

BOFIT Discussion Papers  
12 • 2013

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China's RMB bilateral swap  
agreements: What explains the  
choice of countries?



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BOFIT Discussion Papers  
Editor-in-Chief Laura Solanko

BOFIT Discussion Papers 12/2013  
30.5.2013

Alicia Garcia-Herrero and Le Xia: China's RMB bilateral swap agreements:  
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ISBN 978-952-6699-15-8  
ISSN 1456-5889 (online)

This paper can be downloaded without charge from <http://www.bof.fi/bofit>.

Suomen Pankki  
Helsinki 2013

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Alicia Garcia-Herrero and Le Xia

## China's RMB bilateral swap agreements: What explains the choice of countries?

### Abstract

This paper analyzes empirically what determines the choice of countries signing an RMB-denominated Bilateral Swap Agreement (BSA) with China. The gravity motif is predominant (both in terms of country size and distance from China) but so is the trade motif, in terms of both exports to China and the existence of an FTA with China. Institutional soundness also matters since countries with better government and less corruption are more likely to sign an RMB-denominated BSA. This contravenes the view that China has used RMB BSAs as a soft power tool in more corrupted countries. However, the fact that China has a preference for countries with a default history and a closed capital account calls for caution.

Keywords: RMB internationalization, bilateral swap agreements.

JEL: F33, F36, F42.

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We would like to thank Carrie Liu for her capable research assistance. Helpful comments were received from Aaron Mehrotra, Mark Spiegel, Jacob De Haan, Iikka Korhonen, Robert McCauley, Matthew Yiu, Xingwang Qian, as well as other participants of the "Conference on Renminbi and the Global Economy" organized by City University of Hong Kong, Department of Economics and Finance, and Research Center for International Economics, and Bank of Finland Institute for Economics in Transition (BOFIT).

# 1 Introduction

Having weathered the 2007–2008 global financial crisis, China’s authorities have embarked in a bold project to internationalize their currency (the RMB). Interestingly, the ongoing internationalization of the RMB looks quite different from some historical precedents (such as the USD or even the JPY). We would highlight two aspects. First, efforts to internationalize the RMB commenced prior to the full opening (or convertibility) of the capital account. Second, the internationalization process has so far been government-led rather than market-led (Frankel, 2011)

Among the government’s efforts to advance towards RMB internationalization, an important one has been the signature of Bilateral Swap Agreements (BSAs) between the People Bank’s of China (PBoC) and certain countries. Since December 2008, the PBoC has signed or renewed BSAs with 19 central banks, including those of both emerging and industrialized countries (accounting for more than 300 billion USD in total). Importantly, the PBoC clearly revealed that the main objective of these BSAs is to promote the use of the RMB in trade and investment (PBoC, 2012), which is very different from the traditional use of BSAs as precautionary arrangement to provide liquidity during a financial crisis. The best example of the latter was the series of BSAs signed by ten ASEAN countries and the three largest East Asian economies (Japan, South Korea and China) under the Chiang Mai Initiative (CMI) in an attempt to prevent the reoccurrence of the 1997–1998 Asian Financial Crisis. In the same vein, during the 2008–09 global crisis, the US Federal Reserve also signed a number of temporary BSAs with foreign central banks to ensure these countries’ access to dollar liquidity amidst financial market turmoil.

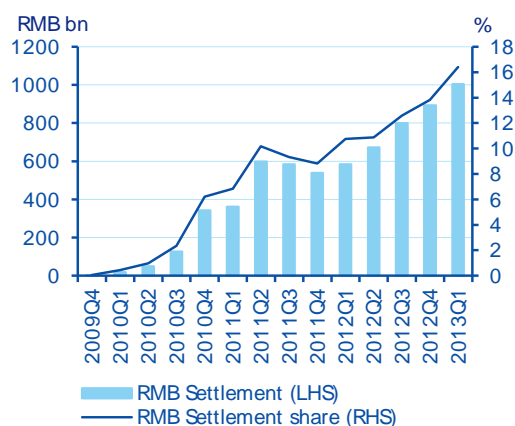
Given the central role of BSAs in RMB internationalization, their special nature and relatively large size, it seems important to understand what determines the choice of countries signing such BSAs. In this paper, we attempt to answer this question by using a gravity model. In the next section, we briefly review the steps taken towards RMB internationalization, with special attention to BSAs. Section 3 explains the empirical specification and related data issues. The results are described in Section 4 as well as the robustness checks conducted. Section 5 draws some policy conclusions.

