

Post-COVID-19 Global Currency Order: Risks and Opportunities for the Euro



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Abstract

The issuance of EU debt in the context of the recovery plan for Europe creates scope for strengthening the international role of the euro. However, with a large share of safe euro assets likely to be absorbed by the pandemic emergency purchase programme of the ECB, a shortage of eligible bonds stands to impede such progress. The ECB could decisively increase the supply of safe assets by issuing tradable ECB certificates of deposit as a way of overcoming this obstacle.

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LIST OF ABBREVIATIONS

BoJ	Bank of Japan
CBDCs	Central Bank Digital Currencies
COFER	Currency Composition of Official Foreign Exchange Reserves
ECB	European Central Bank
ECBCD	ECB Certificate of Deposit
ECON	European Parliament's Committee on Economic and Monetary Affairs
EMU	Economic and Monetary Union
EU	European Union
GDP	Gross Domestic Product
IMF	International Monetary Fund
INSTEX	Instrument in Support of Trade Exchanges
MFIs	Monetary Financial Institutions
NGEU	Next Generation EU
PSPP	Public Sector Purchase Programme
PEPP	Pandemic Emergency Purchase Programme
QE	Quantitative Easing
SDR	Special Drawing Right
SURE	Support to mitigate Unemployment Risks in an Emergency programme
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TIC	Treasury International Capital
TLTRO	Targeted Longer-Term Refinancing Option
US	United States
USD	US dollar

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EXECUTIVE SUMMARY

This study describes emerging trends and possible shifts in the global monetary system. It assesses the likelihood of significant changes, including opening the space for additional global currencies, potentially leading to a situation where several national units share international currency status.

Currently, the dollar is far and away the leading global currency. It accounts for more than 60% of identified foreign exchange reserves and nearly 50% of global foreign exchange turnover. It is the currency of denomination for more than 60% of international debt and 50% of international loans. On all these dimensions, the international monetary role of the dollar far exceeds the weight of the United States (US) in the global economy. At the same time, the share of the euro is only a fraction of that of the US, although the US and euro area economies are of similar size.

In other words, although the euro is the second most important global currency, its share of global transactions does not exceed the weight of the euro area in the global economy (except in payments through SWIFT, where the euro and dollar are roughly coequal). Moreover, this role relies almost entirely on the importance of the euro area itself in global trade and transactions, with the euro little used in transactions in which the euro area itself is not one of the principals. The absence of the euro in “third country” transactions is especially pronounced in Asia. While the dollar also dominates in Latin America, the economic weight of this region is low compared with Asia, and its growth prospects are more limited.

Economic research is converging on the “dominant currency paradigm” (Gopinath et al., 2020), which implies that traders in non-reserve currency countries use the dominant currency, currently the dollar, in their international transactions for invoicing and financing – even in transactions that do not involve the country issuing the dominant currency. This is contrary to the traditional view that producers of manufacturing products, especially in developed economies, invoice their exports in their home currency because most costs, especially labour costs, are fixed in that currency. That continues to be the case of firms in the euro area, but not in other countries, especially emerging economies. This is yet an additional factor that, as matters are currently configured, favours the dollar over the euro.

The spread of international value chains is a key reason for this shift by traders (both exporters and importers) to dominant currency invoicing. Exports produced in value chains require intermediate inputs. Exporters will thus prefer to price their products in the same currency as their inputs and will require and prefer finance in that same currency. Because many such inputs are invoiced in dollars, given the historical weight of the United States in the global economy and historical role of the dollar, that “same currency” tends, currently, to be the dollar.

In contrast to this focus on trade, most official studies of the international role of the euro (e.g. ECB, 2020) focus on financial aspects, such as the use of the euro as the currency of denomination for international bonds, international deposits and loans by banks, foreign exchange turnover, and foreign exchange reserves. The dominant currency paradigm posits that the international role of a global currency in these financial markets is linked to its use as a numeraire or invoicing unit of account in trade, including when that trade is not directly with a reserve currency area.

This combination of network effects in invoicing and complementarity between invoicing and financing implies a considerable degree of inertia, absent major disturbances. Once most trade is invoiced and financed in a currency (the USD at present) it becomes difficult to change the status quo. No individual economic agent has an incentive to switch to another currency.

The question is whether changes in the structure of the global economy will overcome this inertia. According to medium-term growth forecasts (EPRS, 2018), the share of the three biggest economies in

global GDP is likely to remain at about 50% over the next decade, but with the weight of China increasing by about the same amount as the fall in the weight of both the United States and the euro area. With China acquiring an even greater weight in international trade and finance and its exporters and lenders having a preference for the renminbi, it is at least conceivable that this currency will acquire a growing global role.

The great unknown is thus whether China will open its financial market and allow the renminbi to be freely traded, perhaps even actively encouraging its use in offshore trade and finance. So far, there is little sign of this happening. China tightened up on many cross-border transactions following a bout of financial turbulence in 2015, in response to which it prioritised domestic financial stability over currency internationalisation. By a number of measures, the international role of the renminbi diminished subsequently. China now seems poised to make another push to foster greater international use of its currency, possibly by issuing a digital version of the renminbi.

Yet another scenario is that China does not succeed in significantly internationalising the renminbi but decouples significantly, both economically and financially, from the United States. In this case it is conceivable that it will shift transactions and financial assets currently denominated and held in dollars into another major currency, such as the euro.

- *Main risks and opportunities for the euro on the global stage stemming from the COVID-19 crisis*

The threat to the cohesion of the euro stemming from the asymmetric impact of the COVID-19 crisis has been overcome. Yet, it remains to be seen whether the Next Generation EU (NGEU) package will be sufficient to durably offset the asymmetric impact of the crisis on different Member States or whether the crisis will lead to renewed divergence in economic performance, including debt levels, among Member States.

In addition, there is the possibility that the EUR 750 billion of EU bonds to be issued as part of that package will create the foundation for a more widely held benchmark and reserve asset. Reserve managers complain that markets in the low-risk, liquid government bonds that make up the foundation of their portfolios are segmented along national lines, and that not all government bonds satisfy the conditions for safe asset status. Only four euro area countries have AAA ratings from at least one agency (France, Germany, the Netherlands and Austria). Sovereign spreads within the euro area continue to differ, the best efforts of the European Council and the European Central Bank (ECB) notwithstanding. By creating an EU-level benchmark and reserve asset, the new bonds hold out the promise of changing this.

Promise is not the same as reality, however. The figure of EUR 750 billion (plus potentially another EUR 100 billion from the SURE programme on support to mitigate unemployment risks in an emergency) is a relatively small fraction of the EUR 10 trillion in existing central bank foreign reserves, much less the larger stocks of foreign assets held by sovereign wealth funds and private banks and firms. Those who see the EU as having a “Hamiltonian moment” imagine that this EUR 750 billion is just the first step in the direction of a larger issuance. Whether or not their forecast is right could make an important difference for the international status of the euro.

An important caveat here, which has attracted little notice, is that up to half of these new EU bonds is likely to be bought by the ECB under its pandemic emergency purchase programme (PEPP) of sovereign bond purchases, leaving potentially only a little over EUR 400 billion for use as international reserves.

- *Shifts in economic, geopolitical and technological environment*

- i) *Economic*

Eichengreen et al. (2018) emphasise the importance of “growing the platform” in order for a currency to acquire and retain a consequential international role. An economy whose shares of global GDP, trade and financial transactions decline secularly cannot expect to significantly enhance the international role of its currency or, if its currency possesses that role, to maintain it indefinitely. The NGEU, with its structural reform, digital and green economy elements, creates the potential for the euro area to grow its platform more quickly.

Conversely, problems with growth in the United States, whether because of failure to agree on an economic programme or simple failure to control the virus, could open up space for competing currencies. The projections from the International Monetary Fund (IMF) (as of July 2020) imply that the United States will have a somewhat shallower recession than the euro area. Moreover, the US economy has a stronger digital sector, which suggests that its long-term growth performance should also be less affected than that of the euro area, insofar as the COVID-19 crisis will accelerate the shift to digitisation. Growth is also a key element of the sustainability of public finances. This relative robustness of the US economy suggests that doubts about the sustainability of US public finances are unlikely to become a major factor unless credible evidence accumulates that the COVID-19 crisis has permanently impaired potential growth.

Maintaining a higher growth rate will be essential for the stability of US finances as the debt/GDP ratio is increasing by about 25 percentage points of GDP. The IMF predicts that gross general government debt would be higher for the United States (as a ratio of GDP) than that of Italy in 2019. A priori this comparison would suggest that the United States might soon have to pay a higher risk premium. That being stated, there is no sign of this in financial markets today. US long-term interest rates have remained close to historical lows although investors expect this future high level of debt. This implies that the point at which the markets start to doubt the sustainability of US public finances is still far away. One reason for this might be that the amount of US federal debt in the hands of the public is likely to remain more moderate, at below 110% of GDP.

- ii) *Geopolitical*

A major post-COVID-19 development at the geopolitical level is the likelihood of heightened conflict between the United States and China, together with hardening attitudes towards China in Europe. These developments point in the direction of a bifurcated international monetary and financial system, in which the euro is used in Europe’s borderlands while the renminbi is used in Asia.

US foreign policy unilateralism also has the potential of opening up space for alternatives to the dollar. This turn in US policy has led to various initiatives to create alternatives to dollar credit for clearing cross-border transactions. Although few of these initiatives have gained much traction to date, further steps by the United States to weaponise the dollar could hasten their development. The development of clearing and settlement facilities utilising the euro could therefore make use of the currency more attractive to countries seeking to insulate themselves from US foreign policy unilateralism.

