852 of 18 June 2020) and the Commission's proposed regulation on an EU Green Bond Standard.³⁶ Although the EU Green Bond Standard was not yet ready when the EU started issuing NGEU bonds, an NGEU Green Bond Framework was adopted, which has helped reassure investors about the green nature of NGEU green bonds (European Commission, 2021h).

The “green appeal” of NGEU green bonds, and of NGEU bonds more generally, is also supported by the RRF Regulation, which obliges EU countries to allocate at least 37% of their national RRFs to investments and reforms supporting climate objectives, a target that has actually been exceeded in the first year of life of the RRF (European Commission, 2022c). In addition, an overall climate mainstreaming target of 30% applies to the combined expenditure of under the NGEU and the EU's Multiannual Financial Framework for 2021-2027 (European Council, 2020a).

Something similar can be said of the **social bond nature of the SURE programme**, which seems to have contributed to the success of the SURE bonds. Like for the NGEU green bonds, the EU has adopted, as noted, an EU SURE Social Bond Framework, which ensures that EU loans are used by the beneficiary countries exclusively to fund eligible social expenditures (European Commission, 2020c).

In sum, the EU is well positioned to exploit these special, ESG (Environmental, Social, and Governance) niches in the international bond market. To the extent that it does so through its new facilities, their appeal to international investors and their stimulating effect on the international role of the euro could be reinforced.

Finally, some of **the exceptional measures taken by the ECB in response to the pandemic**, and in particular its new massive asset purchase programme and the decision to provide liquidity to non-euro area central banks, should also support the global relevance of the euro. In March 2020, the ECB expanded its existing asset purchase programme and launched a Pandemic Emergency Purchase Programme (PEPP) for both public and private sector securities. Initially with a volume of EUR 750 bn but subsequently increased, in two steps, to EUR 1.85 tn, the PEPP should help ensure that euro-area sovereign bonds retain their safe asset status.³⁷ Regarding the provision of euro liquidity to non-euro area central banks, since the beginning of the pandemic, the ECB has reactivated existing, or established new, swap and repo arrangements with non-euro-area central banks and has set up a new, temporary Eurosystem Repo Facility to provide liquidity to non-euro area central banks not meeting the requirements for agreeing bilateral liquidity facilities. By contributing to mitigate stress in euro funding markets, these facilities reduce the risk of sharp fluctuations in euro funding costs for non-euro area financial institutions and enterprises, thus increasing confidence in euro asset markets and the attractiveness of defining financial and commercial contracts in euros. There is indeed some evidence that the existence of currency swap arrangements with other central banks is positively correlated with the international use of a currency, even though the direction of causation is not well established (see ECB, 2019; Box 7).

³⁶ Also, the European Commission has also launched in October 2019 an International Platform on Sustainable Finance in order to share best practices and agree on common approaches to foster sustainable finance.

³⁷ Like other measures discussed above, the PEPP was meant to be a temporary programme, to be terminated once the ECB's Governing Council judged that COVID-19 crisis was over, although not before March 2022. At its meeting of March 2022, the Governing Council decided to discontinue net asset purchases under the PEPP at the end of that month, although principal repayments from maturing securities purchased under the PEPP will continue to be reinvested until at least the end of 2022. See [Monetary policy decisions \(europa.eu\)](#).

6. A LESS OPTIMISTIC VIEW

Section 4 provided a number of arguments why the EU's macroeconomic and financial response to the pandemic could support the international role of the euro. There are, however, several counter-arguments that rebalance to some extent this rather optimistic assessment.

First of all, the facilities just mentioned are, as noted, of a **temporary nature**. As discussed, new net bond issuance under the NGEU instrument must be completed by 2026, although issuance to refinance maturing bonds and bills can continue until 2058. Also, all SURE bonds must in principle be issued by end-2022, and all requests for assistance under the ESM's PCS instrument must be submitted by 2022 and the related disbursements completed by 2024. The initial investment period of the EIB's EGF, for its part, ended on 31 December 2021 and the availability period of the MFA COVID-19-related package expires one year after the respective entries into force of the Memoranda of Understanding signed with the beneficiary countries. By the end of 2021, the EIB's EGF, the SURE programme and the MFA package had largely been implemented. Equally short-lived is expected to be the impact of the pandemic on the fiscal deficits of triple A-rated euro area countries, although its implications for debt issuance will be, as noted, more durable. Moreover, the deterioration in debt dynamics provoked by the pandemic might delay the upgrading to the triple or double A rating level of certain euro area countries, especially if combined with other shocks affecting debt sustainability (e.g. the increase in interest rates provoked by the current global inflationary context).

To be sure, some of the positive changes discussed in Section 4, such as the modernisation in the Commission's debt issuance strategy or the long-term effect of the RRF on productivity and resilience, will have longer-lasting effects. And it could be argued that the "Hamiltonian moment" generated by the creation of the NGEU facility and, to a lesser extent, the SURE bonds has "broken the ice" in the path towards the development of a common euro-denominated safe asset. After this historical breakthrough, some experts are already arguing in favour of either prolonging the life of these instruments or creating similar ones. Thus, both Bruegel and the Centre for European Policy Studies, two major Brussels-based economic think tanks, have put forward proposals to make the SURE and NGEU instruments permanent.³⁸ But, for now, the transformation of the SURE and NGEU facilities into permanent stabilisation instruments is not on the EU's agenda and, therefore, these facilities will disappear by end-2022 and end-2026, respectively, even if their impact on EU supranational debt stocks lingers for years.

There is also the risk that the **actual issuance** of NGEU bonds will in the end fall significantly below the maximum available amount of NGEU funds. This will be the case if the demand for these funds does not fully materialise or if the countries receiving support under the RRF fail to meet the milestones and targets contained in their national RRFs, preventing the full disbursement of the programmed funds. Also, the important addition of the NGEU and SURE instruments to the supply of EU supranational safe assets will be partly compensated by the lack of new programmes funded by the ESM and other EU stabilisation facilities and the gradual amortisation of previous programmes, unless new episodes of macro-financial instability were to emerge within the euro area requiring the reactivation of these facilities.