## 2 Background and literature review

### The internationalization of the RMB

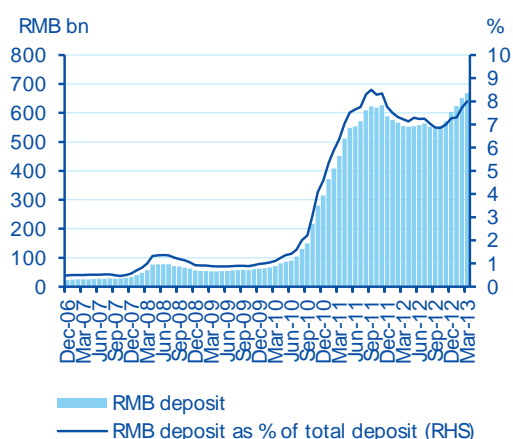
The internationalization of the RMB commenced in 2009 as the authorities launched a Pilot Program of RMB Settlement of Cross-Boarder Trade Transactions (henceforth, Pilot Program) by which a number of companies in China and abroad could settle their trades in RMB. The Pilot Program was then expanded in June 2010 and again in August 2011, extending eligibility to all enterprises (inside and outside of China) for cross border RMB settlements. So far, the proportion of RMB-settled trade in China's total trade has increased very quickly to 16.3% in Q1 2013, up from almost zero when the pilot program was rolled out. (Chart 1)

Chart 1  
RMB trade settlement grew rapidly



Source: CEIC and BBVA Research

Chart 2  
RMB deposit in Hong Kong has increased fast



Source: CEIC and BBVA Research

Nevertheless, the Pilot Program is not the only reason why the RMB internationalization has made significant progress in such a short time. Admittedly, the Pilot Program can give exporters and importers the freedom to choose the currency for settlement, but it cannot ensure that the RMB is chosen as the currency for invoicing and settling, given the very high persistence in the currency choice for an international transaction (Yu, 2011). Indeed, whether a currency can perform as a settlement vehicle in trade transactions largely depends on both its availability to payers and its acceptance on the part of recipients. Particularly, an offshore importer needs to have access to RMB funds (through either trade credit or currency exchange) if it is to use the RMB in payments. On the other hand, a Chinese

onshore importer can only settle transactions in RMB if its offshore counterparty is willing to receive the RMB.

In coordination with the Pilot Program, China's authorities implemented other complementary measures in a bid to increase the availability of RMB funds in the offshore market and raise foreigners' acceptance of the RMB. In this regard, one important step has been to establish offshore RMB centers outside of China. Such a move brings a number of benefits related to the availability of RMB funds offshore.

First, an offshore RMB center can concentrate offshore RMB funds in its neighboring regions, which enables foreign importers to easily find RMB funds if they are willing to participate in RMB transactions settlement. Second, in such an offshore market the RMB funds can generate certain investment returns for their holders through currency exchange or credit extension (as is the case of Hong Kong's dim sum bond market), which in turn serves to increase the overseas acceptance of the RMB. Third, Chinese authorities can additionally offer preferential treatment to the offshore markets. For example, the authorities can partially open domestic capital markets to allow offshore repatriation of RMB funds so as to further increase the attractiveness of the RMB. This is the case for the RQFII in Hong Kong.