Geopolitical tensions could also affect the willingness of the Federal Reserve System to act as a lender and liquidity provider of last resort. A future US Congress or President might limit the Fed’s capacity to provide such services, in which case other countries may look for alternatives, including other central banks more willing to act as lender and liquidity provider of last resort to the world.

iii) *Technological*

A potential technological development given further momentum by COVID-19 is the advent of digital currencies, including central bank digital currencies (CBDCs). CBDCs would allow commercial banks to settle directly with one another using central bank money rather than clearing through the central bank. They could entail retail accounts at the central bank for individuals or individual electronic wallets to which central bank currency could be digitally deposited. Issuance of a CBDC by the United States, the euro area or China would at least marginally enhance the utility and attractions of their respective currencies and, through the functional complementarities, buttress those currencies' international status.

- *Sectoral policies used to facilitate the market-driven process of changing the global role of the euro*

A principal trend reshaping the global economy is catch-up growth in developing Asia. The weight of this region is likely to continue to increase for the next decade at least. Trade in this area is overwhelmingly invoiced in USD (80% in USD versus 8% in euros according to Boz et al. [2020]). Moreover, the euro plays only a marginal role in Asian financial markets. The region in which the euro plays a dominant role, Europe's neighbourhood, is smaller and less dynamic than developing Asia. This implies that the natural basis for a global role for the euro is stagnating in absolute terms and shrinking in relative terms.

Here again the main unknown is China. Geopolitical tensions could cause a state-led shift away from the use of the USD in trade and reserve management. The question is what might be done to encourage a shift towards the euro. The development of a clearing and settlement system for cross-border transactions in euros, as described above, is one possibility.

In addition, the ECB might provide swap lines to Asian central banks, something that would enable them to backstop local firms' transactions denominated in euro. To date, the ECB has established euro-denominated swap lines with non-euro area EU countries (Bulgaria, Croatia, Hungary, Romania and Denmark) as well as neighbourhood countries (Albania, North Macedonia and Serbia) but not with Asian countries. It may be that the constraint is a lack of appetite on the part of Asian countries for euro swaps, since there is little use of the euro in the region. But it cannot hurt to try. The same comment applies to the recently created Eurosystem repo facility for central banks (EUREP). Time will show the appetite by central banks around the world for this facility.

Public policies that acknowledge the need to restructure and reorient economies post-COVID-19 may work in the direction of favouring the EU relative to the United States. In February, the European Commission launched two initiatives, the European Green Deal and the European Digital Agenda. The first sees green activity (emissions reduction, green energy, energy efficiency, clean transport, environmentally-friendly food chains, protection of biodiversity and pollution reduction) as a growing share of the economy going forward. The second emphasises the importance of digital connectivity and skills, competition and innovation in the digital sphere, and civic freedom (freedom of speech, diversity of content, countering crime and misinformation) as becoming increasingly important for economic dynamism going forward. These are the skills and activities in which societies should invest to maximise productivity, economic growth and human development post-COVID-19, the argument goes. The United States, in contrast, has no such agenda – no coherent guidance from government for business about the skills and activities in which to invest.

- *Completion of economic and monetary union (EMU)*

A key element that has often been taken to be decisive for a greater international role of the euro is the availability of a common risk-free asset. This obstacle should be reduced by the imminent issuance of EUR 750 billion of EU bonds. How helpful it will be is an important question, which we later discuss.

A banking union and capital markets union will also be helpful. Anything that makes euro area banks more stable will make euro area bank deposits more stable. Unfortunately, central banks hold mainly securities, not bank deposits, as reserves. As noted elsewhere, a constraint on wider inclusion of the euro in the fixed-income portfolios of central bank reserve managers, sovereign wealth funds, pension funds and other investors is the heavily bank-based nature of the European financial system: that borrowers, for external finance, rely more on bank loans and less on tradable debt securities than in the United States. A goal of the capital markets union is to widen, harmonise and integrate European markets in fixed-income securities. If this encourages some rebalancing from bank loans to securitised debt, it would go some way towards addressing one imbalance in market structure favouring the dollar and the United States. But reserve managers hold mainly government bonds, not corporate bonds, as reserves. And a capital markets union will chiefly enhance the security market access of corporates, not governments, which already access this market.

A stronger euro area economy with a vibrant capital market would undoubtedly make the euro more relevant and competitive on the global stage. Measures to strengthen the economy and European capital markets should be undertaken on their own merit, not because of the side effect regarding the global role of the euro. The key argument for a capital markets union is that segmented capital markets lead to misallocation of resources and lower growth. The missing elements of the capital markets union (or banking union) that have been identified repeatedly by the Commission should thus be put in place. Still, for the reasons discussed above, one should not expect a first-order impact of these measures on the international role of the euro.

As an aside, we do not consider separately representation of the euro area at the IMF, which would not have a direct impact on the international role of the euro but might strengthen the geopolitical and “geo-economic” autonomy of the EU. Such a step (see Gros, 2020a for a recent concrete proposal) could be considered an important complement to the other steps discussed here.

We conclude with one specific proposal. A measure that might make it more attractive for central banks to increase their investment in euro assets would be for the ECB to issue certificates of deposit that are freely negotiable, not only among euro area banks but also globally. This would provide a useful complement of a riskless short-term asset to the long-term bonds the EU will issue soon to finance the NGEU fund.

1. INTRODUCTION

A number of European institutions (the ECB, Commission and Parliament) have recently called for steps to foster the international role of the euro. The ECB publishes each year an in-depth report on the international role of the euro. The last report argues explicitly that the cost–benefit calculus has changed, and that the ECB now sees the benefits as outweighing the costs.

The 2020 work programme of the European Commission also contains a reference to a strategy for “Strengthening Europe’s Economic and Financial Sovereignty”. The priorities for 2020 have now been overtaken by the severity of the COVID-19 crisis, but the issue remains on the table. The European Parliament’s Committee on Economic and Monetary Affairs (ECON Committee) is planning an own-initiative report on “Strengthening the international role of the euro”.

The (potential and actual) role of the euro as a reserve currency has been widely discussed in the scholarly literature. A Google Scholar search of the term “reserve currency” yields 24,000 results, approximately half of which also mention the euro. Similarly, one finds 13,000 entries for the term “foreign exchange reserve”, two thirds of which mention the euro. About one third of this literature dates from the last four years. For more details, see Table 6 in the Annex.

This contribution clearly cannot survey the entire field. We concentrate on two key points.

First, the economic literature (and common sense) suggests that the dominance of the USD in trade invoicing and financing is due to a combination of economies of scale and scope. This has been formalised by Gopinath et al. (2020) as the dominant currency paradigm.¹ The simple conclusion from this literature is that action by the EU alone is unlikely to enable the euro to substitute for the dollar in this hegemonic role.

Second, a related observation is that the dominant role of the USD in trade also encourages central banks in the rest of the world to hold USD reserves. The bulk of reserves is held by permanent surplus countries, which tend to accumulate reserves when the dollar is weak (McCauley, 2020; Setser, 2020). Given that it is the USD exchange rate that matters for the economies of these countries, their central banks tend to accumulate dollars.

The USD thus has acquired a “first mover” advantage in the international domain. It appears unlikely that the euro could dislodge the dollar in this role, absent major shocks to and/or emanating from the US economy. But this does not mean that nothing can be done at the EU level.

Economies of scale and scope are very important. At the same time, however, they do not fully determine the currency allocation of reserves. The availability of safe (and liquid) assets in euros also matters. There is some literature that sees the scarcity of safe and liquid euro assets as a key limiting factor (Coeuré, 2019; Claeys and Wolf, 2020).

Unfortunately for those who seek to enhance the euro’s global role, the public sector purchase programme (PSPP) and the pandemic emergency purchase programme (PEPP) are reducing the supply of safe euro assets available for foreign exchange reserves. This study therefore proposes that the ECB could increase the menu of investable euro assets for international reserve holders by issuing short- and medium-term ECB certificates of deposit (ECBCDs).

With this background, the next section looks briefly at the main quantifiable benefits from a global reserve currency role. Section 3 considers post COVID-19 opportunities and risks, after which Section 4 describes the “dominant currency paradigm”, which explains the dominance of the USD in global trade

¹ This term “dominant currency” is not new. It appears thousands of times in the earlier literature (see Table 6 in the Annex).

and financial relations by invoking network and synergy effects. Section 5 delves deeper into the reserve currency issues by looking at the supply of safe assets denominated in euro and how it is affected by the public sector bond buying programmes of the ECB. Section 6 concludes by reiterating a concrete proposal on how to increase the supply of safe euro assets.

2. BENEFITS AND COSTS OF RESERVE AND ANCHOR CURRENCY STATUS

In this section we analyse some economic costs and benefits of an expanded international role for the euro. We focus specifically on the costs and benefits of reserve and anchor currency status.² The benefits and costs of greater use of a country's currency by the official sector in other countries can be quantified with some precision. Quantifying them, it turns out, yields the surprising conclusion that the benefits of reserve currency status are small and even, under euro-relevant circumstances, potentially negative.

