



Trade invoicing in major currencies in the 1970s–1990s: Lessons for renminbi internationalization



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ABSTRACT

In this paper, we investigate how much a major currency is used for trade invoicing by focusing primarily on the experiences of the U.S. dollar, the Japanese yen, and the Deutsche mark (DM) in the 1970s through the 1990s. We then attempt to draw lessons for China's renminbi (RMB) internationalization. Our data on the shares of the three major currencies in export invoicing show that the dollar was unequivocally a global invoicing currency, and that the DM was the most important regional currency in Europe while the yen was never a global or a regional currency. DM invoicing was driven by European countries' trade ties with Germany. In contrast, the yen was not widely used for trade invoicing by Asia–Oceania countries despite the latter's strong trade ties with Japan. Our regression analysis on the determinants of the major currency share in trade invoicing (also including UK pound sterling, the French franc, the Italian lira, and the Swiss franc) in the 1970–1998 period shows that the invoicing share of a major currency tended to be positively affected by the degree of other economies' trade ties with the major currency country and negatively affected by the degree of their financial development or openness. Also, the major currency share in trade invoicing was affected by both other economies' assigned weights of the major currency in their implicit currency baskets and these economies' trade shares with major-currency zone countries. Economies belonging to the U.S. dollar (or DM) zone tended to invoice their trade more in the dollar (or DM) and less in the DM (or dollar). The use of yen for trade invoicing was not much affected by these factors. European countries largely belonged to the DM zone and tended to use the DM for trade invoicing, whereas Asia–Oceania countries belonged mainly to the U.S. dollar zone, leading to a high degree of dollar use. We also find that major currency countries tended to invoice their trade in their own currencies when they had a large presence in international trade, high levels of per capita income, and financial markets that were developed and open. For China, its low level of per capita income, limited financial openness, and the presence of U.S. dollar zone countries in Asia stand as a challenge to the nation's ambition to promote the RMB as a major trade-invoicing currency.

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1. Introduction

In recent years, the issue of renminbi (RMB) internationalization has been actively debated. The global financial crisis of 2007–2009 raised questions about the desirability of the current US dollar-dominant international monetary system. Even though China and other emerging economies have grown fast with their presence rising in the world economy over the last two decades, their interests do not seem to be adequately reflected in the current international monetary system. Thus, with China's rapid rise as a global economic power, its authorities decided to promote the RMB

as an international currency and increase its use for international trade, investment and finance.¹

As a result, the international status of the RMB has been on the rise. According to the Society for Worldwide Interbank Financial Telecommunication (SWIFT), the RMB became the world's fourth most used payments currency in August 2015, overtaking the Japanese yen.² Data from the People's Bank of China indicate that, as of early 2016, RMB cross-border trade settlement accounted for 26% of China's total trade.

¹ See [Eichengreen and Kawai \(2015\)](#) for recent trends, issues and challenges in RMB internationalization.

² RMB accounted for 2.8% of global payments in terms of value, still small compared to the top three in the ranking; the U.S. dollar at 44.8%, euro at 27.2%, and pound at 8.5% (yen at 2.78%). However, it is a rapid rise considering that it ranked 12th with a share of 0.84% in 2012.

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Reflecting the rise of the currency, the International Monetary Fund (IMF) has included the RMB, since October 2016, in the basket for the special drawing rights (SDR), along with the four incumbent reserve currencies: the U.S. dollar, euro, Japanese yen, and U.K. pound. Although the use of the RMB as official assets is still limited, this is an important first step for the currency to become a major reserve currency.

While the RMB is growing as an international currency, a natural question that arises is, what kind of international currency will it become? Will it become like the U.S. dollar which functions as the dominant global currency and as last-resort international liquidity? Or, will it function as a regional currency as the euro does in Europe?³ Or, will it become an international currency like the Japanese yen, which has failed to become neither a global nor a regional currency?

While we cannot predict the future of the RMB, we can learn some lessons from history. In this paper, we focus on one aspect of international currency among the several as identified by [Kenen \(1983\)](#), that is, how much a national currency is used for invoicing international trade. Currency invoicing in trade is one of the earlier steps for any national currency to become a major international currency. This exercise can provide some insight into the future potential for, or impediments to, the RMB becoming a major trade invoicing currency.

Why does currency invoicing in trade matter? Theoretically, in the world with complete financial markets and perfectly substitutable financial assets, the choice of currency for trade invoicing would not be an issue. However, in reality, financial markets are not complete and financial assets denominated in different currencies are not perfectly substitutable—due to differences in the degree of currency convertibility, political risk, financial market depth and liquidity, and various types of transaction costs.

In the absence of complete markets and perfectly substitutable financial assets, the selection of currency for trade invoicing affects the allocation of exchange risk between exporters and importers.⁴ The choice of currency invoicing is also related to the choice of product pricing, that is, whether a producer prices her product in her own currency (called producer pricing) or in the currency of the export market (local currency pricing).⁵ Although ex-post negotiations on the allocation of exchange risk through price changes are possible after observing exchange rate changes, such negotiations are usually costly. Indeed, [Gopinath \(2015\)](#) finds that import prices denominated in the currency of invoicing tend not to be so sensitive to exchange rate changes at horizons of up to 2 years. This suggests that the choice of currency invoicing reflects the degree of pricing power that an exporter might have in the export market, and the structure and characteristics of trading economies.

