

C The euro as an invoicing currency for global trade

By Georgios Georgiadis, Helena Le Mezo and Arnaud Mehl

This special feature presents a new dataset that offers a comprehensive and up-to-date understanding of global trade invoicing patterns within the major currencies. It confirms earlier findings on the globally dominant role of the US dollar in invoicing and the overall stability of invoicing currency patterns. At the same time, the special feature also points to several new stylised facts. First, both the US dollar and the euro have been increasingly used as vehicle currencies, as indicated by the fact that invoicing in the currencies in question has increased notwithstanding the decline in the shares of the United States and the euro area in global trade. Second, the euro is used as a vehicle currency in Europe and some parts of Africa, which suggests that, even if the US dollar is the dominant currency globally, the euro has a dominant role regionally. Third, some European countries have seen significant shifts towards euro invoicing upon joining the euro area or the European Union, which indicates that inertia in patterns of international trade invoicing can be overcome. Finally, empirical estimates suggest that standard theoretical mechanisms that foster the use of a large economy's currency – i.e. strategic complementarities in price-setting and integration in cross-border value chains – underpin the use of the euro for international trade invoicing.

A new dataset on patterns in global trade invoicing

In a recent paper, European Central Bank (ECB) and International Monetary Fund (IMF) staff assembled the most comprehensive and up-to-date panel dataset of trade invoicing currency patterns for major currencies.¹⁰⁶ This dataset provides the respective annual shares of exports and imports invoiced in US dollars, euro, home currencies, and other currencies for 102 countries over the period 1990-2019.¹⁰⁷

Overall, the countries in the dataset account for about 75% of global trade.

Although coverage is sparse for the 1990s, it is quite comprehensive in more recent periods. In total, the dataset includes nearly 1,200 country-year observations for both imports and exports. The data are obtained from official sources through central banks' websites and via requests sent to central banks, statistical offices and customs/revenue authorities. The dataset covers a diverse sample of countries. It includes 40 countries from Europe, 20 from Asia, 22 from Africa, 11 from Latin America, 4 from Oceania, 3 from the Middle East and 2 from North America. The country coverage is also diverse in terms of income levels: 35 countries are advanced economies and the remaining 67 are emerging market and developing economies.

The new data contribute to earlier efforts to assemble cross-country datasets of trade invoicing currency patterns along several dimensions. Compared with the

¹⁰⁶ See Boz, E., Casas, C., Georgiadis, G., Gopinath, G., Le Mezo, H., Mehl, A. and Nguyen, T., "Patterns in invoicing currency in global trade", *Working Paper Series*, No 2456, ECB, Frankfurt am Main, 2020.

¹⁰⁷ The dataset is publicly available on the [IMF's website](#).

study by Gopinath (2015), the dataset includes twice as many countries and, perhaps more importantly, also a time dimension. Relative to earlier datasets, it covers two to four times as many countries and has more systematic coverage over time.¹⁰⁸ It is noteworthy that, compared with these earlier studies, the new dataset contains information on a much larger number of emerging market and developing economies, for which vehicle currency use is more relevant. The substantial improvement in cross-country coverage of trade invoicing data is one of the paper's main contributions.¹⁰⁹ Finally, data quality is significantly improved for European Union (EU) countries compared with existing datasets by using information obtained within the Eurosystem to ensure that definitions of invoicing currency data are harmonised with regard to trading-partner composition. This contribution is important, because data on European countries account for a large share of the new and earlier datasets.

Stylised facts on global trade invoicing patterns

The dataset's broad time-series coverage allows several stylised facts about the evolution of global and regional trade invoicing to be documented. The new data confirm previous findings on the US dollar's dominance and on the overall stability of invoicing currency patterns in global trade.¹¹⁰ They include intra-euro area transactions, in line with Gopinath (2015). If intra-euro area transactions are excluded, the estimated share of the euro is lower, at around 30%, against around 50% for the US dollar.¹¹¹ The new data also reveal several new stylised facts.