Hong Kong was initially chosen to be the "premier" offshore RMB center, given its special relationship with China and its long-standing position as an international financial center. (Garcia-Herrero et al., 2012a). It was warmly welcomed by Hong Kong's authorities because of the potential business opportunities for the local economy and financial market. In fact, the development of the RMB offshore market has been very rapid. As of end-February 2013, offshore RMB deposits in Hong Kong amounted to RMB 652 billion, or 7.7% of total deposits (Chart 2). Moreover, the stellar rise of offshore RMB businesses has also lured other financial centers to follow suit, which include Singapore, Taipei and even London and Paris (Garcia-Herrero etc, 2012 b).

In addition to the above-mentioned measures, the PBoC also sought to lay an institutional foundation for RMB internationalization by establishing BSAs with other foreign central banks. The PBoC engaged in other forms of financial arrangement, including the establishment of bilateral RMB clearing systems or the implementation of direct trading between RMB and other currencies.

## BSAs signed by China

BSAs are definitely not new for China. Indeed, the origin of China's BSAs can be traced back to the Chiang Mai Initiative (CMI), through which China signed a set of BSAs with some ASEAN countries, South Korea and Japan. However, the primary objective of these BSAs was to strengthen the defensive capability of Asian countries against future financial turbulences and to avoid an event like the 1997–1998 Asian financial crisis. As for the currency of denomination, three of six were denominated in USD and the other half in RMB (Table 1). However, it should be noted that even for the BSAs denominated in the RMB, their sizes were determined in USD, as the objective was to provide USD liquidity during times of crisis. In other words, the USD, not the RMB, played the central role in these CMI BSAs signed by China.

Table 1 CMI Bilateral Swap Agreements: China and other ASEAN+3 countries  
(as of Jan 2010)

<b>Bilateral Swap Agreements (CMI)</b>	<b>One / Two Way</b>	<b>Currencies</b>	<b>Size (USD bn)</b>	<b>Status</b>
China – Thailand	One	USD/Baht	2.0	Concluded: Dec 2001 Expired: Dec 2004
China - Japan	Two	RMB/Yen Yen/RMB	6.0	Concluded: Mar 2002
China - Korea	Two	RMB/Won Won/RMB	8.0	Concluded: Jun 2002
China - Malaysia	One	USD/Ringgit	1.5	Concluded: Oct 2002
China - Philippines	One	RMB/Peso	2.0	Concluded: Aug 2003 Amended: Apr 2007
China - Indonesia	One	USD/Rupiah	4.0	Concluded: Dec 2003 Amended: Oct 2006

Source: Gao and Yu (2009) and Bank of Japan

Since December 2008, China started to sign bilateral RMB-denominated BSAs as part of its plan to internationalize the RMB. The first one was signed with South Korea and amounted to RMB 200 billion with a maturity of 3 years. Prior to its expiration in 2011, China and South Korea renewed the BSA and doubled the size to RMB 400 billion. As of



end-March 2013, there are in total 19 countries/regions which have signed RMB-denominated BSAs with China. The latest one, with Brazil, was announced in late March.

Compared to the previous BSAs under the CMI framework, these BSAs are denominated and measured in RMB as the counterparty's currency, signaling their independence from the USD (Table 2). As for their objective, in its annual report of 2012, the PBoC revealed that these BSAs were signed as a measure to promote the usage of RMB in cross-border trade and investment transactions. In the same vein, other official counterparts have expressed a similar view regarding the signing of their BSAs with China. For example, the governor of Pakistan's central bank, Mr. Yaseen Anwar, said that "...it (the BSA) is to enhance the role of the Chinese Yuan in international trade and investment."

Table 2 China's RMB BSAs with other countries (as of March 2013)

