Online Appendix to:

The Rise of the Dollar and Fall of the Euro as International Currencies

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A Online Appendix

This Online Appendix contains two subsections. Section A.1 offers additional results on the dollar and euro shares of syndicated loans in the SDC Platinum data. Section A.2 presents the time series evolution of dollar and euro trade invoicing shares for alternative specifications and data sources. It concludes with a back of the envelope calculation useful for thinking about the role that methodological changes in calculated currency shares for EU countries may have plausibly played in influencing our results.

A.1 Dollar and Euro Use In Bank Loans

In this subsection of the Online Appendix, we plot the evolution of dollar and euro shares when we pool all the data (Figure A.1), when we separately plot several sectors that were excluded from the main text (Figure A.2), and when we separately plot our data for regions of the world (Figure A.3).

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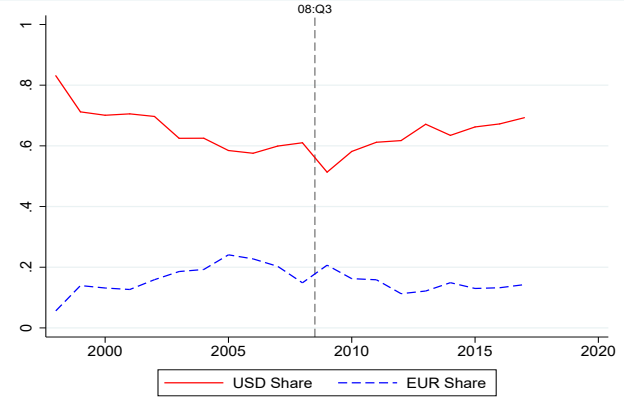


Figure A.1: Dollar and Euro Use to Denominate Bank Loans: Aggregate

(a) Agriculture, Mining, and Construction

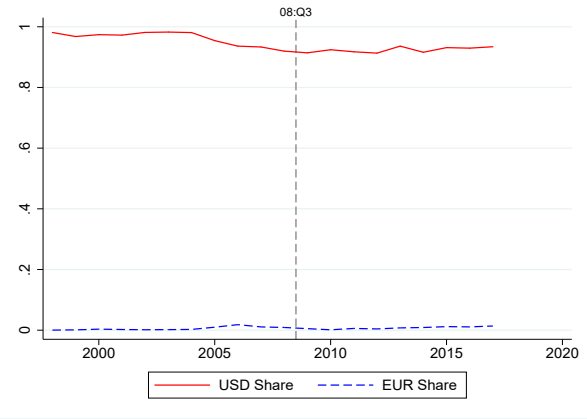
(b) Transportation and Communications

Figure A.2: Dollar and Euro Use to Invoice Bond Securities: Sectors

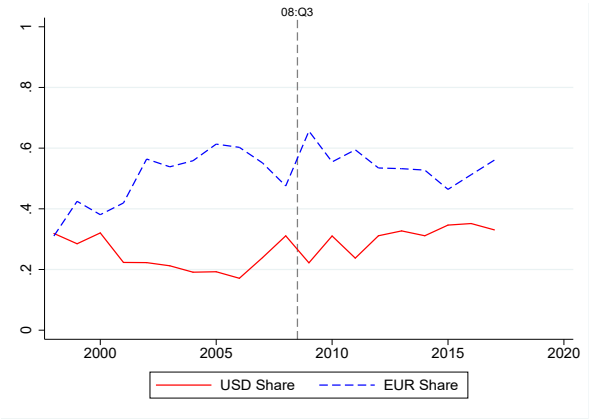
A.2 Dollar and Euro Use for Invoicing International Trade

This subsection of the Online Appendix explores the robustness of our results on the dollar and euro shares of international trade invoicing. We start in Figure A.4 by running the identical analysis as reported in Figure 2, but where we weight each country's imports or exports by the dollar value of their trade flows in 2010, obtained from the IMF's Direction of Trade database. The results are similar and in many of the below figures we report together the weighted and unweighted results.