Last but not least, some authors (notably Eichengreen and Gros, 2020) have argued that the increase in the actual supply of euro safe assets to the rest of the world stemming from the NGEU and other new facilities will be much smaller than often assumed because **a large share of those bonds has been absorbed by the ECB through its asset purchase programmes**, and in particular through the PEPP introduced in response to the pandemic. The argument is that the PEPP, like its predecessor, the Public

³⁸ See Corti and Alcidi (2021) and Christie, Claeys and Weil (2021). Corti and Alcidi propose to turn SURE into a permanent facility that would operate under the margin available under the own resources ceiling, similar to the European Permanent Stabilisation Function that had been proposed by the Juncker Commission in 2018.

Sector Purchase Programme (PSPP), involves the purchase of sovereign bonds from all euro area countries, including highly-rated countries, as well as from EU supranationals. To the extent that the ECB buys triple A bonds, it will diminish the stock of euro-denominated safe bonds available to investors around the world, notably foreign central banks, limiting the positive implications of the new facilities for the international role of the euro. In other words, by acquiring safe securities in euros, the Eurosystem is de facto removing them from the international market for safe assets.³⁹

Eichengreen and Gros illustrate their point by looking at the past operation of the PSPP. Between March 2015 and December 2019, the Eurosystem purchased on a net basis EUR 2.2 tn of public bonds through the PSPP. They estimate that, of this amount, roughly EUR 1 tn were bonds issued by four euro area governments enjoying at least a double A rating (Germany, the Netherlands, Austria and France) and EUR 200 bn were bonds issued by triple A-rated EU supranational institutions. Partly reflecting these purchases, the stock of outstanding euro-denominated safe bonds not held by the Eurosystem or other euro area monetary financial institutions (mainly commercial banks and money market funds) actually declined by almost EUR 0.9 tn between end-2014 and end-2019.

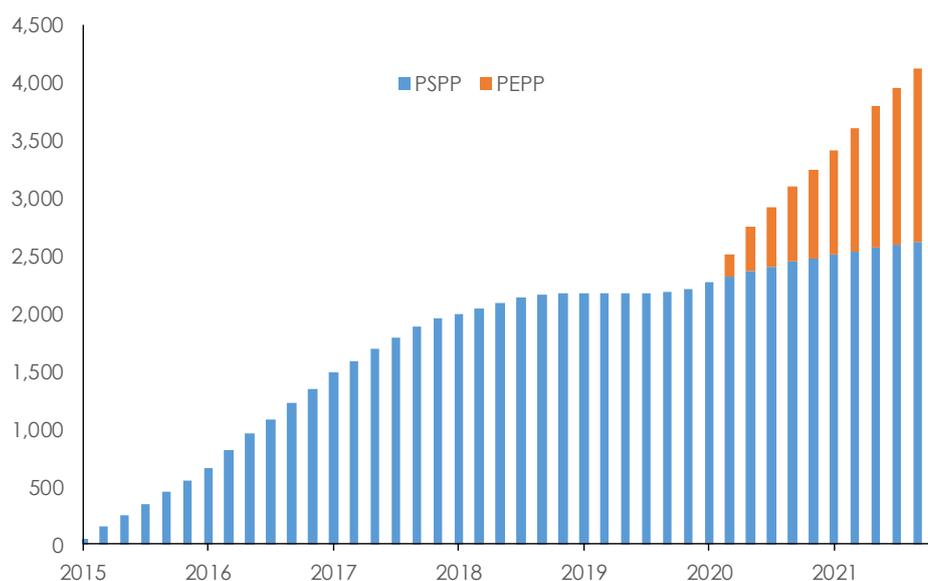
Eichengreen and Gros estimate that without the EUR 1.2 tn of PSPP net purchases, the pool of euro-denominated safe assets available to rest of the world would have been about one third larger at the end of 2019. By comparison, the Federal Reserve holds a much lower share of the stock of dollar-denominated safe public assets. This is partly explained by the fact that the asset purchase programmes that it adopted in response to the global financial crisis have been conducted mainly with mortgage-related securities, as opposed to Treasury bonds. Although the Federal Reserve's QE policies also increased significantly the share of federal government debt held by it (from 5% before 2008 to a peak of 12% in 2012), the share had fallen to 9% by end-2019, which compares with 20% in the case of the Eurosystem. This helps explain why the stock of safe public bonds held outside domestic central and commercial banks rose, according to these authors' estimates, by nearly USD 9 tn in the United States but only by about USD 0.8 tn in the euro area between 2008 and 2019.

In sum, Eichengreen and Gros fear that the EUR 1.85 tn PEPP, similarly to the PSPP previously, is having the unintended effect of withdrawing from circulation much of the EUR 900 bn plus of additional safe euro assets to be supplied by the NGEU and SURE initiatives. While one could argue that without the Eurosystem's purchases, and the liquidity and assurances that they provide to the secondary market, investors might have been less interested in buying NGEU and SURE bonds, the point remains that the Eurosystem's asset purchase programmes have removed from the market a significant part of the safe assets created by the new EU facilities.

Figure 6.1 and Table 6.1 display the Eurosystem's net purchases of public sector securities under the PSPP and PEPP programmes since 2015. Figure 6.1 shows a strong acceleration of purchases since the beginning of 2020, reflecting mainly the introduction of the PEPP but also the resumption of net purchases under the PSPP in November 2019, after a 10-month interruption. Between March 2020 and January 2022, the Eurosystem bought, in net terms, EUR 1,984 bn of euro-denominated public sector securities under both programmes, of which EUR 1,805 bn were government bonds and EUR 179 bn bonds issued by supranationals. While the PEPP accounts for the bulk of these net purchases, the reactivation of PSPP made a non-negligible contribution, explaining EUR 387 bn of them. The public sector securities purchased by the Eurosystem during this period are equivalent to about 16% of the euro area's 2021 GDP and more than twice the combined annual fiscal deficits of the euro area general governments in that year. As a result, the public sector securities, including supranational bonds, bought under the PEPP and PSPP programmes currently make up about 85% of the Eurosystem's total portfolio of securities bought under its asset purchase facilities.