First, the data indicate that use of the US dollar and euro as vehicle currencies has increased over time, despite the decline in the share of global trade accounted for by the United States and the euro area. This is apparent from **Chart 23**, which shows the increasing concentration of invoicing in US dollars and euro over time. In 2018 the share of global trade invoiced in US dollars was around four times larger than the share of global trade destined to the United States – significantly more than in 1999, when it was three times larger. The corresponding ratio also rose for the euro. The implication is that vehicle currency use has been on the rise.¹¹²

¹⁰⁸ These earlier datasets include Kamps, A., "The euro as invoicing currency in international trade", *Working Paper Series*, No 665, ECB, Frankfurt am Main, 2006; and Goldberg, L. and Tille, C., "Vehicle-currency use in international trade", *Journal of International Economics*, Vol. 76, 2008, pp. 177-192.

¹⁰⁹ See Ito, H. and Chinn, M., "The rise of the "redback" and the People's Republic of China's capital account liberalization: an empirical analysis of the determinants of invoicing currencies", *ADB Working Paper*, 473, 2014, p. 8, in which it is noted that, "in contrast to the relatively rich theoretical literature on the choice of currency for trade invoicing, the empirical literature is thin. The paucity of empirical literature is due to data availability".

¹¹⁰ See, for example, Gopinath, G., "The international price system", *NBER Working Paper*, No 21646, 2015.

¹¹¹ The estimates assume that all intra-euro area transactions are invoiced in euro.

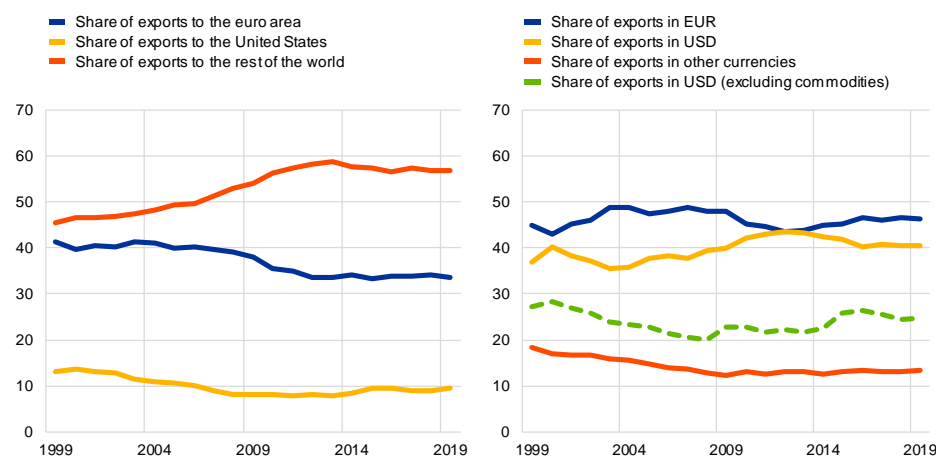
¹¹² In addition, the increasing concentration of invoicing in US dollars and euro over time is visible in the decrease in the share of trade invoiced in other currencies shown in the right panel of Chart 23.

Chart 23

Use of the US dollar and the euro as vehicle currencies has increased

Shares of global exports broken down by destination (left panel) and by invoicing currency (right panel)

(percentages)



Source: Boz, E., Casas, C., Georgiadis, G., Gopinath, G., Le Mezo, H., Mehl, A. and Nguyen, T., "Patterns in invoicing currency in global trade", *Working Paper Series*, No 2456, ECB, Frankfurt am Main, 2020.

Notes: The left panel shows the evolution of the share of exports to the United States, the euro area and the rest of the world in global exports; the right panel plots the share of global exports that are invoiced in US dollars, euro and other currencies. Only exports to countries for which invoicing data are available are shown. The charts are based on interpolated and extrapolated data.

The disproportionate role of the US dollar in global trade invoicing can also be discerned at the country level. The left panel of **Chart 24** compares the share of countries' exports to the United States in total exports with the share of their exports invoiced in US dollars; in almost all cases, the latter is much greater than the former. From a global perspective, the euro's share in trade invoicing is more in line with the share of trade in which at least one euro area country is involved.