RMB BSAs	Size	Effective Date	Expiration Date
China-South Korea	180 bn RMB/38 Tr Won	Dec-08	Dec-11
Renewed	360 bn RMB/64 Tr Won	Oct-11	Oct-14
China-Hong Kong	200 bn RMB/227 bn HKD	Jan-09	Jan-12
Renewed	400 bn RMB/490 bn HKD	Nov-11	Nov-14
China-Malaysia	80 bn RMB/40 bn MYR	Feb-09	Feb-12
Renewed	180 bn RMB/90 bn MYR	Feb-12	Feb-15
China-Belarus	20 bn RMB/8 tr BYB	Mar-09	Mar-12
China-Indonesia	100 bn RMB/ 175 tr Rupiah	Mar-09	Mar-12
China-Argentina	70 bn RMB/ Equal Amount Peso	Mar-09	Mar-12
China-Iceland	3.5 bn RMB/66 bn ISK	Jun-10	Jun-13
China-Singapore	150 bn RMB/30 bn SGD	Jul-10	Jul-13
China-New Zealand	25 bn RMB	Apr-11	Apr-14
China-Uzbekistan	0.7 bn RMB	Apr-11	Apr-14
China-Mongolia	5 bn RMB	May-11	May-14
Expanded	10 bn RMB	Mar-12	May-14
China-Kazakhstan	7 bn RMB	Jun-11	Jun-14
China-Thailand	70 bn RMB/ 320 bn THB	Dec-11	Dec-14
China-Pakistan	10 bn RMB/140 bn PKR	Dec-11	Dec-14
China-UAE	35 bn RMB/20 bn AED	Jan-12	Jan-15
China-Turkey	10 bn RMB/3 bn TRY	Feb-12	Feb-15
China-Australia	200 bn RMB/30 bn AUD	Mar-12	Mar-15
China-Ukraine	15 bn RMB/19 bn UAH	Jun-12	Jun-15
China-Brazil	190 bn RMB/60 bn BRL	March-13	Mar-16

Source: the PBoC and BBVA Research

The counterparties of China's RMB BSAs include not only developing countries but also industrialized ones like the UK, Australia and New Zealand. In terms of geographical dis-

tribution, the majority of the BSA counterparties are in the Asia-Pacific region, with exceptions from Europe (Iceland, Belarus and Turkey) and South America (Brazil and Argentina). The RMB BSAs generally have a 3-year maturity. The BSAs with South Korea, Hong Kong and Malaysia have been renewed and even expanded in size prior to the expiration. However, the BSAs with Belarus, Indonesia and Argentina expired in 2012 without an announcement that the arrangement would be renewed.

## Other forms of RMB-related bilateral financial arrangements

Beyond the BSA, China has also engaged in other forms of bilateral financial arrangements with other countries/regions in a bid to facilitate cross-border RMB settlements. For example, the PBoC established bilateral RMB clearing systems with the central banks of Hong Kong, Macao, Taiwan, Singapore and the UK. Under the RMB clearing system, the PBoC usually designates an overseas branch/subsidiary of a Chinese commercial bank as the clearing bank. To a large extent, a bilateral RMB clearing system is an even more effective arrangement for promoting RMB usage in cross-border settlements since it can help to develop an offshore RMB market in the counterparty country. In the cases of Hong Kong and the UK, the RMB clearing systems and BSAs were established almost in tandem with the BSA. Singapore joined an RMB clearing system two years after the signing of its RMB BSA. Beijing and Taipei, in turn, are now discussing the details of a BSA after the establishment of a RMB clearing system. Macao seems like the exception in the sense that its RMB clearing system was not accompanied with a BSA, probably due to the small size of its economy.

Another type of bilateral RMB-related financial arrangement is the direct trading of the RMB with another currency. Previously, the trading of the RMB with another currency in the foreign exchange markets had always used the USD as the intermediary. The direct trading of the RMB was firstly launched against the Japanese Yen (JPY) in 2012. Then Australia and China reached a similar agreement in April 2013.

Compared to an RMB clearing system, the direct trading between the RMB and another currency can be understood as a weaker form of financial arrangement. In fact, it requires market makers in the country where the direct trading takes place to come back to China's onshore forex market to settle their RMB net positions. The most relevant examples of direct trading are those of the Japanese Yen with the RMB and the Australian dollar

with the RMB. Moreover, China had designated a number of pilot regions in which the direct trading of RMB and the currencies of some small neighboring countries were encouraged (Table 3).