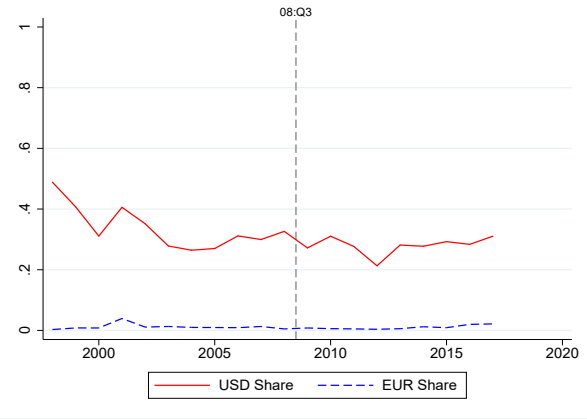
In Figure A.5, we only consider data points that are connected to the most recent datapoint without a gap of more than four years of missing data. For example, if a country has data available for 1999-2006, lacks data for 2007-2009, but has data for 2010-2014, we would interpolate the



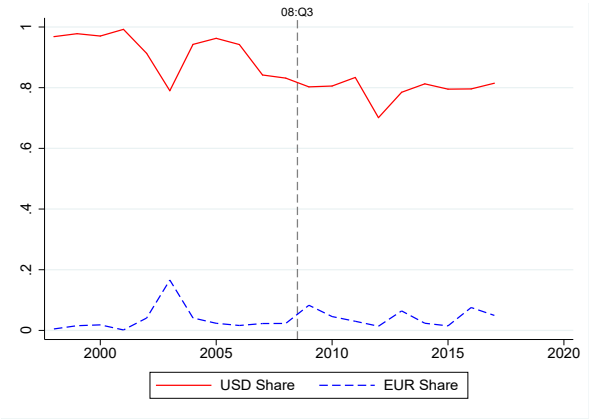
(a) North America



(b) Europe

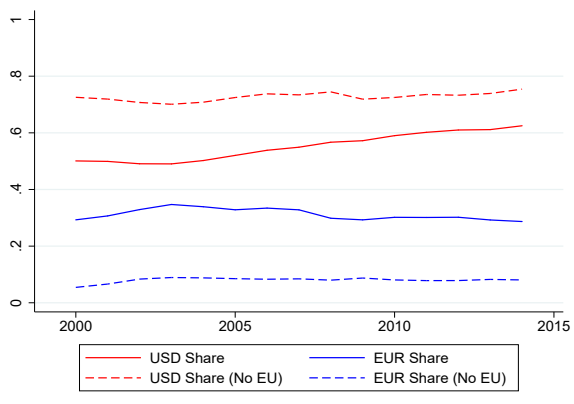


(c) Asia

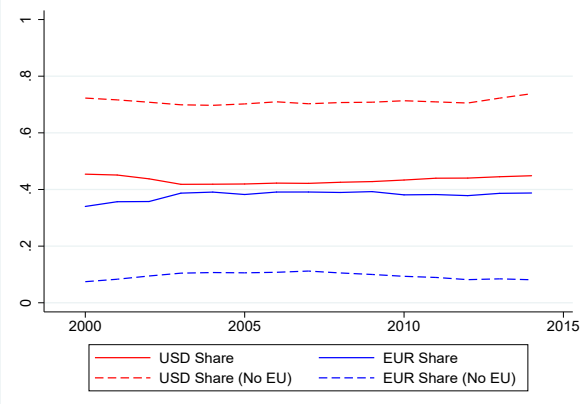


(d) Rest of World

Figure A.3: Dollar and Euro Use to Invoice Bond Securities: Regions



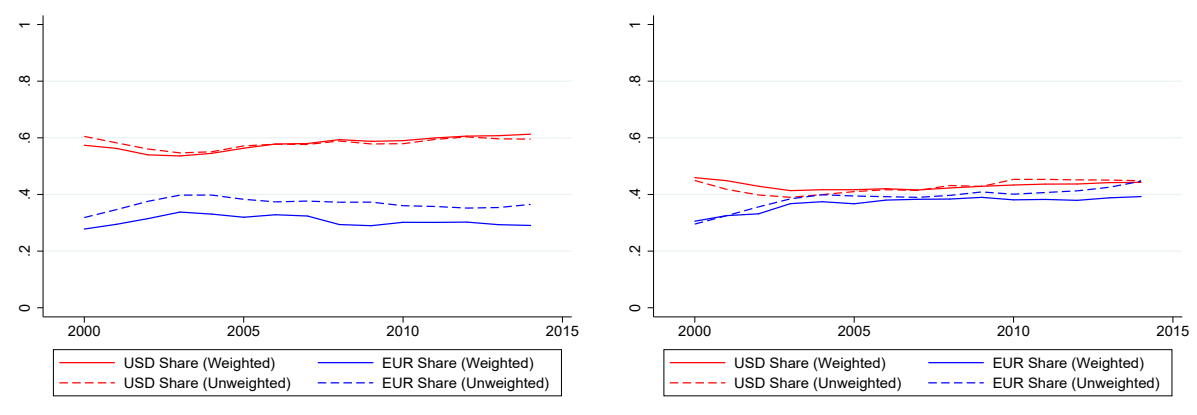
(a) Imports



(b) Exports

