

Federal Reserve Bank of New York  
Staff Reports

The International Role of the Dollar:  
Does It Matter if This Changes?

Linda Goldberg

Staff Report no. 522  
October 2011

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## **The International Role of the Dollar: Does It Matter if This Changes?**

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*Federal Reserve Bank of New York Staff Reports*, no. 522

October 2011

JEL classification: F3, F4

### **Abstract**

There is often speculation that the international roles of currencies may be changing. This paper presents the current status of these roles. The U.S. dollar continues to be the dominant currency across various uses. Yet, such a role may change over time. If this occurs, there could be consequences for seignorage returns, U.S. funding costs, the dollar's value, U.S. insulation from foreign shocks, and U.S. global influence. The paper concludes with a discussion of recent research on related themes and questions for future study.

Key words: dollar, international currency, reserves, foreign exchange, invoicing, United States

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Goldberg: Federal Reserve Bank of New York (e-mail: [linda.goldberg@ny.frb.org](mailto:linda.goldberg@ny.frb.org)). The views expressed in this paper are those of the author and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

## I. Introduction

The U.S. dollar is always in the news. This is not surprising, given the role of the United States in the world economy and the role of the dollar in transactions around the world. During the Great Recession, the strong dollar funding reliance of banks in some markets outside the United States was not viewed as particularly noteworthy until balance sheet funding was disrupted. Some of the news articles speculated on pending changes to the global financial system. As one example, an article in the *Financial Times* (June 28, 2011) discussed a likely shift from the dollar as the dominant reserve currency to a portfolio of currencies, based on a survey of over 80 central bank reserve managers, sovereign wealth funds, and multinational institutions. There is an expectation that there will be an associated evolution of the international financial architecture. Of course, it is already the case that the U.S. dollar is not the only international currency. The euro also is extensively used, and there are international roles for other currencies including the pound sterling, the swiss franc, and the Japanese yen.

For a currency, its international roles include<sup>1</sup> serving as: a store of value and a unit of exchange; a medium of exchange; an anchor currency in exchange rate regimes; a primary currency in official foreign exchange reserves; a transaction currency in foreign exchange and international capital markets; and an invoicing and settlement currency in international trade. As a preview of main findings on currency status, we show that the dollar maintains a dominant role in all key functions. However, there also are some areas where dollar dominance has declined.

The discussion of an evolving role of the dollar is not new. For example, in the past decade there had been ample discussion of the euro overtaking the dollar as the key international currency<sup>2</sup>, or at least having a more balanced allocation of international activity across these two currencies. Much of the discussion, even from the academic side, focused on the role of the dollar in the international reserve holdings of central banks. Chinn and Frankel (2008) is one example of the reasoning behind evolving roles. They project that the dollar status has been based mainly on the growth trajectories of different regions and argue that, in the next decade, the euro could potentially rival or surpass the

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<sup>1</sup> An early overview is provided in Kenen (1983).

<sup>2</sup> For example, see the contributions to the volume edited by Pisani-Ferry and Posen (2009).

dollar. Likewise, Eichengreen (2011) forcefully argues that the world is evolving toward a multi-currency regime, without the continuing dominance of the U.S. dollar.

Most discussions of an expanding role of the euro have paused in the aftermath of the Great Recession and during the period of European sovereign debt stresses. Instead, more recent discussions have turned towards speculating about some the future roles for China's currency, the renminbi. In part, and following on the Chinn and Frankel arguments about country size, this potential is due to because of the spectacular economic growth of China over the past two decades. The argument holds that China's historic rise as a global economic and trading power will continue to profoundly reshape the global economic system. China's promotion of RMB internationalization in recent times is viewed as having the potential to accelerate the removal of China's restrictions on international capital flows. I will not take a stand on projections for the role of the dollar, euro, RMB, or any other currency. And, throughout this chapter, the views are my own, and not those of the Federal Reserve Bank of New York or the Federal Reserve System.

In this article I focus on a few main themes. I begin with a brief review of the main international roles of currencies, and then present data on the status of the dollar in these roles, updating Goldberg (2010). I next turn to three questions. First, from the vantage point of the United States, what are the potential consequences of a change in the international role of the dollar? Second, I note how my own research agenda addresses related questions. And finally, I discuss what types of research questions are open and beckoning economic researchers in this area of analysis.

As I turn specifically to the question of whether a potential decline in the international role of the dollar or a rise in the roles of other currencies would be a concern, a key caveat prevails: the context surrounding such changes are important. International currency usage is a market-driven decision. The roles of currencies are not exclusively defined by the relative size of countries and their country's presence in international markets. Indeed, in the early part of the 20<sup>th</sup> century, the United States had surpassed the United Kingdom in size, but size alone was not enough to unseat the pound sterling. Official and private sector agents have strong financial incentives to "vote with their feet" and use currencies that satisfy high standards of liquidity and convertibility. Many dimensions influence such currency choice outcomes, including country size, openness in international trade

and international capital flows, creditworthiness, and institutional and policy soundness and stability. The dollar's primacy in international economic transactions is a historical artifact that reflects the fact that the United States satisfied these criteria following the ravages of World War II. Its status was institutionalized within the Bretton Woods system and has been retained even as other economies, including the euro area and China, have grown in strength. Size, openness, creditworthiness, and institutions and policies have reinforced the status during this period.

Whether the rise of other currencies presents more negative or positive consequences for the United States is closely linked to conditions within the United States. If the United States maintains the strong economic fundamentals and the types of institutional strengths that have supported the dollar's international roles, the consequences of a reduced dollar role may not be a large concern. Indeed, the emergence of plausible alternatives to the dollar could signal strength in other economies and serve as a positive source of discipline on U.S. decisions. A decline of dollar's international primacy in such an environment is not to be regarded as a significant threat to U.S. economic well-being when this decline arises in the context of strong U.S. growth and institutional fundamentals.

