

No Reservations: International Order and Demand for the Renminbi as a Reserve Currency*

Steven Liao[†] Daniel E. McDowell[‡]

Forthcoming at International Studies Quarterly

Abstract

This study identifies 37 central banks that added China's Renminbi (RMB) to their reserve portfolio since 2010. Why do some states diversify into new reserve currencies at an early stage while most continue to take a wait-and-see approach? We argue that state preferences regarding international order influence decisions to invest in RMB. While some states support the liberal, U.S.-led *status quo*, others prefer an emerging Chinese alternative order. We contend that as state preferences for international order move away from the U.S.-model (and toward China), the likelihood of diversifying reserves into RMB should increase. Thus, the decision to invest in RMB is not simply an economic choice. It is also a *political* act that signals and symbolizes a state's preferences for a diminution of American global influence and support for a revised order. Employing new United Nations General Assembly (UNGA) ideal points data, we find that states with larger (smaller) ideal point distance with the U.S. (China) are *more* likely to adopt RMB as a reserve currency. Furthermore, such political considerations rather than economic concerns about transaction needs, optimal portfolio considerations, and instrumental calculations best explain emergent demand for the RMB as a reserve currency.

*Earlier versions of this study were presented at the International Studies Association annual meeting, Toronto, Canada, March 2014 and the American Political Science Association annual meeting, Washington, D.C., September 2014. We would like to thank Herman Schwartz, David Steinberg, Federico Steinberg, two anonymous reviewers, the ISQ editors, and workshop participants at Syracuse University for helpful comments and suggestions.

[†]Postdoctoral Research Associate, Niehaus Center for Globalization and Governance (NCGG), Princeton University, Princeton, NJ. E-mail: stevenliao@princeton.edu.

[‡]Assistant Professor, Department of Political Science, Syracuse University, Syracuse, New York. E-mail: dmcdowel@maxwell.syr.edu.

1 Introduction

Top international reserve currency status is a fundamental resource for great powers: hegemons rely on it while rising powers seek it. In particular, it produces a number of economic and political benefits for the issuing state. These include the power to delay economic adjustment, more business for its financial institutions, lower international borrowing costs, global prestige, and the enhancement of its capacity to project military power abroad (Chinn and Frankel 2005; Cohen 2006, 2012, 2013; Eichengreen 2013; Kirshner 2008; McNamara 2008; Norrlof 2010; Subramanian 2011).¹ It is no wonder, then, that issuing the world’s top reserve currency is referred to as an “exorbitant privilege.” Historically, the world’s largest economy issues the top reserve currency. This was true of Great Britain and its pound sterling during the 19th and early 20th century. This is true of the U.S. since at least the end of the Second World War.² In light of the growth of the Chinese economy (Johansson et al. 2012), there is increased speculation that the Chinese renminbi (RMB) will soon take on a key role in the global reserve system (Eichengreen 2011, 2012; Prasad and Ye 2012; Roubini 2009). Today, momentum is building for the currency’s inclusion in the International Monetary Fund’s (IMF) Special Drawing Rights (SDR) basket—a classification that would essentially codify the RMB’s reserve currency status.³ One recent study boldly projected that the RMB is poised to dethrone the dollar as top reserve currency “by the end of this decade or early in the next one” (Subramanian 2011:16).

Despite the importance of the reserve currency’s role in international relations, the act of central banks adopting new reserve currencies is still poorly understood. Why do some states diversify into new reserve currencies at an early stage while most continue to take a wait-and-see approach? Although scholars have produced a substantial literature on the political and economic foundations of dominant reserve currencies, the majority of this work focuses on “inertia”—the factors that *sustain* top reserve currency status after dominance in that arena is already achieved (Dooley, Folkerts-landau, and Garber 2003; Helleiner and Kirshner 2009; Shih and Steinberg 2012; Strange 1971; Zimmermann 2002). Yet, if we are to understand what brings about change in the global monetary system, we also need to understand the conditions that contribute to the emergence of new, rival reserve currencies.

In this paper, we identify 37 central banks that added China’s RMB to their reserve port-

¹Issuing a key reserve currency is not without its costs, however. For a thorough discussion of the costs and benefits of issuing a global reserve currency, see Garber (1996), McNamara (2008), and Subramanian (2011).

²For more on the sterling to dollar transition, see Krugman (1992:173), Eichengreen and Flandreau (2008), and Eichengreen (2011).

³In a first step toward this move, the IMF declared in June 2015 that the RMB is no longer undervalued (IMF 2015).

folio since 2010. Why are these states “early-adopters” of a new reserve currency? Here, we build and expand on existing political economy explanations of reserve currency preferences. We argue that decisions to diversify reserves into RMB are influenced by state preferences regarding international order: the rules, principles, and institutions that govern state interactions and behavior (Ikenberry 2001:23). While the existing “liberal” order largely reflects U.S. interests and values, many scholars now argue a distinctly Chinese version of world order is taking shape to challenge the American *status quo*. This Chinese alternative purportedly calls into question a number of core liberal internationalist principles. These include the desirability of American military power, free market capitalism, and democratization (Barma, Ratner, and Weber 2007; Halper 2010; Jacques 2009; Kagan 2008; Kirshner 2014; Rachman 2011). We propose that other states in the international system can be thought of as partisans, so to speak. While some support the liberal, U.S.-led *status quo*, others prefer the emerging Chinese alternative. It is our contention that as state preferences for international order move away from the U.S.-model (and toward China), the likelihood of diversifying reserves into RMB should increase. That is, the decision to invest in RMB is not simply an economic choice. It is also a *political* act. An act that signals and symbolizes a state’s preference for a diminution of American global influence and support for a revised order.

Employing new United Nations General Assembly (UNGA) ideal points data (Bailey, Strezhnev, and Voeten 2015) to measure state preferences toward international order, we find that states with larger ideal point distance with the U.S. are *more* likely to adopt RMB as a reserve currency. Furthermore, states with *smaller* ideal point distance with China are also more likely to diversify reserves into RMB. The findings persist even after accounting for alternative theoretical models of reserve currency preferences: economic considerations about international transactional needs, portfolio optimization strategies, and instrumental calculations (Helleiner and Kirshner 2009). In contrast, we find modest support for transactional needs and optimal portfolio explanations and no supportive evidence for instrumental calculations. This suggests that political considerations rather than economic concerns best explain emergent demand for the RMB as a reserve currency. Finally, the findings hold under several robustness checks. These include alternative measures of key predictors, alternative estimation approaches, and a simple cross-sectional analysis.

Our study makes a number of contributions to the literature on the geopolitics of reserve currency choice. First, while existing work on this topic relies primarily on case study evidence, our results show that geopolitical considerations are systematically related to reserve currency choice. Second, extant analyses focus on how bilateral security relations help to *sustain* reserve currency dominance once it is achieved. Our study argues that geopolitics—defined as state preferences for international order—influences the extent to which new re-

serve currencies can *challenge incumbents*. Finally, more generally, our results indicate that the trajectories of new reserve currencies are influenced by geopolitical forces. Thus, the RMB may have an edge that past currencies that challenged the dollar lacked—a political authority backing the money that stands in stark contrast to the *status quo* order.

The outline of this paper is as follows. Section 2 briefly reviews the growth of off-shore and on-shore RMB financial markets and explains how we identify early adopters of RMB reserves. In Section 3, we present our central argument that state preferences for international order influence reserve currency choice. Next, Section 4 draws from existing economic theories of reserve currency preferences to develop competing testable hypotheses. In Section 5, we discuss in detail the data sources and measurements of our outcome variable of interest and covariates. Then, we discuss the models we use to fit the data and report our findings. Section 6 concludes the paper.

2 The Puzzle: Early-Adopters of RMB Reserves

In early 2009, as the global economy was still in the grips of the global financial crisis, People’s Bank of China (PBC) Governor Zhou Xiaochuan issued an eyebrow raising speech entitled “Reflections on Reforming the International Monetary System.” In the speech, Zhou proposed the creation of a new reserve currency “disconnected from individual nations” that would be “stable in the long run, thus removing the inherent deficiencies caused by using credit-based national currencies.”⁴ Though not mentioned by name, the speech implicitly called into question the desirability of a world dependent on the U.S. dollar as its key reserve currency.⁵ Moreover, it signaled China’s willingness to take on more of a leadership role in the global monetary system (Helleiner 2010:10; Wang and Rosenau 2009:28). In the years since the crisis, China stepped up its efforts to promote the international use of the RMB in order to free itself from dependence on the dollar and to increase its global influence (Eichengreen 2013:364; Kirshner and Helleiner 2015:215).

In order to encourage the adoption of its money as a reserve currency, China is working to facilitate the development of international RMB bond markets both off- and onshore. Indeed, press reports indicate that Beijing is taking direct steps to encourage central banks to invest in its currency by setting aside portions of offshore government bond issuances exclusively for foreign monetary authorities (Sweeney 2012). Still, the truth is that a number of factors continue to limit the RMB’s role as a reserve currency. Even with China’s recent efforts to

⁴Specifically, Zhou suggested that the role of IMF Special Drawing Rights (SDRs) be strengthened and expanded. For more on this topic, see Chin and Yong (2012).

⁵According to IMF data, the U.S. dollar presently makes up over 60 percent of global allocated reserves.

promote internationalization, considerable restrictions on investments in the upstart currency remain in place. Moreover, because the RMB is not fully convertible for capital account transactions, assets denominated in the currency are formally considered illiquid.⁶ If the currency is to truly challenge the dollar, China will need to continue implementing financial and institutional reforms (Lee 2014; Otero-Iglesias and Vermeiren 2015). Despite these limitations, the first reports of sovereign investments in RMB denominated assets emerged in late-2010 with Belarus, Hong Kong, and Malaysia all reportedly shifting small portions of their reserves into the currency. At years' end 2014, we identify a total of 37 central banks that now hold some assets in RMB as shown in Figure 1. The types of investments vary somewhat but all fall into one of three categories: (1) Chinese central government bonds (2) commercial bonds issued in mainland financial markets, (3) commercial or government bonds issued in offshore financial markets like Hong Kong. We briefly discuss each of these below.

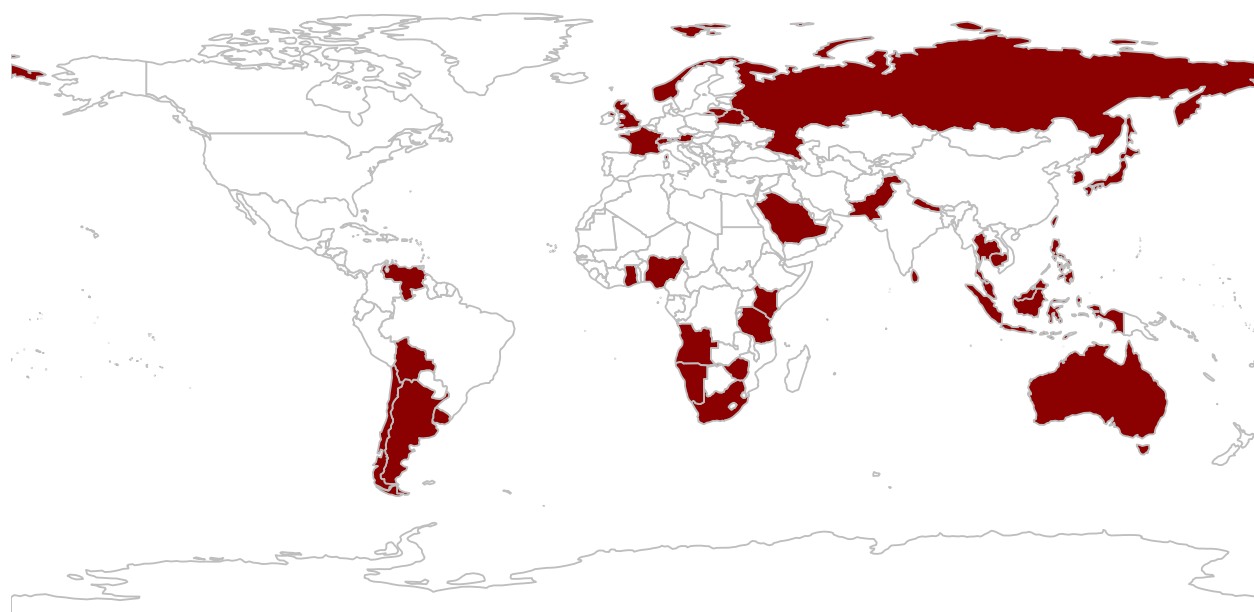


FIG 1. Countries Holding RMB Reserves in 2014.

Central government bonds, mainland China. Like all sovereigns, the Chinese central government issues debt to finance spending and investment. The primary instrument used by the state to raise funds is the Government Bond issued by the Ministry of Finance

⁶At the time of this writing, the IMF does not recognize the RMB as a legitimate reserve currency. IMF reserve guidelines directly state that “assets redeemable only in nonconvertible foreign currencies cannot be reserve assets” (IMF 2012:17). This may change in the near future, however, as the IMF is considering adding the RMB to its SDR basket of currencies.

(MOF) offered in various maturities (Sachs 2014).⁷ However, the vast majority of China’s sovereign debt is held domestically. The central government does not allow foreigners to directly purchase its debt without its permission. Since 2010, the PBC permitted a handful of foreign central banks—including monetary authorities in Australia and Japan—to invest in Chinese central government debt.

Equities & commercial bonds, mainland China. Besides investments in sovereign debt, some central banks purchased RMB-denominated equities or bonds issued within China’s domestic financial markets.⁸ Beijing’s first step toward opening up mainland financial markets to foreigners came in 2002 with the introduction of the Qualified Foreign Institutional Investor (QFII) program.⁹ In short, the QFII system allows foreign investors to buy and sell shares (based on an assigned quota) on the Shanghai or Shenzhen Stock Exchanges. It also permits them to invest in bonds traded on the Exchange and Inter-bank markets.¹⁰ By the end of 2014, about 270 foreign institutions—including several central banks—were approved investors. Combined, these quotas total about \$55 billion. Figure 2 displays the growth of the QFII program over the last decade. Another important change came in 2010 when China launched a complementary pilot program. This expressly permitted foreign central banks to invest directly in the still largely-closed mainland inter-bank bond market, though still under a quota system (Sachs 2014:4).

Commercial & government bonds, offshore. The third way foreign central banks invest in RMB-denominated assets is via bond purchases in offshore hubs like Hong Kong, Singapore and Luxembourg.¹¹ In the summer of 2007, China Development Bank—a state-owned financial institution—made the first RMB-denominated bond issuance in Hong Kong (Asia Society 2011). For the first two years, Beijing permitted only Chinese and Hong Kong banks to issue what have come to be known as “dim sum bonds,” after the tasty style of cuisine in Hong Kong of the same name. In 2010, foreign institutions were permitted to issue

⁷A secondary instrument is the Central Bank Note issued by the central bank as a tool for implementing monetary policy. However, the total volume of Central Bank Notes during the first quarter of 2014 was about 1/16 the size of the Government Bond market (Sachs 2014).

⁸Little more than a decade ago it was virtually impossible for residents and institutions outside of mainland China to invest in RMB-denominated assets issued domestically. While China opened up to foreign direct investment (FDI) in the early-1980s and liberalized trade related transactions in the mid-1990s, the restrictions on financial flows both in and out of mainland China remained in place.

⁹For a full list of QFIIs, see the China Securities Regulatory Commission website at http://www.csrc.gov.cn/pub/csrc_en/OpeningUp/.

¹⁰However, the program is still quite limited in scope. First, institutions must apply for a license. Only those approved by the Chinese Securities Regulatory Commission (CSRC) are permitted to move money into the mainland financial system. Additionally, each “qualified” foreign investor is assigned a quota limiting how much they can invest.