2.1. The value of 'exorbitant privilege'

A central argument concerns what French President Valéry Giscard d'Estaing called the "exorbitant privilege" of the United States as issuer of the only true global currency. Attempts to quantify this privilege start with the observation that a government whose currency is widely used and held internationally can issue debt at lower interest rates because of the existence of this additional demand. But the value of this "privilege" declines along with the level of interest rates. If interest rates on government debt are already near zero, then the gains from lowering them still further will be limited or non-existent.³

Another potential benefit derives from the widespread use of one's banknotes abroad. On this count, the euro has been a big success, since currency in circulation has more than doubled (as a percentage of GDP) over the last 20 years, and it is thought that a large fraction of euro cash is used abroad (ECB, 2017). Traditionally, issuing banknotes was a profitable business for central banks, since they could invest the proceeds from relatively costless cash issuance in government bonds with a decent yield. The value of euro bank notes in circulation now exceeds EUR 1 trillion. With interest rates at 5%, this would have meant a revenue stream of about EUR 50 billion per year, equivalent to about one third of the EU's annual budget. However, issuing currency is not a profitable business for central banks when interest rates turn negative (Gros, 2016). If central banks invest the proceeds in negatively yielding government bonds, they lose money rather than earning it.

The ECB has estimated that about EUR 500 billion is held abroad. At a negative rate of 0.5%, this would imply a cost for the euro area of EUR 2.5 billion per year. The amount may be small, but the point that it is a cost, not a benefit, remains. In these conditions, any increase in the international use of euro cash only leads to higher costs.

A study by the ECB (2019) argues that foreign reserve holdings have an impact that is analogous to central bank purchases of their own government bonds. In the view of these authors, both types of purchases (QE and foreign exchange investments) are insensitive to the price (yield) of the bonds. By reducing the amount available to price-sensitive investors, they push up the price. This idea is buttressed by an econometric exercise that uses term premium estimates for government bonds with a residual maturity of 10 years across the four largest currency areas since the 1980s. The term premium

² There are also other aspects of this question, but they are more difficult to quantify. A recent IMF study by Boz et al. (2020) underlines once more that the dominant role of the USD has an impact on many economic relationships, like the pass-through of a devaluation on exports or import prices, the elasticity of the reaction of trade to exchange rate changes, etc. These are important consequences of a dominant role. But in many cases, it is difficult to determine whether these consequences of dominant currency status constitute a cost or a benefit for the US economy.

³ Even if interest rates on Treasury securities can turn negative, there will be limits on how negative, and the closer rates are to the effective lower bound the less the value of this "privilege".

is chosen because it reflects the yield in bonds not incorporated in future short-term rates (which the central bank itself can set).

The numerical results of these estimates can be used for a rough, “back of the envelope” calculation of the gain in terms of lower financing costs for government debt were foreign central banks to hold a much larger share of euro area government debt in their portfolios.⁴ Using the results in ECB (2019), one finds that an increase in the share of safe euro assets held by foreign central banks of 10 percentage points (e.g. from 20% to 30%) would lead, *ceteris paribus* (no impact on inflation expectations, etc.), to a reduction in the term premium of 50 basis points. Given that only a fraction of public debt has a maturity of 10 years, this implies a lower financing cost, over all maturities, of on average at most 30 basis points. Moreover, for domestically held debt, a lower financing cost for the government represents just a transfer within the country. A lower financing cost for public debt arises only from the share held abroad. Assuming that the share of public debt held abroad has risen to 30%, it follows that the country would save about 9 basis points in payments to foreigners. With a debt/GDP ratio of 100% (which in reality is lower for the AAA countries in the euro area), the annual gain would amount to about 0.1% of GDP of these four AA/AAA countries (and about one half of that for the entire euro area).

Caballero et al. (2017) also argue that the value of the exorbitant privilege declines with the interest rate and becomes negative when a scarcity of safe assets pushes the safe rate below zero.

In fact, interest rates (both real and nominal) tend to be higher on US dollar debt than euro debt. Over the last 20 years the long-term interest in USD (10-year Treasury) has been about 1 percentage point higher than that on riskless euro (i.e. German) debt. Even the average long-term government interest rate for the euro, which takes into account risk premiums in the periphery and liquidity premiums on the debt of other core countries, has been lower than that of riskless US debt. Since the exchange rate is now at almost the same level as 20 years ago, this implies that dollar debt has been more expensive even after one adjusts for exchange rate changes. This suggests that other factors are more important than exorbitant privilege for determining fixed-income spreads.⁵

Yet, the fact that the real value of the debt is under the control of the home country authorities is a double-edged sword: on the one hand, it protects against liquidity problems because, in a crisis, the national central bank can issue enough liquidity to ensure that all debt can be repaid in nominal value. On the other hand, this large demand by foreigners for domestic bonds might constitute a source of moral hazard in that it induces the government to run up large deficits and debts. The United States might thus have enjoyed an exorbitant privilege in the past, when its fiscal and external positions were strong. But “this time might be different”. The external position of the United States remains weak and its debt-to-GDP level of the federal government might soon reach (pre-COVID-19) Italian proportions. For global investors looking for a safe haven it is not so much the absolute level of the US debt ratio, but rather whether the United States remains safer than other major economies. The gross debt of the general government is projected to increase to over 140% of GDP in the United States, but “only” to about 105% of GDP in the euro area. The difference between the United States and the euro area, which amounted to about 20 percentage points in 2019, is likely to increase to about 35 percentage points in

⁴ These results are taken here as a benchmark, because they have been used by the ECB itself to argue that a stronger international role yields important benefits. The study acknowledges: “Developments in term premia do not immediately reveal the effects of foreign official investments, which need to be identified separately. In fact, estimates of term premia for the United States and the euro area have been higher on average than those for Japan and the United Kingdom, although the share of foreign central bank holdings in the latter two sovereigns’ outstanding debt is lower.”

⁵ Another factor, which we cannot discuss here is the nature of US investment abroad, which differs from that of foreign investment in the US. Gourinchas and Rey (2005) have made the point that the US issues its own debt mostly short term in dollars and invests abroad, in longer-term debt instruments and equity. This is one of the reasons why the US still has a positive balance on investment income despite being a net foreign debtor. The same now applies to the euro area. Its net international investment position is still slightly negative, but its net investment income balance is positive.

the near future. This increasing difference might provide an opening for euro-denominated debt, provided of course that the stability of the euro remains assured.

2.2. Insurance from being a safe haven

A further benefit of international currency status is built-in insurance. The leading international currency, being the currency that is most widely held and therefore most liquid, behaves as a safe haven in times of crisis. Investors rush into dollars whenever there is a major disturbance to the global economy (as they did in March 2020 and even in September 2008, when the United States was the source of that disturbance). US banks see deposits rather than withdrawals by non-residents. US asset valuations strengthen relative to what they would be otherwise. A stronger dollar gives the Fed leeway to inject additional liquidity into the economy without risking a currency crash.

Working in the other direction is the danger that foreign official holders of US Treasury securities may liquidate them in a crisis in order to intervene in the foreign exchange market to support their own currencies or simply get their hands on cash. Private investors, such as hedge funds, may be encouraged by the safe-asset nature of US Treasuries to take highly leveraged positions in them, which they are then forced to liquidate when prices move unexpectedly in a crisis, threatening the smooth functioning of the market. (High levels of leverage are possible because the collateral value of Treasury securities is high.) In March 2020, leveraged investors, foreign as well as domestic, who bought Treasuries in the cash market and hedged the interest rate risk with futures contracts started unwinding these positions as futures prices rose, leading to a feedback loop of lower prices and larger sales in the cash market (Schrimpf et al., 2020; Fleming and Ruela, 2020). This risked the creation of a “liquidity spiral” in which volatility led to illiquidity, and illiquidity led to even greater volatility (Brunnermeier and Pederson, 2009). These dangers of mutually reinforcing increases in volatility and illiquidity were even greater to the extent that foreign investors, official as well as private, were investors in US Treasuries and futures. The risk of market dysfunction was only resolved through prompt Federal Reserve intervention, providing exceptional liquidity to the banks acting as broker-dealers in this market. With exorbitant privilege comes exorbitant danger and exorbitant duty (Caballero et al., 2017; Gourinchas et al., 2010).

2.3. Providing an anchor

Finally, one needs to consider the potential cost of having one's own currency used as an anchor currency by other countries. Anchor currency status and reserve currency status go together. If countries choose to anchor (peg) their currencies to the dollar, their central banks will hold reserves in dollars so as to be able to intervene to stabilise the dollar exchange rate. Thus, one way of encouraging a larger reserve currency role for the euro would be to encourage more countries to adopt euro pegs.

A pegged exchange rate has the advantage of reducing (bilateral) currency volatility, this being the traditional argument about the benefits to the anchor currency issuer. But anchor currency status also makes it more difficult to adjust to shocks to relative competitive positions.

This second consideration is placed in relief when one considers the euro area relative to China. It would not be advantageous for Europe were China to peg its currency to the euro instead of the USD. In that case, the exchange rate of the euro to its biggest trading partner (and competitor) would be determined by the Chinese authorities. Being an anchor currency can thus mean a loss of control. (US commentators conscious of the fact refer to this as the “n-1 problem” i.e. that the n^{th} country, in this case the United States, cannot independently set its exchange rate if the other $n-1$ countries seek to do so.)

Moreover, the euro area is a very open economy, much more so than the United States. This implies that a loss of control over the exchange rate is more important for the euro area than for the United States. The costs of loss of control of the exchange rate when the economy is highly open explains the revealed preference of other potential reserve currency candidates to avoid reserve currency status. For example, German authorities were never keen to enhance the status of the Deutsche Mark as a reserve currency, fearing that this would lead to more volatility given that the holders of reserve assets might change their preferences, thereby unleashing large capital flows which would make it impossible for the German authorities to independently control the country's exchange rate. The euro area has today a similar degree of openness as Germany in the 1970s and 1980s.