However, if poor U.S. policy decisions undermine U.S. economic fundamentals and institutional strengths, the reduced international role of the dollar could be one component of a broader decline. The changes described below could have more adverse effects if the reduced dollar role is associated with less auspicious U.S. policy and institutions.

A second caveat also applies to the discussion. While the exposition has a focus on the roles of currencies, this is a somewhat distinct issue from a focus on the exchange value of currencies. Exchange rates can move substantially, as illustrated in Chart 1, without immediately having bearing on the international roles of currencies.

## II. The current status of the dollar in its international roles<sup>3</sup>

In policy discussions, two of the most frequently discussed roles of the dollar are as a central currency in the exchange rate arrangements of many countries and in country international reserves. While a historical perspective is provided in Goldberg (2010), up-to-date information on the status of the dollar in these roles is provided in Table 1 and Charts 2, 3 and 4.

In Table 1, currency arrangements are grouped according to whether countries have dollarized or have formed currency boards using the dollar, have a pegged exchange rate against the dollar, or maintain managed floats with the dollar as a reference currency.<sup>4</sup> The table shows statistics of 1995, 2000, 2005, and 2010. The statistics show numbers of countries with each exchange rate regime status out of a total of 207 reporters. There also are statistics presented on the share of GDP of all of these countries in the dollar-linked regime. As of 2010, eight countries are dollarized or have currency boards using the dollar, and ninety have a pegged exchange rate against the dollar. There is little evidence here that the dollar role as an anchor has changed to date. Indeed, the share of global GDP for countries with exchange rate regimes tied to the dollar has increased over time.

Country foreign currency reserves are another focal point of analyses and policy discussions. Cross-country data show that foreign exchange reserve holdings grew sharply over the recent decade. While reserves dipped during the great recession, they have since resumed their climb, nearing \$10 trillion in the beginning of 2011 (Chart 2). In particular, reserves growth is dominated by, but not limited to, developing countries. Within foreign exchange reserve portfolios, the dollar denominated assets continue to account for the majority of reserves held by both industrialized and developing countries (Charts 3 and 4), whether these assets are valued at current exchange rates or at constant exchange rates. This distinction is useful as it abstracts from changes in portfolio shares that might be passive and due to evolving currency values. These charts show that there appears to have been some recent diversification away from dollars by developing countries. Yet, overall and despite recent years of market turbulence, various crises, and including movements toward greater internationalization of the RMB by China, the dollar has not declined in prominence either as a central currency for exchange rate arrangements or as an international reserve currency.

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<sup>3</sup> This section provides an update of information in Goldberg (2010).

<sup>4</sup> Exchange rate arrangements can be difficult to categorize and *de facto* arrangements are often different from reported *de jure* arrangements. We use the Reinhart and Rogoff (2002) approach.

The next international currency role is as a transaction currency. A range of evidence shows that the dollar continues to be the leading transaction currency in the foreign exchange markets and a key invoicing currency in international trade. With an 85 percent share of foreign exchange transaction volume--more than twice the share of next leading currency, the euro--the dollar dominates these markets (Table 2). Yet, this dominance has declined somewhat in the past decade, even as volumes of currency transactions have more than doubled.

The dollar's leading role in foreign exchange transactions also is reinforced by this currency's widespread use in the invoicing of international trade. Cross-country evidence in Goldberg and Tille (2008), and the extended evidence in Kamps (2006), present some of the more comprehensive views based on data at the level of country exports and imports. More recently, the ECB report on *The International Role of the Euro* (July 2011, Tables 4.2 and 4.3) details currency use in imports and exports of European Union countries. In general, the euro's role rose in the years following the advent of the euro, before stabilizing. More recent evidence on direction of changes in euro and dollar shares are mixed across countries. In other recent work using Canadian Customs data (Goldberg and Tille 2010), I document relatively stable use of the dollar, euro, and other key currencies in invoicing international trade over the past decade.

International debt and loan markets are yet another area in which currency roles can be compared.<sup>5</sup> The ECB has compiled comprehensive data which show the shares of euros, dollars, yen and other currencies in all outstanding debt securities, issued anywhere in the world (ECB 2011 Table 2.1). The growth of debt issuance within European economies, including internal markets of the euro area, has been associated with a declining dollar share in all debt securities (Chart 5). Another key gauge of presence in international finance is the dollar-denominated share of all securities sold outside the issuing country and in a currency different from that of the issuer's country. Within this narrower type of debt issuance -- termed "international debt securities" -- the dollar role continues to expand. Currently, dollars account for nearly half of all debt when borrowers turn to external markets and foreign currency financing. It also is the dominant currency in liabilities extended to both nonbank and bank counterparties. The dollar share in loans to bank and non-bank customers

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<sup>5</sup> For more detail, see European Central Bank (2009), Couerdacier and Martin (2007), and Thimann (2008).

has remained around 60 percent (Chart 6). The dollar also plays an important role in the growing volumes of cross-border loans of banks (Chart 7).

### III. What would be the U.S. Consequences of a Declining Dollar Status?

It is sometimes argued that the United States extracts large benefits from the privileged international status of the dollar.<sup>6</sup> It is less frequently asked what could be the consequences of a decline in this status. We examine the potential consequences in five areas: seignorage returns, funding costs, transaction costs, U.S. insulation to foreign shocks, dollar valuation, and U.S. global influence.<sup>7</sup> These consequences are summarized in Table 3 and discussed in more detail below.