³⁹ To this, one could add the amount of high-quality liquid assets in euros that euro area commercial banks and other euro area financial institutions such as pension funds or insurance companies are required to hold by law or by their statutes. These also detract from the supply of euro assets available to non-euro area central banks and investors.

Figure 6.1: Cumulative purchases of public securities under the PSPP and PEPP (EUR billions)



Source: ECB.

Table 6.1: Eurosystem's purchases of public securities under PSPP and PEPP (cumulative net purchases as of end-2021; in EUR bn and in percent of total)

	PSPP		PEPP	
	EUR bn	Share of total (%)	EUR bn	Share of total (%)
Austria	73.9	2.8	42.3	2.6
Belgium	92.6	3.5	54.2	3.4
Cyprus	4.3	0.2	2.5	0.2
Estonia	0.4	0.0	0.3	0.0
Finland	42.4	1.6	26.8	1.7
France	522.9	19.7	291.1	18.2
Germany	640.6	24.1	392.6	24.6
Greece	0.0	0.0	36.9	2.3
Ireland	42.0	1.6	25.3	1.6
Italy	437.7	16.5	268.4	16.8
Latvia	3.4	0.1	1.7	0.1
Lithuania	5.6	0.2	3.1	0.2
Luxembourg	3.9	0.1	1.9	0.1
Malta	1.4	0.1	0.5	0.0
Netherlands	124.4	4.7	83.9	5.3
Portugal	52.1	2.0	33.9	2.1
Slovakia	17.3	0.7	7.6	0.5
Slovenia	10.5	0.4	6.3	0.4
Spain	305.6	11.5	181.6	11.4
Suprationals	279.4	10.5	136.4	8.5
Euro area	2660.5	100.0	1597.3	100.0
o/w: AAA	1048.3	39.4	614.8	38.5
AA	784.8	29.5	446.3	27.9
Other	827.4	31.1	536.3	33.6

Sources: ECB, Standard & Poor's and author's calculations.

More crucially for the purposes of our analysis is the fact that the bulk of these public sector securities are bonds issued by highly-rated governments and supnationals (see Table 6.1). Thus, over 39% of the purchases under the PEPP were of bonds issued by triple A governments and supnationals and an additional 30% were double A government bonds. PSPP cumulative purchases since the programme was introduced in 2015 show a very similar pattern. This reflects the fact that the Eurosystem allocates its purchases of national government securities under these programmes according to the Eurosystem's capital key and the large shares that some large triple and double A countries, such as Germany (26.36%) and France (20.42%), have in this distribution key.

If about 39% of the public sector securities bought by the Eurosystem between March 2020 and January 2022 were AAA assets, this means that the Eurosystem withdrew from the market about EU 774 bn in safe assets, which is four times the value of the SURE and NGEU bonds issued during that period and 85% of the total amount of safe assets (EUR 906.9 bn) that the SURE and NGEU facilities are expected to create by 2026. This warns against exaggerating the impact of the EU's response to the pandemic on the actual supply of safe assets in euro.

To avoid withdrawing safe assets from the market, Eichengreen and Gros have proposed to make part of the ECB's liabilities tradeable through the **issuance of certificates of deposit (ECBCDs)**. Being issued by the ECB, they argue, these certificates would represent a euro area safe asset *par excellence* and would be attractive, in particular, for foreign central banks deciding how to best invest their foreign exchange reserves. They contend that the legal basis for these ECBCDs already exists, namely Article 13 of the 2015 Guidelines on the Implementation of the ECB's Monetary Policy Framework (ECB, 2015). The fact that Article 13 limits the maturity of ECBCDs to 12 months could be a constraint from the point of view of promoting the euro's global because central banks invest the bulk of their reserves at longer maturities. But central banks also hold a significant share of their reserves in bank deposits, for which ECBCDs could be a good substitute.

Another proposal is that of Avgouleas and Micossi (2021) and Micossi (2021), which suggest to **transfer a substantial part of the sovereign bonds purchased by the Eurosystem**, both during the COVID-19 crisis and before, to the ESM. This would not only avoid, according to these authors, the potentially disruptive effect on the bond markets of having the ECB release these sovereign bonds rapidly once the monetary policy justification for holding them in its books disappears but could also have a salutary impact on the availability of euro-denominated safe assets, thus supporting the euro's international status. The reason is that the ESM would purchase the sovereign bonds held by the ECB by issuing its own bonds in order to fund the secondary market facility foreseen in Article 18 of the ESM Treaty. Like for the ECBCDs proposal, the advocates of this approach believe that this approach would be legally feasible, requiring only some modifications of Article 18 that would not entail ratification by euro area Member States.

Yet another possibility would be to make sure that a significant part of the purchases of sovereign debt under the PSPP, the PEPP or similar asset purchase programmes that might be created in the future **target riskier bonds issued by sub-AA euro area governments**. In so doing, the Eurosystem would in fact be applying one of the general recommendations Caballero, Farhi and Gourinchas (2017, pp. 41-42) made to limit the impact of central banks' asset purchase programmes on the global availability of safe assets. This is actually what the never used OMT programme introduced by the ECB in the middle of the euro area crisis was meant to do by concentrating its purchases on the debt securities of the highly-indebted countries being attacked by the markets. But applying the same approach to the PSPP or the PEPP could raise issues of both equanimity and moral hazard and would require a political consensus at the Governing Council of the ECB and in the Eurogroup.

In sum, this section has discussed a number of reasons why the impact of the new facilities and of the national fiscal responses to the COVID-19 crisis on the supply of euro-denominated safe assets might not be as significant as hoped for. They reflect the temporary nature of the facilities, the potential implications of the new debt dynamics at national level for the ratings outlook, and the effects of the Eurosystem's asset purchase programmes. While the NGEU instrument will continue to issue very

large amounts of new bonds in the coming five years, a strategy to develop the international role of the euro cannot simply depend on a temporary generator of common safe assets. Other approaches aimed at developing a permanent common safe asset might need to be considered.