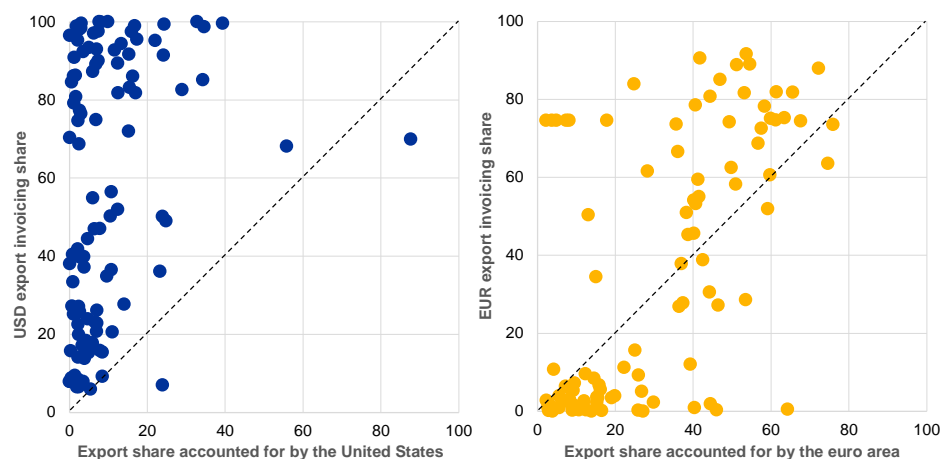
Still, it is interesting that the euro is used as a vehicle currency in certain regions. In particular, non-euro area European countries and several African countries use the euro for invoicing of more than just their exports to the euro area (these countries tend to cluster towards the top left-hand corner of the right panel of **Chart 24**). So even though the US dollar is the globally dominant currency in trade invoicing, the euro may be regarded as a regionally dominant currency in Europe and some parts of Africa, including countries of the CFA franc zone.

Chart 24

The US dollar is a globally dominant currency, while the euro is a regionally dominant currency in Europe and some parts of Africa

Trade and invoicing currency shares at the country level

(percentages)



Source: Boz, E., Casas, C., Georgiadis, G., Gopinath, G., Le Mezo, H., Mehl, A. and Nguyen, T., "Patterns in invoicing currency in global trade", *Working Paper Series*, No 2456, ECB, Frankfurt am Main, 2020.

Notes: The chart presents scatter plots of the share of countries' total exports accounted for by the United States and the share of total exports invoiced in US dollars (left panel), as well as the share of total exports accounted for by the euro area and the share of total exports invoiced in euro (right panel). The 45-degree line is shown as a black dashed line.

Third, institutional and geographical proximity to the euro area and the EU seem to have triggered notable changes in invoicing currency patterns for several countries. Countries that are in the run-up to euro adoption or that joined the EU, EU candidate countries, and other European countries have experienced marked increases in the use of the euro as an invoicing currency – increases that typically occurred at the expense of the US dollar. **Chart 25** illustrates this point by showing the full time-series data for selected European countries.¹¹³ The increase in these countries' export shares invoiced in euro is noticeable, especially when one considers that the shares of exports destined to the euro area have either been fairly stable or exhibited only modest increases. The rise in the share of exports invoiced in euro is typically paralleled by a decline in the share invoiced in US dollars. These findings are consistent with the theoretical literature's emphasis on the role of history, path dependence and nonlinearities in the choice of a trade invoicing currency, including discrete events, such as the establishment of currency unions and episodes of comprehensive institutional integration.¹¹⁴

¹¹³ The shares of invoicing in euro prior to 1999 are calculated as the sum of the legacy currencies.

¹¹⁴ See Gopinath, G. and Stein, J., "Banking, trade, and the making of a dominant currency", *Quarterly Journal of Economics*, and Mukhin, D., "An equilibrium model of the international price system", mimeo, 2018.