**Seignorage revenues:** Seignorage gains on currency outstanding can be approximated by the difference between interest earned on securities acquired in exchange for bank notes and the costs of producing and distributing those notes. Total seignorage returns to the United States are estimated to be moderate, despite roughly \$1 trillion in cash dollars in circulation. In a low interest rate environment seignorage gains can be relatively small, with an upper bound of around \$2.5 billion per year if calculated at 25 basis points, or \$20 billion if calculated at an interest rate of 2 percent. By some estimates, in excess of 60 percent of U.S. dollar notes are outside of the United States. Clearly, changes in volumes of dollar cash holdings that are outside of the United States would alter these gains proportionately.<sup>8</sup>

**Funding costs:** It is sometimes argued that one reflection of the “exorbitant privilege” afforded the United States due to the dollar’s international status is evidenced in the lower funding costs facing U.S. borrowers on dollar liabilities. This point has been at the center of heated debate. While U.S. entities have had higher rates of return on outward investments compared with what is paid to

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<sup>6</sup> For example, Pierre-Olivier Gourinchas and Helene Rey. 2007. “From World Banker to World Venture Capitalist: The U.S. External Adjustment and the Exorbitant Privilege” in R. Clarida (ed.) *G7 Current Account Imbalances: Sustainability and Adjustment* (Chicago, University of Chicago Press), 11-55. The term “exorbitant privilege” was first coined in the 1960s by Valery Giscard d’Estaing, at the time France’s finance minister.

<sup>7</sup> This section closely follows the discussion of the blog post by Linda Goldberg, Mark Choi and Hunter Clark, in Liberty Street Economics, October 3, 2011. <http://libertystreeteconomics.newyorkfed.org/2011/10/what-if-the-us-dollars-global-role-changed.html>

<sup>8</sup> Of the roughly \$1 trillion of U.S. currency in circulation, perhaps half to two-thirds is held outside of the United States. Much of the cash is in Russia and the former Soviet Union, Central and South America, and the Middle East. The consequences could be more substantial if the dollar has a reduced role in Russia and the former Soviet Union.

foreign investors on U.S. inward capital flows, the evidence for exorbitant privilege per se is disputed. Careful empirical investigation by Curcuru, Thomas and Warnock (CTW 2011) shows that most of the differential in funding costs on U.S. borrowing roles versus those on U.S. investments is attributable to the different composition of outward and inward capital flows. In particular, U.S. outward investment is more heavily focused on higher return foreign direct investment. While there remains a small advantage on average for the United States compared to other countries in official and bond financing, this is not relative to *all* countries. Also, recent studies attribute the lower rates charged the United States on its debt to country risk premia, differences in tax rates, and the relative stability of investment returns across nationalities, rather than to the dollar's international role per se.<sup>9</sup> There is a conceptual counter argument provided by Gourinchas and Rey (2011), in which there is effectively an insurance premium paid by the rest of the world to the United States for its exorbitant duty in giving the world a stable anchor and for providing other countries lender of last resort resources. This argument does not refute the CTW evidence, but does raise interesting questions about the role of currencies and volumes of flows vis a vis the United States during crises.

Regardless of one's stance in this exorbitant privilege debate, it is certainly possible that funding costs could rise on U.S. government borrowing if the assets of other countries emerge as stronger alternative investment vehicles to U.S. Treasuries, or if the safe haven role of the dollar is perceived as eroded. This could potentially reduce the demand for U.S. government debt relative to the non-dollar denominated assets purchased by private and official sector investors. A reduced demand for U.S. official sector debts could increase the debt financing costs for the United States, having as a consequence a higher fiscal burden of U.S. debt and perhaps an increasing crowding out of domestic public and private sector spending.<sup>10</sup> A reduced demand for the U.S. assets also could lead to U.S. dollar depreciation.

***US insulation from foreign shocks:*** The dollar's role in invoicing international trade and its predominance in international borrowing and lending activity have traditionally provided the United

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<sup>9</sup> Curcuru, Stephanie, Charles Thomas, and Francis Warnock. 2011. "On Returns Differentials", Federal Reserve Board manuscript; Curcuru, Stephanie and Charles Thomas. 2010. "The U.S. Net Income Puzzle", Federal Reserve Board manuscript.

<sup>10</sup> For estimates of increasing financing costs of U.S. debt burdens, see Congressional Budget Office estimates, February 24, 2011. Letter to Honorable Paul Ryan from CBO Douglas Emendorf.

States with a degree of insulation from shocks that originate in foreign markets. This type of insulation is discussed in Goldberg and Tille (2006). The relatively low sensitivity of U.S. import prices to exchange rate changes results in less expenditure switching between home and foreign goods when the dollar value changes. The low import price sensitivity is partially attributable to the use of dollars in trade invoicing. With increased use of other currencies in invoicing trade and in borrowing and lending activity, the insulation could decline. In particular, reduced dollar invoicing of international trade and use of dollars in international borrowing and lending activity could raise exchange rate pass-through into domestic import prices, and ultimately make U.S. prices more sensitive to foreign fluctuations. Thus, when the dollar exchange rate moves, more of the expenditure switching burden is felt in the United States and less by our foreign trading partners. Greater invoicing in other currencies could shift the adjustment burden more to the United States. On the financial side, the global predominance of the dollar has enabled U.S. entities to issue their debt in U.S. dollars, helping the U.S. government and private entities avoid the “original sin” of large currency mismatch risks on their balance sheets.

Overall, the increased use of other currencies in place of the dollar in international roles such as trade invoicing and lending and borrowing activity could lead to a directional rebalancing of international transmission of shocks and stimuli. The United States could be influenced more by the policy decisions and economic cycles of foreign markets, and increasingly take these into account in a range of policy decisions made in the domestic economy.

**Dollar valuation:** A currency’s value is supported by its status as the primary global reserve currency to the extent that U.S. dollar assets are demanded by public and private sector entities worldwide. If, for example, there was a withdrawal of foreign exchange reserve demand for U.S. dollars, this occurrence could be associated with a depreciated U.S. dollar relative to whichever currency gets an enhanced role. The potential economic consequences of a weaker dollar are mixed. The U.S. debt burden does not increase in dollar terms since U.S. liabilities are denominated in dollars, regardless of the size of external debt of the United States. However, higher costs of carrying the debt could arise if further dollar depreciation is expected and compensation for that risk is required by investors. Changes in the value of the dollar also are associated with well-established facts on competitiveness of U.S. exporters and importers. Countries that use the dollar on their

international trade with other (non-U.S.) counterparties also may be affected (Goldberg and Tille 2009).