This section has also helped underline the utmost relevance of the ECB's asset purchase programmes for the availability of safe assets in euros and, indirectly, for the global status of the euro. With the pandemic-related recession now behind us, and concerns about the inflationary outlook, exacerbated by the surge in international energy and commodity prices produced by the war in Ukraine, taking centre stage, we might soon find ourselves in a very different situation: as the ECB starts to unwind its QE policies, it will bring back to the market a large portion of the safe assets that it withdrew from circulation. Depending on how this is done, it could give a welcome boost to the supply of euro area safe assets, reinforcing the planned issuance of NGEU bonds. But if the EU wants to strengthen the euro's global status in a solid and durable manner, it should consider implementing a more comprehensive strategy. To this the paper now turns.

7. A MORE COMPREHENSIVE STRATEGY

Let us try to wrap up the analysis so far and draw some strategic conclusions. This paper has recalled that the euro is punching internationally below the economic weight of the euro area. Apart from the incumbency advantages of the dollar, this has a lot to do with the scarcity of high-quality, marketable assets in euros and, more generally with the insufficient depth, liquidity and efficiency of the euro area's capital markets. It also reflects shortcomings related to the uncompleted architecture of EMU.

The paper has also shown that while the macro-financial measures adopted by the EU in response to the pandemic, and in particular the new financial facilities, will boost significantly the supply of euro-denominated safe assets, they are unlikely to be enough to have a meaningful and durable impact on the euro's global reach. If the EU wants to effectively promote the euro's international use, consistent with the more pro-active policy adopted in recent years, a more comprehensive strategy will therefore be needed. Now, what should such strategy also include?⁴⁰

First of all, the EU should continue to **deepen and improve the institutional setup of EMU** in order to increase its stability and credibility. This entails, in particular, completing the banking union and fully implementing the Capital Markets Union initiative, which would help overcome the persistent segmentation of the euro area's financial markets. One could also argue that since what really matters for developing an international currency is the size and efficiency of security markets, as opposed to those of banks, the EU should consider reforms that would help its financial system move in the direction of that of the United States, i.e. that would rebalance its structure from its current bank dominance towards a stronger role of the security markets. While such fundamental reform should be mainly driven by other considerations (the Capital Markets Union project, in particular, may well impact relative shares of banks and securities markets), it could also have a welcome side-effect on the euro's global outreach.⁴¹

Deepening EMU also entails strengthening the fiscal surveillance system and paving the way for a more coordinated approach to sovereign debt management. It might also require a revamping and simplification of the structural reform framework provided by the European Semester. The ongoing

⁴⁰ Quite a few of the measures suggested in this section are already part of the strategy on the international role of the euro adopted by the EU in recent years, as set forth in the European Commission's Communications of 2018 and 2021, related Council Conclusions and the European Parliament's Resolution of 2021 (see Section 3).

⁴¹ In its 2014 report on whether Europe is overbanked, the ESRB (2014) noted that empirical evidence suggests that the financial structures that are heavily skewed towards banking tend to be associated with lower growth and warned that bloated banking systems increase systemic risk and are more likely to trigger sovereign debt and banking crises. It recommended taking measures to rebalance the EU's financial structure away from banks and towards security markets.

Economic Governance Review intends, as noted, to address all these issues. More effective structural reforms, including policies to support and stimulate the green and digital transition, an objective to which the NGEU instrument is contributing directly, can create the basis for stronger and more sustainable and inclusive growth and a more dynamic and resilient euro area economy. This could in turn increase confidence in the euro, thus favouring its international status.

Secondly, more ambitious steps should be taken to support the issuance of **safe assets in euros**. Ultimately, this would mean reactivating the debate on the regular issuance of a sufficiently large common euro asset denominated in euros, which would require some consensus on the adoption a coordinated approach to sovereign debt management. But it could also include some concrete steps that would not require agreeing on the latter. In particular, it could entail:

- **Making permanent, or prolonging, the SURE and NGEU instruments**, as proposed by some experts. Of course, even a limited extension of the budget and period of availability of these instruments would not be without challenges. Both are legally linked to the COVID-19 pandemic and would, therefore, require amending the SURE and NGEU regulations. SURE is also dependent on the agreement of all EU countries to grant the necessary direct guarantees. In the most ambitious of scenarios, the SURE bonds could eventually be linked to any macroeconomic crisis requiring employment support, while the NGEU instrument could eventually become a permanent means to support the EU's green and digital transition.⁴²
- Euro area countries, and in particular those with weak fiscal and debt positions, should continue to advance with their **fiscal consolidation** plans. This would not only strengthen the euro's real and perceived macroeconomic foundations and help prevent a repetition of the imbalances that led to the euro area's sovereign debt crisis, but could also help some euro area countries regain AAA and AA status overtime, thus producing a consequential jump in the supply of high-quality euro-denominated assets.
- The Commission should also build on recent progress in the context of NGEU and the SURE and continue to **modernise its funding strategy and infrastructure** in order to make EU supranational bonds more attractive for international investors seeking safe assets. The aim is to consolidate the shift towards bulk borrowing (as opposed to back-to-back financing) and efforts to develop a deep and liquid secondary market and a reliable benchmark along the yield curve. This might also require investment in human resources and IT to reinforce the Commission's teams managing its funding strategy. These additional efforts and investments would only make full sense if the EU has in place the financial facilities requiring a regular issuance of safe bonds in the market, for example because the NGEU and SURE are renewed or replaced by permanent facilities. But the need to manage efficiently until 2058 the liabilities related to NGEU, as well as the advantages for other types of EU borrowing, provide sufficient reasons to continue strengthening the Commission's funding capabilities even if SURE and NGEU are eventually phased out, as currently planned.

Third, **the EU should exploit windows of opportunity in certain new segments of the global bond market** such as green bond and social bond markets. With NGEU and SURE, the Commission has already become, as noted, a major green bond and social bond issuer, and this position is expected to be reinforced in the coming years. The stricter criteria for tagging investments as green contained in the EU's Sustainable Finance Disclosure Regulation, in its Taxonomy of Sustainable Activities and in the Commission's proposed Green Bond Standard have yet to be applied to EU supranational and sovereign green bonds. For example, the NGEU Green Bond Framework only requires green bonds issued under NGEU to comply with the somewhat less strict rules issued by the ICMA.⁴³ The EU

⁴² In the proposal of Corti and Alcidì (2021) to transform SURE into a permanent instrument, it would still be used to finance short-term work schemes in EU countries facing an exceptional crisis and would, therefore, be different from the European unemployment reinsurance scheme proposed by some experts in the past.

