

The euro as an international currency

Francesco Papadia and Konstantinos Efstathiou

Executive summary

(konstantinos.
efstathiou@bruegel.org) is
an Affiliate Fellow at Bruegel

(francesco.papadia@
bruegel.org) is a Senior
Fellow at Bruegel

be answered in relation to the international role of the euro: is a more important international role for the euro worth pursuing, and what measures would achieve this result, if it is worth pursuing? The most significant benefit for the euro area if the euro played an increased international role would be less dependence on the dollar and a reduced ability of the United States to pursue its political objectives, which are possibly inconsistent with European Union objectives.

have been shared between currencies and the international weights of currencies have evolved according to a limited number of variables. The most important of these are the economic size of the issuing country, the level of development and stability of the underlying financial market, openness to capital movements, a policy stance that encourages currency internationalisation, and political and military power. With the exception of financial stability, these factors do not vary substantially

international role is the stability of the euro-area financial system.

the completion of banking union, progress on capital markets union, the issuance of a common bond, and more generally the completion of the institutional architecture of the euro area and progress on a common foreign and defence policy would promote a wider role for the euro. The European Central Bank should also move beyond its neutral attitude towards the international use of the euro.

policies would have effects well beyond the international use of the euro and, while in principle desirable, are not easy to achieve. Proposals on the international role of the euro published in December 2018 by the European Commission were the start of a journey rather than a decisive step towards a greater international role for the euro.



1 The welfare implications of the wider international use of a currency

In his 2018 State of the Union address, European Commission president Jean-Claude Juncker raised an issue that had been somewhat dormant over recent years: the international role of

These various considerations apply only partly to the euro. Seignorage is not particularly relevant for the euro because the international diffusion of euro banknotes is less widespread than that of the dollar⁴. Moreover, the euro area, unlike the US, has a current account surplus while there are no federal bonds and only some sovereign issuers enjoy safe asset status. Furthermore, currently, the 'denomination rents' for euro-area banks running international business in euro should not be sizable: first, European banks have significantly reduced their international activity since the financial crisis (McCauley *et al*, 2017; Emter *et al*, 2018); second, for their international business, European banks use foreign currencies (in particular the dollar) more than American banks.

The main benefit for the euro area if the euro took on a greater international role would be the financial autonomy that this would bring. The extraterritorial reach of US rules and decisions, granted by the very extensive international role of the dollar, would be reduced if the euro was used more widely. This has become more relevant with the apparent divergence of EU and US interests. The Commission clearly referred to this issue, noting that a stronger international role for the euro "will allow the EU to better protect its citizens and businesses, uphold its values and promote its interests" (European Commission, 2018a).

Any assessment of the costs and benefits of a greater international role for the euro should also consider the reasons behind the reluctance of the Bundesbank to allow the international use of the Deutschmark, lest it complicate monetary policy. This reluctance was transmitted to the European Central Bank, though the ECB has a neutral attitude to the idea of a greater international role for the euro⁵.

There is less reason for the European Central Bank than for the Bundesbank to be reluctant about a greater role for the currency given two changes:

- The euro area is a much larger and less open economy than Germany, so external monetary shocks have relatively less impact;
- The Bundesbank's opposition was tied to its monetary aggregate approach to monetary policy; in an interest rate approach, as followed by the ECB, the monetary shocks that could derive from shifts in the international demand for the euro are less relevant.

2 A conceptual framework and historical evidence

2.1 Functions and determinants of international currency use

What drives the international use of currencies? Assessing the determinants of currency internationalisation requires the international functions of currencies to be identified. Based on the three traditional money functions (ie unit of account, medium of exchange and store of value) and considering the two types of users of currencies (ie private and official agents) there are six such functions (Krugman, 1984), as in **Table 1**.

⁴ The ECB's estimates that about 30 percent of outstanding currency was held abroad at the end of 2016 (ECB, 2017), which is only half of the share for the US dollar.

⁵ The ECB's policy towards the international use of the euro is summarised as follows by Draghi: "The international role of the euro is primarily determined by market forces. The Eurosystem neither hinders nor promotes the international use of the euro." (ECB, 2018).

Table 1: International functions of currencies

Functions of money	Private use	Official use
Unit of account	Invoice/quotation currency	Pegging currency
Medium of exchange	Payment/vehicle currency	Intervention currency
Store of value	Investment/ financing currency	Reserve currency

Source: Bruegel based on Krugman (2014) and ECB (1999).