**US global influence:** Less quantifiable but potentially more significant could be a loss of global prestige and policy influence for the United States resulting from a shift towards a multi-polar currency world. One key channel of U.S. global influence in the modern economic system has been its influence on the institutions, such as the IMF and World Bank, that undergird the current international economic and financial order. A second avenue by which U.S. influence may be impacted by growing international use of other currencies in international negotiations and transactions. This could further strengthen the reach of other countries in ways that could differ from U.S. preferences and interests.

#### **IV. Related Research Themes**

To date, the formal analysis of consequences of international currency roles tackles very few questions. Foremost among these are studies that address the reasons that countries accumulate or decumulate international reserves. Aizenman (forthcoming), Eichengreen (2011), Chinn and Frankel (2008), and Dooley, Folkerts-Landau and Garber (2004) debate the angles of mercantilism, international insurance, or some variant of infant industry protection through undervalued currencies. Rodrik (2006) argues that holding such reserves comes at a high social cost. Obstfeld, Shambaugh and Taylor (2009), and Aizenman and Sun (2009) address the dynamics of such international reserves during the Great Recession. All of these studies show that reserves can have real effects by changing some combination of country vulnerability to various international shocks and reducing exchange rate volatility. In the mercantilist view, there also are growth consequences that arise from arguments that ascribe reserve accumulation to goals of currency undervaluation, with such approaches more typically and historically associated with infant industry protection arguments.

Another set of themes in the literature considers related consequences for international macroeconomic policy and shock transmission. I begin my discussion with the literature on macroeconomic modeling with findings for optimal monetary policy and international transmission of shocks, mainly from the perspective of how my own research fits in.

Much of this research takes as an exogenous prior and starting point the prevalence of local currency pricing or producer currency pricing, with ensuing debates hinging on beliefs about the appropriate assumptions and the symmetry of these assumptions across countries.<sup>11</sup> My work with Jose Manuel Campa (Campa and Goldberg 2005) shows that asymmetries across countries are the right way to approach this – some countries have more local currency pricing while others are best described by producer currency pricing on their imports. My work with Cedric Tille (Goldberg and Tille 2008) shows that the differences across countries in the currency invoicing of international trade are a reason for these asymmetries. Indeed, other recent theoretical work and empirical work also confirm the mapping between rates of exchange rate pass through into import prices and the currencies of rigidity of pricing of traded goods (Engel 2006, and Gopinath, Itskhoki, and Rigobon 2010). Given such asymmetries, I have argued that the international trade consequences of exchange rate movements, and in particular the prevalence of expenditure switching, are likely to take different forms across countries (Goldberg and Tille 2006; Goldberg and Dillon 2007).

Some of my other research with Tille (Goldberg and Tille JME 2010) concentrates on the consequences for economies when they have the possibility of using their own currency, the exporter's currency, or vehicle currencies, that is the currency of third countries not directly involved in the international trade transaction. The use of dollars in trade transactions between Korea and Thailand, or of euros in transactions between Sweden and Turkey, for example, can alter the structure of shock transmission to those economies and the effectiveness of their potential policy responses. Indeed, the use of a vehicle currency on trade among “periphery” countries can have fundamental implications for periphery country policy effectiveness, as well as for its welfare and its susceptibility to shocks transmitted internationally by other countries (Goldberg and Tille 2008). If the periphery countries use the center's currency on their bilateral international trade transactions, their economies can be more sensitive to the center country's monetary policy, and their own national monetary policies can be less effective at influencing prices in local markets. The center country monetary policy decisions also can have externalities for the periphery. This second dimension, under some conditions, can be inefficient for periphery countries in their bilateral transactions. Given such inefficiencies, in some cases periphery countries could benefit from

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<sup>11</sup> For example, see Obstfeld and Rogoff (2002), Devereux and Engel (2003), Corsetti and Pesenti (2005), and Devereux, Shi, and Xu (2006).

international monetary policy cooperation with the center country. However, engaging in such cooperation would not be welfare enhancing for the center country, which otherwise would set policy only with its own welfare as criteria.

There is still much work to be done on understanding which forces could tip the equilibria on the international roles of currencies. Eichengreen and Flandreau (2010) consider the evolution of roles of the pound sterling and U.S. dollars in the early 20<sup>th</sup> century, showing that these both co-existed as the key currencies for some time. The dollar's role rose, in part, as a result of supportive policy actions in the United States. Other types of analyses also ultimately can inform our understanding of the conditions that influence which currencies exporters and importers use on their international trade transactions, and therefore which forces can lead to switching in currency use. With data on every single import transaction of Canada (45 million observations) over a seven year period, Goldberg and Tille (2010, 2011) are posting and testing the relative importance of alternatives theoretical contributions for invoice currency selection in international trade activity.<sup>12</sup> We find strong support for a direct role of exchange rate arrangements, for coalescing in a common currency, reliance on commodity inputs in production, and for the bargaining power of importers versus exporters. The connection between transaction size and invoicing is a new aspect in the invoicing literature. Our theoretical and empirical work is arguing that strategic interactions between exporters and importers are a neglected and potentially important consideration in the discussion of international roles of currencies.

## **V. Open questions**

While the selected literature review presented reveals some questions that are interesting and relevant in the area of international roles of currencies and some in progress work, clearly many questions remain unanswered. For starters, much more could be done to investigate the conditions for endogenous shifting between currencies in the full range of international roles. As noted, there has been some historical assessment of evolving roles of currencies in foreign exchange reserves. There also is more limited research underway on the international trade side, in our case using detailed Canadian data. It would be interesting to see what could be done using data for other

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<sup>12</sup> A non-exhaustive list of recent contributions includes Bacchetta and van Wincoop (2005), Devereux, Engel, and Storgaard (2004), Friberg (1998), Novy (2006), Goldberg and Tille (2008).

countries. Many countries have detailed data collected on international trade transactions that could potentially be utilized for such purposes.

More work, both empirical and theoretical, also would be useful on the finance side. Some related work is done by Philippe Martin and Helene Rey (2004), building on the theme of financial supermarkets. Martin and Nicolas Coeurdacier (2007) show that the euro served as a unilateral financial liberalization that decreased transaction costs for both bonds and equity disproportionately within the euro area.