Table 3 Direct trading mechanisms against other currencies

Date	Region	Country	Currency
2011 Jun	Yunnan Province	Laos	Lao Kip (LAK)
2011 Jun	Xinjiang Province	Kazakhstan	Kazakhstan Tenge (KZT)
2011 Jun	Guangxi Province	Vietnam	Vietnamese Dong (VND)
2011 Jul	Shandong Province	Korea	Korea Won (KRW)
2011 Dec	Yunnan Province	Thailand	Thai Baht (THB)
2012 Jun	Nationwide	Japan	Japanese Yen (JPY)
2013 April	Nationwide	Australia	Australian Dollar (AUD)

Source: the PBoC and BBVA Research

In addition, the Chinese government has also leveraged the financing muscle of its policy banks, in particular the China Development Bank (CDB) and the Export-Import Bank of China, to promote the usage of RMB in international lending. For example, in 2010 the CDB denominated half of a US\$ 20 billion loan to Venezuela in the RMB so that Venezuela could make purchases of Chinese goods and services in China's own currency. Moreover, the CDB has offered RMB-denominated loans to SMEs in Africa while China's Export-Import Bank has issued RMB-denominated lines of credit to Jamaica and Bolivia. In 2012, the CDB signed a memorandum of understanding with its Brazilian, Russian, Indian, and South African counterparts in the BRICS Summit to boost lending in their own currencies, including –and perhaps most in favor of– the RMB.

Nevertheless, we think that the overseas RMB-denominated loan programs of China's public banks differed in nature from the other financial arrangements described in this section since they are directly affected by the business considerations of the policy banks. Therefore, in our analysis below, we only consider cross-border RMB clearing systems and the RMB direct-trading mechanism of RMB (against Japanese Yen and Australian Dollar) as potentially similar mechanisms to BSA arrangements.

## Effectiveness of the RMB BSAs

Takatoshi (2011) finds that the effectiveness of these BSAs for promoting RMB use in cross-border settlements is constrained by the fact that China's capital account still remains closed. In practice, these BSAs have rarely been tapped into since their implementation. The PBoC revealed in its 2011 Annual Report that only RMB 30 bn of the total 803.5 bn in BSAs was used in that year. In its 2012 Annual Report, the PBoC mentioned that some BSAs were used but did not reveal the exact amount.

We do not hold such a negative view as Takatoshi in this matter. In fact, RMB BSAs do not necessarily have to be used fully to promote the RMB internationally. This is specially the case for those BSAs offered to off-shore RMB financial centers as a way to provide the RMB liquidity in case there was a shortage of it. For example, the Hong Kong Monetary Authorities (HKMA) announced the use of its RMB BSA in late 2011 when strong demand for the offshore RMB sharply drained the market liquidity. As such, the RMB BSA has helped to stabilize the nascent money market of the offshore RMB and has thereby contributed to the ensuing rapid development of offshore RMB businesses in Hong Kong. This case showed that the RMB BSAs, at least for countries with international financial centers, have more than a symbolic meaning.

## Previous studies in BSA country selection

Although the RMB BSAs and similar financial arrangements are widely cited as an important step in RMB internationalization, there is still scant literature on these financial arrangements, in particular on what determines the selection of counterparty countries.

The only related empirical analysis we are aware of is that of Aizenman and Pasricha (2010), who explore the Fed's selections for establishing BSAs with a number of emerging markets at the height of the 2008–2009 global financial crisis. They find that the US tended to provide BSAs to emerging countries with close financial and trade ties, a high degree of financial openness and a relatively good sovereign credit history.

It is noted that the conclusions of Aizenman and Pasricha (2010) must not be directly extended to the RMB BSAs signed with China and with other countries, given the difference in respective objectives. The RMB BSAs are aimed at promoting the use of RMB in trade transaction settlements rather than providing temporary liquidity in times of crisis. However, it is in any case a good reference in terms of methodology.