Consolidating the various forces working through each function and summarising the relevant economic literature (Chinn and Frankel, 2007; Papaioannou and Portes, 2008; Benassy-Quere, 2015; Krugman 1984 and Eichengreen *et al*, 2018) the following list of factors determining the share of a currency in international functions can be established:

- **Size of the economy (in terms of the GDP and the financial assets) in the international context and the network externalities.** Large size obviously translates into a large volume of transactions. Additionally, 'thick markets' diminish transaction costs and thus attract more participants, further reducing costs (Krugman, 1980; Matsuyama *et al*, 1993; Rey, 2001). Network externalities are especially relevant for the vehicle and investment/ financing functions. Moreover, the size of the economy (Hassan, 2013) and a larger relative supply of debt (He *et al*, 2016) matter for the choice of the safe asset and, therefore, for the investment/ financing and reserve functions.
- **Development of the international financial markets.** The liquidity and depth of financial markets are crucial for the investment/ financing function, since they reduce transaction costs and the cost of borrowing (liquidity premium). Liquidity also influences the choice of the safe asset of last resort (Maggiore, 2017).
- **Financial and monetary stability enhances the store-of-value role.** With regard to official reserves, portfolio-choice models (Ben-Bassat, 1980; Papaioannou

sterling remained the dominant reserve currency until the end of the second world war, long after the US had overtaken the UK as the world's largest nation in terms output and trade.

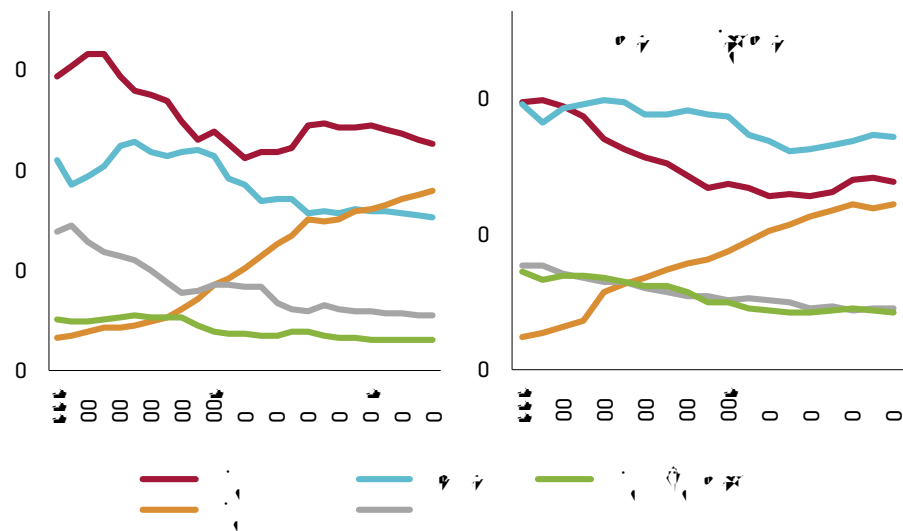
The internationalisation of the US currency, therefore, evolved simultaneously with the economic weight of the country, rather than with a lag, as strong inertial effects would suggest.

The weight of the US dollar in disclosed foreign exchange reserves (constant exchange rates) peaked at 90 percent in the early 1960s (Eichengreen *et al*, 2018). Such a high share for the dollar also reflected US economic and political power in the post-war years, when only the US dollar could be converted into gold. In fact, post-1973, after the unravelling of the Bretton Woods system, network effects became weaker and, from 1970 to 2015, the share of the dollar in disclosed international reserves has fluctuated between 50 percent and 70 percent in constant exchange rates (Eichengreen *et al*, 2018).

3 Developments over the last 20 years in the international use of the euro

How does the euro area fare in terms of the determinants and the actual international use of the euro? The euro area only has an advantage over the US in its relative share of international trade (Figure 1). The US ranks first in the share of world GDP, whereas the euro area comes in second (Figure 1), while the United Kingdom and Japan have much lower shares. However, China's share is projected to overtake the euro area by 2019. In all other determinants, the euro area has a clear edge over China but no advantage over the US. In relation to the financial system, American capital markets are more developed than those of the euro area. In terms of financial stability, the recent crisis affected the euro area's financial system more than that of the US. In terms of free movement of capital, the euro area, the US and other advanced economies (eg Japan, the UK) have fully liberalised capital accounts (a Chinn-Ito index score of 1) while China's is restricted (a score closer to 0). Finally, the euro area has no fully-fledged integrated political organisation or military capacity.