There also is the issue of holdings of international cash, which historically was discussed under the heading of currency substitution. Recent work by Hellerstein and Ryan (2011) develops and estimates a model of demand for cash dollars, using new data from the Fed's international cash distribution operations. They find an important role for history of macroeconomic instability, size of the informal economy, openness to trade, and competition with the euro. What is the tipping point from store of value uses to medium of transaction uses, as was emphasized decades ago by Calvo and Vegh (1992)?

Much more work is warranted on the range of consequences of switching. On the trade side, real rigidities are effected. Is this important? How large of the effects? Other types of consequences? What are the broader effects of changing the prevalence of anchor currencies worldwide? We start to see this theme in work by Bergin and Feenstra (2008) which again works through the exchange rate pass through angle. Much more can be done on these questions as well.

Additional historical precedent that can be instructive. Eichengreen (2005), Bordo, Meissner and Redish (2005), Eichengreen and Flandreau (2005) and others have debated whether the transition from sterling to dollars in international reserves and debt was abrupt, or whether currencies co-existed in dominance. Yet, to my knowledge there is little investigation as to what this transmission meant in the context of the range of international roles of currencies that I have discussed.

Finally, there is an entire theme of the geopolitics of currencies, and the consequences of dollar, or euro, or renminbi diplomacy. How this operates and what part is specifically related to the international roles of currencies, as opposed purely to country size are other open questions.

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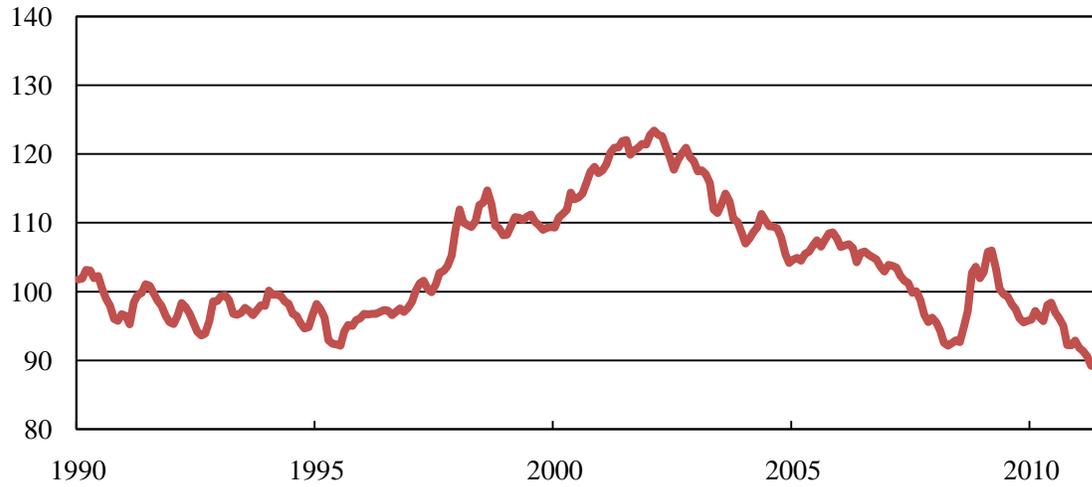
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**Chart 1: Real Broad Trade-Weighted Exchange Value Versus Major Currencies**