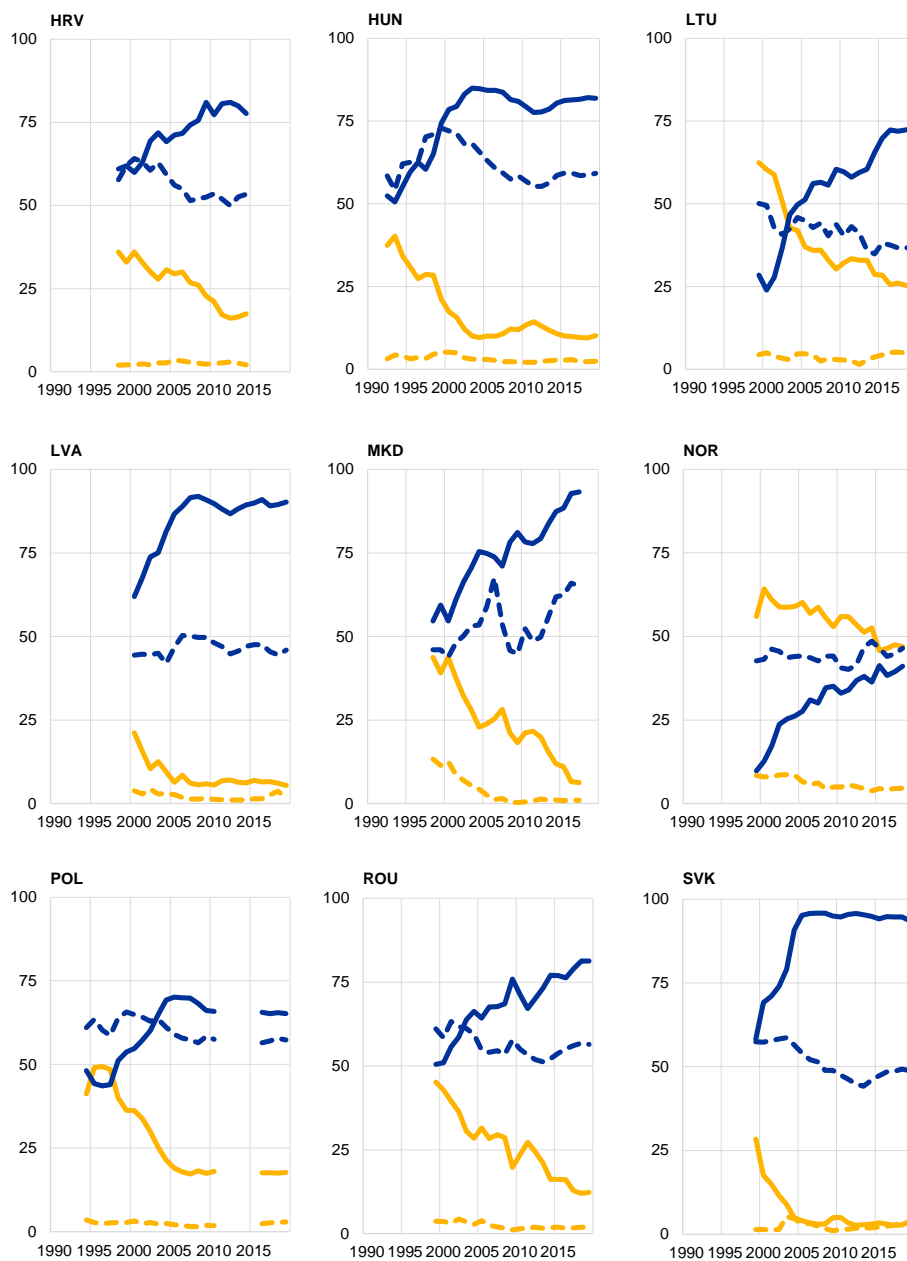
Chart 25

Evidence of significant shifts in euro invoicing across countries

Evolution of invoicing and export shares for selected European countries

(percentages)

- Exports in euro
- - Share of exports to the euro area
- Exports in US dollars
- - Share of exports to the United States



Source: Boz, E., Casas, C., Georgiadis, G., Gopinath, G., Le Mezo, H., Mehl, A. and Nguyen, T., "Patterns in invoicing currency in global trade", Working Paper Series, No 2456, ECB, Frankfurt am Main, 2020.

Notes: The charts plot the evolution of US dollar (solid yellow lines) and euro export (solid blue lines) invoicing shares as well as US export shares (dashed yellow lines) and euro area export shares (dashed blue lines).