Figure 1: Country shares (%) of global GDP and exports and imports of goods and services



Source: Bruegel based on IMF *World Economic Outlook* (left panel), IMF International Financial Statistics (balance of payments) (right panel)

We now look at the evidence for the euro performing the functions of an international currency. Beginning with the *de facto* role, according to the IMF (2004), “after adjusting the data to take into account only the holdings of these currencies (Deutsche mark, French franc, Netherlands guilder, and private ECU) outside of the euro area, their combined share in 1998 was virtually identical to the share of the euro in 1999”. In short, there was no ‘euro effect’ in the sense that the euro did not punch above the weight of the currencies it was replacing.

Since the introduction of the euro there have been three developments (Figure 2, left panel):

1. The international level of reserves sharply increased between 1999 and 2013, with their amount multiplying by close to seven times. Since 2013, the amount has more or less remained stable. Over the entire period the average annual rate of growth of reserves, at close to 11 percent, has been more than double that of global GDP, at 5 percent;
2. The coverage of IMF statistics on the currency composition of reserves has substantially improved and is now nearly complete;
3. The dollar accounts for by far the largest amount of reserves; the euro is second by some distance, while the yen and all the other currencies represent very small amounts (Figure 2, right panel).

Figure 2: Global holdings of foreign exchange reserves



Source: Bruegel based on IMF and ECB (2018). Note: unallocated reserves includes reserves with undisclosed currency composition. End of period figures.

The right panel of Figure 2 also shows two other interesting developments:

- The shares of the different currencies do not change much year on year;
- Notwithstanding the previous point, there has been a decrease in the dollar share, from 70 percent in 1999 to 63 percent in 2017, while the euro’s share initially grew from 20 percent in 1999 to 25 per cent in 2002, remained around that level until 2009, and dropped subsequently to 21 percent in 2017, coinciding with the European phase of the financial crisis. The share of the other currencies, excluding the yen, has increased, from 5 percent at the beginning of the period to 12 percent at its end, because of investment in non-traditional currencies such as the Australian and Canadian dollars, and even the Chinese renminbi, pointing to greater diversification of reserves (ECB, 2014 and 2015).

Figure 4: Euro share of foreign-currency bond issuance and the ECB financial integration index

Source: Bruegel based on Dealogic and ECB (2018). Note: euro share of foreign-currency bond issuance is a 4-quarter moving average.

Figure 5: Outstanding international loans and deposits, by currency

Source: Bruegel based on BIS and ECB (2018). Note: Refers to outstanding amounts of cross-border loans and deposits (intra-euro-area loans and deposits are not regarded as cross-border); excludes interbank loans and deposits. End-of period figures.

Figure 6 shows that the euro is the most important currency for invoicing or settlement in trade between the euro area and the rest of the world, whether for exports or imports, goods or services. The left panel of Figure 6 also provides corroboration that exporters, more than area

Figure 6: Use of the euro as a settlement/invoicing currency in extra-euro area exports and imports, percentage of total

Source: Bruegel based on national central banks, Eurostat and ECB (2018). Note: countries include Belgium, Cyprus, Estonia, France, Greece, Italy, Latvia, Lithuania, Luxembourg, Portugal, Slovakia, Slovenia and Spain. 1) Data for Greece, Cyprus, Slovenia, Spain, Italy (goods until 2010), Portugal and Luxembourg refer to the currency of settlement; 2) Data from 2013 onwards might show a break because of the implementation of the updated international balance-of-payments standards (BPM6); 3) Services data for Greece, Cyprus, Spain and Italy (after 2008) excludes travel items.

Figure 7 shows the use of the dollar and the euro in the exports and imports of third countries, averaged between 1999 and 2015. The data points to the regional role of the euro, as its shares are relatively high only for exports/imports of non-euro area European countries and countries in the European neighbourhood. In East Asia and South America, trade is overwhelmingly invoiced in dollars. In short, the extent of trade relations, influenced by distance, and the larger market sizes of the US and the euro area relative to their trading partners, largely determine the invoicing currency shares. In addition, the dollar's share across countries is on average larger than that of the euro. The dollar's share is even quite high in Europe and its neighbourhood, showing the disproportionate role of the dollar in denominating commodities and raw materials.

In international trade, Figure 8 shows that, from December 2015 to 2017, first place was once again retained by the dollar, but the euro got much closer to it; in 2017, the two currencies covered very similar shares. Moreover, the volatility in the respective shares over only two years is notable (almost 10 percentage points). However, there is a caveat: no adjustment has been made in the figures for exchange rate movements.

The choice of vehicle currency on foreign exchange markets has been remarkably stable

Figure 7: Use of the dollar/euro for export/import invoicing, selected third countries

Source: Gopinath (2015). Note: Average share of exports from/imports into that country in that currency, averaged across all years for which data is available (starting 1999).