¹¹The development of Hong Kong as a hub for offshore RMB trading began in 2003 when the PBC authorized the Hong Kong Monetary Authority (HKMA) to allow banks in its jurisdiction to open RMB deposit accounts for individuals. In 2003, this was expanded to include businesses as well.

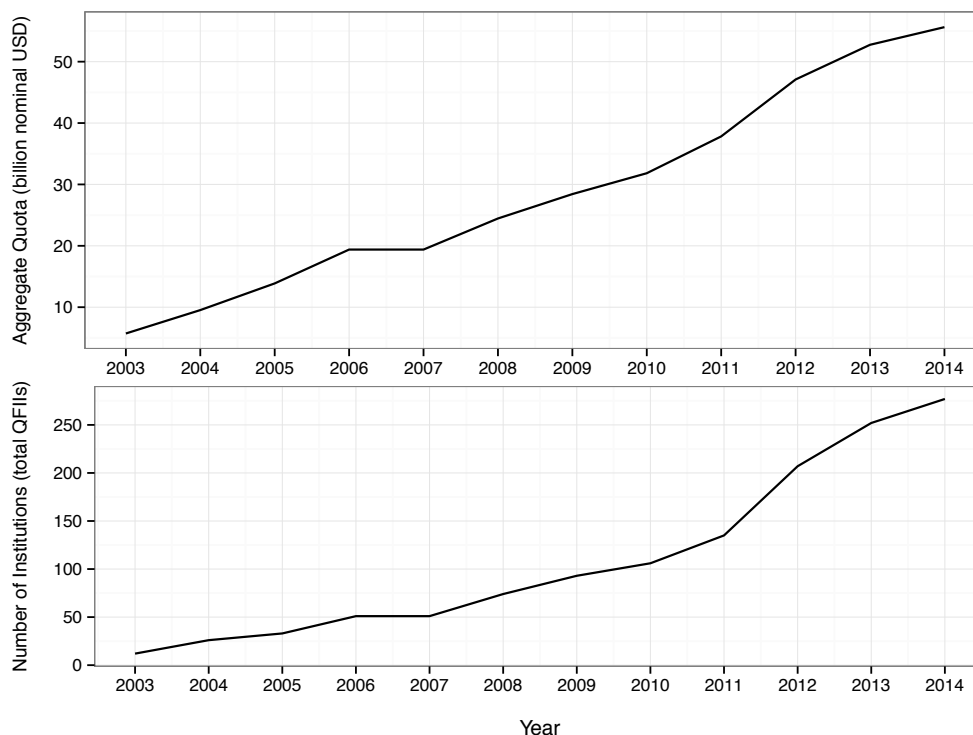


FIG 2. QFII Expansion, 2003-2014.

dim sum bonds for the first time.¹² A wide range of Chinese and foreign firms—including the likes of Caterpillar, McDonalds, Volkswagen and Volvo—have raised funds in RMB via Hong Kong.¹³ China Development Bank is a prolific issuer of dim sum bonds and regularly attracts central banks as buyers of its once quasi-government bond issuances.¹⁴ Even a few foreign governments are issuing RMB bonds in Hong Kong. For example, in November 2013 the Canadian province of British Columbia sold a 2.5 billion RMB (about \$410 million) one-year dim sum bond. Reuters (2013) reported that central banks took the “lion’s share” of the offering. China’s MOF, which also issues central government debt offshore in Hong Kong, began to set aside a special tranche of each sale for foreign monetary authorities beginning in the summer of 2012 (Sweeney 2012).

¹²According to data from Dealogic, reported in the *Wall Street Journal*, dim sum bond issuance in 2012 totaled \$14 billion up from under \$6 billion in 2010 (Law 2013).

¹³Smaller offshore hubs are also developing in various locations including Frankfurt, London, Luxembourg, Singapore, and Taiwan.

¹⁴China Development Bank was permitted to issue “special financing bonds.” Unlike bonds issued by other state-owned banks these carried the same classification as government debt until 2011 when it was stripped of this advantage (Bloomberg 2011).

2.1 A Media-based Strategy for Identifying Sovereign Investments in RMB

Identifying which monetary authorities are invested in RMB-denominated assets of any variety is not easy. Many central banks keep the currency composition of their foreign exchange reserves confidential. As we noted previously, we identify a total of 37 central banks that now hold assets in the Chinese currency. In six cases—Australia, Austria, Bolivia, Chile, Macao, and Nigeria—central banks have publicly admitted to making such investments in official reports or press releases. In four cases—Lithuania, Norway, Singapore, and Switzerland—we infer that the respective central banks hold RMB assets via investments in Chinese equities or its onshore interbank bond market. Each of these institutions maintains approval for a QFII quota. It seems highly unlikely that a central bank would go to the trouble to gain access to this market and then not take advantage of it.¹⁵ In three cases—Hong Kong, Namibia, and Uruguay—we confirmed investment via an email exchange with the central bank (discussed more below). In the remaining cases, we identified sovereign investors through media reports.

Such media-based data collection is not without its weaknesses. In particular, the approach poses challenges for the completeness, accuracy, quality and credibility of data (Reeves, Shellman, and Steward 2006; Schrodtt, Simpson, and Gerner 2001; Woolley 2000). As Strange et al. (2013:18) explain, “information extracted from public media outlets throughout the world cannot substitute for complete and accurate statistical data from official sources. Media-based data collection is only as good as the imperfect data sources upon which it relies.” While we would obviously prefer more reliable method of identifying sovereign RMB investors, at present a media-based approach is the best option available.

We based our strategy on Strange et al.’s two stage process. First, we initially identified sovereign RMB investors via searches utilizing both *Factiva* and *Google Alerts*.¹⁶ Once we identified a sovereign investor, we then conducted additional targeted searches using Google’s search engine in both English and Chinese. In most cases, we identified multiple reports that corroborated the initial account. We also contacted each of the 173 central banks in our data directly via email—on two separate occasions—requesting information about RMB investments.¹⁷ Most declined to respond or informed us such information is confidential.

¹⁵Moreover, in the cases of Norway and Singapore, the size of their initial quotas have since been increased. We would only expect to observe such increases if the previous investment quota were reached.

¹⁶Factiva is a Dow Jones-owned media database, which searches roughly 28,000 media sources worldwide. Google Alerts is a system that emails users updates based on pre-set queries. We maintained several Google Alerts for RMB reserves since 2010.

¹⁷We sent email inquiries in March 2014 and then a second time in December 2014.

However, many replied in ways that supported our information from press accounts.¹⁸

Table 1 presents the full list of monetary authorities that we identify as holding RMB reserves in chronological order.¹⁹ It also indicates the date on which such investments were first reported, how much the bank reportedly invested (when available), what type of investments were made (when available), and the first source in which these investments were reported. An asterisk indicates that multiple media sources confirm RMB investment.²⁰

Presently, the RMB comprises only a tiny fraction of global reserves. We estimate that global RMB reserves range from a low of \$53.2 billion to a high of \$146.5 billion in 2014. The IMF calculates that global reserves as of the end of 2013 totaled about \$11.6 trillion. Based on this information, we estimate the RMB’s share of global reserves ranges from 0.45% to 1.5%.²¹ Yet, many scholars claim that this is just the beginning of the RMB’s rise to prominence as an international reserve currency (Eichengreen 2011, 2012; Prasad and Ye 2012; Roubini 2009; Subramanian 2011). Thus, these early adopters provide us with a very unique opportunity to isolate the *demand-side* factors that drive change in the international reserve hierarchy. Despite considerable research on this subject, the factors that motivate central banks to adopt *new* reserve currencies remains poorly understood. In part, this is because the vast majority of international relations research on the subject focuses on identifying the factors that *sustain* top reserve currency status after dominance in that arena is achieved (Dooley, Folkerts-landau, and Garber 2003; Helleiner and Kirshner 2009; Shih and Steinberg 2012; Strange 1971; Zimmermann 2002). Yet, if we are to understand what brings about change in the international monetary system, we also need to understand the conditions that contribute to the adoption of new, rival reserve currencies.

¹⁸More than 30 monetary authorities confirmed they are not invested in RMB. Some with considerable flair. For instance, one reply stated “The Central Bank of [redacted] is on a continuous journey in identifying investment opportunities & ensuring the Reserves are adequately diversified. Currently, we have no exposure to the Chinese Renminbi.” As indicated above, a few others confirmed holding RMB-denominated assets.

¹⁹Three additional states hold RMB-denominated assets controlled by sovereign wealth funds: the Kuwait Investment Authority, Abu Dhabi Investment Authority, and Qatar Holding LLC which is an indirect subsidiary of Qatar Investment Authority. SWFs are state owned investment funds that tend to accept more risk than central banks. According to the IMF some countries report SWF investments as part of their reserves while others do not (IMF 2011). We chose to adopt a conservative definition of foreign exchange reserves here. Thus, we exclude these cases from our analysis. However, we conducted robustness checks that included these cases. Our results were substantively unchanged.

²⁰AFP = Agence France-Presse; BTA = Belarusian Telegraph Agency; email = investment confirmed with authors via email exchange; IFR = International Financing Review; NNN = NAM News Network; official = acknowledged in official central bank document; QFII = country listed as Qualified Foreign Institutional Investor by China Securities Regulatory Commission; SCMP = South China Morning Post; WSJ = Wall Street Journal.

²¹The high-end estimate would put the RMB at just below the Australian dollar. In 2014, that currency comprised about 1.9% of global reserves. IMF reserve total taken from the composition of foreign exchange reserves (COFER) database available here: <http://www.imf.org/External/np/sta/cofer/eng/index.htm>; Authors’ RMB estimates are explained in detail in Appendix A.

<i>Country</i>	<i>Date</i>	<i>Amount</i>	<i>Type</i>	<i>Source</i>
Norway	10/2006	up to \$1.5 bn	onshore	QFII
Malaysia	09/2010	undisclosed	sovereign	WSJ*
Hong Kong	10/2010	5-10% (\$16-\$31 bn)	sovereign	Bloomberg*
Belarus	11/2010	undisclosed	onshore	BTA*
Venezuela	08/2011	undisclosed	undisclosed	WSJ*
Kenya	08/2011	undisclosed	undisclosed	NNN*
Chile	09/2011	2.3% (\$945 mn)	undisclosed	official*
Nigeria	09/2011	2-7% (\$2.3-\$4.6 bn)	offshore	Reuters*
Cambodia	10/2011	undisclosed	undisclosed	IFR
Philippines	10/2011	undisclosed	undisclosed	IFR
Russia	10/2011	undisclosed	undisclosed	IFR*
Singapore	10/2011	up to \$1 bn	onshore	QFII
Thailand	11/2011	0.5% (\$836 mn)	off/onshore	Reuters*
Austria	11/2011	undisclosed	onshore	official*
Japan	12/2011	\$10.3 bn	sovereign	WSJ*
Uruguay	?/2012	\$0.21 bn	offshore	email
Macao	03/2012	15.5% (\$2.5 bn)	off/onshore	official*
Bolivia	05/2012	0.4% (\$58 mn)	offshore	official*
Indonesia	07/2012	undisclosed	onshore	WSJ*
Korea	07/2012	\$3.3 bn	onshore	WSJ*
Saudi Arabia	07/2012	undisclosed	undisclosed	WSJ*
Tanzania	08/2012	undisclosed	offshore	People's Daily*
Pakistan	10/2012	undisclosed	onshore	Reuters
Angola	04/2013	undisclosed	offshore	Reuters
Australia	04/2013	\$1.6 bn	sovereign	Bloomberg*
Nepal	06/2013	undisclosed	onshore	Xinhua
South Africa	06/2013	\$1.5 bn	off/onshore	Financial Times*
Taiwan	10/2013	undisclosed	undisclosed	AFP*
Lithuania	11/2013	up to \$100 mn	onshore	QFII
Namibia	12/2013	undisclosed	offshore	email
Ghana	04/2014	undisclosed	undisclosed	SCMP*
France	04/2014	undisclosed	sovereign	Financial Times*
Switzerland	07/2014	up to \$2.5 bn	onshore	QFII
Sri Lanka	09/2014	undisclosed	onshore	Bloomberg*
Argentina	09/2014	\$1.3 bn	undisclosed	Reuters*
United Kingdom	10/2014	\$490 mn	offshore	Bloomberg*
Zimbabwe	10/2014	undisclosed	undisclosed	China Daily*

TABLE 1. Official Reserve Assets in RMB by Country.

So, why are these 37 monetary authorities jumping on the RMB bandwagon first while others are, so far, taking a pass? In the next section, we present our argument. We assert that geopolitical considerations are behind much of the emergent demand for the RMB as a reserve currency.

3 International Order and Reserve Currency Choice

The notion that geopolitical considerations influence reserve currency preferences has a long history in international relations scholarship (Helleiner and Kirshner 2009:15). Strange (1971:18) argued that sterling owed its global standing, in part, to the influence of the British state. The currency was strongly supported, she explained, by states with close security ties to Britain. Numerous studies show that West German support for the dollar during the 1960s was directly related to that country’s bilateral security relations with the U.S. (Calleo 1982; Gavin 2004; Zimmermann 2002). Others point out that close military allies of the U.S. tend to be strong supporters of the dollar (Murphy 2006; Posen 2008; Spiro 1999). Norrlof (2010:185) argues that countries that benefit from American military dominance have an interest in supporting the dollar’s international role since this strengthens the U.S. economy. Finally, Cohen (2015) makes the case that the military reach and foreign policy ties of reserve currency issuers influence the global attractiveness of their currencies.

We contend that geopolitical forces are driving much of the early demand for the RMB as a reserve currency. As such, our analysis here builds, but also expands, on these earlier works. Existing work on the subject in international relations tends to reduce geopolitics to bilateral security relations. Our analysis is in the tradition of Gilpin (1987:119) who wrote “every international monetary regime rests on a particular political order.” Accordingly, we argue that decisions to diversify reserves into RMB are influenced by state preferences regarding international order: the rules, principles, and institutions that govern state interactions and behavior (Ikenberry 2001:23).

Many scholars are now arguing that the ideas and principles, which underlie the existing, U.S.-led liberal order, are increasingly contested. In every account, China is leading the charge to revise the *status quo*. Echoing Gilpin (1981), Jacques (2009) predicts a coming hegemonic transition where China will eventually supplant the U.S. as the world’s dominant state. Like hegemon’s before it, China will attempt to fundamentally revise the system, replacing existing liberal ideas and structures with alternatives that reflect its own priorities and values. Rachman (2011) says that a number of core liberal internationalist principles—including the desirability of U.S. military power, free market capitalism, and democratization—are all facing challenges at the global level. China is leading that charge. Barma, Ratner, and Weber (2007:24) assert that China, in conjunction with other rising powers, is constructing an alternative international system “with its own distinctive set of rules, insitutions, and currencies of power.” While not directly challenging the U.S.-led order, this parallel system enables rising powers to “route around” the West, rendering American power increasingly trivial. Kirshner (2014:13) argues that the global financial crisis under-

mined global confidence in open financial markets and delegitimized the U.S. economic order. Consequently, he expects more countries will follow China's lead in seeking greater autonomy from American economic influence. Halper (2010:2) paints, perhaps, the starkest picture. In his view, as the "protagonist in a clash of values [and] governance" China is leading an assault on the U.S. liberal order. Moreover, he sees China winning converts:

"Today's emerging markets are increasingly drawn to a new and compelling doctrine of state-managed capitalism. They are learning to combine market economics with traditional autocratic or semi-autocratic politics in a process that signals an intellectual rejection of the Western economic model. According to this doctrine, the government maintains central control over a partly liberalized economy, and the people accept a very non-Western kind of civic bargain: political oppression in the public square in return for relative economic freedom and a rising quality of life. Both of these trends have a powerful cheerleader in Beijing."