Index, 1990 = 100

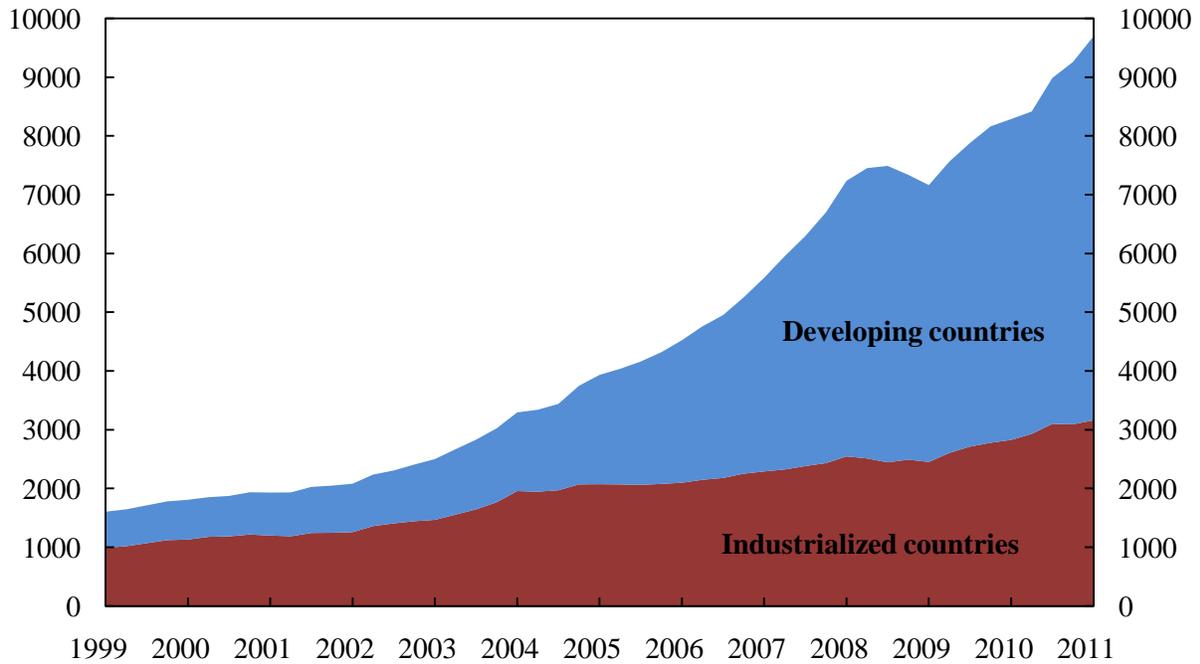


Source: Federal Reserve Board

**Chart 2: Foreign Currency Reserve Holdings**

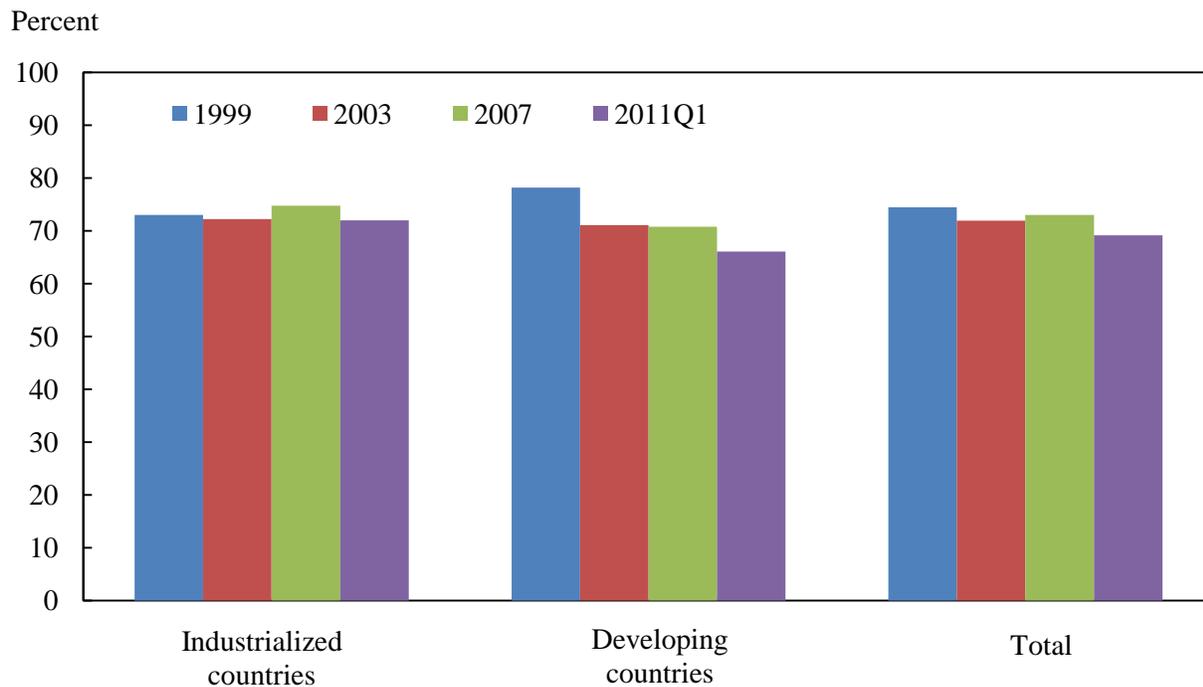
Billions USD

Billions USD



Source: International Monetary Fund, Currency Composition of Official Foreign Exchange Reserves (COFER) data.

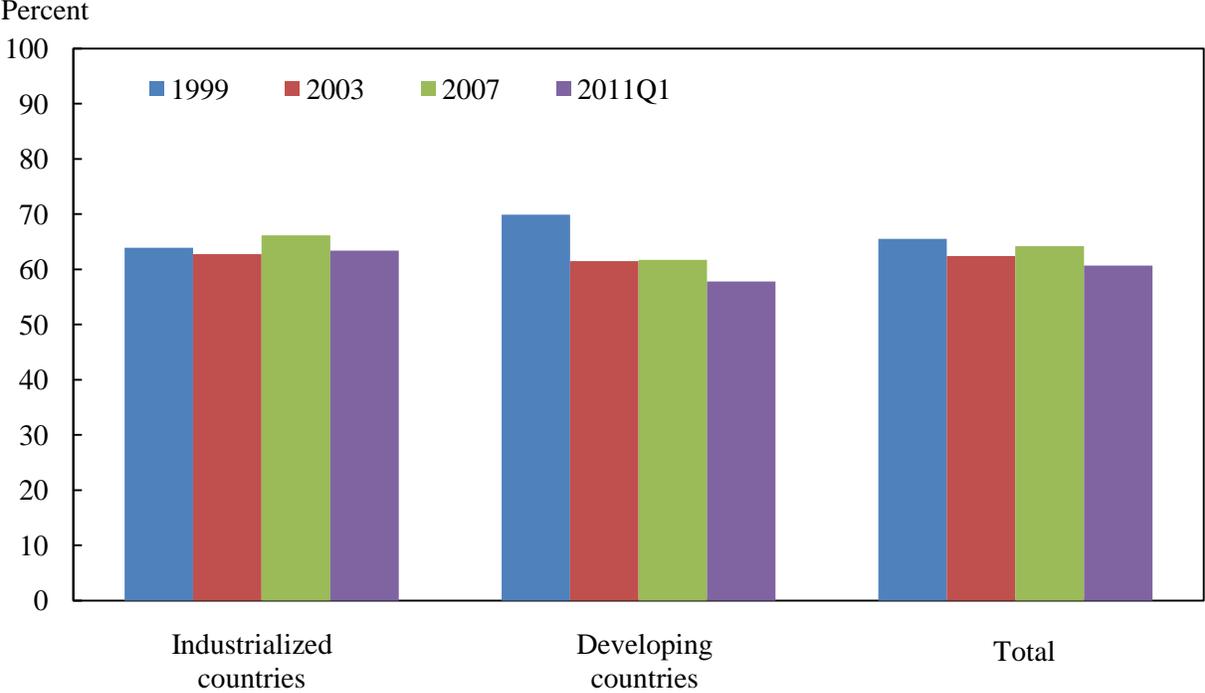
**Chart 3 U.S. Dollar Assets in Foreign Currency Reserves**



Source: International Monetary Fund, Currency Composition of Official Foreign Exchange Reserves (COFER) data; Board of Governors of the Federal Reserve System staff estimates