⁴³ On this point, see Christie, Claeys and Weil (2021).

should ensure the swift adoption of all these regulatory proposals and their application to its supranational and national issues of green bonds. It should also lead the international discussion on green bond standards, thus strengthening its position as a sustainable-finance hub. All this would help the EU consolidate its strong place in the green bond market niche, with positive implications for the euro's international standing.

Another key issue are the **ECB's policies and facilities**. First, the design of **QE policies** is, as noted, paramount for the effective availability of safe assets in euros. Section 6 discussed some proposals put forward by the literature to mitigate the impact of the ECB's asset purchases on the actual supply of safe euro assets available to the market. While these proposals raise complex issues, including on the ECB's facilities, the role of the ESM and sovereign debt management that are beyond the scope of this paper, they underline the need to consider the implications of the ECB's asset purchase programmes in any strategy regarding the international role of the euro. Secondly, the **ECB's swap lines and repo agreements** with non-EU central banks can also have an important bearing on the euro's global status, in addition to being useful to protect the euro area from possible financial turbulences in its neighbourhood. The reactivation or creation of several of these swap and repo arrangements during the pandemic, including the new Eurosystem Repo Facility, are welcome steps. They should be maintained and could, in some cases, be extended to other interested central banks.⁴⁴

Also of relevance are the **implications of a digital euro for its international status**. Indeed, in a global context characterised by the emergence of digital currencies, including crypto-currencies, stablecoins and central bank digital currencies (CBDC), the EU is considering, as noted, introducing a digital euro as a CBDC. The ECB's timely report on the matter (ECB, 2020c) sets out several scenarios under which a decision to issue a digital euro might be warranted, and the ECB launched in July 2021 an investigation phase that will last two years and will address issues regarding design and distribution, without however prejudging any future decision on the issuance of a digital euro. The Commission is working, in close liaison with the ECB, on a possible legislative proposal for adoption in 2023, should it be deemed appropriate to go ahead with the introduction of a CBDC.

As stressed by the ECB (2021), while the global appeal of currencies largely depends on fundamental economic forces such as the size of the economy, financial depth and liquidity and the soundness macroeconomic policies, a digital euro could buttress its international use in a number of ways. In particular, being a direct claim on the Eurosystem, a digital euro would reduce the risks of holding euro assets as a store of value. It could also encourage its use in all types of cross-border transactions, including the transfer of migrant remittances, by avoiding the inefficiencies of current payment infrastructures and reducing transaction costs. And because it would encourage the use of the euro in both trade and financial transactions and both as means of payment and as a store of value, the type of complementarities and positive feedback loops emphasised by Gopinath and Stein (2018) could take place.⁴⁵ The international currency case for introducing a digital euro would be even more important if other key countries, such as the United States or China, were to introduce their own CBDCs.⁴⁶ That said, and like in other policy areas, the decision whether to introduce a digital euro, as well as its specific design features (which are of high relevance for its actual impact on the euro's international use), should and will be driven by considerations other than its implications for the euro's global role.

Reforms in **external representation and coordination** aimed at strengthening the capacity of the euro area or the EU to speak with a single voice in international financial fora and on foreign policy

⁴⁴ Eichengreen and Gros (2020) suggest that the ECB should offer swap lines to Asian central banks to help them backstop local firms' transactions in euro. This could help strengthen the future standing of the euro in a region that is more likely to shift at some point towards an increased reliance on the renminbi.

⁴⁵ Having said that, the ECB (2021) concludes, based on model simulations, that the introduction of a digital euro would not necessarily be a game changer for the international role of the European currency.

⁴⁶ The Roadmap for Enhancing Cross-Border Payments adopted by the G20 in 2020 includes a building block dealing with the international dimension of CBDCs and provides a framework for agreeing a coordinated approach on the matter (<https://www.fsb.org/2020/10/enhancing-cross-border-payments-stage-3-roadmap/>).

and security matters could also help promote the euro's global outreach (Coeuré, 2019; Eichengreen and Gros, 2020). The importance of consolidating or better coordinating the representation of the euro area in institutions such as the IMF and fora such as the G20 has been stressed, as noted, in several communications and proposals adopted by the Commission since 2008.⁴⁷ But although some progress has been made in this area in recent years, there is still substantial room for improvement.⁴⁸

Finally, since the adoption of its 2018 Communication on the international role of the euro and the related Recommendation on energy invoicing, the Commission has engaged in a proactive promotion of the euro's internationalisation in the context of its bilateral macroeconomic **dialogues with third countries** and of its cooperation on energy matters with neighbouring countries that are key energy suppliers of the EU. The macroeconomic dialogues help understand better the potential interest of non-EU countries, and the obstacles they face, in using the euro, notably as currency of denomination of their international bonds and foreign exchange reserves, while the energy dialogues are aimed at exploring possible mutual interest in shifting to euro the invoicing of gas, oil or electricity imports. Obviously, the scope for impacting the euro's international status through this type of dialogues is rather limited. For example, any shift to energy pricing in euros will have to overcome the advantages the dollar derives from using a single currency as *numéraire*. But the dialogues are useful and should be pursued, having for example allowed the Commission over the last two years to explain the main features of the SURE and NGEU bonds, including the first green bonds issues, which have elicited significant interest from reserve and sovereign wealth fund managers in neighbouring countries.⁴⁹

8. TOWARDS A MULTIPOLAR CURRENCY SYSTEM?

While incumbency advantages undoubtedly impose serious barriers to other currencies trying to displace the US dollar in the international arena, ongoing structural changes in the world economy, technological progress and geopolitical factors lend increasing credence to the new view on international currencies. These changes could create a more propitious context for other currencies, and, in particular, the euro and the renminbi, to gain international stature, especially if supported by appropriate internationalisation strategies. Indeed, the new view of international currencies sees, as noted, the current hegemony of the dollar as a historically anomaly and believes that the world will eventually head back to a multi-polar currency system. The distinct trend towards a decline in the dollar's share in global foreign exchange reserves observed since 2008 (see Figure 8.1), though hard to interpret given the large number of central banks that do not report the currency composition of their reserves to the IMF, might well be a harbinger of a future multi-polar system.