Elsewhere, Ikenberry (2008, 2010, 2011) argues that the U.S. order is capable of integrating China as a stakeholder in the existing system. Thus, it may avoid a direct challenge from Beijing. Ultimately, it is not our concern here whether confrontation or integration ultimately occur. What matters for our argument is that at present (1) the existing liberal order reflects U.S. interests and values and (2) a distinctly Chinese model of order is now taking shape as a possible alternative to the American *status quo*. We propose that it is useful to think of other states in the international system as partisans, so to speak. While some support the liberal, U.S.-led *status quo*, others prefer the emerging Chinese alternative. Support for a particular version of order is a function of a state's foreign policy preferences across a range of issues including U.S. military preponderance, democratization, human rights, free markets and globalization.

We expect that states will respond to China's efforts to internationalize its currency differently depending on which partisan camp they are closest to. That is, cross-national variation in preferences regarding the nature of international order should influence the relative attractiveness of investments China's currency. Specifically, we anticipate that as a state's preference for international order moves away from the U.S. (and toward China), it should be more inclined to diversify its reserves into RMB. We expect this because the global dominance of the U.S. dollar is not just an economic fact, it is also a political one. As Cohen (2012:19) and Calleo (2009:164) each point out, the dollar's position as top global currency is a "potent symbol" of American power and its attendant order. Even economist and Nobel laureate Robert Mundell acknowledged the role international currencies play as a symbol of the issuing state's international primacy (Mundell 1993:10). Just as a Chinese

order is purportedly taking shape as an alternative to the U.S. order, the Chinese “redback” is emerging as a potential alternative to the American greenback.

We argue that an investment in RMB at this early stage is as much a *political* move as it is an economic one. To invert Gilpin (1987), if every international monetary regime is built upon a particular political order, then every political order has its own international monetary regime. Thus, we believe that the decision to invest in RMB can be symbolic of a state’s interest in a revised international order that is less U.S.-centric. It is a partisan endorsement of a different way of organizing and regulating political and economic interaction in world politics. Consequently, we expect that states which hold a negative (positive) view of the U.S. (Chinese) order should be more inclined to add RMB to their reserves. Such a decision is a sign of support for—or perhaps even an act of—change. Thus,

Hypothesis 1: *All else equal, countries are more likely to diversify into RMB as their preference for international order moves away from the U.S. (and toward China).*

4 Economic Explanations of Reserve Currency Preferences

Alongside our central hypothesis, we consider a series of additional hypotheses derived from three existing economic models of reserve currency preferences: the transactional needs model, the optimal portfolio model, and borrowing language from Helleiner and Kirshner (2009), the instrumental model. We discuss each of there in turn below.

4.1 Transactional Needs Model

The transactional needs model assumes that governments largely value foreign exchange reserves for the purposes of financing imports, servicing foreign debts, and foreign exchange intervention. Consequently, reserve managers want highly liquid assets denominated in the currencies with which they generally transact in global markets. A number of empirical studies show that transactional needs play an important role in determining the currency composition of reserves. For example, research consistently shows that the more a country imports from a reserve currency issuer, the more likely it is to hold that nation’s currency in its reserves. Similarly, the currency composition of reserves also tends to correlate with the currency denomination of sovereign debts (Dellas and Bang Yoo 1991; Dooley 1986; Dooley, Lizondo, and Mathieson 1989; Eichengreen and Mathieson 2000; Heller and Knight 1978). The underlying explanation behind these observed correlations is that reserve cur-

rency decisions reflect insurance motives on the part of portfolio managers. For example, countries that import heavily from the U.S. and/or borrow primarily in dollars should hold a higher proportion of their reserves in liquid, dollar-denominated assets. In the event access to foreign credit markets is blocked (as happened in the fall of 2008, for example) these dollars can serve as a “rainy day” fund of sorts. This would enable the central bank to process international payments or service external liabilities until access to credit markets returns to normal.²² Thus, the decision to diversify into RMB may reflect transactional need considerations.

The RMB is beginning to play an important role in trade finance. Indeed, in late-2012, the Society for Worldwide Interbank Financial Telecommunications (SWIFT) announced that the Chinese currency’s share in trade finance surpassed the euro and was second only behind the dollar (VN 2013).²³ While much of Chinese trade continues to be settled in U.S. dollars, RMB-based trade settlement in China’s own trade relationships is increasing. For example, for the entire year of 2009, the volume of RMB-based trade totaled a meager \$570 million. According to the reports from the PBC, in the first three quarters of 2014 China settled roughly \$770 billion—or about 25 percent—of its trade in RMB.²⁴ Figure 3 reports the quarterly growth in cross-border trade settlement since 2009. As the RMB takes on an increasingly important role in trade finance, countries that rely heavily on Chinese imports have more reason to add the currency to their reserve portfolio for transactional reasons. Indeed, prior to Australia’s investments in the currency, a key business group in that country called for just such a move citing the RMB’s growing use in trade settlement.²⁵ Thus, if transactional needs in trade are driving early adoption of the RMB as a reserve currency, we would expect to observe the following.

Hypothesis 2: *All else equal, countries are more likely to diversify into RMB as they become*

²²A number of studies on the build up of foreign exchange reserves in the aftermath of the Asian Financial Crisis pointed to transactional needs motives over optimal portfolio considerations (Aizenman and Lee 2007, 2008; Jeanne and Ranciere 2011; Obstfeld, Shambaugh, and Taylor 2010).

²³However, it should be pointed out that the RMB remains a very, very distant second accounting for a bit less than 9 percent of global trade financing (measured by Letters of Credit and Collections) while the dollar accounted for about 81 percent.

²⁴Totals are authors’ estimates based on data from PBC Monetary Policy Reports and U.N. Comtrade quarterly trade data. It should be pointed out that some scholars believe that these data may be inaccurate. Yu (2012) argues that yuan-based trade settlement is being driven by opportunities for exchange rate arbitrage. Moreover, even if Chinese trade is increasingly settled in RMB, the invoicing currency in many cases remains the dollar.

²⁵Arguing in favor of increasing Australia’s exposure to RMB, David Olsson, Chairman of the China-Australia Chamber of Commerce noted: “Countries throughout the region are already using the yuan for trading purposes and over time we will see those countries increasingly using the yuan as an underlying currency for global transactions...That’s a big issue for Australia where we are currently so tied to the US dollar” (Hepworth 2012).

increasingly import-dependent on China.

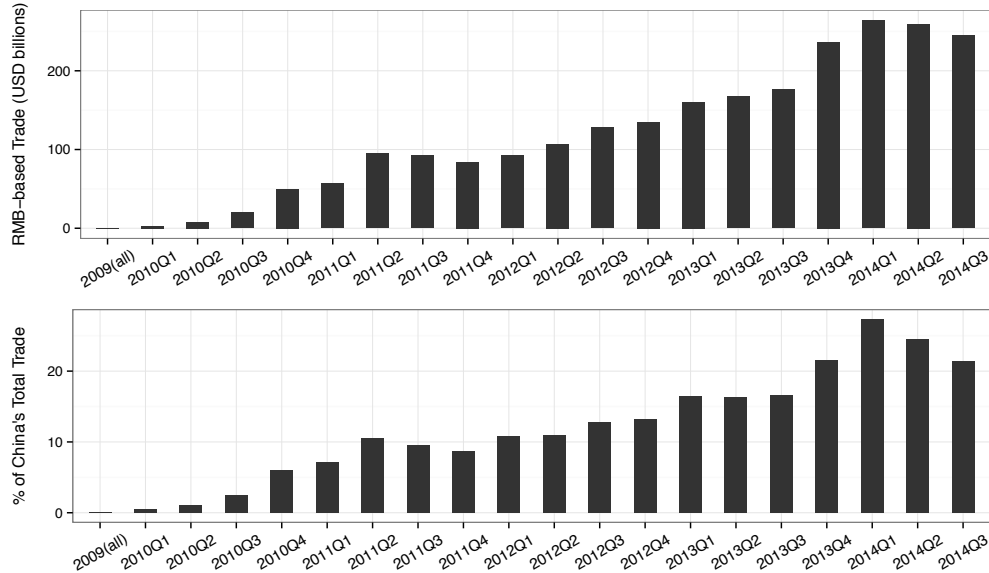


FIG 3. RMB Settlement of Cross-Border Trade.

4.2 Optimal Portfolio Model

The optimal portfolio model assumes that reserves are fundamentally viewed as a store of value by governments. Scholars initially making such arguments sought to apply theories of how firms' selected and managed international portfolios to sovereign portfolio management. In essence, optimal portfolio models argue that the share of foreign exchange reserves denominated in a specific currency is directly related to the risks and returns associated with holding assets denominated in various monies (Ben-Bassat 1980; Dellas and Bang Yoo 1991; Dooley 1986; Dooley, Lizondo, and Mathieson 1989; Papaioannou, Portes, and Siourounis 2006). In particular, reserve managers consider three primary types of risk: (1) the risk that a borrower will default on its debt, or *credit risk*; (2) the risk that an asset cannot be traded quickly enough to avoid a loss, or *liquidity risk*; and (3) the risk the income derived from an investment in one currency will fall relative to potential investments in alternative currencies due to exchange rate changes, or *currency risk*.

Currency risk is central to optimal portfolio arguments. Reserve managers want safe, liquid assets. However, they also want their investments to hold their value over time and, ideally, deliver a return. Yet, it is impossible to know with certainty *ex ante* which assets denominated in which currencies are going to perform the best over a given time frame.

Thus, all reserve investments come with some opportunity cost: the income gains (or losses) that would have accrued to the sovereign had they invested in an alternative currency/asset. Because of the inherent currency risk that accompanies such investments, sovereigns (like private investors) seek to maintain diverse portfolios that optimize and stabilize returns over time. For instance, if the exchange rate of one reserve currency is negatively correlated with another in the portfolio, the variance in the value of a country's holdings is minimized. Such hedging considerations, according to the optimal portfolio model, best explain variation in demand for assets in one reserve currency over another.

If reserve currency decisions are primarily a function of optimal portfolio considerations, recent years gave reserve managers plenty to think about. The unconventional monetary policies of the Federal Reserve and the European Central Bank (ECB) increased the risks of negative returns for central banks investing in the two top reserve currencies. The case of the dollar is particularly telling. During the period of time under consideration here (2010-2014), the performance of the dollar as a store of value was abysmal. Since the global financial crisis in 2008, the Federal Reserve implemented a number of large scale asset purchase programs—including quantitative easing (versions 1, 2 and 3) and “operation twist”—designed to lower long-term interest rates in the U.S. The Fed's efforts directly impacted on the attractiveness of U.S. Treasury bonds by driving yields down.²⁶ At the same time, rock-bottom rates in the U.S. led private investors to move their money out of the American market in search of yield. This contributed to a weakening of the dollar. Indeed, in August 2011 the dollar's trade-weighted exchange rate reached its all-time low. Figure 4 plots the 5-year Treasury constant monthly rate along with the dollar's trade weighted exchange rate. Clearly, 2010 through 2014 were not banner years for the dollar as a store of value.²⁷ In short, the combination of historically low treasury yields and a general depreciation trend means that the opportunity cost to holding dollar-denominated reserves was quite high over these five years. The Fed's actions, then, may have adversely impacted global confidence in the dollar as a reserve asset.²⁸

Some recent evidence supports this assertion. In a January 2013 survey of reserve cur-

²⁶At the same time, speculation about when the Fed would begin to “taper” its bond buying in 2012 and 2013 injected additional uncertainty into the market. Pointing to this fact, the deputy governor of the South African Reserve Bank directly linked his institution's decision to diversify into RMB to “risks facing the global environment emanating from asset tapering” and thus “made a strategic decision to diversify...currency exposure.” (England and Strauss 2013).

²⁷Exchange rate data available from http://www.federalreserve.gov/releases/h10/summary/indexn_m.htm; Treasury rate data from FRED database at <https://research.stlouisfed.org/fred2/series/GS10>

²⁸A recent report from J.P. MorganChase notes that as the dollar's attractiveness declined investors started “to question how much longer the dollar's status as the world's *de facto* reserve currency will remain unchallenged” (Morgan 2009:1).

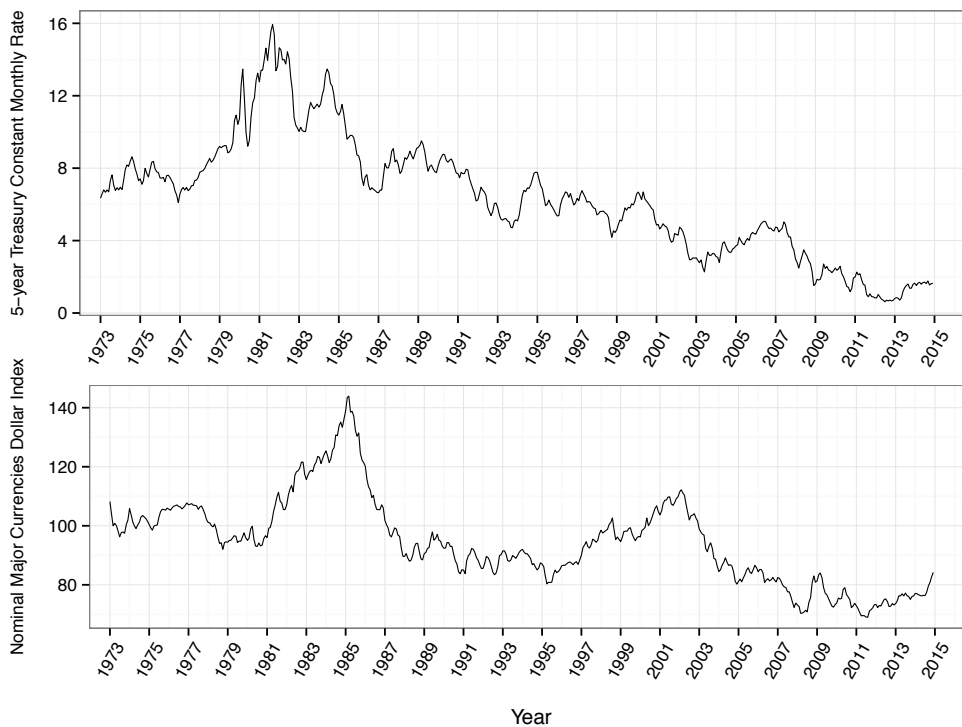


FIG 4. 5-Year Treasury and the Dollar’s Exchange Rate, 1973-2014 (monthly).

rency managers conducted by RBS, 83 percent of respondents indicated the ultra-low interest rate regimes at the Fed and ECB impacted their own reserve management strategies (Pringle and Carver 2013:6). In the words of one reserve manager, “From the credit risk perspective it is still good to be in highly rated government bonds, but as their yields are close to zero from the income perspective almost everything else seems more attractive” (Pringle and Carver 2013:13). Similarly, in a recent study on the topic, Otero-Iglesias and Steinberg (2013:317) find rising discontent about the performance of the dollar among financial elites in top reserve holding countries. One interviewee remarked, “we were losing everywhere, we were losing on inflation, we were losing on our depreciating [dollar denominated] assets.”