The size of the home economy and its financial markets also matters. Shifts in the international role of the euro might lead to wide swings in financial markets, which can be more easily absorbed in a large economy. The euro area is still the third largest economy, but its weight in the global economy is shrinking towards 10%, which is the level Japan had not so long ago.

The euro area is thus gradually becoming a "small open economy" for which the disadvantages of reserve currency status are increasing while the benefits remain uncertain.

A study by the IMF (Adler et al., 2020) has drawn attention to the implications of the role of the USD as the dominant currency in the COVID-19 crisis, which is that exchange rate changes have little impact on trade flows from emerging economies (since the dollar cost of US imports and exports does not change with the exchange rate). This might be a comfortable situation for the United States, whose economy is less open and, given its market-based financial system, reacts more to monetary policy. For the euro area, becoming the dominant currency might not be blessing because it depends more on exports and monetary policy might be less potent to offset macroeconomic shocks.

3. POST-COVID-19 OPPORTUNITIES AND RISKS

The immediate threat to the cohesion of the euro stemming from the asymmetric impact of the COVID-19 crisis has been overcome. Even so, it remains to be seen whether the Next Generation EU (NGEU) package will be sufficient to durably offset the asymmetric impact of the crisis on different Member States or whether the crisis will lead to renewed divergence in economic performance, including debt levels, among Member States going forward.

3.1. Expanding the availability of EU bonds

In addition, there is the possibility that the EUR 750 billion of EU bonds to be issued as part of that package will create the foundation for a more widely held benchmark and reserve asset. Reserve managers complain that markets in the low-risk, liquid government bonds that make up the foundation of their portfolios are segmented along national lines, and that not all government bonds satisfy the conditions for safe asset status. Only four euro area countries with a sizeable public debt have AAA rating from at least one agency (France, Germany, the Netherlands and Austria). Sovereign spreads within the euro area continue to differ, the best efforts of the European Council and ECB notwithstanding. By creating an EU-level benchmark and reserve asset, the new bonds hold out the promise of changing this.

Promise is not the same as reality, however. The addition to EU debt instruments currently foreseen, namely EUR 750 billion (plus potentially another EUR 100 billion from the SURE programme), constitutes a relatively small fraction of the EUR 10 trillion in existing central bank foreign reserves, much less the larger stocks of foreign assets held by sovereign wealth funds and private banks and firms.

Moreover, both the NGEU and the SURE instruments have been conceived as temporary. Those who see the EU as having a “Hamiltonian moment” imagine that the EUR 750+ billion will not be temporary, but on the contrary, a first step in the direction of a larger issuance of low-risk, high-liquidity euro-denominated EU bonds. Whether or not this forecast is accurate will make a consequential difference for the international status of the euro.

A crucial caveat here, which has attracted little notice, is that up to half of these new EU bonds is likely to be bought by the ECB under its PEPP programme of sovereign bond purchases, leaving potentially only a little over EUR 400 billion for use as international reserves. We return to this important issue below.

3.2. Impact on relative growth rates

Eichengreen et al. (2018) emphasise the importance of “growing the platform” in order for a currency to acquire and retain a consequential international role. An economy whose shares of global GDP, trade and financial transactions decline secularly cannot expect to significantly enhance the international role of its currency or, if its currency possesses that role, to maintain it indefinitely. The NGEU, with its structural reform, digital and green economy elements, creates the potential for the euro area to grow its platform more quickly.

Conversely, problems with growth in the United States, whether because of failure to agree on an economic programme or simple failure to control the virus, could open up space for competing currencies.

How COVID-19 will affect comparative US and euro area growth rates is a great unknown, just as the course of the virus and therefore its economic and other consequences more generally remain uncertain. If the pandemic and its consequences are brought under control relatively quickly (whether

through the development and effective administration of a vaccine, the development of palliative treatments or because the virus simply disappears) and things revert to normal, then this will favour European growth relative to US growth, since European countries have gone to greater lengths to retain pre-existing links between workers and firms. On the other hand, if the pandemic persists and therefore leads to permanent changes in consumption and production (less spending on tourism, travel and hospitality, more spending on health care, home care and elder care, or less spending on high streets but more spending online), then this will favour the United States, which has traditionally exhibited a higher level of labour market flexibility and turnover, and whose policies have done less to keep workers connected to their existing employers.

But other public policies that acknowledge the need to restructure and reorient economies post-COVID-19 may work in the other direction, favouring the EU relative to the United States. In February the European Commission launched two initiatives, the European Green Deal and the European Digital Agenda. The first sees green activity (emissions reduction, green energy, energy efficiency, clean transport, environmentally-friendly food chains, protection of biodiversity and pollution reduction) as a growing share of the economy going forward. The second emphasises the importance of digital connectivity and skills, competition and innovation in the digital sphere, and civic freedom (freedom of speech, diversity of content, countering crime and misinformation) as becoming increasingly important for economic dynamism going forward. These are the skills and activities in which societies should invest to maximise productivity, economic growth and human development post-COVID-19, the argument goes. The United States, in contrast, has no such agenda – no coherent guidance from government for business about the skills and activities in which to invest.

Other possible effects for economies and their growth rates plausibly include faster growth of very large companies and faster growth of high-tech activity. The pre-crisis period had already seen increased concentration of activity and rising efficiency advantages for very large companies. This too appears to be a trend accelerated by COVID-19, as many small businesses (think of family-run restaurants) have found it difficult to survive the pandemic and to adapt their business models to its circumstances. A distinct but related observation is that the pandemic has favoured high-tech companies and platform companies in particular, what with the trend for transactions to move online. Amazon, Apple, Facebook, Microsoft and Google are all American companies, giving the United States a head start.

All that can be said with confidence is that relative growth rates will be a key factor for international currency status in the future as they always have been in the past (see for example, Chinn and Frankel, 2007). How those relative growth rates are affected is yet to be seen, but governments possess the ability to shape the outcome.

3.3. Geopolitics and international currencies

A major post-COVID-19 development at the geopolitical level is the likelihood of heightened conflict between the United States and China, together with hardening attitudes towards China in Europe. (Witness policy towards Huawei/5G, Sweden closing its Confucius Institutes and European concerns over Chinese human rights.) Assuming that Europe sides with the United States and against China, “Cold War 2.0”, as this is sometimes called, is likely to limit take-up of the renminbi in Europe as well as take-up of the euro in China. European governments may hesitate to see their firms rely on the People’s Bank of China for liquidity, just as they hesitate to see them rely on Huawei for 5G. As a policy tit for tat, the Chinese government might then discourage its banks and firms from using the euro in cross-border transactions.

These geopolitical developments thus point in the direction of a bifurcated international monetary and financial system, in which the euro is used in Europe's borderlands while the renminbi is used in Asia. In the same way that we are now possibly seeing a "splinternet", we may see the advent of a splintered international monetary system.

Alternatively, US foreign policy unilateralism has the potential to open up space for alternatives to the dollar. The Trump Administration has threatened to identify European companies and governments doing business with Iran in violation of unilateral US sanctions using data from SWIFT and to deny such companies and governments dollar credit from US banks. The US Congressional proposal for a Protecting European Energy Security Clarification Act similarly could lead to sanctions against European companies and officials involved in the inspection and certification of the Nord Stream 2 pipeline. Other Congressional proposals moot the possibility of the US declaring Russia to be a sponsor of state terrorism and excluding it from clearing transactions through SWIFT.

All this has led to various initiatives to create alternatives to SWIFT and dollar credit for clearing cross-border transactions. These include the Instrument in Support of Trade Exchanges (INSTEX), which is euro-based, a bilateral agreement between Russia and China for clearing in the ruble and renminbi, and Chinese plans to marry its Cross-Border Inter-Bank Payments System with an independent messaging system so as to create a full-fledged alternative to SWIFT. None of these initiatives have gained much traction to date; they have not contributed materially to wider international use of the euro and the renminbi. Further steps by the United States to weaponise the dollar could accelerate their development, however.

Geopolitical tensions and political developments more generally could also affect the willingness of the Federal Reserve System to act as a lender and liquidity provider of last resort. A necessary condition for international currency status is an adequate supply of safe assets denominated in that currency. Because those safe assets can be held in investment portfolios, banks and firms will be more willing to do business in them. The Federal Reserve regularly acts to ensure the safety (in other words, the stability and liquidity) of US Treasury and other dollar fixed-income markets by intervening in response to turbulence, by extending dollar swap lines to select foreign central banks and by creating dollar repo facilities. It is argued that its actions along these lines in March 2020 further cemented the dollar's international role.

A future, more nationalistic Federal Reserve Board might not be equally inclined to act as lender of last resort to the world. A future Congress or President might view such transactions as exposing US taxpayers to potential capital losses and limit the Fed's capacity to do so. In March 2020, the US Treasury committed to allocate EUR 50 billion from the Exchange Stabilization Fund to cover Federal Reserve losses on these and other operations. A future US administration could conceivably depart from this precedent. Such changes would not be dollar positive and might open up space for other currencies on the global stage.

3.4. COVID-19 as an accelerant of digitisation

COVID-19, it is said, is a powerful accelerant of already-prevailing trends. Among the prominent trends already prevalent prior to the pandemic was the movement of transactions online and their digitisation – a movement that is proceeding, if anything, even more rapidly now.

Among the technological developments accelerated by COVID-19 is, specifically, the advent of digital currencies. These are of three types. The first type is traditional cryptocurrencies, such as Bitcoin; these are too volatile to compete with the dollar and other government-backed monies as vehicles for cross-border transactions. The second type is stablecoins, such as Facebook's proposed currency Libra, which

would be pegged to the dollar, the euro or other government-backed currencies and operate on a private, permissioned blockchain. These would be fragile (if only partially collateralised) or prohibitively expensive to scale (if fully collateralised). They also make no provision for a lender of last resort, so they are susceptible to liquidity problems.