Figure 8: Global payments by currency, percentages of total

Source: Bruegel based on SWIFT via ECB (2018). Note: Customer-initiated and institutional payments. Messages exchanged over SWIFT. Based on value. MT 103 (a SWIFT payment message format used for cash transfer specifically for cross-border wire transfer), MT 202 (a SWIFT message format for financial institution funds transfer between financial institutions), cross border only. Excluding payments within the euro-area.

Bosnia and Herzegovina implement euro-based currency boards. Beyond Europe, the Communauté Financière Africaine and Change Franc Pacifique groupings (primarily former French colonies) and Cape Verde, Comoros and São Tomé and Príncipe have pegs based on the euro (see eg ECB, 2018).

In summary:

1. The use of international currencies has increased in the examined period, growing faster than world GDP in some cases, including as reserves and international securities;
2. In all possible international roles, the dollar occupies by some distance the first place, while the euro is a good second; other currencies mostly have negligible importance;
3. The distance between the euro and the dollar varies substantially depending on the international function; the euro is within striking distance of the US dollar as a means of payment, not too far behind in the investment financing and reserve roles, but far behind in terms of the invoicing of (commodity) trade and as a vehicle currency in foreign exchange;
- 4.





References

- Andritzky, J. (2018) 'Can Eurozone Reform Help Contain Trump?' *Bruegel Blog*, 17 October
- Ben-Bassat, A. (1980) 'The optimal composition of foreign exchange reserves,' *Journal of International Economics*, 10(2): 285-295
- Bordo, M. and R. McCauley (2018) 'Triffin: Dilemma or myth?' *BIS Working Papers* No 684, Bank for International Settlements
- Chinn, M. and J. Frankel (2007) 'Will the Euro Eventually Surpass the Dollar As Leading International Reserve Currency?' in R.H. Clarida (ed) *G7 Current Account Imbalances: Sustainability and Adjustment*, University of Chicago Press
- Cohen, B. (2012) 'The Benefits and Costs of an International Currency: Getting the Calculus Right,' *Open Economies Review*, 23(1): 13-31
- Eichengreen, B., A. Mehl and L. Chitu (2018) *How Global Currencies Work: Past, Present and Future*, Princeton University Press
- Emter, L., M. Schmitz and M. Tirpák (2018) 'Cross-border banking in the EU since the crisis: what is driving the great retrenchment?' *ECB Working Paper Series* No 2130, European Central Bank
- European Central Bank (2001) *Review of the international role of the euro*
- European Central Bank (2013) 'ECB establishes standing swap arrangements with other central banks,' press release, 31 October, available at <https://www.ecb.europa.eu/press/pr/date/2013/html/pr131031.en.html>
- European Central Bank (2014) *The international role of the euro*
- European Central Bank (2015) *The international role of the euro*
- European Central Bank (2017) *Estimation of euro currency in circulation outside the euro area*, External Statistics Division, ETS/2017/091, 6 April
- European Central Bank (2018) *The international role of the euro – Interim report*
- European Commission (2018a) 'Communication from the Commission to the European Parliament, the European Council (Euro Summit), the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions – Towards a stronger international role of the euro,' COM(2018) 796/4
- European Commission (2018b) 'Commission Recommendation of 5.12.2018 on the international role of the euro in the field of energy,' C(2018) 8111/2
- Gopinath, G. (2015) 'The International Price System,' *NBER Working Paper Series*, No. 21646, National Bureau of Economic Research

International Monetary Fund (2004) *IMF Annual Report 2004*

Kindleberger, C. (1981) 'Dominance and Leadership in the International Economy: Exploitation, Public Goods, and Free Rides,' *International Studies Quarterly* 25(2): 242-254

Krishnamurthy, A. and A. Vissing-Jorgensen (2012) 'The Aggregate Demand for Treasury Debt,' *Journal of Political Economy* 120(2): 233-267

Krugman, P. (1980) 'Vehicle Currencies and the Structure of International Exchange,' *Journal of Money, Credit and Banking* 12(3): 513-526

Krugman, P. (1984) 'The International Role of the Dollar: Theory and Prospect,' in J.F.O. Bilson and R.C. Marston (eds) *Exchange Rate Theory and Practice*, University of Chicago Press

Maggiori, M. (2017) 'Financial Intermediation, International Risk Sharing, and Reserve Currencies,'

American Economic Review 107(1): 1-14

Journal of International Money and Finance 71: 1-14

Economic Studies 60(2): 283-307

McCauley, R. (2015) 'Does the US dollar confer an exorbitant privilege?' *Journal of International Money and Finance* 57: 1-14

McCauley, R., A. Bénétrix, McGuire, P. and G. von Peter (2017) 'Financial deglobalisation in banking?'