Now what are those structural trends that make the advent of a multi-polar currency system more plausible now? Most have already been alluded above. Firstly, **progress in financial technology**, including the emergence of digital currencies, is likely to reduce, as noted, interchangeability costs and first-mover advantages, allowing new comers to operate with low transaction and information costs.

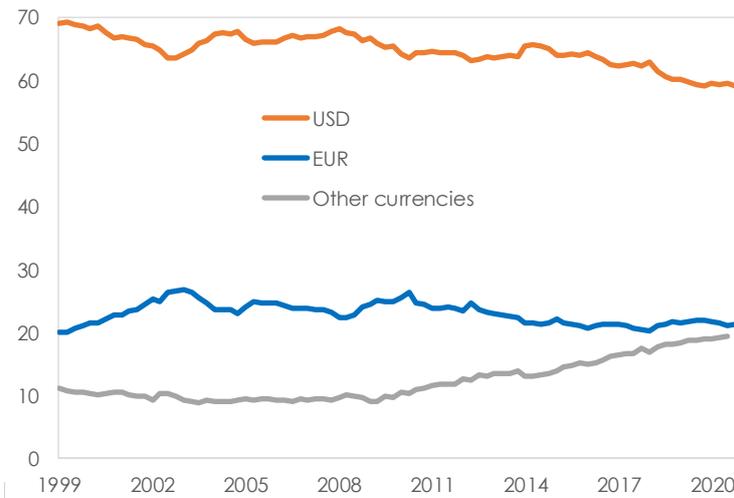
Secondly, the **weight of China and other emerging markets in the world economy and global trade** has been increasing rapidly and is projected to continue rising, while that of the United States (and of the euro area) is expected to decline (see Figure 8.2). Although this will not, by itself, be enough to overcome inertial forces, in combination with other factors it might well make a difference.

⁴⁷ For a description of the EU's system of external representation and coordination and of its shortcomings, see chapter 4 of Van den Nord *et al.* (2008) and European Commission (2008a and 2008b).

⁴⁸ For a recent concrete proposal on how to take this process forward, see Gros (2020).

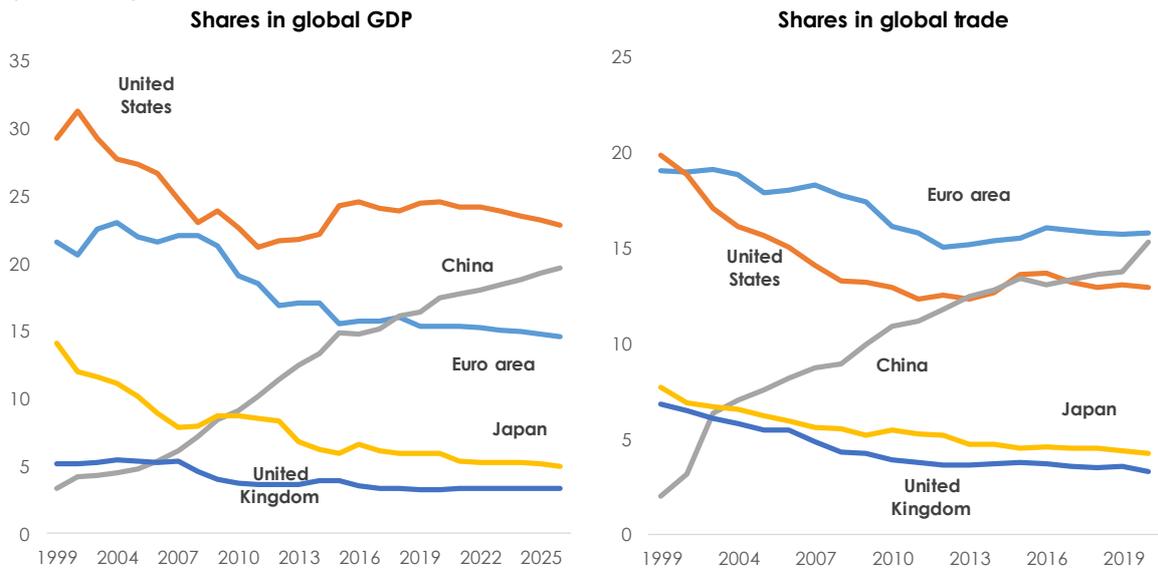
⁴⁹ These dialogues have in some cases been complemented by Commission-funded surveys on the use of the euro in certain regions. For the results of the surveys on the use of the euro in the EU's Eastern and Southern neighbourhoods, see Neykov and Robert (2021) and Almagro Herrador, Macovei and Bizer (2022), respectively.

Figure 8.1: **Currency composition of global FX reserves**
(in percent; at constant, Q4 2020 exchange rates)



Source: ECB, based on IMF (COFER database).
Note: Shares in global foreign exchange reserves with disclosed currency composition.

Figure 8.2: **Trends towards a multi-polar world economy**
(in percent)



Sources: IMF, *World Economic Outlook (WEO) Database, October 2021*; and IMF, *International Financial Statistics*.