### 3 Empirical specification

We use a simple logistic regression model to identify the determinants of China's RMB BSAs based on a gravity model. We select the gravity model because of its proven good performance in explaining bilateral trade flows (Feenstra etc, 2001). The dependent variable is a dummy, which equals one if the country has an RMB BSA or similar financial arrangement (bilateral RMB clearing system or direct trading mechanism against the RMB) with China; or zero otherwise. We include 18 of the 19 countries which have signed a bilateral RMB arrangement (we exclude Uzbekistan due to data constraints). We add those with either a direct trading mechanism against the RMB (basically Japan since the other one with such arrangement, Australia, already has a BSA) or a clearing system (Taiwan and the UK, since the third one with such arrangement and no BSA, Macao, lacks the necessary data). We consider five main motifs which could explain the selection of these RMB BSAs and choose a number of related variables (the definitions of variables and their sources are given in appendix 1). It should be noted that these motifs may be valid independently of whether it is China that chooses with whom to engage in a BSA or it is the counterpart country.

The first is the gravity motif, which is represented by its two core variables: distance and size. We use the distance between Beijing and the other country's capital as a proxy (DISTANCE). Economic size is proxied by the country's nominal GDP in USD (GDP). The distance variable has an important interpretation as a motif based on the fact that Asian countries are obviously closer to China. In other words, if distance is found to be significant in increasing the likelihood of signing RMB BSAs, this would be tantamount to RMB internationalization being more of a regional than a global process, at least as relates to BSAs. This is what several scholars have argued (Takatoshi, 2011 and Yu and Gao, 2009).

The second motif is trade. We use two variables for this. The first is the share of a country's exports to China as a percentage of total exports (EXP). We also include a dummy variable which is equal to one if a country is in a Free Trade Area (FTA) with China; or zero otherwise (FTA).

The third is a financial motif, which is proxied by two key variables. One is a country's FDI to China as the percentage of China's total inward FDI (FDI) and the other is the openness of the capital account (CAOP), following Aizenman and Pasricha (2009).

We would expect that both variables would foster the use of RMB for cross border settlements.

The fourth motif is macroeconomic soundness, which we proxy with two variables. The first is inflation (INF). Although one could understand inflation as a measure of macroeconomic instability, it is also true that high inflation is generally associated with a weak currency, which in turn is associated with a higher share of trade invoiced in foreign currencies. This is why we do not have a clear a-priori on the sign of the coefficient for inflation, but we do think it is a candidate for testing. The second measure of macroeconomic soundness is the riskiness of a country for its creditors, proxied by a dummy variable which takes the value one if the country has defaulted in the past (DEFAULT).

Finally, we look into the importance of an institutional motif. This seems highly relevant since the signing of some BSAs has been interpreted as maneuvering by China to relate with countries that are institutionally riskier and perhaps more corrupted and, thus, easier to influence or simply closer to China in terms of institutional quality. To capture this, we use four variables. The first two proxy the quality of institutions in a certain country while the other two look at how close the quality of their institutions is to that of China. For the absolute indicators, we focus on two: first, a measure of government quality (GOVQUALITY), which includes an index measuring the quality of the Rule of Law and another one for Government Effectiveness. The higher the index number, the better the government quality. The second one is a measure of corruption (CORRUP), which increases with the pervasiveness of corruption. For the institutional indicators relative to China, we use the absolute value of the difference between a certain country's measure of government quality and that of China and the same for corruption (DIF-GOVQUALITY and DIF-CORRUP). The hypothesis to be tested here is whether China prefers to sign BSAs with countries that are more similar to China in the way their Government operates. As this is a cross-section analysis, we take five-year averages of all of the potential determinants for five years just before the signing of each of the BSAs.

## 4 Regression results

Table 4 presents the results of our logit regressions, which aim to identify the reasons behind a country signing a BSA with China. We show five different specifications with dif-

ferent regressors, as not all can be included together due to their high correlations (Appendix 2)

In all the specifications where the gravity motif is included, its relevance is confirmed. In fact, the coefficients of GDP size and distance are statistically significant with the expected signs, which implies that a larger economic size and the closeness to China increases the likelihood of a country's signing an RMB BSA with China. These results obviously substantiate our choice of the gravity model.