Thus, emergent demand for RMB may be a function of concerns about low or even negative returns to traditional dollar-denominated assets. Conversely, offshore and onshore RMB-denominated assets promised higher relative returns. During the period under consideration here, the expectation that the Chinese currency would appreciate against the dollar also increased the attractiveness of RMB-denominated assets.²⁹ For example, reports

²⁹Between 2005 and 2014, the RMB appreciated about 25 percent against the dollar. As recently as year-end 2013, Deutsche Bank predicted that the currency would appreciate an additional 2 to 3 percent against the dollar in 2014 (Yuanyuan 2014). However, in 2014, the PBC took steps to introduce “two-way risk” into RMB markets, allowing the currency to depreciate, as well as appreciate, against the dollar.

of Nigeria’s decision to invest 5 to 10 percent of its reserves in RMB linked the decision, in part, to “bets the currency will appreciate” (Li 2011). Consequently, we assume that from 2010 through 2014, reserve managers expected higher income returns from RMB-based investments. Thus, holding such assets could offset weak returns (or even losses) from dollar-denominated assets.

Of course, such expectations should be universal across sovereigns. Thus, on its own this cannot explain observed variation in demand for RMB across countries. However, we suspect that countries will respond to declining confidence in incumbent reserve currencies and expectations of a rising RMB in different ways. Specifically, we expect that sovereigns with larger stockpiles of foreign exchange reserves should be more inclined to diversify into non-traditional currencies, like the RMB. Even if reserve managers view their holdings primarily through the transactional needs lens, such insurance-driven investments should exhibit diminishing returns. That is, once you save enough dollars (or euros) to pay for, say, three-months of imports, every dollar saved thereafter is increasingly superfluous for transactional needs.³⁰ There should be a threshold of reserves above which each additional dollar (or euro) yields a smaller marginal insurance benefit to the sovereign. Consequently, we expect that as governments’ reserve stocks grow, they will weigh currency risks more and liquidity and credit risks less. When returns from safe, liquid traditional reserve currency assets are very low or negative, these central banks should be more likely to consider investments in non-traditional reserve currencies—like the RMB. While such investments may exhibit increased liquidity and credit risks, they promise to reduce currency risks which help offset losses and protect the value of their portfolio. Thus, if demand for RMB is driven by optimal portfolio considerations, we expect to observe the following.

Hypothesis 3: *All else equal, countries are more likely to diversify into RMB as their stock of foreign exchange reserves increases relative to their international transactional needs.*

4.3 Instrumental Calculations Model

The final approach assumes that reserve currency preferences are a function of policymakers instrumental calculations. More specifically, it asserts that states are likely to invest in a currency if doing so brings with it some “specified broader economic benefits” (Helleiner and

³⁰Sufficient reserves to cover three months of imports or all of a country’s short-term debts are the two most common “traditional” measures of reserve adequacy. For example, a recent Central Bank of Iceland report notes that the bank has “traditionally maintained its foreign reserves at a level close to the equivalent of roughly three months’ imports” (Benediktsson and Palsson 2005:82). The IMF is working on alternative ways to measure reserve adequacy suggesting that such measures are arbitrary and “focus only on a particular aspect of vulnerability” (IMF 2011:4).

Kirshner 2009:12). For instance, Dooley, Folkerts-landau, and Garber (2003:2) argue that the so-called “Bretton Woods II” system is built on an implicit agreement where export-dependent Asian economies hold dollar-denominated reserves for reasons that lie outside the inherent economic attractiveness of the currency (Helleiner 2008:363). Countries with export-oriented development strategies are willing to “underwrite future deficits of the [U.S.]” by continuing to grow their dollar reserves through purchasing U.S. government debt. In doing so, however, they “subordinate the objective of maximizing the value of reserve assets.” Thus, from this perspective, reserve currency decisions neither reflect optimal portfolio nor transactional considerations. The decision to continue investing primarily in the dollar is the result of an economic deal between the two sides. A *quid-pro-quo* so to speak. The U.S. agrees to continue to run large current account deficits vis-a-vis the Asian economies so long as they continue to lend freely to the U.S. government. Likewise, Asian economies are willing to continue purchasing large quantities of U.S. debt in exchange for access to the American market that is vital to their export-oriented development strategies.

It is possible that emergent demand for the RMB as a reserve currency reflects similar instrumental calculations. Given China’s immense international economic clout and its apparent desire to promote currency internationalization, it is possible Beijing is using economic inducements to encourage official investments in RMB. States that are economically dependent on China should be most sensitive to such quid-pro-quo logic.³¹ As China works to gradually promote the RMB as a reserve currency, it may look to countries that depend on it as an export market, those that depend on it for foreign direct investment, or those that depend on Chinese aid to shift a portion of their reserves into RMB. Alternatively, dependent states may choose to invest in RMB hoping that such a move will curry economic favor from Beijing. For example, a Central Bank of Nigeria press release announcing the decision to diversify into RMB stated the decision “is expected to *secure a strategic advantage for Nigeria in its economic and trade relationship with the People’s Republic of China*” (Central Bank of Nigeria 2011; emphasis added). The instrumental logic is clear in this last statement.

At least three forms of economic dependence could influence the likelihood of early adoption of the RMB as a reserve asset. First, economies heavily dependent on China as a market for exports should, all else equal, be more inclined to view their developmental goals as being tied to continued and increased access to this market. Similarly, economies dependent on inflows of direct investment from China should view development goals as tied to continued and increased future flows. In addition, countries that receive substantial

³¹By *economic dependence* we mean the extent to which one state relies on another in order to achieve some economic goal.

foreign aid from China should be more likely to believe their future economic fortunes are dependent on continued aid flows from Beijing. In short, countries dependent on China in any of these arenas should be more susceptible to such *quid-pro-quo* logic. Thus, if instrumental calculations are driving demand for RMB as a reserve currency, we expect to observe the following.

Hypothesis 4: *All else equal, countries are more likely to diversify into RMB as they become increasingly economically dependent on China.*

5 Empirical Analysis

In this section, we present empirical evidence supportive of our main argument: state preferences toward international order shape their reserve currency choices. Furthermore, political considerations rather than economic calculations best explain emergent demand for the RMB as a reserve currency. Section 5.1 discusses the data used in the analysis, which covers 173 partner countries from 2009 to 2013.³² Section 5.2 describes the model and methods. Section 5.3 and Section 5.4 presents findings and results for robustness checks, respectively.

5.1 Data and Measurement

5.1.1 Outcome of Interest

Our main outcome of interest is a central bank’s decision to hold a portion of its foreign exchange reserves in RMB. Ideally, we would like data on central banks’ share of reserves allocated in RMB to capture the level of diversification. However, as many central banks keep the currency composition of their foreign exchange reserves confidential, we measure diversification into RMB instead as a dichotomous variable: whether or not a country holds RMB-denominated assets in a given year. We assume that once investments in the currency is reported or confirmed, the central bank maintains RMB-denominated assets in their portfolio.³³ This dichotomous variable `Reserve` is coded as 1 when RMB-denominated assets were (reportedly) part of a central bank’s reserves in a given year and 0 otherwise.

³²RMB reserve data covers up to 2014.

³³In most cases, multiple reports over several years support our assumption. However, in a few cases only one report identifies the initial investment. Due to the very short time-frame that this study examines, we believe the assumption is justifiable. However, we directly address this concern in robustness checks below.

5.1.2 Key Predictors

International Order (IO) Model. To test the effect of state preferences towards international order on reserve currency choice (Hypotheses 1), we employ two new measures of state preferences from Bailey, Strezhnev, and Voeten (2015): a country’s **UNGA Ideal Point Distance with the U.S.** in a given year, and a country’s **UNGA Ideal Point Distance with China** in a given year. The former captures state positions toward the U.S.-led liberal order, while the latter reflects state preferences toward the emerging Chinese alternative.

Bailey, Strezhnev, and Voeten (2015:1) estimate dynamic national ideal points using voting data in the United Nations General Assembly (UNGA) from 1946-2012. They show that ideal point estimates improve upon conventional dyadic similarity indicators such as Affinity or S-scores (Gartzke 1998; Signorino and Ritter 1999) by allowing for more valid inter-temporal comparisons: distinguishing UN agenda changes from changes in state preferences. Although ideal point estimates only capture revealed preferences rather than underlying “true” preferences, Bailey, Strezhnev, and Voeten (2015:11) argue that strategic voting is less prevalent in the UNGA since votes are non-binding and thus less problematic. They also demonstrate the validity of ideal points as a measure of state preferences toward international order by showing how ideal point distances with the US are negative (positive) and significantly correlated with democratization and financial liberalization (left-wing government ideology). As a result, we argue that measures of ideal point distance with the US and China are appropriate and well suited to capture state preferences towards competing versions of international order. However, in our robustness checks, we also employ conventional measures of voting affinity with the US and China (Strezhnev and Voeten 2013).

Transactional Needs (TN) Model. To test the effect of transactional considerations on monetary authorities’ decisions to invest in RMB (Hypotheses 2), we measure a country’s **Import Dependence on China** in a given year. In particular, import dependence is a country’s imports of goods from China divided by the country’s total imports of goods from the world using UN Comtrade data (UN Comtrade 2013). In robustness checks, we also measure a country’s import dependence in terms of its share of the country’s current GDP.

Optimal Portfolio (OP) Model. To test the effect of optimal portfolio considerations on a monetary authority’s decision to invest in RMB (Hypothesis 3), we measure a country’s **Reserves in Months of Imports**. In particular, a country’s total foreign exchange reserves expressed in months of imports in a given year using WDI (2013) data. While we recognize that this is an imperfect measure of the adequacy of a country’s foreign exchange reserves, it is a traditional metric used by the IMF (2011). In robustness checks, we also measure a country’s reserves over its current GDP as an alternative way to capture the adequacy of reserves.

Instrumental Calculations (IC) Model. To test the effect of instrumental calculations on a monetary authority’s decision to invest in RMB (Hypotheses 4) we employ two measures: a country’s **Export Dependence** on China in a given year, and a country’s **FDI Inflow Dependence** on China in a given year. Export dependence is measured as a country’s exports of goods to China divided by the country’s total exports of goods to the world using UN Comtrade data. FDI dependence is measured as a country’s FDI net inflows from China divided by the country’s total FDI net inflows from the world using data from China Statistical Yearbook and United Nations Conference on Trade and Development (National Bureau of Statistics of China 2010, 2011, 2012, 2013; UNCTAD 2014). Unfortunately, bilateral Chinese foreign aid data is very sparse for our time frame. For example, one of the most authoritative aid data sets available, AidData (2011), shows more than 82.43% missing country-years for our universe of observations, with most available data covering Chinese aid to African countries. Given the general sparseness of the data, and that our empirical findings are robust to the inclusion of Chinese aid measures after multiple imputation, we exclude discussions about the aid mechanism in the paper.³⁴

5.1.3 Other Covariates

We also include a set of covariates that may confound the relationship between key predictors and reserve currency choice. First, China signed **Bilateral Swap Agreements** (BSAs) with a total of 25 partner central banks between December 2008 and 2014. These BSAs give partner central banks the ability to “swap” their own currency for RMB in order to settle trade in RMB as opposed to currencies like the dollar or euro. A number of these central banks also reportedly diversified reserves into RMB (Liao and McDowell 2014). As a result, we may overestimate our findings if signing BSAs positively shape both the decision on adopting RMB reserves and our key predictors. For example, if partner central banks are more likely to adopt RMB and also converge towards China’s version of international order (or become more economically dependent on China) after formal BSA cooperation. We measure BSA as a dichotomous variable coded as 1 if a country has an active BSA with the PBC in a given year.

Second, in the post-war era, mature democracies issued all major reserve currencies. Some scholars suggest that the RMB’s prospects as an international currency are held back by the autocratic regime backing the money. Eichengreen (2012) sums up the logic as follows: “In a democracy, the executive is subject to checks and balances. This reassures investors,

³⁴In addition to AidData, we also tried using Chinese aid data from the Rand Corporation (2013) and Chinese investment from the Heritage Foundation (2014). Data coverage was even more sparse with these sources, and did not change our empirical findings.

including foreign investors, that they are safe from expropriation. It is not yet clear whether China, as a one-party state, can finesse this problem.” As a result, democracies may be more hesitant to adopt RMB as reserves, while also preferring the U.S.-led international order. This leads to overestimating the negative (positive) effects of state preferences toward U.S. (China)-led international order on the adoption of RMB. We measure partner country **Regime Type** based on Polity scores (Marshall, Jaggers, and Gurr 2012).

Finally, we include a standard set of gravity model variables such as **GDP** and **GDP per capita** (constant 2005 US dollars) and geographic **Distance** (thousand kilometers) in our models. We rely on WDI for GDP data and CEPII’s GeoDist for dyadic distance data (CEPII 2011). In addition, because Shih and Steinberg (2012) show that central bank independence (CBI) affects reserve currency preferences, we include Dreher, Sturm, and Haan (2008)’s data on **Irregular Central Bank Governor Turnovers** as a proxy for CBI.³⁵

Further details about variables are summarized in the appendix. In particular, Table B.1 summarizes operationalization and data sources. Table B.2 shows the descriptive statistics for the variables. Figure B.1 illustrates pair-wise correlation between covariates.

5.2 Models and Methods

Given our dichotomous outcome of interest, we fit a set of logistic regression models. The first four models contain key predictors corresponding to a particular hypothesis and a same set of control covariates. The fifth model is a full model that includes all covariates. We also include year fixed-effects and compute Heteroskedastic and Autocorrelation Consistent (HAC) standard errors to address problems with clustering in years and countries. Overall, we formally express the models as follows:

³⁵The more common irregular turnovers are, the more likely it is that a central bank is not independent. As Cukierman, Webb, and Neyapti (1992:363) explain, “If the political authorities frequently take the opportunity to choose a new governor, they will at least have the opportunity to pick those who will do their will.”

$$f_{IO}(RMBRES_{it+1}|\mathbf{X}_{it}, \theta_{IO}) = \text{logit}^{-1}(\alpha_0 + \alpha_1 IDEALPOINTDIST_{it} + \boldsymbol{\alpha}_2 \mathbf{Z}_{it}) \quad (1)$$

$$f_{TN}(RMBRES_{it+1}|\mathbf{X}_{it}, \theta_{TN}) = \text{logit}^{-1}(\beta_0 + \beta_1 PIMPORTDEP_{it} + \boldsymbol{\beta}_2 \mathbf{Z}_{it}) \quad (2)$$

$$f_{OP}(RMBRES_{it+1}|\mathbf{X}_{it}, \theta_{OP}) = \text{logit}^{-1}(\delta_0 + \delta_1 RESIMPORT_{it} + \boldsymbol{\delta}_2 \mathbf{Z}_{it}) \quad (3)$$

$$f_{IC}(RMBRES_{it+1}|\mathbf{X}_{it}, \theta_{IC}) = \text{logit}^{-1}(\gamma_0 + \gamma_1 PEXPORTDEP_{it} + \gamma_2 PFDIDEP_{it} + \boldsymbol{\gamma}_3 \mathbf{Z}_{it}) \quad (4)$$

$$f_{Full}(RMBRES_{it+1}|\mathbf{X}_{it}, \theta_{Full}) = \text{logit}^{-1}(\lambda_0 + \lambda_1 IDEALPOINTDIST_{it} + \lambda_2 PIMPORTDEP_{it} + \lambda_3 RESIMPORT_{it} + \lambda_4 PEXPORTDEP_{it} + \lambda_5 PFDIDEP_{it} + \boldsymbol{\lambda}_6 \mathbf{Z}_{it}) \quad (5)$$

where f_{IO} , f_{TN} , f_{OP} , and f_{IC} denote statistical models implied by international order, transactional needs, optimal portfolio, and instrumental calculations hypotheses, respectively, and f_{Full} denotes a full model that includes all covariates. i and t index countries and years, respectively. RMB reserves is the outcome variable of interest measured at time $t + 1$. \mathbf{X}_{it} is a vector of predictors for each model measured at time t for country i . Leading the dependent variable allows us to address problems with simultaneity and also maximizes variation in our outcome variable since there were more countries holding RMB as reserves in 2014.³⁶ θ_{IO} , θ_{TN} , θ_{OP} , θ_{IC} , and θ_{Full} are vectors of parameters for each model. Given the high and negative correlation between a state's UNGA ideal point distance with U.S. and China, we substitute the measures in f_{IO} and f_{Full} instead of including them simultaneously.³⁷ \mathbf{Z}_{it} is a vector of control covariates discussed in Section 5.1.2 augmented with year fixed effects.