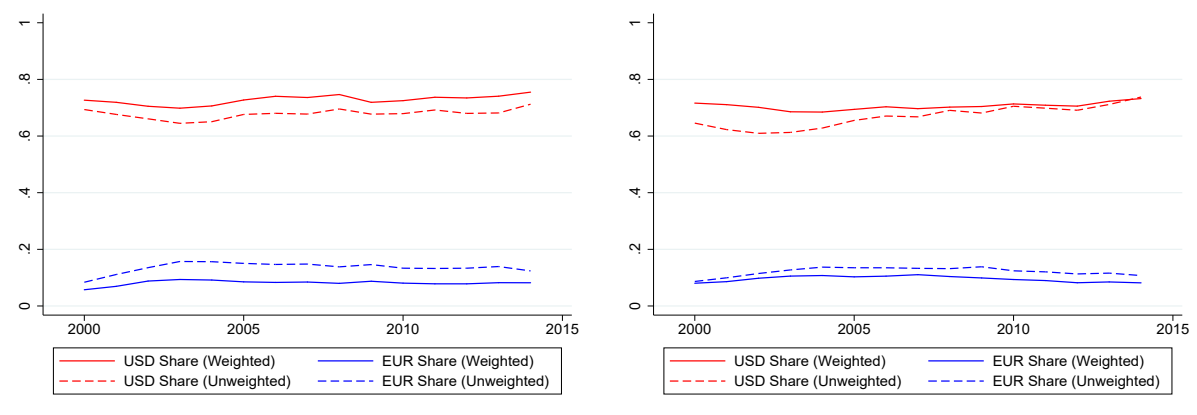
Figure A.4: Dollar and Euro Use to Invoice International Trades

missing 2007-2009 period and include all these data in the analysis. However, if a country has data available for 1999-2005, lacks data for 2006-2009, but has data for 2010-2014, we would only in this figure include the data for 2010-2014. The 2006-2009 gap would be considered too long, so we ignore all earlier data. We have considered other rules governing the maximum gap size and find similar results. Figures 5(a) and 5(b) plot these results for all countries, while Figures 5(c) and 5(d) plot results with this equivalent gap treatment but only for Non-EU countries.