The trade motif is also found to be highly relevant in explaining the country choice for an RMB BSA. A country's exports to China marginally contribute to the signing of an RMB BSA, and the signing of an FTA with China even more so (at least in a more significant way). This result may be explained in two ways. First, the PBoC (or the Chinese Authorities as a whole) might intentionally promote the idea of a RMB BSA with its largest exporters so that they are more likely to accept the RMB in bilateral trade settlements, confirming the idea that exports to China are more relevant than imports from China in determining the choice of countries for BSAs.

The financial motif has a more mixed result than the trade motif. The amount of FDI to China is not found to be significant in increasing the likelihood of signing an RMB BSA. Financial openness, in turn, is found to be significant, but with the opposite sign from what we would have expected based on Aizenman and Pasricha's findings (2010) for the US BSAs. The negative coefficient for financial openness implies that countries with a closed capital account tend to be more likely to sign a BSA with China.

In line with the financial motif, macroeconomic soundness also offers mixed results. Inflation is not found to be significant, reflecting the opposite forces which may be influencing the signing of a BSA, on the one hand discouraging it due to macroeconomic instability but, on the other hand, encouraging it (since hard currency is more needed for invoicing trade). However, China seems to be attracted to countries with a history of default, which contravenes the macroeconomic soundness motif.

As for the institutional motif, our results do not support the view that China has been using RMB internationalization, and in particular RMB denominated BSAs, to get closer to countries institutionally more similar to China. On the contrary, countries with a better government and less corruption are found to be more prone to signing a BSA with China. In the same vein, the less similar the country is to China, institutionally, the greater the likelihood of a BSA being signed with China.

Table 4 Determinants of China's RMB BSAs with other countries (as of March 2013)

No. of Obs.		(1) 118	(2) 118	(3) 118	(4) 118	(5) 118
Gravity motif	GDP	0.458** (2.12)				
	DISTANCE	-1.197* (-1.79)	-1.520** (-2.17)	-1.587** (-2.28)	-1.909** (-2.52)	-1.753** (-2.49)
Trade motif	EXP	3.707* (1.70)	4.644* (1.82)	3.116 (1.45)	4.394* (1.71)	3.232 (1.49)
	FTA	1.704** (2.05)	1.905** (2.17)	2.026** (2.35)	1.820** (2.07)	2.034** (2.35)
Financial motif	FDI	44.44 (0.83)	60.28 (0.98)	66.43 (1.02)	66.10 (0.85)	70.64 (0.95)
	CAOP		-0.837** (-2.41)	-0.556* (-1.76)	-0.796** (-2.47)	-0.655** (-2.16)
Macro-economic soundness	INF	-0.049 (-0.52)	-0.000 (-0.07)	-0.043 (-0.52)	-0.001 (-0.10)	-0.001 (-0.07)
	DEFAULT	1.598 (1.46)	3.092*** (2.58)	2.424** (2.12)	2.928** (2.56)	2.447** (2.26)
Institutional motif	GOVQUALITY		1.701*** (2.69)			
	DIF-GOVQUALITY			1.269* (1.95)		
	CORRUP				-1.525*** (-3.05)	
	DIF-CORRUP					1.428*** (2.75)
	_cons	6.327 (1.03)	10.71* (1.74)	10.81* (1.76)	14.24** (2.15)	11.74* (1.94)
	R <sup>2</sup>	0.376	0.413	0.367	0.430	0.407

t statistics in parentheses.

\* p &lt; 0.1, \*\* p &lt; 0.05, \*\*\* p &lt; 0.01.

Source: BBVA Research

Finally, to test the robustness of the results, we also include two additional cases (Venezuela and Philippines) although, admittedly, the objectives of their RMB arrangements have been different. The Philippines has a CMI RMB-denominated BSA but has not been replaced by a new RMB BSA. Venezuela is included, given the large loan received from



CDB, which was partially denominated in RMB. We do not have enough information on other loans granted by the CDB for sovereign countries. The results, as shown in Appendix 3, hardly change.