While there is relatively rich theoretical literature on the choice of currency in trade invoicing, the empirical literature has been thin, largely due to limited data availability. As only a small number of countries have collected and published currency invoicing data, it has been difficult for researchers to use a comprehensive dataset on the shares of currencies in trade invoicing.⁶

The US dollar is ‘the’ global currency today, functioning as the most dominant currency for trade invoicing, for cross-border asset and liability holding, in foreign exchange markets, and as official reserve assets. The DM was the most important regional currency in Europe whose role was succeeded by the euro. The yen was and still is never a global nor a regional currency, as its use for trade invoicing remains limited even in Japan’s trade. In our econometric analysis, we restrict our sample period to the 1970s through the 1990s. By examining the determinants of the shares of major currencies in trade invoicing and the different patterns across these currencies, we hope to draw some lessons for the RMB.

In this paper, we expand and update the database on the shares of major currencies used for trade invoicing first compiled by [Ito and Chinn \(2015\)](#). The updated dataset contains data on the shares of not only the U.S. dollar, the Japanese yen, and the Deutsche mark but also other major currencies such as the euro, U.K. pound sterling, French franc, Italian lira, and Swiss franc, used for both export and import invoicing. The dataset includes the shares of these major currencies in trade invoicing used by both the major currency countries and by non-major currency economies.

The paper is organized as follows. In [Section 2](#), we explain briefly the dataset and review stylized facts on the use of major currencies, especially the U.S. dollar, the Japanese yen, and the Deutsche mark. In [Section 3](#), we conduct an empirical analysis to investigate the determinants of the major currency share in trade invoicing, by using data for the above three currencies as well as U.K. pound, French franc, Italian lira, and Swiss franc. We first run regressions from the perspective of non-major currency economies. We augment our analysis in two ways; first, by examining whether ‘currency zone’ variables matter for the choice of a major currency for trade invoicing; and second, by studying different patterns of trade invoicing among the major currencies. Then, we run regressions from the perspective of major currency countries to investigate the determinants of major-currency invoicing. In [Section 4](#), we use our empirical analysis to draw some lessons and implications for further internationalization of the RMB. In [Section 5](#), we provide concluding remarks.

2. Trade invoicing currency dataset and stylized facts

2.1. Data on currency shares in trade invoicing

In this study, we use the updated and expanded version of the dataset initially constructed by [Ito and Chinn \(2015\)](#). The initial version contained the datasets developed by [Goldberg and Tille \(2008\)](#) and [Kamps \(2006\)](#), while also including data collected from the websites of central banks and other government agencies, as well as from other studies that examined the issue of currency invoicing for trade. This dataset included only the shares of the U.S. dollar, the euro, and home currencies used for trade invoicing and settlement. The new augmented dataset is much more extensive than the initial one. First, a significant amount of new data is added, such as data from past studies and data obtained through personal communications. Second, coverage of major currencies is expanded to include trade invoicing in the Japanese yen, U.K. pound, Deutsche mark (DM), Dutch guilder, French franc, Italian lira, Swiss franc, and others.⁷ Third, the sample period is en-

³ [Eichengreen and Lombardi \(2015\)](#) investigate these questions.

⁴ In fact, the move to the generalized floating system in 1973, following the breakdown of the Bretton Woods system, was accompanied by higher levels of exchange-rate fluctuations and uncertainty, which made the issue of currency choice for trade invoicing more important than before.

⁵ The choice of product pricing involves a question of whether to avoid price or demand uncertainty. When a producer prices her product in her home currency, she can avoid price uncertainty but faces uncertain demand as it is subject to exchange rate fluctuations. When a producer prices her product in the local currency of the export market, she can minimize demand uncertainty but faces price uncertainty due to exchange rate changes.

⁶ Hence, most empirical studies on currency invoicing have focused on individual countries, as in [Donnenfeld and Haug \(2003\)](#) for Canada, [Wilander \(2004\)](#) for

Sweden, [Ligthart and Werner \(2012\)](#) for Norway, [Ito, et al. \(2010, 2012\)](#) for Japan, and [Da Silva \(2004\)](#) for the Netherlands. [Goldberg and Tille \(2008\)](#) and [Kamps \(2006\)](#) are the exceptions, conducting cross-country analysis on the determinants of trade invoicing, though the scope of country coverage tends to be small and highly unbalanced. For more literature review, refer to [ECB \(2005\)](#), [Kamps \(2006\)](#), [Goldberg and Tille \(2008\)](#), [Maziad, et al. \(2011\)](#), [Aubion \(2012\)](#), and [Ito and Chinn \(2015\)](#).

⁷ The new dataset also includes the shares of the Canadian dollar, Belgium franc, Danish krone, Norwegian krone, Swedish krone, the RMB, Singaporean dollar, Hong

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