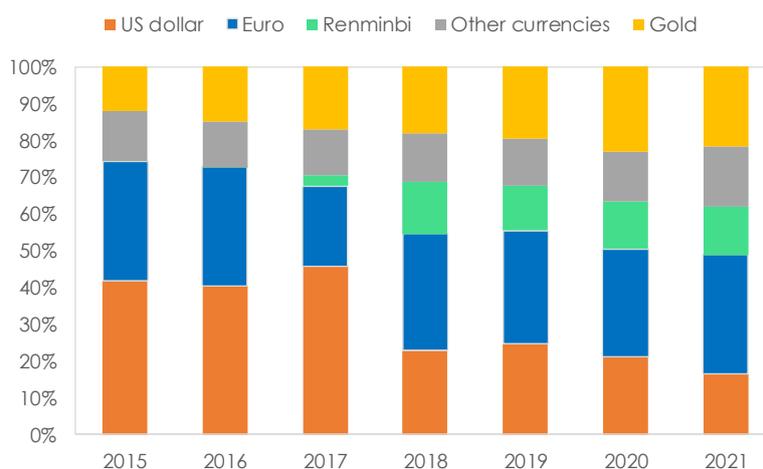
Notes: Nominal GDPs in US dollars, converted at current exchange rates. For 2021-2026, GDP figures are WEO projections. China is mainland China excluding Hong Kong. For global trade flows, shares of exports + imports over 2 times global trade. The euro area refers to the 19 current euro area countries throughout the period and excludes intra-euro area trade flows.

Thirdly, **concerns about the sustainability of US public finances and external imbalances**, as well as about political cohesion within the United States, given the increasing polarisation of the American society, exemplified by last year's assault on the US Congress by an angry mob, could dent confidence in the dollar, opening up space for competing currencies. According to the projections contained in the IMF's *World Economic Outlook* of October 2021, the COVID-19 crisis, in conjunction with recent rises in interest rates and other factors, will result in a 25 percentage point increase in the US public debt/GDP ratio between 2019 and 2026, pushing it to 134%, a level well above that of the euro area, which is expected to hover around 100% of GDP during the next ten years, as shown in Figure 5.3.

Fourthly, **the unsatisfied global demand for safe assets** provides, as noted, a window of opportunity for other currencies that will manage to supply that kind of assets. With China not meeting at present the preconditions to offer secure assets, notably in terms of financial liberalisation and depth, as well as transfer and political risk, this puts the euro in a good position to benefit from the global scarcity of highly-quality assets, provided that it manages to agree on an ambitious strategy to foster its own supply of such assets. Again, the NGEU and the SURE instruments are a good but insufficient step.

Last but not least, **geopolitical factors** might also accelerate the transition towards a multi-polar currency system. There are several aspects to this: first, the geopolitical tensions and economic conflict between the United States and China have increased China's interest in promoting the internationalisation of the renminbi as a way to reduce its strategic dependency on the United States. Similarly, tensions with Russia, recently exacerbated in the context of Russia's invasion of Ukraine, have led Russia to adopt a policy aimed at reducing its dependency on the US dollar. This is illustrated by Russia's efforts since the early 2000s to reduce the share of the US dollar in its official foreign exchange reserves and increase that of the euro, and more recently that of the renminbi and gold (see Figure 8.3), which has been a key factor behind the decline in the US dollar's share in global reserves, given that Russia is the fourth largest reserve holder in the world.⁵⁰ Indeed, Iancu et al. (2020), analysing quarterly data from 2006 to 2018, find evidence that declines in the share of the dollar in Russia's official foreign exchange reserves are correlated with the imposition or intensification of US sanctions on Russia.

Figure 8.3: **Currency composition of Russia's reserves**
(in percent; annual, end-of-period data)



Source: Bank of Russia.

The increasing use by the United States of access to the dollar as a foreign policy tool may accelerate these geopolitically-driven trends. Already during the previous US administration this policy had prompted both China and, in some cases, even the EU to seek alternatives to SWIFT and dollar credit for clearing cross-border transactions. Thus, the Trump Administration's decision to threaten European companies and governments that did not implement the US unilateral sanctions on Iran by denying them dollar credit from US banks, relying for this on SWIFT data, had led, as noted, the EU to put in place an alternative clearing system based on the euro. Similarly, China is considering creating a renminbi-based alternative to the SWIFT messaging system and has concluded a bilateral agreement with Russia for the clearing of ruble and renminbi balances. The partial exclusion of several Russian banks from SWIFT in the context of the sanctions on Russia adopted in response to its

⁵⁰ With the EU having participated in the freezing of the Russian central bank's foreign assets, as part of the economic sanctions imposed by the international community in response to the war on Ukraine, Russia might well attempt in the future to diversify its foreign exchange reserves also away from the euro. But the insufficient market liquidity and depth of assets in alternative currencies (e.g. renminbis) limit Russia's options for holding its reserves.

invasion of Ukraine could encourage both Russia and China to move further in this direction.⁵¹ China's plan, unveiled in 2019, to introduce a digital renminbi seems also partly motivated by geopolitical considerations. The same can be said of the People's Bank of China's decision in 2015 to replace the exchange rate fluctuation band against the dollar with a narrow band vis-à-vis a basket of currencies including the euro.⁵²

Although geopolitical tensions have sometimes created room for the euro to develop as an alternative to the US dollar, they could also lead China and Russia to try to reduce dependence on both US dollar and euro liquidity. If this second type of reaction prevails, we could witness a progressive segmentation of the international monetary and financial system in separate geographical zones, with the euro being used mostly in the EU and its neighbourhood (including parts of Africa), the renminbi in Asia, and possibly also in parts of Africa given the growing importance of China's development finance and trade links with this continent, and the dollar elsewhere and in a number of global functions. Russia, for its part, might diversify its dependence among these three potential monetary blocks, or might, alternatively, drift away from the two Western blocks and towards a greater reliance on the Chinese one.

Which scenario will eventually emerge will crucially depend on China's capacity to develop and liberalise its capital markets and to offer renminbi assets that are perceived as safe by international investors. For as long as this is not the case, these trends and geopolitical factors are more likely to benefit the euro than the renminbi. Having said that, this process of diversification of the international monetary system should not necessarily play the renminbi against the euro. On the contrary, by combining to break the network and economies of scale advantages of the dollar, the internationalisation of the renminbi could facilitate that of the euro and vice versa. Combined progress with the internationalisation of both currencies could help the system reach the critical, tipping point that Krugman (1984) talks about, beyond which the dollar's hegemony could unravel, allowing a few major international currencies to coexist in a new equilibrium.