We employ multiple imputation to address issues with missing data for two main reasons. First, countries holding RMB as reserves are oftentimes developing countries that suffer from problems with missing data. As a result, ad hoc listwise deletion would systematically bias our analysis by dropping these important countries. Second, Honaker and King (2010:561-562) discuss how multiple imputation avoids biases and inefficiencies caused by ad hoc methods such as listwise deletion. Furthermore, the approach is well-accepted and increasingly common in many fields. We create ten multiply imputed datasets using the **R** package **Amelia II** (Honaker, King, and Blackwell 2011), fit logistic regression models to each of the datasets with the **R** package **Zelig** (Imai, King, and Lau 2007), and combine

³⁶We exclude country-years for Hong Kong and Macau in f_{IO} and f_{IC} due to their Special Administrative Region status and ineligibility to vote in the UNGA. Similarly, we exclude country-years for Taiwan due to the latter reason.

³⁷See Figure B.1 for correlations between UNGA measures and Figure C.2 for a scatter plot of ideal point distances with U.S. and China.

the results using Rubin’s Rules (Rubin 1987).³⁸

5.3 Results

Figure 5 summarizes results from the logistic regression models.³⁹ We find that states with larger ideal point distance with the U.S. are *more* likely to adopt RMB as a reserve currency. Furthermore, states with *smaller* ideal point distance with China are also more likely to diversify reserves into RMB. This suggests that states are more likely to adopt RMB reserves as their preferred international order moves away from U.S and towards China. More importantly, results from the full models show that the findings persist even after including key predictors that account for economic considerations.

In contrast, we only find modest support for transactional needs and optimal portfolio explanations. We find no supportive evidence for instrumental calculations. For example, while coefficients for partner import dependence and reserves in months of imports are both positive and statistically significant in their individual models, the coefficients lose statistical significance in the full models. Overall, this suggests that political considerations rather than economic concerns best explain emergent demand for the RMB as a reserve currency.

Figure 6 shows changes in the predicted probability of holding RMB reserves as a state’s UNGA ideal point moves away from U.S. or China. For example, using one standard deviation below and above the mean ideal point distance as indicators of “close” and “far”, countries that are close to the U.S. (1.86) are, on average, 33% less likely to hold RMB as reserve currency than countries that are far (3.63). A substantive comparison of countries close and far from the U.S. is Switzerland in 2011 and Sri Lanka in 2012, respectively.

In contrast, countries that are close to China (0.02) are, on average, 44% more likely to hold RMB as reserve currency than countries that are far (1.47). A substantive comparison of countries close and far from China is South Africa in 2009 and Georgia in 2009, respectively.

5.4 Robustness Checks

We substitute in different measures of key predictors, fit conditional logistic regression models, and conduct a simple cross-sectional analysis to evaluate the robustness of our findings. These results are summarized in the following with details presented in Table C.2 and Table C.3 in the appendix.

³⁸Table B.2 in the appendix describes levels of missingness for our main covariates. We employ both leads and lags for covariates in the imputation model. Further details about the imputation model and results from diagnostic tests are available in the online appendix.

³⁹We show further details in Table C.1.

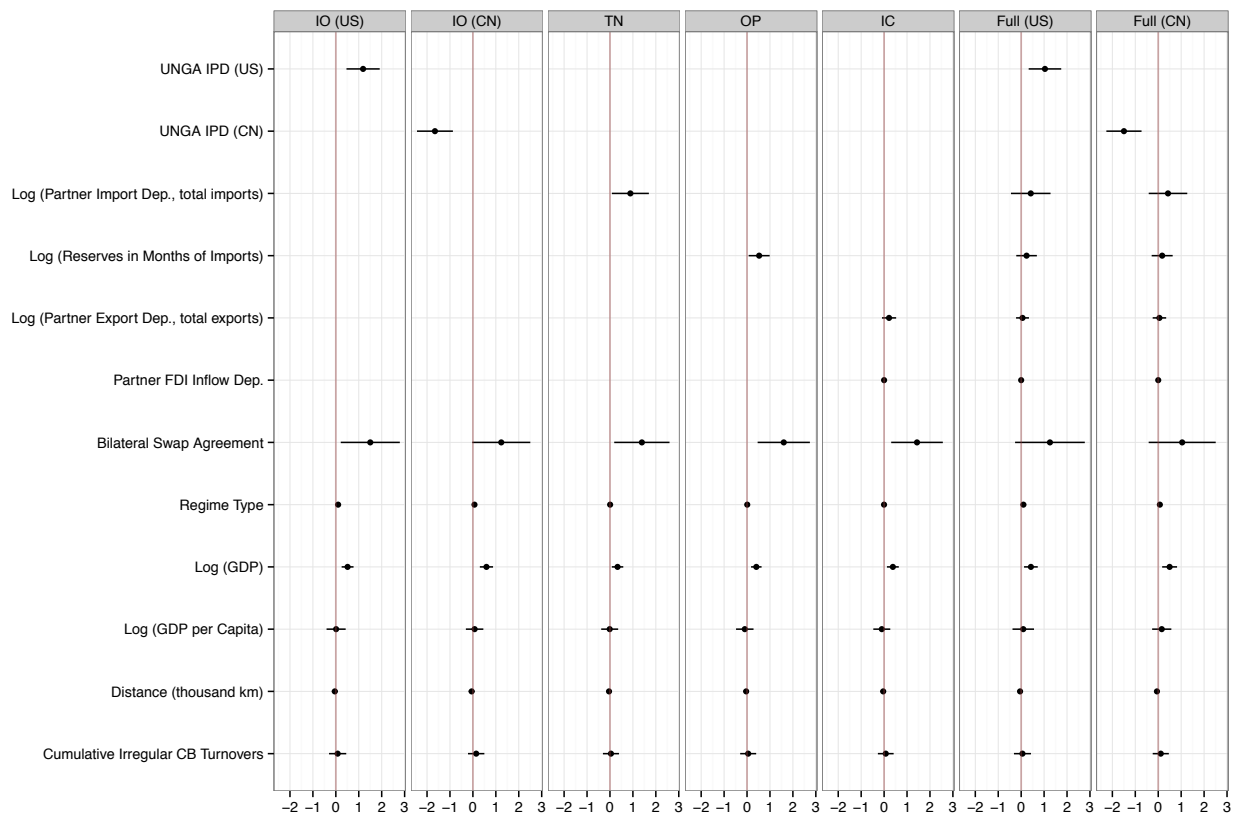


FIG 5. Logistic Regression Model Results. This figure shows the estimated coefficients and 95% confidence intervals for all covariates. Overall, partner country’s UNGA ideal point distance with the United States (China) are statistically significant and positively (negatively) correlated probabilities of holding RMB reserves. Furthermore, the findings hold in both individual and full models.

5.4.1 Alternative Measures of Key Predictors

To evaluate how sensitive our results are to measurement problems, we fit several logistic regression models with alternative measures of key predictors. First, we substitute ideal point measures with conventional dyadic UNGA voting similarity indicators Affinity or S-scores (Gartzke 1998; Signorino and Ritter 1999). The results in Table C.2 show that higher UNGA voting affinity score with the U.S. is statistically significant and *negatively* associated with holding RMB reserves. Furthermore, higher UNGA voting affinity score with China is statistically significant and *positively* associated with holding RMB reserves. Together, the results again support the argument that state preferences toward international order shape their choice about adopting RMB as reserve currency.

Second, we substitute in alternative measures of key predictors for transactional needs, optimal portfolio, and instrumental calculations models. As a different way to measure trade

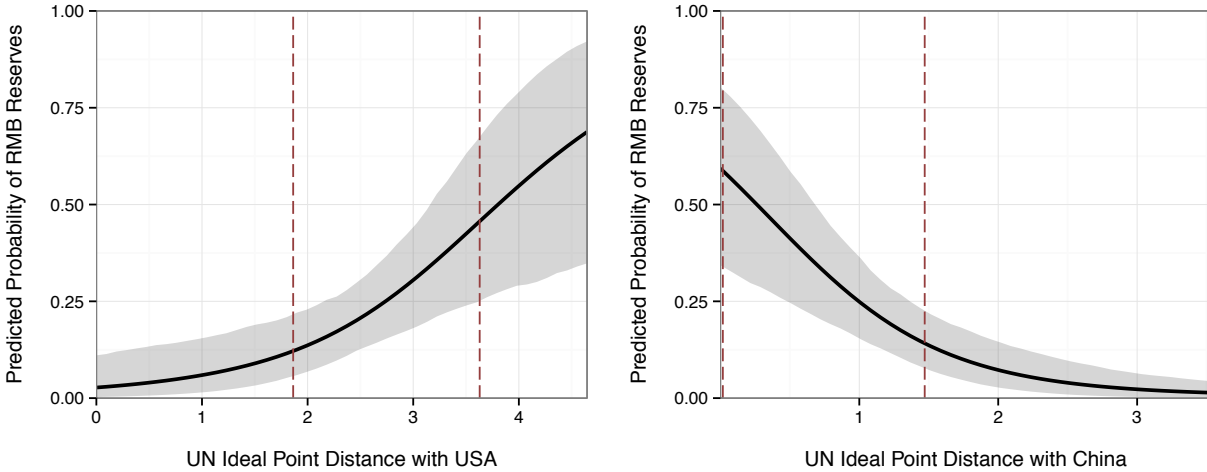


FIG 6. Substantive Effects. UNGA Ideal Point Distance and Simulated Predicted Probabilities of Holding RMB Reserves. Vertical dashed lines indicate one standard deviation below and above the mean ideal point distance.

dependence or reserve adequacy, we employ current GDP-based measures. In particular, we measure partner import (export) dependence as partner total imports (exports) from China over its current GDP. Additionally, we measure a country’s reserve adequacy as reserves over its current GDP. We find that the results, as shown in Table C.2, are substantively the same regardless of the alternative measures we employ: states with larger ideal point distance with the U.S. (China) are more (less) likely to adopt RMB as a reserve currency.

5.4.2 Alternative Estimating Approach

In contrast to the findings under “unconditional” logistic regression models, we fit conditional logistic regression models to address concerns about the well-known incidental parameter problem when applying maximum likelihood estimation to binary response models with fixed effects (Lancaster 2000). In particular, problems related to the inconsistency of maximum likelihood estimation of parameters as sample size increases. Again, we find that the results, as shown in Table C.2, are substantively the same.

5.4.3 Cross-Sectional Analysis

Finally, we assume in the coding of our data that central banks hold RMB assets beginning from the year confirming reports appear up until the end of 2014. Our assumption may not hold if some central banks quickly reverse their decisions about RMB reserves within the time frame of our data. We believe this scenario is highly unlikely given the importance of such decisions, the economic and political costs of such policy reversals, and the short time

frame we focus on. However, we can not be absolutely sure given the confidential nature of many central banks' reserve currency composition. As a result, we collapse our panel data and fit the same main logistic regression models to a cross-sectional version of the data. In particular, we recode our outcome of interest as 1 when RMB-denominated assets were (reportedly) part of a central bank's reserves at any point between 2009 and 2014. Additionally, we collapse independent variables by taking the mean (median) of continuous (ordinal) covariates. Dichotomous covariates are again coded as 1 for any occurrences of the variable within the time frame of our data.

As shown in Table C.3, we find substantively consistent results in the cross-sectional analysis: states with larger ideal point distance with the U.S. (China) are more (less) likely to adopt RMB as a reserve currency. The only difference is that none of the key predictors for economic considerations are statistically significant in their individual models anymore. This further strengthens our argument that political considerations rather than economic concerns best explain emergent demand for the RMB as a reserve currency.

6 Concluding Remarks

It is difficult to overstate the importance of reserve currency status to world politics (Shih and Steinberg 2012:856). Understanding the substantial political and economic benefits that issuing states derive from the position, international relations scholarship has greatly improved our knowledge of the factors that contribute to global currency supremacy. In particular, existing work has done much to identify the *inertial* conditions that contribute to the maintenance of top reserve currency status once it is achieved. Yet, despite this significant cumulation of knowledge, the field has spent less time considering the *initial* conditions that drive the adoption of new, rival reserve currencies. Why do some states diversify into new reserve currencies at an early stage while most continue to take a wait-and-see approach?

The salience of this question is growing today. Predictions that the Chinese RMB will soon rise to prominence in the global reserve system now abound in contemporary debates about the future of the international monetary system (Eichengreen 2011, 2012; Prasad and Ye 2012; Roubini 2009; Subramanian 2011). Meanwhile, many observers now argue that support for U.S.-led liberal international order—built on American military preponderance, democratization, free market capitalism and globalization—is beginning to erode as China's global influence grows (Barma, Ratner, and Weber 2007; Halper 2010; Jacques 2009; Kagan 2008; Kirshner 2014; Rachman 2011).

We contend that these two trends are not independent of one another. The dollar's global dominance is symbolic of American primacy and its attendant order. Similarly, the rise of the

RMB is symbolic of China’s ascendancy and an alternative version of order reflecting Beijing’s priorities and values. In short, we argue that a state’s decision to diversify into RMB at this early stage is as a *political* act; a partisan endorsement of China’s expanding international influence. In this paper, we identify 37 central banks that hold RMB in their portfolios by year’s end 2014. Exploiting cross-national variation in sovereign RMB investments, our empirical analysis supports our central argument: as state preferences move away from the U.S. liberal order or toward the Chinese alternative, they are more likely to diversify into RMB.

This paper builds on existing scholarship in international relations showing that geopolitical considerations shape reserve currency choice (Calleo 1982; Cohen 2015; Gavin 2004; Helleiner and Kirshner 2009; Murphy 2006; Norrlof 2010; Posen 2008; Spiro 1999; Strange 1971; Zimmermann 2002). However, our argument and analysis expands on these studies in three ways. First, existing work in this area largely relies on case studies to uncover the geopolitical calculations behind reserve currency choice. While providing rich historical accounts of the motivations behind policymakers’ decisions, these studies tend to show that geopolitical calculations drive reserve currency choice only in specific cases. Our results strengthen this literature by showing that geopolitical considerations are systematically related to states’ reserve currency preferences.

Second, extant studies in this tradition tend to focus on how bilateral security relations help to sustain reserve currency dominance once it is achieved. Our study does not limit geopolitical influences to security ties. It also shifts the focus to the factors that influence the capacity of new reserve currencies to challenge incumbents. In particular, we build on Gilpin (1987) by demonstrating that change in the international monetary system—defined here as emergent demand for the RMB as a reserve currency—is linked to preferences about political order. This is particularly relevant if the U.S. and China are, as some suggest, destined for hegemonic competition. If political calculations continue to drive part of the RMB’s rise as a reserve currency, the international monetary system may eventually take on a bifurcated appearance: on one side, those that support the U.S.-led liberal order and its greenback; on the other, those that support the Chinese order and its redback.