This leaves central bank digital currencies (CBDCs). CBDCs already exist of course: central banks already open wholesale accounts and transact electronically with qualifying financial institutions. Expanded CBDCs would allow commercial banks to settle directly with one another using central bank money rather than clearing through the central bank. They could entail retail accounts at the central bank for individuals or individual electronic wallets to which central bank currency could be digitally deposited. Some 100 central banks are studying these possibilities. But actual rollout would require solving difficult problems, including security, disintermediation of the commercial banking system and the simple question of who – domestic residents or the residents of all countries – would be eligible to hold CBDCs.

How would actual rollout of CBDCs affect the international monetary system? Issuance of a CBDC by the United States, euro area or China might marginally enhance the utility and attractions of their respective currencies and, through the functional complementarities described above, buttress those currencies' international status.

Of the majors, the People's Bank of China is moving most quickly towards issuing a CBDC, piloting the programme in the city of Suzhou by paying government employees half of their travel subsidies in digital currency. This pilot could be extended to other individuals and cities and eventually to cross-border payments. At the same time, surveys of merchants in, inter alia, South Korea, point to reservations about accepting a Chinese CBDC; the merchants surveyed question the anonymity and security of such transactions. This suggests, again, that a Chinese CBDC would not be a game changer.

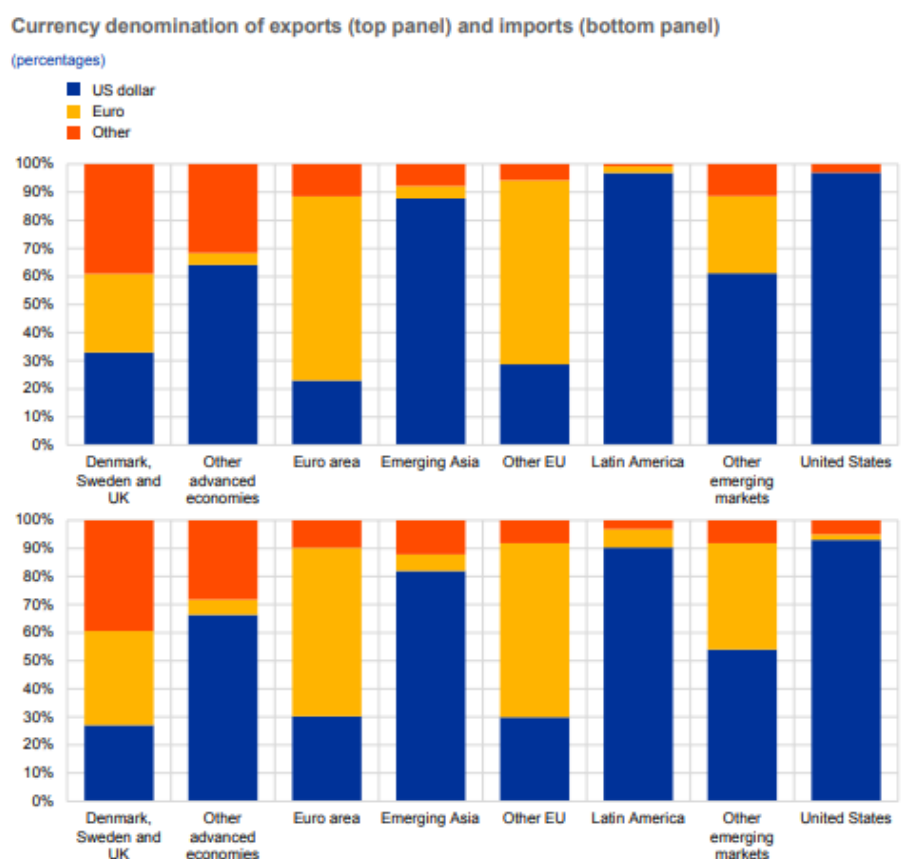
Now former Bank of England Governor Mark Carney (2019) has suggested the creation of a basket of CBDCs – a 'synthetic hegemonic currency' – as a basis for international monetary transactions. This would resemble a digital version of the IMF's Special Drawing Rights (SDRs), which are similarly a basket of leading international currencies. A synthetic hegemonic currency would nonetheless have to surmount all the same hurdles that have hampered commercial use of the SDR and the creation of a synthetic SDR by a leading financial institution or institutions: the basket is arbitrary, its value would fluctuate against the national units in which domestic transactions are conducted, and there would be no unified, synthetic hegemonic currency lender and liquidity provider of last resort.

4. DOMINANT CURRENCY PARADIGM

Economic research (e.g. Gopinath et al., 2020; Gourinchas et al., 2010) highlights what has become known as “the dominant currency paradigm”, which implies banks, firms and governments in non-reserve currency countries use the dominant currency, currently the dollar, for the majority of their international transactions. Producers invoice their exports in the same currency in which they borrow as a natural hedge. For exports requiring intermediate inputs, producers invoice their intermediate inputs in the same currency as their final exports as another hedge. Banks denominate their loans in the same currency in which they borrow on the international interbank market as way of squaring their exposures and limiting their risk. Central banks hold their reserves in the same currency in which resident firms borrow and invoice their imports and exports so as to be in a position to provide that currency to the firms in question when they need it.

The euro plays a subsidiary role as the second most important global currency. But this role relies almost exclusively on the importance of the euro area in global trade, with the euro very little used in transactions which do not involve the euro area. The absence of the euro in “third country” transactions is especially pronounced in Asia. (The USD also dominates in Latin America. But the economic weight of this region is low, and its growth prospects limited.) These patterns are illustrated in Figure 1 below (drawn from ECB, 2019).⁶

Figure 1: The US dollar dominates global trade invoicing



Sources: Gopinath (2015) and ECB calculations.

Notes: The estimates for the euro area include intra-euro area trade. Data for regional groups are aggregated using simple averages of country-level data.

⁶ See ECB (2019), <https://www.ecb.europa.eu/pub/pdf/ire/ecb.ire201906~f0da2b823e.en.pdf>.

Official studies of the international role of the euro (e.g. ECB, 2020) focus on financial aspects, such as the use of the euro as the currency of denomination for international bonds, international deposits, loans by banks, foreign exchange turnover and global foreign exchange reserves. Financial depth is singled out as the key factor supporting international currency status. Thus, the dollar dominates international finance because the US Treasury market is the single most liquid market in the world.

In contrast, the dominant currency paradigm argues that international currency status depends on trade as well as finance. It posits that the international role of a global currency in financial markets is linked to its use as a numeraire or invoicing unit of account in trade, including when that trade is not directly with a reserve currency area. The widespread use of the USD in invoicing creates network effects as it becomes more convenient for any individual exporter to invoice in USD when most others are using the same currency. This effect is strengthened powerfully in a world of interwoven value chains as exporters will find it more convenient to invoice in the currency in which they have to pay for their intermediate inputs.

Once most trade is invoiced and financed in a currency (the USD at present), banks and firms outside the United States have an incentive to denominate and settle a variety of financial transactions in that same currency. And when a variety of financial transactions are denominated in a currency, they have an incentive to invoice and settle import and export transactions in that same currency. Hence, the status quo becomes difficult to change. No individual economic agent has an incentive to switch its transactions to another currency in the absence of similar action by others. The functional complementarities between different uses of the dominant imply a high degree of inertia, absent major disturbances.

The dominant currency paradigm and its implication of strong inertia nevertheless rest uneasily with evidence, in for example, Eichengreen et al. (2018), that several national units can coexist as international and reserve currencies. These authors show that, historically, when two or three countries, rather than just one, have dominated international transactions, each of their currencies, and not just one, have played consequential international roles. A possible reconciliation is that different currencies dominate in different regions or parts of the world. Eichengreen and Flandreau (1996) show that this has generally been true of the international monetary system in the past. The invoicing pattern of the smaller countries neighbouring the euro area, which shows that indeed the euro exerts a considerable influence in this region, is consistent with this presumption.

It follows that one would expect the Chinese renminbi to dominate trade finance and settlement, as well as a range of financial transactions in Asia (with the dollar and euro dominating in their regions and maybe the rest of the world). The renminbi plays only a marginal role, however, even in the region China dominates economically. A potential explanation is that China's importance for global trade has developed in advance of its capacity to play a role in international finance. The renminbi plays only a very limited international role despite the fact that China is now the most important trading partner of a large number of countries and its economy is already larger than that of the euro area (and on course to overtake the United States).

A possible implication is that if China does not take steps to significantly enhance the role of the renminbi in financial transactions in Asia and globally, then there may be space to expand the role of the euro in Asia, insofar as China (and, indirectly, other Asian countries with which it does business) seek to reduce their interdependence with the United States and their dependence on the dollar.

5. MONETARY POLICY AND THE SUPPLY OF SAFE ASSETS

The share of the euro in global foreign exchange reserves has fluctuated between 22% and 25% over the last decade, roughly one third the share of the USD. A possible contributing factor is that there are not enough euro-denominated safe assets (Valla, 2019; ECB, 2019⁷). This section first provides some evidence on reserve holdings in general and then new analysis of the amount of safe assets in euros available for investors outside the euro area. It argues that the sovereign bond buying programmes of the ECB (PSPP and PEPP) have reduced the supply of safe assets to the market, with significant implications for the prospects for euro internationalisation.

