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Network effects in currency internationalisation: Insights from BIS triennial surveys and implications for the renminbi

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ABSTRACT

The dominance of the US dollar in foreign exchange (FX) markets appears to reflect very strong network effects in the use of international currencies. What we observe today is the result of a slow-moving process that has witnessed a switch from the dominance of the pound sterling to the US dollar, perhaps during the inter-war period in the early part of the 20th century. This paper presents a discrete choice model of FX trading that explicitly allows for this type of critical transitions in order to understand the dynamics of currency turnover in FX markets. We estimate the model using the Bank for International Settlements' data from triennial surveys of FX markets and also examine the factors that could potentially shift the dynamic path and lead to an earlier critical transition. We then discuss the implications for the renminbi, a budding international currency. If the renminbi were to become a dominant international currency, it would require China to attain a much higher level of financial development and openness. It is important to note that our model does not address the possibility of a gradual weakening of the network effects in FX markets due to, for example, the advancement of trading technologies, which would allow the co-existence of a few equally dominant major currencies.

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1. Introduction

The international monetary system has been dominated by one national currency that acts as the main medium of exchange, unit of account, and store of value. The Dutch guilder was the prominent international currency in the 17th and 18th centuries, and then pound sterling played the role until World War I. The US dollar has been dominant perhaps since the interwar period (Eichengreen, 2011; Eichengreen and Flandreau, 2009; Prasad, 2014; Schenk, 2010).

A snapshot of the dominance of the US dollar is shown in Fig. 1, which contrasts the turnover share of currencies in FX markets against the global trade share of the issuing countries. All points would lie along the 45-degree line if transactions of two currencies were only to intermediate the bilateral trade between their issuing countries. The actual trading of the US dollar is far greater than what would be expected purely on the basis of direct trade flows with the US. Substantial systematic residual biases, which are positive and large for the US dollar, are left unexplained by a linear regression model of the currency turnover share, even when controlling for more determinant factors (Fig. 2).

Why do one or a few currencies dominate the international monetary system? What explains the nonlinear relation between currency internationalisation and underlying fundamentals? With the emergence of China as a major economic power, does the renminbi have the potential to become a major international currency, and if so, what would the dynamic path look like? The answers to these questions appear to have much to do with network effects in the use of money (Kindleberger, 1981; Krugman, 1980, 1984).

A fiat money derives value from others using it. In this regard, there is an analogy between money and language. What makes English the world's *lingua franca* is not its simplicity or internal beauty but its wide use (Kindleberger, 1981). Similarly, one chooses to use a currency in the belief that it is the one that others are most likely to use. Without government regulation and enforcement, the invisible hand of the market guide agents to concentrate on a limited number of currencies to deal with market frictions such as costs of transaction and calculation. There appear to be significant efficiency

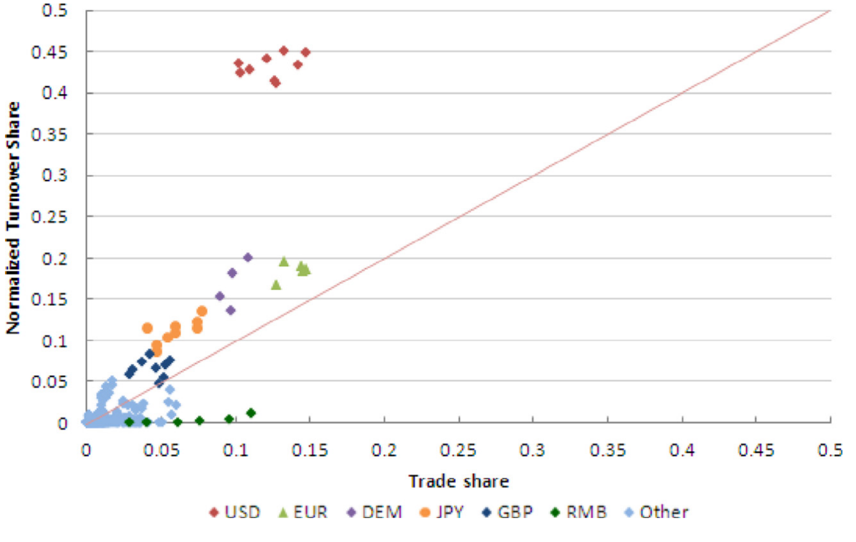

Fig. 1. FX turnover share of currency and global trade share of issuing country.
Note: (i) FX turnover share is normalised so that it sums up to 1 over all currencies in each period. (ii) Trade share is adjusted for intra-euro area trade.
Data source: BIS, WTO.