Finally, in a more general sense, our results suggest that the trajectories of new reserve currencies are influenced by geopolitical forces. Thus, if China were not viewed as representing a distinct alternative to the U.S. liberal order, a different group of countries would have diversified into RMB. Indeed, if we removed removed from the decision-making process altogether, the RMB may not have found nearly as many early admirers as it has. Our analysis suggests that new reserve currencies benefit if the issuing state that stands behind it represents a challenge to the *status quo* order. Furthermore, this may help explain why

the Japanese yen and the German deutsche mark in the 1970s and 1980s and the euro in the 2000s, all failed to seriously challenge the dollar for top reserve currency status. Without question, economic deficiencies limited the rise of each challenger—a fact which is also true of the RMB today (Cohen 2015). However, *political* deficiencies also played a role: in all three of these cases, the authority issuing the alternative currency did not represent an alternative order. Rather, each was deeply embedded within the American system. Thus, from a purely political point of view, states dissatisfied with the *status quo* likely viewed each of these currencies as perfect substitutes for one another.

Like challengers of the past, the RMB's rise is without question dependent on Beijing's continued implementation of monetary and financial reforms. Such efforts will directly affect the currency's economic attractiveness to central banks. However, while the RMB faces similar economic challenges, its political position is quite different from these earlier cases. As Helleiner and Kirshner (2015:11) point out, China is “neither an ally nor a client” of the U.S.—rather, it is the “first newcomer on the monetary scene in seventy years that can be seen as a potential adversary” to American dominance. In short, our analysis supports the assertion that the RMB may have an edge that past challengers have lacked—a political authority backing the money that stands in stark contrast to the *status quo*.

References

- Aizenman, Joshua and Jaewoo Lee. (2007) International Reserves: Precautionary Versus Mercantilist Views, Theory and Evidence. *Open Economies Review* 18(2):191–214.
- (2008) Financial versus Monetary Mercantilism: Long-run View of Large International Reserves Hoarding. *The World Economy* 31(5):593–611.
- Asia Society. (2011) *Trading with China: The Rise of Offshore Renminbi Business*. Tech. rep. Asia Society.
- Bailey, Michael A., Anton Strezhnev, and Erik Voeten. (2015) Estimating Dynamic State Preferences from United Nations Voting. *Journal of Conflict Resolution* (Forthcoming).
- Barma, Naazneen, Ely Ratner, and Steven Weber. (2007) A World Without the West. *National Interest* (July/August):23–30.
- Ben-Bassat, Avraham. (1980) The Optimal Composition of Foreign Exchange Reserves. *Journal of International Economics* 10(May):285–295.
- Benediktsson, Haukur C. and Sturla Palsson. (2005) Central Bank Foreign Reserves Central Bank of Iceland. *Monetary Bulletin - Central Bank of Iceland* 3:79–86.
- Bloomberg. (2011) Financing China Costs Poised to Rise With CDB Losing Sovereign-Debt Status. *Bloomberg News*.
- Calleo, David P. (1982) *The Imperious Economy*. Cambridge, MA: Harvard University Press.
- (2009) Twenty-First Century Geopolitics and the Erosion of the Dollar Order. In: *The Future of the Dollar*. Ithaca, New York: Cornell University Press:164–190.
- Central Bank of Nigeria. (2011) *Nigeria Approves Inclusion of Chinese Renminbi in External Reserves*. Tech. rep. Central Bank of Nigeria.
- CEPII. (2011) *The GeoDist Database*. URL: <http://www.cepii.fr/anglaisgraph/bdd/distances.htm>.
- Chin, Gregory and Wang Yong. (2012) Debating the International Currency System. *China Security* 6(1):17.
- Chinn, Menzie and Jeffrey Frankel. (2005) Will the Euro Eventually Surpass the Dollar as Leading International Reserve Currency? *NBER Working Paper* (July). URL: <http://www.nber.org/papers/w11510>.
- Cohen, Benjamin J. (2006) The Macrofoundations of Monetary Power. In: *International Monetary Power*. Ed. by David M. Andrews. Ithaca, New York: Cornell University Press:31–50.
- (2012) The Benefits and Costs of an International Currency: Getting the Calculus Right. *Open Economies Review* 23(1):13–31.

- Cohen, Benjamin J. (2013) Currency and State Power. In: *Back to Basics: State Power in a Contemporary World*. Ed. by Martha Finnemore and Judith Goldstein. Oxford University Press:159–176.
- (2015) *Currency Power: Understanding Monetary Rivalry*. Princeton, NJ: Princeton University Press.
- Cukierman, Alex, Steven B. Webb, and Bilin Neyapti. (1992) Measuring the independence of Central Banks and Its Effects on Policy Outcomes. *The World Bank Economic Review* 6:353–398.
- Dellas, Harris and Chin Bang Yoo. (1991) Reserve currency preferences of central banks: the case of Korea. *Journal of International Money and Finance* 10(3):406–419.
- Dooley, Michael P. (1986) An Analysis of the Management of the Currency Composition of Reserve Assets and External Liabilities of Developing Countries. In: *The Reconstruction of International Monetary Arrangements*. Ed. by Robert Z. Aliber. Macmillan.
- Dooley, Michael P., David Folkerts-landau, and Peter Garber. (2003) An Essay on the Revised Bretton Woods System.
- Dooley, Michael P., Juan Saul Lizondo, and Donald J. Mathieson. (1989) The Currency Composition of Foreign Exchange Reserves. *Staff Papers - International Monetary Fund* 36(2):385–434.
- Dreher, Axel, Jan-Egbert Sturm, and Jakob de Haan. (2008) Does high inflation cause central bankers to lose their job? Evidence based on a new data set. *European Journal of Political Economy* 24(4):778–787.
- Eichengreen, Barry. (2011) *Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System*. Oxford University Press.
- (2012) *The Dollar's Days as Reserve Currency are Numbered*.
- (2013) Number One Country, Number One Currency? *The World Economy* 36(4):363–374.
- Eichengreen, Barry and Marc Flandreau. (2008) The Rise and Fall of the Dollar, or When Did the Dollar Replace Sterling as the Leading International Currency? *NBER Working Paper*.
- Eichengreen, Barry and Donald J Mathieson. (2000) The Currency Composition of Foreign Exchange Reserves: Retrospect and Prospect. *UNU World Institute for Development Economics Research, Working Papers* (181).
- England, Andrew and Delphine Strauss. (2013) South Africa to invest in China bonds. *Financial Times*.
- Garber, Peter M. (1996) The Use of the Yen as a Reserve Currency. *Monetary and Economic Studies* (December):1–21.

- Gartzke, Erik. (1998) Kant We All Just get Along? Opportunity, Willingness, and the Origins of the Democratic Peace. *American Journal of Political Science* 42(1):1–27.
- Gavin, Francis. (2004) *Gold, Dollars, and Power: The Politics of International Monetary Relations*. Chapel Hill, NC: University of North Carolina Press.
- Gilpin, Robert. (1981) *War and Change in World Politics*. Cambridge: Cambridge University Press.
- (1987) *The Political Economy of International Relations*. Princeton, NJ: Princeton University Press.
- Halper, Stefan. (2010) *The Beijing Consensus: How China’s Authoritarian Model Will Dominate the Twenty-First Century*. New York: Basic Books.
- Helleiner, Eric. (2008) Political Determinants of International Currencies: What Future for the US dollar? *Review of International Political Economy* 15(3):354–378.
- (2010) The New Politics of Global Reserve Reform. *Journal of Globalization and Development* 1(2).
- Helleiner, Eric and Jonathan Kirshner. (2009) *The Future of the Dollar*. Ed. by Eric Helleiner and Jonathan Kirshner. Ithaca, New York: Cornell University Press:1–23.
- (2015) The Politics of China’s International Monetary Relations. In: *The Great Wall of Money: Power Politics and China’s International Monetary Relations*. Ithaca, New York: Cornell University Press:1–22.
- Heller, Robert H. and M. Knight. (1978) Reserve-Currency Preferences of Central Banks. *Princeton Essays in International Finance* 131.
- Hepworth, Annabel. (2012) *Reserve Bank Urged to Build Up Yuan Holdings*. URL: <http://www.theaustralian.com.au/business/markets/reserve-bank-urged-to-build-up-yuan-holdings/story-e6frg916-1226468543335>.
- Honaker, James and Gary King. (2010) What to Do about Missing Values in Time-Series Cross-Section Data. *American Journal of Political Science* 54(2):561–581.
- Honaker, James, Gary King, and Matthew Blackwell. (2011) Amelia II: A Program for Missing Data. *Journal of Statistical Software* 45(7):1–47.
- Ikenberry, G. John. (2001) *After Victory: Institutions, Strategic Restraint, and the Rebuilding of Order after Major Wars*. Princeton, NJ: Princeton University Press.
- (2008) The Rise Future of China of and the West Can the Liberal System Survive? *Foreign Affairs* 87(1):23–37.
- (2010) The Liberal International Order and its Discontents. *Millennium - Journal of International Studies* 38(3):509–521.
- (2011) The Future of the Liberal World Order: Internationalism After America. *Foreign Affairs* 90(3):56–62.

- Imai, Kosuke, Gary King, and Olivia Lau. (2007) Zelig: Everyone’s Statistical Software.
- IMF. (2011) Assessing Reserve Adequacy. Washington D.C.
- (2012) *International Reserves and Foreign Currency Liquidity: Guidelines for a Data Template*. Tech. rep. Washington D.C.: International Monetary Fund.
- (2015) *Transcript of a Press Conference on the Conclusion of the Article IV Consultation Mission with China*. URL: <http://www.imf.org/external/np/tr/2015/tr052615.htm> (visited on 06/16/2015).
- Jacques, Martin. (2009) *When China Rules the World: The End of the Western World Order*. New York: The Penguin Press.
- Jeanne, O. and R. Ranciere. (2011) The optimal level of international reserves for emerging market countries: A new formula and some applications. *Economic Journal* 121(555):905–930.
- Johansson, Asa et al. (2012) Looking to 2060: Long-term global growth prospects. *OECD Economic Policy Papers* (03).
- Kagan, Robert. (2008) *The Return of History and the End of Dreams*. New York: Knopf.
- Kirshner, Jonathan. (2008) Dollar primacy and American power: What’s at stake? *Review of International Political Economy* 15(3):418–438.
- (2014) *American Power after the Financial Crisis*. Ithaca, New York: Cornell University Press.
- Regional Hegemony and an Emerging RMB Zone. (2015). In: *The Great Wall of Money: Power Politics and China’s International Monetary Relations*. Ed. by Jonathan Kirshner and Eric Helleiner. Ithaca, New York: Cornell University Press:213–240.
- Krugman, Paul. (1992) *Currencies and Crises*. Cambridge, MA: MIT Press.
- Lancaster, Tony. (2000) The Incidental Parameter Problem since 1948. *Journal of Econometrics* 95(2):391–413.
- Law, Fiona. (2013) Dim-Sum Bond Issuance Climbs. *The Wall Street Journal*.
- Lee, Jong Wha. (2014) Will the renminbi emerge as an international reserve currency? *World Economy* 37:42–62.
- Li, Fion. (2011) Nigeria Buys ‘Well-Managed’ Yuan, Thailand Poised: China Credit. *Bloomberg*.
- Liao, Steven and Daniel McDowell. (2014) Redback Rising: China’s Bilateral Swap Agreements and Renminbi Internationalization. *International Studies Quarterly*:n/a–n/a. URL: <http://dx.doi.org/10.1111/isqu.12161>.
- Marshall, Monty G., Keith Jagers, and Ted Robert Gurr. (2012) *Polity IV*.
- McNamara, Kathleen R. (2008) A Rivalry in the Making? The Euro and International Monetary Power. *Review of International Political Economy* 15(3):439–459.

- Morgan, J.P. (2009) *Questioning the U.S. Dollar's Status as a Reserve Currency*. Tech. rep. October. J.P. Morgan Asset Management.
- Mundell, Robert A. (1993) *EMU and the International Monetary System: A Transatlantic Perspective*. Österreichische Nationalbank.
- Murphy, Taggart R. (2006) East Asia's Dollars. *New Left Review* 40:39–64.
- National Bureau of Statistics of China. (2010) *China Statistical Yearbook*.
 — (2011) *China Statistical Yearbook*.
 — (2012) *China Statistical Yearbook*.
 — (2013) *China Statistical Yearbook*.
- Norrlof, Carla. (2010) *America's Global Advantage: US Hegemony and International Cooperation*. Cambridge: Cambridge University Press.
- Obstfeld, M., J. Shambaugh, and A. Taylor. (2010) Financial stability, the trilemma, and international reserves. *American Economic Journal: Macroeconomics* 2(2):57–94.
- Otero-Iglesias, Miguel and Federico Steinberg. (2013) Is the Dollar Becoming a Negotiated Currency? Evidence from the Emerging Markets. *New Political Economy* 18(3):1–28.
- Otero-Iglesias, Miguel and Mattias Vermeiren. (2015) China's State-Permeated Market Economy and Its Constraints to the Internationalization of the Renminbi. *International Politics*.
- Papaioannou, Elias, Richard Portes, and Gregorios Siourounis. (2006) Optimal Currency Shares in International Reserves: The impact of the Euro and the Prospects for the Dollar. *Journal of the Japanese and International Economies* 20(4):508–547.
- Posen, Adam S. (2008) Why the Euro will Not Rival the Dollar. *International Finance* 11(2005):75–100.
- Prasad, Eswar and Lei Ye. (2012) *The Renminbi's Role in the Global Monetary System*. Tech. rep. February. Washington D.C.: Brookings.
- Pringle, Robert and Nick Carver. (2013) *RBS Reserve Management Trends 2013*. London: Central Banking Publications.
- Rachman, Gideon. (2011) *Zero-Sum Future: American Power in an Age of Anxiety*. New York: Simon and Schuster.
- Reeves, Andrew, Stephen Shellman, and Brandon Steward. (2006) Fair & Balanced or Fit to Print? The Effects of Media Sources on Statistical Inferences. *Working Paper*.
- Reuters. (2013) Central Banks Snap up Dim Sum Issue from Canada's British Columbia.
- Roubini, Nouriel. (2009) The Almighty Renminbi? *The New York Times* 13 May.
- Rubin, Donald B. (1987) *Multiple Imputation for Nonresponse in Surveys*. Wiley.

- Sachs, Goldman. (2014) FAQ : China's Bond Market. (September 2013). URL: <http://www.goldmansachs.com/gsam/glm/insights/market-insights/china-bond-market/china-bond-market.pdf>.
- Schrodt, Philip A., Erin M. Simpson, and Deborah J. Gerner. (2001) *Monitoring Conflict Using Automated Coding of Newswire Sources: A Comparison of Five Geographical Regions*.
- Shih, Victor and David A. Steinberg. (2012) The Domestic Politics of the International Dollar Standard : A Statistical Analysis of Support for the Reserve Currency , 2000-2008. 4:855–880.
- Signorino, Curtis S and Jeffrey M Ritter. (1999) Tau-b or Not Tau-b: Measuring the Similarity of Foreign Policy Positions. *International Studies Quarterly* 43(1):115–144.
- Spiro, David. (1999) *The Hidden Hand of American Hegemony*. Ithaca, New York: Cornell University Press.
- Strange, Austin et al. (2013) China's Development Finance to Africa: A Media-Based Approach to Data Collection. *Center for Global Development Working Papers* (April 2013).
- Strange, Susan. (1971) *Sterling and British Policy: A Political Study of an International Currency in Decline*. Oxford University Press.
- Strezhnev, Anton and Erik Voeten. (2013) *United Nations General Assembly Voting Data*. URL: <http://hdl.handle.net/1902.1/12379>.
- Subramanian, Arvind. (2011) Working Paper 11-14: Renminbi Rules: The Conditional Imminence of the Reserve Currency Transition. (September).
- Sweeney, Pete. (2012) *Asian central banks divided on new Chinese dim sum offer*. URL: <http://in.reuters.com/article/2012/06/15/china-bond-dimsum-idINL3E8HF0N220120615>.
- The Heritage Foundation. (2014) *The China Global Investment Tracker*. URL: <http://www.heritage.org/research/projects/china-global-investment-tracker-interactive-map>.
- Tierney, Michael J. et al. (2011) More Dollars than Sense: Refining Our Knowledge of Development Finance Using AidData. *World Development* 39(11):1891–1906.
- UN Comtrade. (2013) *UN Comtrade Statistics*. URL: <http://comtrade.un.org/>.
- UNCTAD. (2014) *UNCTAD Statistics*. URL: <http://unctad.org/en/Pages/Statistics.aspx/>.
- VN, Sreeja. (2013) Yuan Overtakes Euro As Second-Most Used Currency In International Trade Settlement: SWIFT. *International Business Times*.
- Wang, Hongying and James N. Rosenau. (2009) China and Global Governance. *Asian Perspective* 33(3):5–39.