5.1. Global foreign exchange holdings: the state of play

Table 1 below presents the latest data on currency composition drawn from the IMF (COFER) database, focusing on the five currencies that account for 94% of total identified and imputed foreign exchange reserves. The stylised facts are well known (and widely discussed by the ECB (2019 and 2020), for example): the share of the USD is above 60%, more than three times larger than that of the euro, which is at 20%.⁸ The next currency is the Japanese yen, at 5.7%, followed by the UK pound at 4.4%. The table also presents in the first two columns the total amounts of reserves held (translated into USD) based on the hypothesis that the currency shares of the central banks, giving information on the currency composition of reserves (so-called allocated reserves) is equal to that of the total, which includes reserve holdings from countries that do not wish to provide this information to the IMF.⁹

The first two columns show the totals, which amount to about USD 2.2 trillion for the euro, or about EUR 2 trillion. This is the amount of assets denominated in euros held as foreign exchange reserves by central banks all over the world.

It is widely assumed that central banks hold “safe” assets, which are usually defined for central banks as AAA - or at least AA-rated securities. Central banks generally do not publish information on the composition of their foreign exchange reserves by instrument. An exception is the case of Switzerland. The Swiss National Bank shows that it invests only a very small fraction of its (fixed-income) assets in bonds rated below A, confirming the preference for safe assets.

The next section therefore explores the relationship between the ECB’s purchase programme(s) of public sector securities and the availability of safe euro assets.

⁷ ECB (2019) states (p. 60): “One ingredient for a stronger international role of the euro is to have a larger supply of safe assets.” Habib et al (2020) argue that the size of the debt market is a key factor likely to make the currency a safe haven (for developed economies).

⁸ Recent contributions suggest that the bulk of reserves is held by permanent surplus countries that tend to accumulate reserves when the dollar is weak (McCauley, 2020; Setser, 2020). Given that it is the USD exchange rate that matters for the central banks of these countries, they tend to accumulate dollars.

⁹ The data on the currency composition of the reserves of each country is usually confidential and the IMF database does not contain this information.

Table 1: Currency composition of foreign exchange reserves

	Total amounts 2015 (USD)	Total amounts 2020 (USD)	Shares (% of allocated reserves) 2015	Shares (% of allocated reserves) 2020
USD	7,555	7,272	66.0	62.0
Euro	2,292	2,352	20.0	20.0
Renminbi	n.a.	357	0.0	2.0
Yen	438	669	3.8	5.7
UK pound	392	784	3.8	4.4
Total	10,676	11,434	94	94

Source: IMF, Currency Composition of Official Foreign Exchange Reserves (COFER) database.

5.2. ECB bond buying and the supply of safe euro assets

Present policy settings imply a contradiction between two policy goals of the ECB.

In order to ensure the continued maintenance of price, financial and economic stability in the face of the COVID-19 crisis, the Eurosystem has embarked on a massive programme of purchases of government bonds (PEPP). PEPP has much to recommend it under the circumstances. It involves purchases of the bonds of all euro area Member State governments. But by taking the bonds of the highly rated countries from the market, PEPP purchases diminish the supply of euro-denominated safe assets available to other central banks around the world and make it more difficult to enhance the international role of the euro. Hence, there is tension between the aim of the PEPP (as a form of quantitative easing [QE], to make government bonds scarce and thereby increase their price) and the aim of euro internationalisation (enticing central banks around the world to buy and hold more euro-denominated government bonds).

PEPP is still being implemented. It is therefore too early to quantify the reduction in safe asset supply it will entail. However, this is possible for the previous programme, the PSPP.

5.3. Looking back: QE and the ECB's public sector purchase programme

PEPP is an addition to the ECB's earlier PSPP. Under the PSPP, which operated between 2014 and 2018, the ECB purchased roughly EUR 2 trillion of government bonds (and a little more than EUR 200 billion of the bonds of European supranational entities). These bonds are no longer on the market, thus reducing the scope for reserve managers to hold euro assets.

Moreover, European banks are required to hold "high quality liquid assets" up to a certain proportion of their balance sheets, and public sector bonds are the main source of this type of asset. By implication, another significant fraction of euro area public debt securities is absorbed by European banks (about EUR 1.5 trillion by end 2019). For example, German banks hold about 20% of total federal debt securities outstanding. In most euro area countries, the central bank together with the commercial banking

system now hold about 40% of all available debt securities.¹⁰ Insurance companies are also obliged to hold a certain percentage of their assets in euro-denominated government debt and consequently absorb an additional share of the available government debt.

How these factors affect the available quantity of euro area government bonds on the market is shown in Tables 2-5.

Given the focus on safe assets, the tables below present the aggregate data for the supply of bonds of highly rated euro area countries. (The following countries have a rating of at least A: Germany, the Netherlands, France, Belgium, Austria). ECB (2019) considers only AAA euro area countries as suppliers of safe euro assets to the market (Germany, the Netherlands, France and Austria).

The securities of the so-called European supranationals (mainly the EU, the European Stability Mechanism, European Financial Stability Facility and European Investment Bank) have until recently received little attention because volumes were limited, and the market is split among different issuers. For example, bonds of the European Stability Mechanism or the European Investment Bank are not perfect substitutes for each other (and not perfect substitutes for German or French government bonds although both institutions have a top-notch ranking). However, the aggregate amounts of safe securities issued by supranationals has now reached substantial levels of several hundred billion euros, more than the total for a country like the Netherlands. In the tables below we show estimates for supranational bonds separately, since the EU bonds to be issued as financing for the NGEU project would increase this category by about EUR 800 billion.

Table 2 shows the value of government bonds outstanding for the United States and select European countries. It considers three points in time: 2008 Q4, just before the Federal Reserve started QE1; 2014 Q4, when the Federal Reserve had ended its bond purchases and the ECB had not yet begun PSPP; and 2019 Q4, after the end of the PSPP.

This table shows that after the Great Financial Crisis government debt expanded on both sides of the Atlantic. Between 2008 and 2014, US debt outstanding increased by USD 5 trillion (an increase of two thirds) whereas safe euro area debt increased only by EUR 1.2 trillion, or one third. Measured in USD, the increase was even smaller for the euro area, since the euro depreciated over this period.

Since 2014, the total stock of highly rated public sector securities has remained basically constant (whether calculated in USD or euros) in the euro area, whereas the supply of US government bonds has increased by over EUR 3 trillion.

¹⁰ At present, most banks hold mainly the debt of their home government. But the observation that the banking system absorbs about 15–20% of total public debt would continue to hold even if this were not the case, i.e. if all banks held a diversified portfolio of public debt from all euro area member countries. For the total holdings of the banking system, see <https://sdw.ecb.europa.eu/reports.do?node=10000028>.

Table 2: Stock of government bonds outstanding

	End 2019	End 2014	End 2008
DE	1,584	1,638	1,234
FR	1,989	1,720	1,155
NL	311	359	279
AT	248	233	168
Total “safe” euro assets	4,132	3,949	3,017
EU supranationals	600	600	350
Total “safe” euro assets (including supranationals)	4,732	4,549	3,367
USD/euro exchange rate	1.1	1.2	1.35
Total in USD	5,205	5,459	4,546
Total “safe” euro assets (no supranationals) in USD	4,545	4,739	4,074
US	16,827	13,088	7,926

Source: Own calculations based on ECB, Statistical Data Warehouse. The figures for supranationals are own estimates. The data for 2008 are own estimations.

Note: The numbers on the first four rows are expressed in EUR billion, the numbers on the 6th and the 7th rows are in USD billion.

The data in Table 2 refer to the total amount of government bonds outstanding. We now concentrate on how central bank bond buying (QE) has reduced the amount of bonds available for the private sector.

Under the PSPP, as any QE operation, the central bank buys bonds from commercial banks. In this first leg of the operation the stock of bonds available for markets outside the aggregate formed by the central bank and the banking system does not change. The only direct impact of a QE operation is that commercial banks hold fewer government bonds but more deposits at the central bank. If these two assets were perfect substitutes, an operation like the PSPP would have little impact. But in reality, the banking system does not reduce its holdings of government bonds by the amount bought by the central bank. When this is the case, the supply of government bonds to the wider market diminishes. This reduction of the supply of (long-term) bonds is what central banks seek to achieve with QE. The figures presented below show that indeed the PSPP has considerably reduced the supply of safe euro assets to the wider market.

Table 3 shows the amount of bonds not held by either the Eurosystem or monetary financial institutions (MFIs), before and after the PSPP. Comparing the two columns in this table, one finds that the supply of

safe euro assets declined by about EUR 800 billion between 2014 Q4 and 2019 Q4. In USD the decline was even larger, because the euro depreciated against the USD during this period.

Table 3: Stock of bonds outstanding not held by the Eurosystem or MFIs (ECB data)

	End 2019	End 2014
DE	852	1,295
FR	1,341	1,428
NL	158	284
AT	146	162
Total “safe” euro area assets	2,497	3,170
EU supranationals	293	496
Total “safe” euro area assets (including supranationals)	2,791	3,665
USD/euro exchange rate	1.1	1.2
Total in USD	3,069	4,398
Total “safe” euro area assets in USD (no supra-nationals)	2,747	3,804

Source: Own calculations based on ECB Statistical Data Warehouse (Securities Holding Statistics, PSPP breakdown history and Government Finance Statistics).

Note: The numbers on the first five rows are expressed in EUR billion, the numbers on the last row are in USD billion.