(a) Imports

(b) Exports

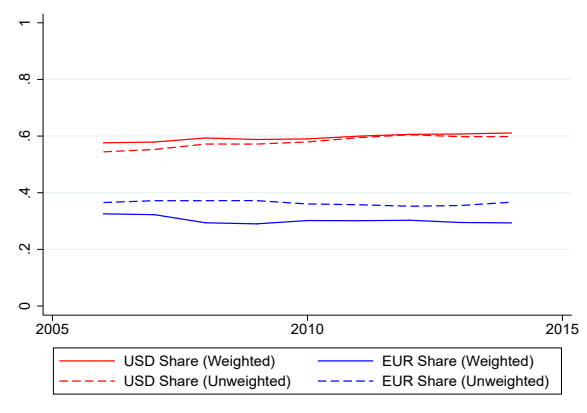


(c) Imports (Non-EU)

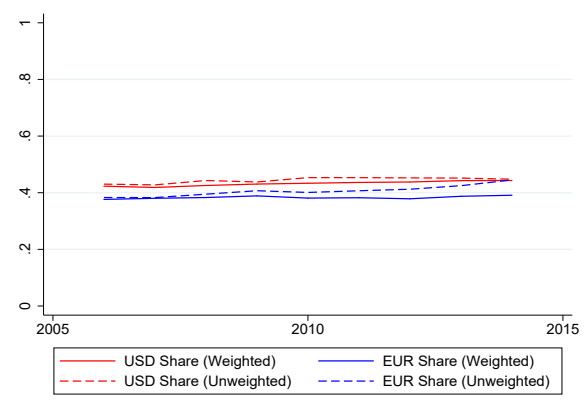
(d) Exports (Non-EU)

Figure A.5: International Trade Invoicing: Gaps ≤3 Years

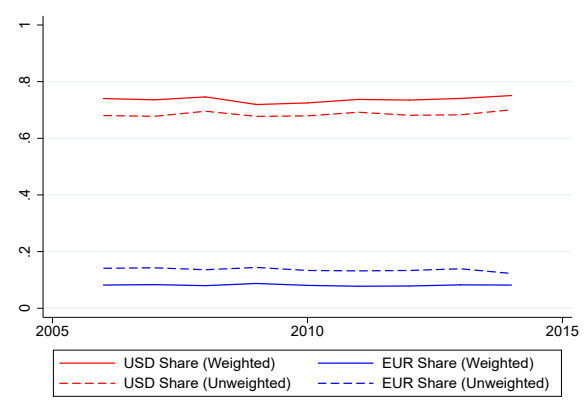
The results in Figure A.6 are generated by simply dropping all data prior to 2005, and thereby eliminating anything sourced from Kamps (2006), which presents data through 2004. Figures 6(a) and 6(b) report the results using all countries in the data, and Figures 6(c) and 6(d) present these results excluding EU countries.



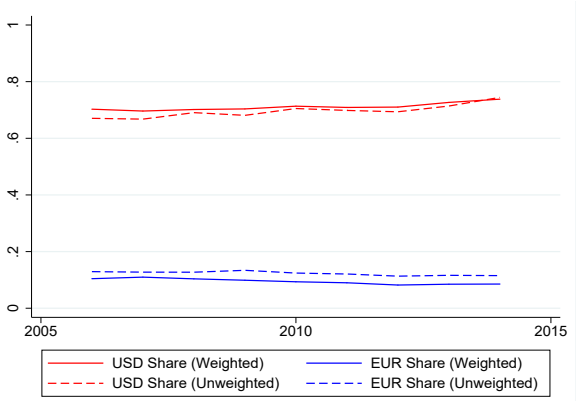
(a) Imports



(b) Exports



(c) Imports (Non-EU)



(d) Exports (Non-EU)

Figure A.6: International Trade Invoicing: Drops Data Prior to 2005

There were two additional sources we considered to study trends in currency invoicing. First, we studied a more limited set of countries, compiled in the ECB's annual publications on the role of the euro (see ECB (2018) and earlier versions of the same report). These ECB data only report the euro share and lists declines of 6 and 2 percentage points in its share of exports and imports for the euro zone as a whole from 2008 to 2017. When we use our regression specification and absorb country fixed effects, however, we show declining euro shares for that same period when we use trade weights and increasing euro shares when we ignore weights. Second, we analyzed Eurostat data, which covers the euro and dollar share of invoicing for 2010-2017 for a limited set of countries. Our analyses of these data did not suggest meaningful trends in the dollar and euro currency shares.