- WDI. (2013) *World Bank World Development Indicators*. URL: <http://data.worldbank.org/data-catalog/world-development-indicators>.
- Wolf, Charles, Jr., Xiao Wang, and Eric Warner. (2013) China's Foreign Aid and Government-Sponsored Investment Activities: Scale, Content, Destinations, and Implications. *Research Report*.
- Woolley, John T. (2000) Using Media-Based Data in Studies of Politics. *American Journal of Political Science* 44(1):156–173.
- Yu, Yongding. (2012) Revisiting the Internationalization of the Yuan. *ADB Working Paper Series*.
- Yuan, Hu. (2014) Yuan to Appreciate Moderately in 2014. *China Daily, USA*.
- Zimmermann, Hubert. (2002) *Money and Security: Troops, Monetary Policy and West Germany's Relations with the United States and Britain, 1950-1971*. Washington D.C.: German Historical Institute; Cambridge: Cambridge University Press.

Appendix A

Presently, the IMF COFER database does not include information on the RMB's share of global reserves. Consequently, we estimate this on our own based on official and media reports and present this in Table A.1. In most cases, media reports of sovereign RMB investments do not include any information about the size of the investment. In these cases, we estimate a low-end investment of 0.5% (multiplier = 0.005) and a high-end estimate of 5% (multiplier = 0.05) of the central bank's total reserves. Some reports indicate that a particular monetary authority has invested a specific percentage of their reserves in RMB. In these cases, we use such reports as the basis for our high and low-end multipliers. Finally, in a few cases, the investment amount is publicly reported by the central bank or in a media report. In these cases, we do not include a multiplier in Table A.1. Rather, we present the reported amount instead. To calculate our estimate of global RMB reserves, we sum up our low- and high-end estimates for all known investors. We then divide these by total world reserves according to IMF COFER data. Listed reserve totals are 2013 data from the World Bank WDI database and include gold. The only exception is Taiwan, which is not included in WDI data. In this case, we acquired 2012 reserves data from the Central Bank of the Republic of China (Taiwan) website.

<i>Country</i>	<i>Reserves</i>	<i>Mult. (low)</i>	<i>Mult. (high)</i>	<i>Low Est.</i>	<i>High Est.</i>
Angola	\$32.8	0.005	0.05	\$0.164	\$1.64
Argentina	\$30.5			\$1.3	\$1.3
Australia	\$52.8	0.03	0.03	\$1.58	\$1.58
Austria	\$23.3	0.005	0.05	\$0.116	\$1.165
Belarus	\$6.7	0.005	0.05	\$0.033	\$0.333
Bolivia	\$14.4	0.004	0.004	\$0.058	\$0.058
Chile	\$41.1	0.0225	0.0225	\$0.945	\$0.945
Cambodia	\$5.0	0.005	0.05	\$0.024	\$0.249
France	\$145.16	0.005	0.05	\$0.73	\$7.31
Ghana	\$5.58	0.005	0.05	\$0.03	\$0.28
Hong Kong	\$311.2	0.05	0.1	\$15.5	\$31.1
Indonesia	\$99.4	0.005	0.05	\$0.496	\$4.969
Japan	\$1,266.8			\$10.3	\$10.3
Korea	\$345.7			\$3.3	\$3.3
Kenya	\$6.6	0.005	0.05	\$0.032	\$0.329
Lithuania	\$8.1	half QFII	full QFII	\$0.050	\$0.100
Macao	\$16.1	0.155	0.155	\$2.502	\$2.502
Malaysia	\$134.8	0.005	0.05	\$0.674	\$6.743
Namibia	\$1.51	0.005	0.05	\$0.01	\$0.7
Nepal	\$6.7	0.005	0.05	\$0.033	\$0.335
Nigeria	\$46.4	0.05	0.1	\$0.928	\$4.641
Norway	\$58.2	half QFII	full QFII	\$0.750	\$1.5
Pakistan	\$7.7	0.005	0.05	\$0.038	\$0.383
Philippines	\$83.2	0.005	0.05	\$0.415	\$4.159
Russia	\$509.7	0.005	0.05	\$2.548	\$25.484
Saudi Arabia	\$737.8	0.05	0.005	\$3.688	\$36.889
Singapore	\$277.8	half QFII	full QFII	\$0.500	\$1.000
South Africa	\$49.7			\$1.5	\$1.5
Sri Lanka	\$7.5	0.005	0.05	\$0.037	\$0.375
Switzerland	\$536.2	half QFII	full QFII	\$1.25	\$2.5
Taiwan	\$416.8	0.005	0.05	\$2.084	\$20.840
Tanzania	\$4.7	0.005	0.05	\$0.023	\$0.233
Thailand	\$167.3	0.005	0.005	\$0.836	\$0.836
United Kingdom	\$104.4			\$0.490	\$0.490
Uruguay	\$16.3			\$0.021	\$0.021
Venezuela	\$20.3	0.005	0.05	\$0.101	\$1.014
Zimbabwe	\$0.5	0.005	0.05	\$0.002	\$0.023
TOTAL				\$53.15	\$176.48

TABLE A.1. RMB Reserves by Country estimates (billions USD).

Appendix B

<i>Variable</i>	<i>Operationalization</i>	<i>Source</i>
RMB Reserves	Whether a country's central bank has invested a portion of its foreign exchange reserves in RMB in year $t + 1$. 1 = yes, 0 = no.	Compiled by authors
UNGA Ideal Point Distance (USA)	A country's estimated ideal point distance with the USA in the United Nations General Assembly (UNGA) in a given year.	Strezhnev and Voeten (2013)
UNGA Ideal Point Distance (China)	A country's estimated ideal point distance with China in the UNGA in a given year.	Strezhnev and Voeten (2013)
Voting Affinity (USA)	A country's voting affinity with the USA in the UNGA in a given year.	Strezhnev and Voeten (2013)
Voting Affinity (China)	A country's voting affinity with China in the UNGA in a given year.	Strezhnev and Voeten (2013)
Partner Import Dependence (total imports)	A country's import of goods from China divided by the country's total import of goods from the world in a given year (log)	Constructed based on UN Comtrade data
Partner Import Dependence (current GDP)	A country's import of goods from China divided by the country's current GDP in a given year (log)	Constructed based on UN Comtrade and WDI data
Reserves in Months of Imports	Total reserves in months of imports (log)	WDI
Reserves over Current GDP	Total reserves divided by the country's current GDP (log)	WDI
Partner Export Dependence (total exports)	A country's export of goods to China divided by the country's total exports of goods to the world in a given year (log)	Constructed based on UN Comtrade data
Partner Export Dependence (current GDP)	A country's export of goods to China divided by the country's current GDP in a given year (log)	Constructed based on UN Comtrade and WDI data
Partner FDI Inflow Dependence	A country's FDI net inflows from China divided by the country's total FDI net inflows from the world in a given year	Constructed based on China Statistical Yearbook and UNCTAD data
BSA	Whether a country has an active BSA with the PBC in a given year. 1 = yes, 0 = no.	Authors
Regime Type	Destination country Polity Score 2 in a given year.	POLITY IV
GDP	Partner country log GDP (constant 2005 USD) in a given year.	WDI
GDP per Capita	Partner country log GDP per capita (constant 2005 USD) in a given year.	WDI
Distance	Thousand kilometers between most populated cities of dyad (log).	CEPII
Cumulative Irregular CB Turnovers	The cumulative total of irregular central bank turnovers since 2009	Dreher, Axel, Jan-Egbert Sturm and Jakob de Haan (2010)

TABLE B.1. Variables, Operationalization, Sources.

Variable	\bar{x}	Min	Max	n	#NA
RMB Reserves	0.13	0.00	1.00	865	0
UNGA Ideal Point Distance (USA)	2.75	0.00	4.65	681	184
UNGA Ideal Point Distance (China)	0.74	0.00	3.53	680	185
UNGA Voting Affinity (USA)	-0.30	-0.89	1.00	681	184
UNGA Voting Affinity (China)	0.66	-0.57	1.00	680	185
Partner Import Dependence (total imports)	0.10	0.00	0.46	680	185
Partner Import Dependence (current GDP)	0.04	0.00	0.97	676	189
Reserves in Months of Imports	5.64	0.04	79.24	580	285
Reserves over Current GDP	0.22	0.00	3.02	800	65
Partner Export Dependence (total exports)	0.06	0.00	0.87	675	190
Partner Export Dependence (current GDP)	0.03	0.00	1.17	671	194
Partner FDI Inflow Dependence	-0.01	-21.33	2.97	321	544
BSA	0.08	0.00	1.00	865	0
Regime Type	4.01	-10.00	10.00	787	78
GDP (billions)	294.00	0.14	14450.33	830	35
GDP per Capita (thousands)	10.81	0.15	81.85	825	40
Distance (thousands)	8.79	0.81	19.30	865	0
Cumulative Irregular Central Bank Turnovers	1.05	0.00	4.00	564	301

TABLE B.2. Descriptive Statistics.

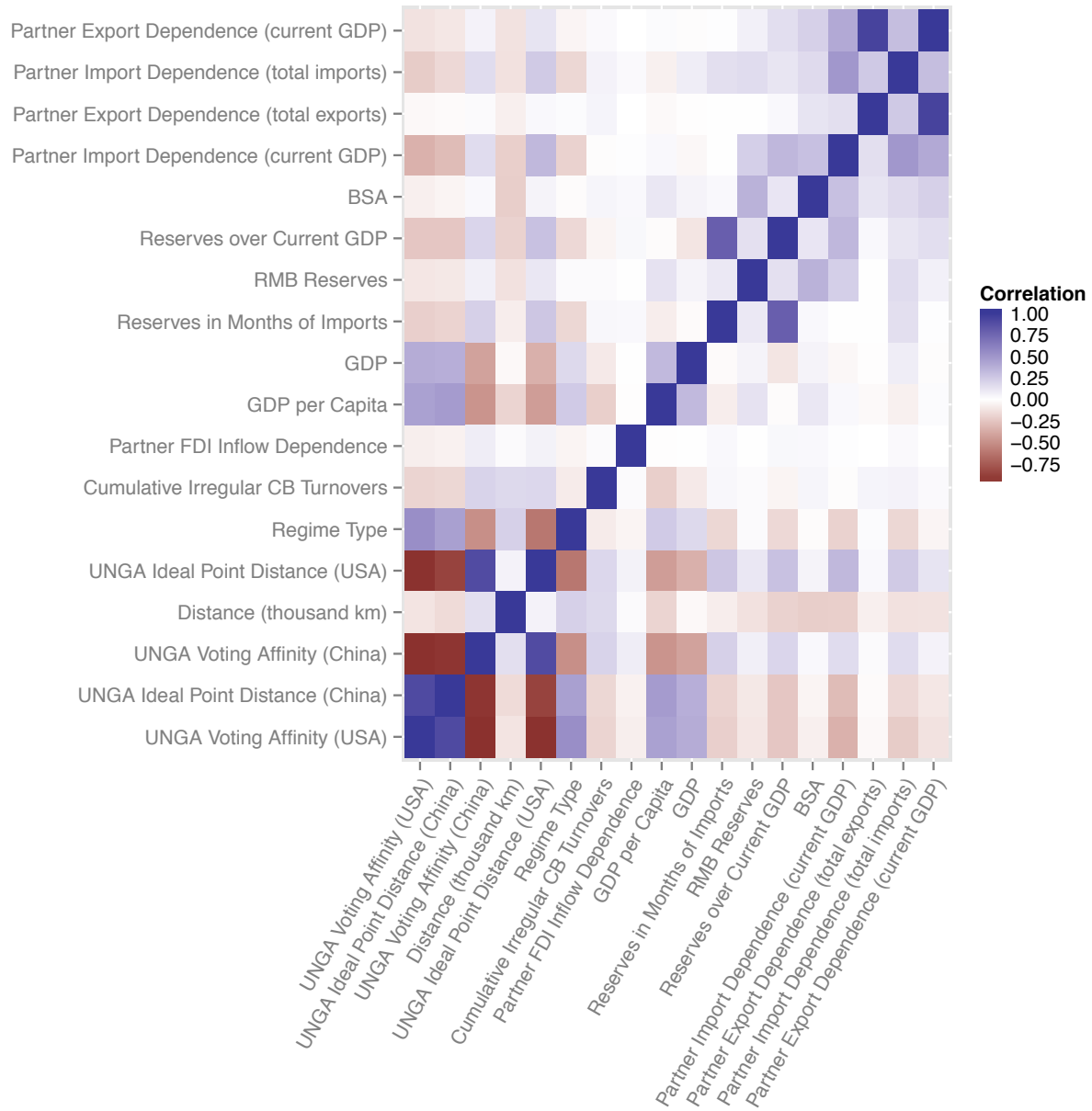


FIG B.1. Covariate Correlation Matrix. Correlations between numeric variables are Pearson product-moment correlations, correlations between numeric and ordinal variables are polyserial correlations, and correlations between ordinal variables are polychoric correlations.

Appendix C

	IO (US)	IO (CN)	TN	OP	IC	Full (US)	Full (CN)
Intercept	-20.648*** (4.145)	-18.539*** (3.571)	-9.792*** (2.833)	-13.861*** (2.416)	-11.586*** (2.984)	-17.792*** (4.357)	-15.966*** (4.020)
UNGA Ideal Point Distance with the USA	1.189** (0.370)					1.037** (0.362)	
UNGA Ideal Point Distance with the China		-1.655*** (0.399)					-1.495*** (0.391)
Log(Partner Import Dependence)			0.890* (0.411)			0.418 (0.440)	0.426 (0.429)
Log(Reserves in Months of Imports)				0.528* (0.234)		0.236 (0.229)	0.172 (0.234)
Log(Partner Export Dependence)					0.216 (0.158)	0.059 (0.143)	0.052 (0.150)
Partner FDI Inflow Dependence					-0.000 (0.003)	-0.000 (0.003)	-0.000 (0.005)
BSA	1.502* (0.657)	1.237^ (0.646)	1.391* (0.615)	1.601** (0.581)	1.435* (0.574)	1.255 (0.776)	1.045 (0.746)
Regime Type	0.100^ (0.058)	0.069 (0.047)	0.007 (0.038)	0.009 (0.036)	-0.003 (0.036)	0.098^ (0.059)	0.071 (0.048)
Log(GDP)	0.513*** (0.132)	0.591*** (0.147)	0.331** (0.127)	0.405*** (0.117)	0.382** (0.132)	0.424** (0.153)	0.496** (0.166)
Log(GDP per Capita)	0.012 (0.213)	0.075 (0.194)	-0.012 (0.189)	-0.098 (0.195)	-0.100 (0.189)	0.091 (0.239)	0.153 (0.214)
Distance (thousand km)	-0.045 (0.066)	-0.055 (0.067)	-0.041 (0.059)	-0.038 (0.063)	-0.039 (0.063)	-0.047 (0.065)	-0.056 (0.064)
Cumulative Irregular CB Turnovers	0.079 (0.191)	0.143 (0.182)	0.043 (0.179)	0.050 (0.178)	0.072 (0.175)	0.056 (0.189)	0.111 (0.180)
Num obs.	850	850	865	865	865	850	850
Log Likelihood	-220.321	-215.558	-242.453	-244.507	-248.941	-216.387	-212.339
AIC	464.642	455.117	508.906	513.015	523.882	464.774	456.678

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, ^ $p < 0.1$

TABLE C.1. Results for Main Logistic Regression Models Fitted to Panel Data. Dichotomous variable for RMB reserves in year $t + 1$ as the dependent variable. HAC standard errors in parentheses. Year fixed effects included in model but results omitted to facilitate presentation.