The impact of the PSPP can be seen by comparing 2014 Q4 with 2019 Q4. The supply of euro area safe securities to the market actually fell over this period by more than EUR 800 billion (from over EUR 3.6 trillion to EUR 2.8 trillion). This reflected purchases (by the Eurosystem) of about EUR 1 trillion of core government bonds and of over EUR 200 billion of supranationals. These reductions in the bond supply through Eurosystem buying were only partially offset by ongoing budget deficits in France and some net sales by the banking sector.

Without these EUR 1 trillion of PSPP purchases, the pool of safe euro assets would have been more than one third larger at the end of the period. For the United States, by contrast, the USD 2.4 trillion of Treasuries held by the Federal Reserve amounted to only about 15% of the total supply of safe assets. The end result of these divergent trends was that by the end of 2019, the effective supply of safe assets in dollars was nearly six times larger than that in euros. (See Box 1.)

Box 1: The limited impact of QE on the supply of safe assets in the United States

The tables in the main text illustrate the impact that central bank bond buying (QE) by the Eurosystem under the PSPP has had on the availability of safe assets outside the banking system. (For the banking system, QE just implies a substitution of two safe assets: government bonds versus deposits at the central bank.)

The data in this box documents that the various QE operations of the Federal Reserve have had a much smaller impact on the supply of safe assets in the United States. What constitutes a safe asset in the US is somewhat disputed, since the securities of the US “government-sponsored” institutions are also used in foreign exchange reserves (McCauley, 2020). We concentrate here on the impact of QE on the supply of Treasuries, using a somewhat different source (which has data for 2008).

The following table is not fully comparable with Table 3 because the source used in Table 3 does not go back to 2008. Table 4 shows the amount of government bonds that are available to the broader financial markets because they are not held by either the (national) central bank or by (home) commercial banks.

Table 4: Stock of government bonds outstanding not held by domestic central or commercial banks

	End 2019	End 2014	End 2008
DE	1,036	1,378	980
FR	1,343	1,337	572
NL	216	316	266
AT			
Total “safe” euro assets	2,595	3,030	1 818
USD/euro exchange rate	1.1	1.2	1.35
Total “safe” euro assets in USD	2,855	3 636	2,455
US (Treasuries)	16,827	13 088	7,926
US/euro area	5.9	3.6	3.2

Source: Own calculations based on the Bruegel dataset and ECB.

Note: The numbers on the first four rows are expressed in EUR billion, the numbers on the 6th and the 7th rows are in USD billion.

The message from this table is that, between 2008 Q4 and 2014 Q4, i.e. during a period when the United States was implementing its various QE operations, the net supply of Treasuries to the market actually increased more in the United States than in the euro area (where QE started later), as can be seen by a comparison of the last two rows of the table above. In 2008 Q4, the supply of safe US assets was 3.2 times larger than that of the euro area. By 2014 Q4, that ratio had increased to 3.6 times. This change reflected the impact not only of Federal Reserve purchases but also of changes in the holdings of commercial banks and ongoing government budget deficits.

The impact of QE on the supply of USD government debt on the market was limited in part because starting in 2009 the Federal Reserve purchased mainly mortgage-related securities, not Treasury bonds – whereas ECB purchases of covered bonds amounted to only about 10% of the total. The share of federal government debt held by the Federal Reserve System increased only from about 5% prior to 2008 to a peak of 12% in 2012, before falling back to 9% by end 2019. By contrast, in the euro area the holdings of the Eurosystem accounted for about 20% of total (bonded) public debt when the PSPP was finished – twice the share in the United States. The difference in the two cases reflects mainly differences in the nature of mortgage securitisation and variations in the size of the market. In the United States, mortgage securitisation is sponsored by the federal government. In the euro area, it is done by individual banks, subject to differing national regulations. This has led to a lower level of mortgage securitisation in the euro area. The mortgage-backed securities (MBS) issued by US housing agencies are used by some central banks to diversify their reserve holdings. McCauley (2020) shows that holdings of the US agency MBS amount to about 10% of their holdings of US Treasury securities.

Still, Table 5 (also based on ECB data) points to a conundrum. This can be stated simply: if one subtracts from the total outstanding of safe securities, the holdings of the Eurosystem, euro area commercial banks and euro area insurance companies (another group with a preference for government bonds based on regulation), one finds a “free float” of EUR 1.8 trillion. Yet, the data in Table 1 above show that official reserves in euros are greater than EUR 2 trillion. It gets worse: subtracting from the known total of safe euro securities outstanding the known amounts held by all euro area residents, only EUR 1 trillion would be left for the rest of the world (see Table 5).

We suspect that the EUR 1 trillion discrepancy can be explained in part as follows. First, central banks hold other assets besides government bonds (e.g. the bonds of German or French development banks). Second, some reserve managers may hold limited amounts of lower-grade euro sovereign bonds (e.g. Italy or Spain).¹¹ Third, some central banks may hold deposits with and other claims on euro area commercial banks. Fourth, some central banks may have investments in euro-denominated corporate bonds (covered mortgage bonds, for example). The available data do not allow one at this point to reach a clear conclusion. For US Treasury securities, one can precisely estimate foreign official holdings from the Treasury International Capital (TIC) Report. This leads to another recommendation: it would be useful for the Eurosystem to publish an equivalent report.

What is clear is the marginal impact of the PSPP. Both Tables 3 and 5 show a drop in the amount available for the market or the rest of the world of about USD 800–1,000 billion between 2014 and 2019 (this is also confirmed by Table 4 using a somewhat different source). Adding supranational bonds bought under the PSPP would increase the drop in what remains available to the rest of the world by another USD 200 billion.

¹¹ This might be limited, however. The Bank for International Settlements notes in its annual reports that it holds limited amounts of BBB-rated government debt. The case of Switzerland suggests a similarly slight role of low-rated securities in central bank reserves.

Table 5: Stock of debt securities outstanding available for the rest of the world (not held by euro area residents)

	Not held by Eurosystem, MFI or insurance companies		Not held by euro area residents	
	End 2019	End 2014	End 2019	End 2014
DE	680	1,157	397	837
FR	736	931	518	707
NL	65	184	29	128
AT	77	94	25	35
Total “safe” euro area assets in euros	1,558	2,365	968	1,706
EU supranationals	218	423	159	355
Total “safe” euro area assets in euros	1,776	2,789	1,127	2,062
USD/euro exchange rate	1.1	1.2	1.1	1.2
Total in USD	1,954	3,347	1,240	2,474
Total “safe” euro area assets (no supranationals) in USD	1,714	2,839	1,065	2,047

Source: Own calculations based on ECB Statistical Data Warehouse (Securities Holding Statistics, PSPP breakdown history and Government Finance Statistics).

Note: The numbers on the first five rows are expressed in EUR billion, the numbers on the last row are in USD billion.

5.4. Looking forward: the PEPP and the supply of safe euro assets

Much like the PSPP, the PEPP will have the unintended effect of limiting the supply of euro-denominated government bonds for foreign central banks. The EUR 1.35 trillion of additional purchases planned by the ECB (equivalent to 12% of euro area GDP) are larger than the combined deficits of euro area Member States.¹²

The PEPP is likely to have a particularly strong impact on the availability of the new common safe assets, since the Eurosystem may purchase as much as half of the (maximum of) EUR 850 billion of common

¹² To be more precise, the PEPP is additional to the continuing, smaller scale, purchases under the overall asset purchase programme of the ECB, which would add another EUR 360 billion for 2020. This implies a total volume of asset purchases of EUR 1.710 trillion. Under both the PSPP and the PEPP, about 85% of total asset purchases would be of public sector securities, yielding a total of over EUR 1.4 trillion.

bonds that the EU is planning to issue in the coming years.¹³ The additional net supply of safe euro assets through the financing of the NGEU project may thus be about EUR 400 billion (equivalent to about 4% of global reserve holdings).¹⁴

The PEPP must of course be seen relative to the global context in which vast asset purchase programmes have been initiated by central banks all around the world. If one compares announced asset purchases of government bonds with projected deficits, one finds that the euro area is likely to be the only major region where the purchases of the central bank will exceed the additional supply of government debt issued to finance current deficits.¹⁵

In the United States, the Federal Reserve System has already purchased nearly USD 2 trillion of Treasury securities. It intends to continue buying USD 80 billion a month for an unspecified period. By the end of 2020, the total would amount to about USD 2.5 trillion, which is considerably less than the projected federal budget deficit (which had run to USD 3 trillion for the 12 months ending in June 2020 – and the 12 months ending in December 2020 will undoubtedly be higher). At this same pace, for 2021 total purchases of Treasury securities would amount to USD 960 billion, again less than the projected deficit.

In sum, the supply of euro assets suitable for foreign exchange reserves may actually shrink, while the US dollar supply will continue to rise.

5.5. How to safely increase the supply of safe euro assets

The ECB (or rather the Eurosystem) finances its bond purchases by issuing bank deposits. These deposits are not tradable outside the banking system (central banks cannot hold them as foreign reserves). It follows that the PEPP reduces the supply of safe euro assets to the market while increasing bank balance sheets, thus making it more difficult for central banks around the world to invest their reserves in euros.

We propose a simple solution to this conundrum: the ECB should make its liabilities tradable. The easiest way of doing this would be for the ECB to issue certificates of deposit (ECBCDs).¹⁶ Certificates of deposit issued by the ECB would constitute a euro area safe asset par excellence. These certificates would be an attractive way for foreign central banks to hold reserves in euros, provided that the certificates in question can be traded globally and are issued in a sufficiently large amount to create a liquid market.