Note: Amounts are valued at 2002Q1 exchange rate

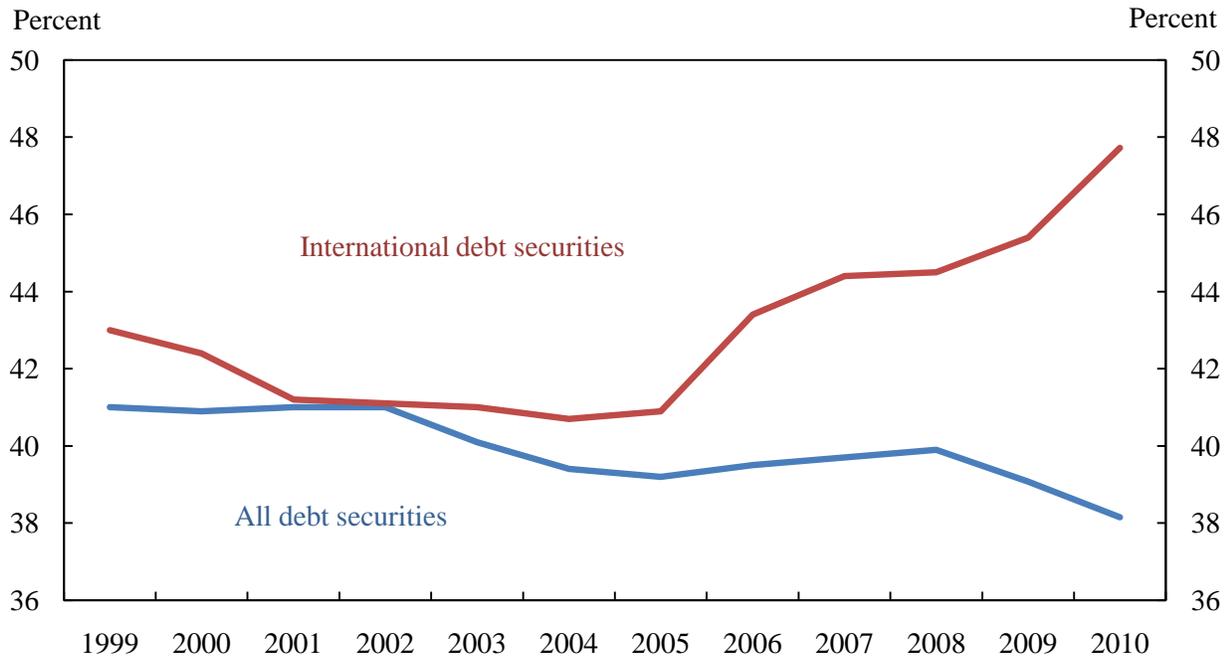
**Chart 4 U.S. Dollar Assets in Foreign Currency Reserves**



Source: International Monetary Fund, Currency Composition of Official Foreign Exchange Reserves (COFER) data; Board of Governors of the Federal Reserve System staff estimates

Note: Amounts are valued at latest quarter exchange rate

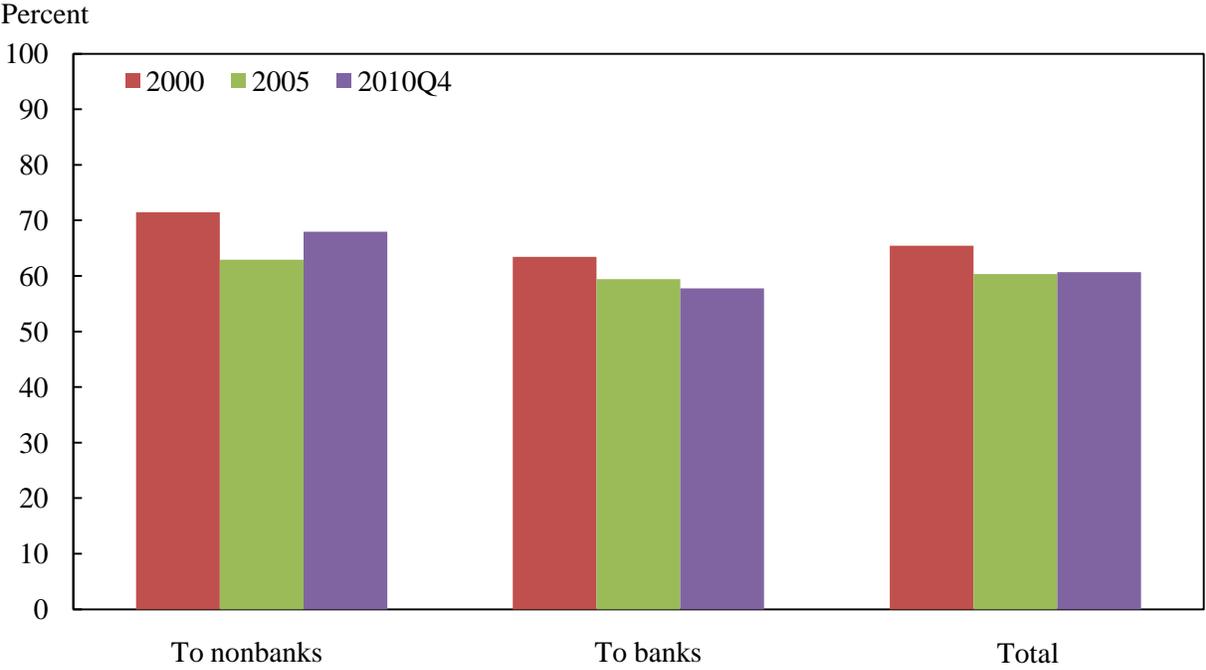
**Chart 5 U.S. Dollar Share of Debt Securities Outstanding**



Source: *International Role of the Euro*, European Central Bank (ECB) (2011).

Note: The "all debt securities" measure corresponds to the ECB series on "global" det securities; the "international debt securities" measure corresponds to the ECB "narrow" measure--defined as securities sold outside the issuing country, excluding debt in the issuer's own currency. Amounts are valued at constant exchange rate.