Finally, we offer a simple back-of-the-envelope useful for thinking about the role of methodological changes in driving reported currency shares for EU countries. In any given period, we can write the multilateral dollar and euro import shares of country i ($\alpha^{\text{USD}}_{i,All}$ and $\alpha^{\text{EUR}}_{i,All}$) as:

$$\begin{aligned}
\alpha^{\text{USD}}_{i,All} &= \omega_{i,EU} \times \alpha^{\text{USD}}_{i,EU} + \left(1 - \omega_{i,EU}\right) \times \alpha^{\text{USD}}_{i,Non-EU} \\
\alpha^{\text{EUR}}_{i,All} &= \omega_{i,EU} \times \alpha^{\text{EUR}}_{i,EU} + \left(1 - \omega_{i,EU}\right) \times \alpha^{\text{EUR}}_{i,Non-EU},
\end{aligned}$$

where $\alpha^{\text{USD}}_{i,EU}$ is the dollar share of imports coming from EU countries and where $\omega_{i,EU}$ is the share of i's total imports that comes from the EU.

Imagine that there were no changes in any of the terms on the right hand side of the above equations, but rather, early data reported $\alpha^{\text{USD}}_{i,All}$ while later data reported $\alpha^{\text{USD}}_{i,Non-EU}$, and the equivalent for euros. This would imply that an interpolated time series would generate changes in currency import shares of:

$$\alpha^{\text{USD}}_{i,Non-EU} - \alpha^{\text{USD}}_{i,All} = \omega_{i,EU} \times \left(\alpha^{\text{USD}}_{i,Non-EU} - \alpha^{\text{USD}}_{i,EU}\right) \tag{A.1}$$

$$\alpha^{\text{EUR}}_{i,Non-EU} - \alpha^{\text{EUR}}_{i,All} = \omega_{i,EU} \times \left(\alpha^{\text{EUR}}_{i,Non-EU} - \alpha^{\text{EUR}}_{i,EU}\right). \tag{A.2}$$

Take, as an example, the UK, where the average dollar share of imports increased by 27 percentage points, and where the euro share decreased by 17 percentage points, from the earliest data (from 1999-2002) to the latest data (2010-2014). Combining these data with (A.1) and (A.2) yields:

$$-1.6 = -\frac{0.27}{0.17} = \frac{\alpha^{\text{USD}}_{i,Non-EU} - \alpha^{\text{USD}}_{i,EU}}{\alpha^{\text{EUR}}_{i,Non-EU} - \alpha^{\text{EUR}}_{i,EU}}. \tag{A.3}$$

For this change in methodology to entirely explain the UK case, therefore, the gap in true dollar import shares between EU and non-EU exports to the UK would have to more than 60 percent larger than the gap in true euro shares between EU and non-EU exports to the UK. Relatedly, since the dollar share of UK exports did not change over the same period, the identical logic would suggest for methodology alone to drive the result, dollar shares would have to be highly similar in exports

to the EU and non-EU.

While certainly plausible, these values seems somewhat unlikely. The large changes in currency shares among EU countries likely reflect methodological changes, though probably also reflect true underlying changes in economic activity. How much of the trend in currency shares used in trade by EU countries is spurious and how much reflected true changes? Further calculations such as these are beyond the scope of our work in this paper but might prove fruitful for future work aiming to piece together the time-series evolution of currency shares in the historical invoicing of international trade.

References

ECB (2018). The international role of the euro.

Kamps, A. (2006). The euro as invoicing currency in international trade.