A legal basis for this instrument already exists: item 4 of the balance sheet of the Eurosystem is called “debt certificates issued”. The ECB’s own definition for this item is as follows: “ECB debt certificates means a monetary policy instrument used in conducting open market operations, whereby the ECB

¹³ The (self-imposed) limit of Eurosystem holdings of national government bonds is one third. For “supranational” debt it is half. Close to half of European Stability Mechanism bonds are held by the Eurosystem (though not by the ECB as a legal entity), see: https://www.ecb.europa.eu/pub/pdf/other/ecb.mepletter170830_TrebesiusStarbatty.en.pdf. Supranational bonds are important for national central banks that could not otherwise buy their share of national debt because they would exceed the one-third limit.

¹⁴ Another unknown is the size of bank balance sheets and their demand for sovereign debt. If households continue to accumulate bank deposits but the demand for credit remains weak, banks will have little choice but to accumulate even more government securities (which have a zero risk weight). Over the first six months of 2020, commercial banks increased their holdings of euro area government debt securities by more than €300 billion, an amount similar to purchases by the Eurosystem (somewhat more than EUR 400 billion). See <https://sdw.ecb.europa.eu/reports.do?node=10000028>.

¹⁵ Japan is on course to issue an additional Y330 trillion of government bonds in 2020 (*Economist*, 4 June 2020). The Bank of Japan (BoJ) had previously issued loose guidance that it planned to purchase government bonds at a rate of Y80 trillion annually; in response to the pandemic, it scrapped that guidance and stated instead that “[t]he BoJ will purchase the necessary amount of government bonds without setting an upper limit” (*Reuters*, 26 April 2020).

¹⁶ Hardy (2020) has independently made a very similar proposition, arguing that ECB certificates could provide a strong competitor for short-term US assets, such as T-bills.

issues debt certificates which represent a debt obligation of the ECB in relation to the certificate holder.”

Until now the ECB has not issued such certificates, but it could do so at any time.

ECBCDs would be attractive because they would not be bottled up in the euro area banking system. Normally only banks (MFIs) are entitled to hold accounts with the ECB or the national central banks of the Eurosystem. The legal provision governing the assets in these accounts is clear: “The ECB shall not impose any restrictions on the transferability of ECB debt certificates.” (See also Box 2 for more details.)

This implies that there would be no legal obstacle for foreign central banks to acquire these euro ECBCDs.¹⁷

Box 2: ECB certificates of deposit: the legal basis

The legal base for this instrument was created in 2015.*

The definition is clear: “issuance of ECB debt certificates” means a monetary policy instrument used in conducting open market operations, whereby the ECB issues debt certificates which represent a debt obligation of the ECB in relation to the certificate holder.

Article 13

Issuance of ECB debt certificates

1. ECB debt certificates constitute a debt obligation of the ECB in relation to the certificate holder.
2. ECB debt certificates shall be issued and held in book-entry form in securities depositories in Member States whose currency is the euro.
3. *The ECB shall not impose any restrictions on the transferability of ECB debt certificates.* (Emphasis added)

Article 13 specifies that the maximum maturity is 12 months.

* It can be found here: https://www.ecb.europa.eu/ecb/legal/pdf/oj_jol_2015_091_r_0002_en_txt.pdf (OJ L 91/21 of 2.4.2015).

Market size should be no problem. At present, liabilities to banks amount to approximately EUR 3 trillion for the Eurosystem as a whole.¹⁸ This suggests that the ECB could easily issue EUR 1 trillion in ECBCDs without any concern that this amount would have to be reduced anytime in the foreseeable future.

The present legal basis for ECBCDs limits their maturity to 12 months, which might hamper their usefulness as reserve assets. IMF data show that central banks hold about USD 1.5 trillion worth of reserves in the form of deposits, with about two thirds held at other central banks and one third held at commercial banks. ECBCDs should constitute an attractive substitute for deposits held at euro area national central banks (or even deposits at the Bank for International Settlements). This should ensure

¹⁷ Certificates of deposit are not unusual instruments for a central bank to issue. A case in point is Denmark, where the interest rate on certificates of deposit is the central bank’s main policy instrument. In the Danish case, this instrument is very short term: loans to banks and CDs have the same maturity, namely one week (<https://www.nationalbanken.dk/en/monetarypolicy/instruments/Pages/Default.aspx>). The Swedish national bank also uses certificates of deposit as its main policy instrument.

¹⁸ August 2020 (<https://www.ecb.europa.eu/press/pr/wfs/2020/html/ecb.fst200804.en.html>).

a small, but significant market for short-term ECB CDs. However, the market for medium maturities would appear to be much larger.

There is little systematic evidence of the maturity of central bank investments. But McCauley (2020) shows that Treasury bills (with a maturity of less than one year) account for only about 1/10th of total Treasury holdings (with bonds constituting the remainder). The Swiss National Bank reports that the average maturity of its fixed-income investments is over 4 years. All this indicates that it would be important to offer foreign central banks an instrument with a maturity of several years. This should be possible.

One concern of the ECB in issuing longer-dated CDs is that it would then be difficult to reverse the asset purchases or reduce lending to banks. But, the balance sheet of the Eurosystem is expanding and is unlikely to shrink any time soon even if the current crisis is overcome. The ECB is granting loans to banks under the targeted longer-term refinancing option (TLTRO) of 3 years. There is thus little danger that the amount of ECB CDs outstanding could be larger than lending to banks and the amount of assets held, suggesting that it should be possible to issue longer-term ECB CDs, i.e. up to 3 years.¹⁹

One objection to this proposal is that issuing these certificates could be seen as draining liquidity from banks, which could be interpreted as being restrictive. Yet, under present circumstances the issuance of these ECB CDs could actually support the current expansionary monetary policy stance. A key issue facing the ECB is that negative rates tend to depress bank profits. Brunnermeier and Koby (2018) have argued that there is actually a “reversal rate” beyond which lower rates have a negative impact on economic activity.

The counterpart of the issuance of tradable ECB CDs would be lower deposits at the ECB which carry a negative rate and thus diminish bank profits. This problem has been partially addressed by the tiering of the deposit rate. Reducing the need for large deposits at the ECB by commercial banks would be a way to further alleviate the tax on bank profits implicit in negative deposit rates and make the present monetary stance more effective. One could therefore argue that the implementation of the ECB CDs would be entirely compatible with its primary mandate (as well as its subsidiary mandates) to maintain price stability.

¹⁹ This is the part of the German curve that is lower than short-term rates, providing an indication that there is excess demand in this segment.

6. CONCLUSIONS

The COVID-19 crisis should not be expected, by itself, to upend the current global monetary order, which has the USD as the dominant global currency and the euro as a significant second reserve currency, but one with a more regionally concentrated role.

Longer-term trends, maybe exacerbated by the crisis, do have the potential to lead to more profound change. The most important trend is the combination of the economic rise of China and its developing geopolitical rivalry with the United States. This constellation could lead the Chinese authorities to foster the international role of its own currency, thus threatening the dominance of the USD in Asia and other parts of the world. Alternatively, were China to fail to successfully internationalise the renminbi, the country's possible decoupling from the United States could augment its appetite for euro-denominated transactions and investments.

In the meantime, there are steps that could be undertaken in Europe to strengthen the attractiveness of the euro as a reserve currency and to simultaneously align monetary policy with the objective of fostering the global role of the euro.

Large-scale bond buying under the PEPP reduces the supply of safe euro assets to the market, and also to foreign central banks. This effect of the PEPP could be neutralised, were the ECB to issue its own certificates of deposit.

The ECB already possesses a legal framework for issuing certificates of deposit, although this has not been utilised to date. The existing legal basis for ECB CDs limits their maturity to 12 months. This should be increased to 3 years to allow the ECB to provide an attractive medium-term asset to foreign central banks.

The balance sheet of the Eurosystem has already surpassed EUR 6 trillion and it continues to expand at present. It is unlikely to shrink any time soon, even if the current crisis is overcome in a couple of years. Moreover, the ECB has granted over EUR 1.5 trillion in loans to banks under the TLTRO with maturities of 3 years. With this basis, it should be possible to issue EUR 1 trillion of longer-term ECB CDs, i.e. up to 3 years.

There is less data available on the holdings of euro-denominated securities outside the euro area than for the USD. It would be useful to make even more data on the holdings of euro-denominated securities available. Creating something like the TIC data available for the United States would allow the authorities to monitor much better the global use of the euro.

Attempts to foster the use of the euro instead of the USD in foreign reserve management should in general be regarded as a zero-sum game from the global point of view. But issuing these ECB CDs would be a net benefit for the world because it would increase the global supply of safe assets.

We conclude that the present dominant role of the USD is for the US to lose (or China to attack). Action at the European level should focus on concrete steps to create instruments that are attractive for international reserve managers. This should also help the world economy, as the step we propose would increase (modestly) the global supply of safe assets.

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ANNEX

Table 6: Google Scholar results

Search term		All time	Since 2016
"Reserve currency"	–	24,000	13,000
	With euro	8,000	3,360
"Foreign exchange reserve"	–	13,000	7,800
	With euro	2,670	1,780
"Global currency"	–	12,000	4,350
	With euro	7,500	2,270
"Dominant currency"	–	3,470	1,050
	With euro	2,020	645
"International role of the euro"		342	263

Source: Own data from Google Scholar searches (18 August 2020).

The issuance of EU debt in the context of the recovery plan for Europe creates scope for strengthening the international role of the euro. However, with a large share of safe euro assets likely to be absorbed by the pandemic emergency purchase programme of the ECB, a shortage of eligible bonds stands to impede such progress. The ECB could decisively increase the supply of safe assets by issuing tradable ECB certificates of deposit as a way of overcoming this obstacle.

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