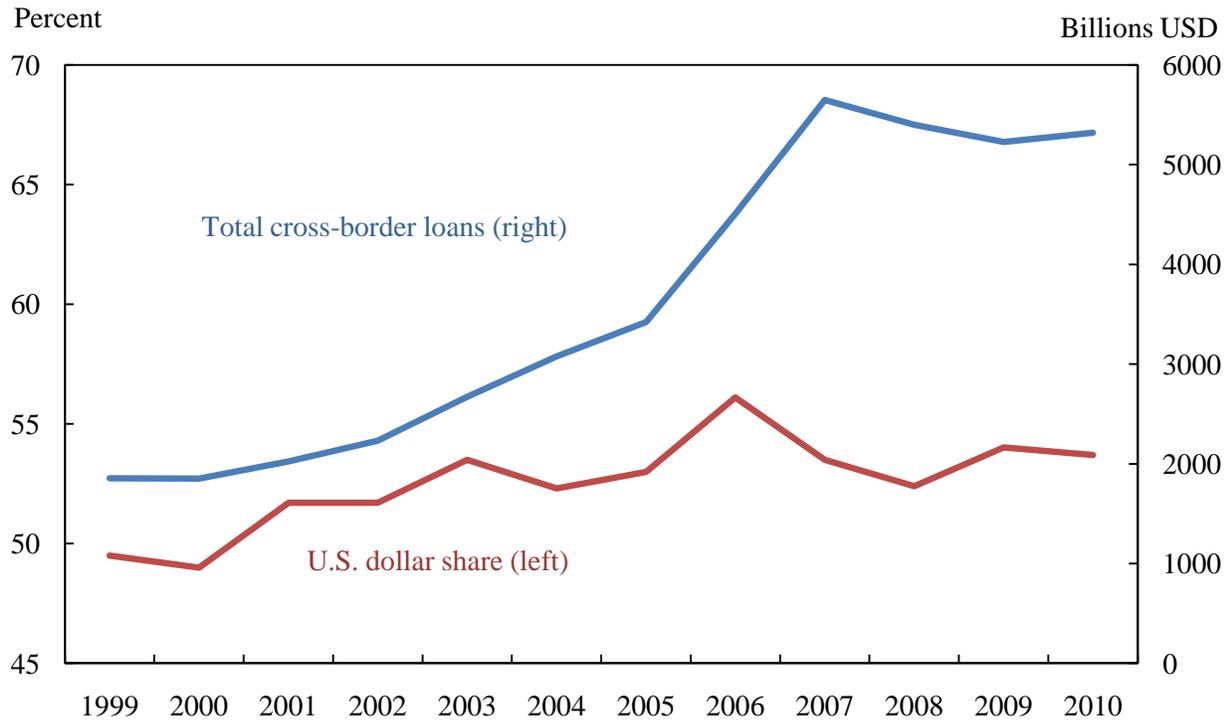
**Chart 6 U.S. Dollar Share of Cross-Border Foreign Currency Liabilities of Non-U.S. Banks**



Source: Bank for International Settlements, cross-border locational-by-residence banking statistics.

Note: Figures exclude liabilities in issuer's own currency.

**Chart 7 International Loan Market and U.S. Dollar Share of All Cross-border Loans**



Source: *International Role of the Euro*, European Central Bank (ECB) (2011).

Note: Amounts are valued at constant exchange rate.

**Table 1 Countries Reporting U.S.-Dollar-Based Exchange Rate Arrangements**

Arrangement	Number of Countries			
	1995	2000	2005	2010
Dollarized or formed currency board	9	8	7	8
Pegged exchange rate regime against dollar	82	85	90	90
Maintained managed floats with dollar as reference currency	6	8	6	9
Total reporting	207	207	207	207
<i>Memo:</i>				
Currency linked to dollar (percent)	47	49	50	52
Gross domestic product linked to dollar (percent)	21	29	31	36

Source: Reinhart and Rogoff (2004); Ilzetzi, Reinhart, and Rogoff (2008); IMF Annual Report on Exchange Arrangements and Exchange Restrictions (2010); author's calculations

**Table 2 Turnover in Traditional Foreign Exchange Markets (percent)**

Currency	1995	2001	2004	2007	2010
U.S. dollar	83.3	90.3	88.7	86.3	84.9
Euro	53.7 <sup>b</sup>	37.6	36.9	37.0	39.1
Yen	24.1	22.7	20.2	16.5	19.0
Other industrialized currencies <sup>a</sup>	24.2	33.9	38.6	40.5	37.9
Emerging market currencies	8.5	16.9	15.4	19.8	19.1

*Memo:*

Average daily turnover (billions of U.S. dollars)

1,150    1,420    1,970    3,210    3,981

Source: Bank for International Settlements

Note: Currency shares total 200 percent in each column because each transaction involves two currencies

<sup>a</sup> Currencies are the pound sterling, Swiss franc, Australian dollar, Canadian dollar, Swedish krona, Norwegian krone, New Zealand dollar, and Danish krone

<sup>b</sup> Legacy currencies replaced by the euro include the deutsche mark, French franc, Netherlands guilder, and European Currency Unit.

**Table 3 Effects of Reduced Internationalization**

Type	Scale of Effect	Comments
Seignorage	small	Seignorage rents are relatively low; dollar cash outside of US not likely to change much
US funding costs	increase from low levels	While the US does not have an “exorbitant privilege” in funding, reduced demand for dollar reserves can raise US funding costs.
Dollar value	\$ depreciates	Arises from lower net demand for USD
US insulation from foreign shocks	Reduced US autonomy in policy	Invoicing patterns change and U.S. import prices and consumption become more exposed to foreign shocks and exchange rates. Could spillover to US monetary policy.
Fiscal policy	More constrained, crowding out	Higher funding cost raises interest payments to external creditors and crowds out domestic expenditure.
US global Influence	Reduced –degree unknown	Dollar swap lines, flight to quality, safe haven role of US investments might be affected.