To sum up and conclude, a new context might be emerging in which the euro, and possibly the renminbi and other currencies, might be able to dislodge the dollar from its hegemonic position, giving way to a genuine multi-polar currency system. But for the euro to take advantage of this new environment, it should adopt a comprehensive and meaningful strategy of internationalisation of the euro. This paper has attempted to shed some light on the type of policies such a strategy could include. A core component of that strategy is an expansion of the pool of euro-denominated safe assets, which could help overcome one of the main problems that have plagued the euro-area's architecture since its creation and constrained the euro's global reach. The NGEU and SURE facilities are important steps in this direction but they have some serious limitations because of their temporary nature and the offsetting effects of the ECB's asset purchase programmes. The EU could think of a more permanent way to ensure the regular issuance of a sufficient amount of safe assets, preferably through the issuance of a common supranational asset, and could fine-tune the ECB's facilities (and possibly those of the ESM) to make sure that the safe euro assets issued by EU sovereigns and supnationals do reach the market, including foreign investors. If the EU does move courageously in this direction, while persevering in its efforts to deepen EMU and strengthen the euro area's external representation, the euro stands a good chance of reaching an international status that is commensurate with Europe's economic, political and regulatory importance.

⁵¹ <https://www.reuters.com/business/finance/eu-excludes-seven-russian-banks-swift-official-journal-2022-03-02/>.

⁵² In recent years, China's efforts to promote the internationalisation of the renminbi have also included measures to encourage trade settlements in renminbi, the launch in 2018 of renminbi-denominated oil futures contracts, the development of offshore renminbi markets and the creation of currency swap lines. They have been supported by the inclusion of the renminbi in the SDR basket in 2016.

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ANNEX I

Table A.1: **Outstanding stock of debt issued in euros by EU supranational institutions, 2002-2021**

(in EUR billions)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
EU	1.44	1.46	1.38	1.47	1.41	1.26	3.14	10.27	13.02	40.44	56.17	56.15	57.38	55.81	54.20	54.00	53.11	51.94	53.06	54.79	
MFA	1.36	1.36	1.21	1.08	0.97	0.79	0.65	0.58	0.50	0.59	0.55	0.56	1.83	3.01	2.95	3.90	4.36	4.73	5.79	7.44	
BoP	-	-	-	-	-	-	2.00	9.20	12.05	11.40	11.40	11.40	8.40	5.70	4.20	3.05	1.70	0.20	0.20	0.20	
EFSM	-	-	-	-	-	-	-	-	-	28.00	43.80	43.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	
Euratom loans	0.08	0.11	0.17	0.39	0.44	0.47	0.48	0.48	0.47	0.45	0.42	0.39	0.35	0.30	0.25	0.25	0.25	0.21	0.27	0.35	
EFSF	-	-	-	-	-	-	-	-	-	17.97	157.06	183.92	194.50	184.59	185.11	200.25	201.57	200.96	197.80	191.30	
SURE bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39.50	89.64
NGEU bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90.95
ESM	-	-	-	-	-	-	-	-	-	-	39.47	60.09	49.24	76.72	85.36	86.43	92.92	103.02	110.51	107.62	
EIB	77.30	85.20	93.00	97.60	101.04	106.55	107.76	136.85	148.19	174.49	196.02	213.30	217.81	215.67	220.90	233.25	242.30	242.24	245.47	246.14	
TOTAL:	78.74	86.66	94.38	99.07	102.44	107.81	110.90	147.11	161.21	232.90	448.72	513.45	518.93	532.78	545.57	573.92	589.91	598.16	646.34	780.43	
Memorandum items:																					
Securities denominated in other currencies																					
ESM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00	6.00	8.00	8.00	10.00	
EIB	112.06	109.30	121.83	150.68	145.54	147.67	159.23	168.91	209.81	226.95	228.65	213.06	235.64	253.58	250.02	216.34	213.08	207.08	189.79	179.79	

Sources: European Commission, ESM and EIB.

Note: MFA = Macro-Financial Assistance; BoP = Balance of Payments Support instrument; EFSM = European Financial Stabilisation Mechanism; EFSF = European Financial Stability Facility; ESM = European Stability Mechanism; EIB = European Investment Bank; SURE = Support to Mitigate Unemployment Risks in an Emergency; and NGEU = New Generation EU instrument.

Table A.2: **SURE and NGEU bond syndications - Role of central bank and foreign investors**
(in EUR billions and in percent of volume issued; as of end-April 2022)

Maturity (years)	Date of issuance	Volume (EUR bn)	Total investor demand (EUR bn)	By investor type		By nationality	
				Central banks/ official institutions	Other	Euro area	Non-euro area
SURE Bonds							
5	10/11/2020	8	85	30%	70%	41%	59%
5	23/03/2021	8	46.5	42%	58%	32%	68%
7	26/01/2021	10	83	19%	81%	48%	52%
8	18/05/2021	8.1	40	20%	80%	49%	51%
10	04/10/2020	10	145	37%	63%	56%	44%
15	24/11/2020	8.5	114	15%	85%	59%	41%
15	09/03/2021	9	86	17%	83%	63%	37%
15	22/03/2022	2.2	35	11%	89%	56%	44%
20	04/10/2020	7	88	13%	87%	72%	28%
25	23/03/2021	5	50	15%	85%	67%	33%
25	18/05/2021	6	33	13%	87%	60%	40%
30	10/11/2020	6	55	15%	85%	59%	41%
30	26/01/2021	4	49	11%	89%	73%	27%
NGEU Bonds							
5	29/06/2021	9	88	30%	70%	37%	63%
7	14/09/2021	9	103	32%	68%	39%	61%
10	11/06/2021	20	142	23%	77%	51%	49%
10	22/03/2022	10	59	31%	69%	48%	52%
15	12/10/2021	12	135	13%	87%	49%	51%
20	13/07/2021	10	96	17%	83%	56%	44%
20	05/04/2022	6	78	12%	88%	66%	34%
30	29/06/2021	6	83	15%	85%	61%	39%
30	08/02/2022	5	64	30%	70%	65%	35%

Source : European Commission.

Note : Excludes NGEU bonds and bills issued through auctions.

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