	Full (Affinity US)	Full (Affinity CN)	Full (alt. TN)	Full (alt. OP)	Full (alt. IC)	Full (clogit US)	Full (clogit CN)
Intercept	-17.729*** (4.287)	-19.300*** (4.377)	-18.844*** (4.235)	-18.354*** (4.440)	-17.042*** (4.549)		
UNGA Ideal Point Distance with the USA			1.029** (0.358)	1.013** (0.370)	1.028** (0.367)	1.026*** (0.269)	
UNGA Ideal Point Distance with the CHN							-1.480*** (0.316)
UNGA Voting Affinity with the US	-3.691*** (0.980)						
UNGA Voting Affinity with China		4.087*** (1.097)					
Log(Partner Import Dependence)	0.413 (0.437)	0.439 (0.435)		0.419 (0.443)	0.346 (0.442)	0.416 (0.318)	0.423 (0.313)
Log(Partner Import Dependence, GDP)			0.413 (0.329)				
Log(Reserves in Months of Imports)	0.206 (0.227)	0.191 (0.232)	0.269 (0.241)		0.233 (0.225)	0.233 (0.162)	0.169 (0.166)
Log(Reserves over Current GDP)				0.266 (0.204)			
Log(Partner Export Dependence)	0.058 (0.149)	0.046 (0.148)	0.072 (0.147)	0.050 (0.144)		0.058 (0.100)	0.051 (0.100)
Log(Partner Export Dependence, Current GDP)					0.168 (0.143)		
Partner FDI Inflow Dependence	-0.000 (0.004)	-0.000 (0.006)	-0.000 (0.003)	-0.000 (0.003)	-0.000 (0.004)	-0.000 (0.003)	-0.000 (0.003)
Bilateral Swap Agreements	1.120 (0.746)	1.014 (0.742)	1.216 [^] (0.730)	1.187 (0.783)	1.130 (0.772)	1.236*** (0.369)	1.030** (0.370)
Regime Type	0.096* (0.049)	0.086 [^] (0.048)	0.093 (0.058)	0.095 (0.059)	0.102 [^] (0.061)	0.097** (0.030)	0.070** (0.025)
Log(GDP)	0.470** (0.162)	0.473** (0.158)	0.495*** (0.140)	0.494** (0.157)	0.421** (0.153)	0.420*** (0.095)	0.491*** (0.100)
Log(GDP per Capita)	0.166 (0.225)	0.155 (0.223)	0.052 (0.227)	0.051 (0.242)	0.064 (0.239)	0.091 (0.136)	0.152 (0.132)
Distance	-0.068 (0.063)	-0.060 (0.062)	-0.030 (0.064)	-0.038 (0.064)	-0.043 (0.065)	-0.047 (0.033)	-0.055 [^] (0.033)
Cumulative Irregular CB Turnovers	0.074 (0.188)	0.088 (0.185)	0.067 (0.186)	0.072 (0.187)	0.058 (0.187)	0.056 (0.118)	0.110 (0.117)
Num obs.	850	850	850	850	850	850	850
Log Likelihood	-212.050	-212.765	-215.941	-215.544	-214.797	-205.864	-201.848
AIC	456.100	457.529	463.882	463.089	461.594	433.727	425.696

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, [^] $p < 0.1$

TABLE C.2. Results for Robustness Models Fitted to Panel Data. First five columns show logistic regression results with alternative measures of key predictors. Last two columns show conditional logistic regression results for full models. Dichotomous variable for RMB reserves in year $t + 1$ as the dependent variable. HAC standard errors in parentheses for logistic regression models. Normal standard errors for conditional regression models. Year fixed-effects included in model but results omitted to facilitate presentation.

	IO (US)	IO (CN)	TN	OP	IC	Full (US)	Full (CN)
Intercept	-19.045*** (4.301)	-17.375*** (4.271)	-8.776* (3.585)	-12.530*** (2.948)	-10.129** (3.490)	-18.464*** (5.272)	-17.015** (5.170)
UNGA Ideal Point Distance with USA	1.154** (0.407)					1.050* (0.424)	
UNGA Ideal Point Distance with China		-1.646** (0.574)					-1.557** (0.580)
Partner Import Dependence, total imports (log)			0.801 (0.591)			-0.087 (0.716)	-0.086 (0.707)
Reserves in Months of Imports (log)				0.560* (0.273)		0.176 (0.271)	0.124 (0.252)
Partner Export Dependence, total exports (log)					0.279 (0.219)	0.096 (0.221)	0.094 (0.228)
Partner FDI Inflow Dependence					0.000 (0.018)	0.001 (0.007)	0.001 (0.010)
BSA	1.300* (0.634)	1.000 (0.649)	0.937 (0.591)	1.087^ (0.571)	0.908 (0.587)	1.191 (0.743)	0.925 (0.741)
Regime Type	0.121* (0.060)	0.088^ (0.048)	0.032 (0.038)	0.035 (0.037)	0.028 (0.039)	0.119* (0.060)	0.089^ (0.050)
GDP (log)	0.579*** (0.159)	0.678*** (0.190)	0.385* (0.156)	0.454** (0.146)	0.429** (0.158)	0.564** (0.191)	0.660** (0.217)
GDP per Capita (log)	-0.088 (0.214)	-0.021 (0.209)	-0.059 (0.208)	-0.141 (0.204)	-0.141 (0.201)	-0.092 (0.259)	-0.024 (0.256)
Distance	-0.026 (0.072)	-0.041 (0.074)	-0.032 (0.062)	-0.028 (0.066)	-0.027 (0.067)	-0.024 (0.077)	-0.039 (0.079)
Cumulative Irregular CB Turnovers	0.289 (0.245)	0.362 (0.237)	0.225 (0.235)	0.230 (0.234)	0.254 (0.230)	0.277 (0.247)	0.349 (0.234)
Num obs.	170	170	173	173	173	170	170
Log Likelihood	-64.596	-63.015	-72.203	-71.711	-72.678	-64.150	-62.668
AIC	145.193	142.031	160.406	159.422	163.357	152.300	149.335

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, ^ $p < 0.1$

TABLE C.3. Results for Logistic Regression Models Fitted to Cross-Sectional Data. Dichotomous variable for RMB reserves in year $t + 1$ as the dependent variable. Values for covariates are calculated as five-year averages for continuous variables. For dichotomous covariates, the covariate is assigned one for any occurrences during the sample period and zero otherwise. HAC standard errors in parentheses. Year fixed effects included in model but results omitted to facilitate presentation.

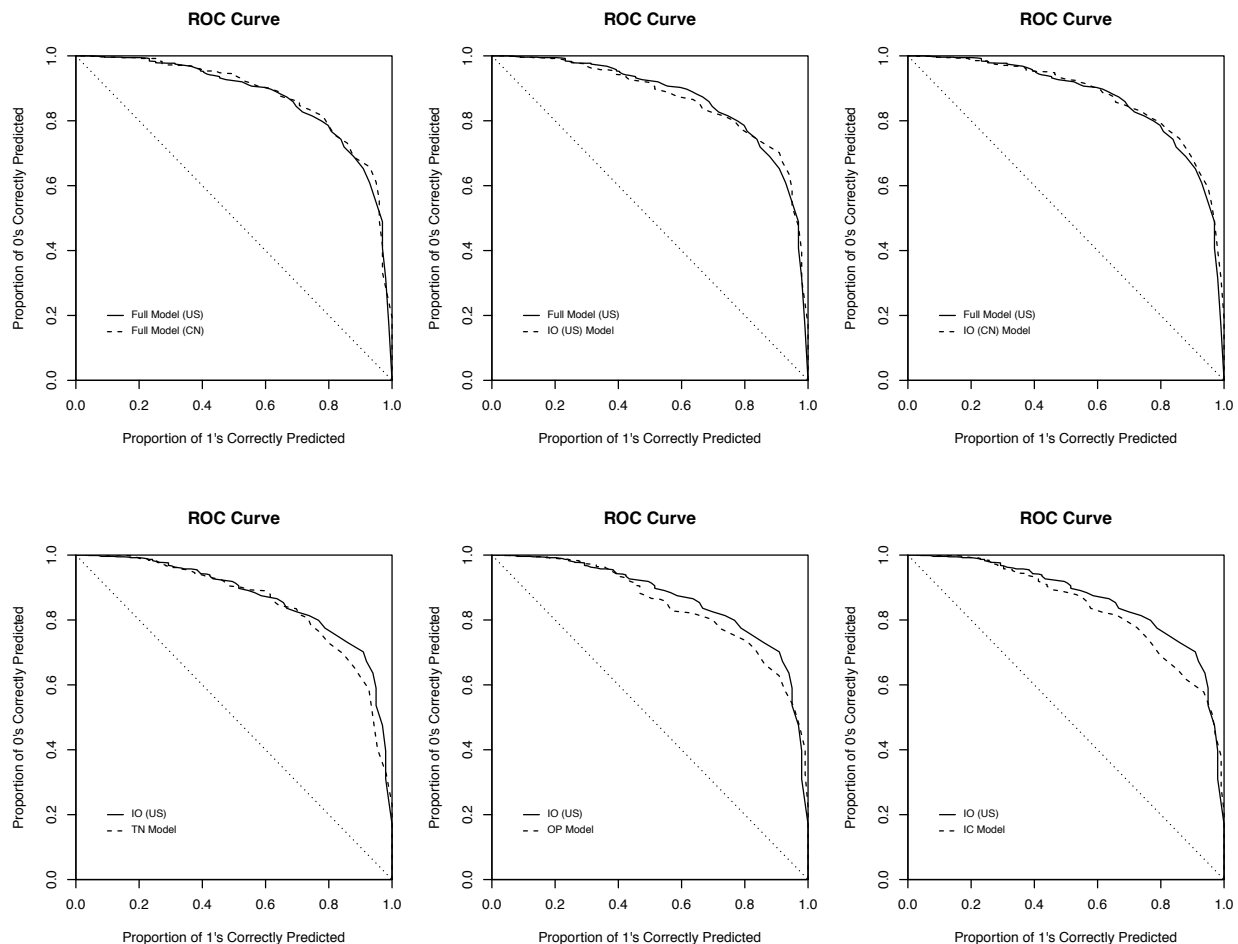


FIG C.1. Logistic Regression Model Fit Comparisons with ROC Curves. The ROC plot summarizes how well models for binary dependent variables fit the data. Curves closer to the upper right corner indicate better fit. Overall, model capturing political considerations fit better than models only accounting for economic considerations. In particular, plots in the first row show that model fit for full models are close regardless using ideal point distance with the USA or China. Furthermore, model fit is also close between full model and the individual IO model. However, plots in the second row show that the IO model fits better than TN, OP, or instrumental models.

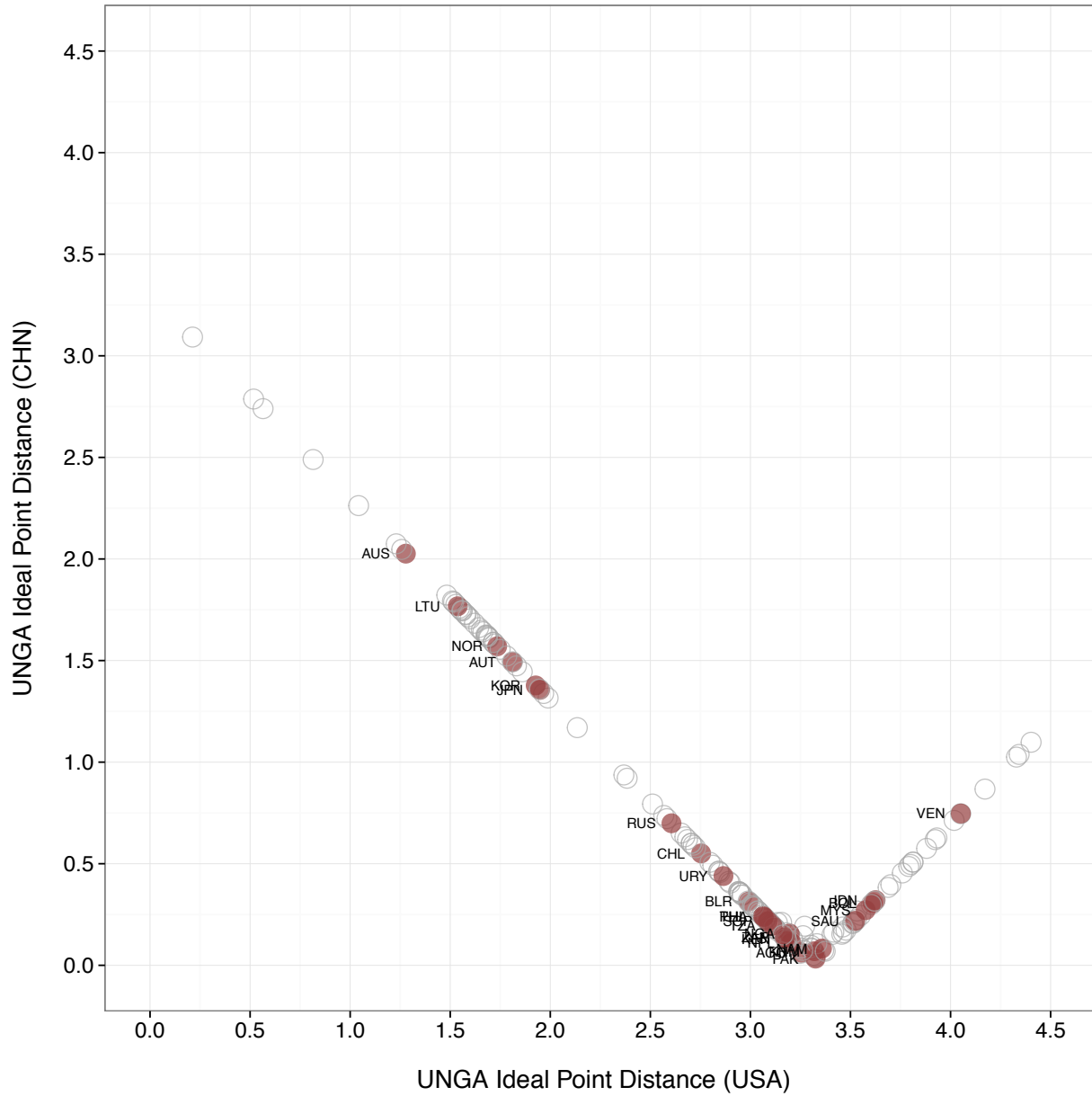


FIG C.2. Average Ideal Point Distance with the USA and CHN, 2009-2012. Dark red circles indicate countries reportedly holding RMB reserves and hollow circles otherwise.