## 5 Conclusions

As an important step to advance RMB internationalization, the PBoC has signed a series of RMB-denominated BSAs with other countries. Using a gravity model, we explore empirically the factors behind the choice of countries for which such RMB BSAs have been signed. As one would expect, we confirm the gravity motif, since both a country's economic size and its distance from China increase the likelihood of a country signing a BSA with China. The trade motif (both the relative amount of a country's exports to China and the existence of a free-trade agreement (FTA) is also crucial for the choice of countries signing BSAs. FDI relations do not seem to matter though, nor does the macroeconomic soundness of the country with which China signs an RMB BSA.

Finally, our empirical analysis does not confirm the view that China has been using RMB internationalization, and in particular BSAs, to engage with institutionally riskier or more corrupted countries, not even with countries that are closer to China, institutionally or in terms of corruption. We do find, however, that riskier countries (in terms of default history) and those with a closed capital account are associated with BSAs. In other words, China does seem to prefer countries with a sovereign default history and financial closeness in its choice of partners for RMB BSAs but not necessarily those with serious corruption or a poor institutional framework. These results should, of course, be considered preliminary since China continues to sign new BSAs at a very fast pace, but they do offer a first answer to a frequently debated question of the underlying reasons behind China's choice of countries for expanding the use of the RMB overseas.

As for future research, given that trade is found to be the key driving force for BSAs, as was intended by the Chinese authorities, it would be interesting to look at the actual effects of signing a BSA, namely whether the authorities' objective has actually been achieved in terms of trade promotion. Another potentially rich avenue of research is to get detailed information on the actual motivations behind the signing of an RMB-denominated BSA by conducting interviews which can feed into a case study.

## Appendix 1

Table 5 Definitions of Variables

Variable	Definition	Source
GDP	Log value of a country's GDP in USD	The World Bank
DISTANCE	Distance between China and the host country (capital-to-capital)	Kristian Skrede Gleditsch, accessible at <a href="http://privatewww.essex.ac.uk/~ksg/data-5.html">http://privatewww.essex.ac.uk/~ksg/data-5.html</a>
CREDIT-GDP	The ratio of a country's total credit to its GDP	The World Bank
EXP	The share of exports to China in the host country's total exports	UN Comtrade Database
IMP	The share of imports from China in China's total exports	UN Comtrade Database
FTA	A dummy variable, equals 1 if China and the counterpart share a Free Trade Agreement and equals 0 otherwise	Ministry of Commerce of China
FDI	A country's FDI into China as a percentage of China's total inward FDI	CEIC
OFDI	A country's FDI from China as a percentage of China's total outward FDI	CEIC
CAOP	The Chinn-Ito Index for capital account openness. A higher index number means more capital account openness	The Chinn_Ito Index for capital account openness, accessible at <a href="http://web.pdx.edu/~ito/Chinn-Ito_website.htm">http://web.pdx.edu/~ito/Chinn-Ito_website.htm</a>
Foreign_reserve	The amount of a country's foreign reserve	The World Bank
Default	A dummy variable, equals 1 if a sovereign default occurred between 1983–2010 and equals 0 otherwise.	The Moody's "Special Comment: Sovereign Default and Recovery Rates, 1983–2010"
INF	The five-year average inflation rate prior to the BSA signing	The World Bank
GOVQUALITY	The rule_of_law index by the World Bank, a higher value means a better rule of law.	The World Bank Governance Indicators (2011)
DIF-GOVQUALITY	The absolute value of the difference between China's rule_of_law index and that of the other country	The World Bank Governance Indicators (2011)
CORRUP	The Corruption index, a higher value means a higher level of corruption	The World Bank Governance Indicators (2011)
DIF-CORRUP	The absolute value of the difference between China's Corruption index and that of the other country	The World Bank Governance Indicators (2011)

Source: BBVA Research

## Appendix 2

Table 6 Correlations of independent variables

	GDP	Credit GDP	Distance	EXP	IMP	FTA	FDI	OFDI	CAOP	Inflation	Foreign -reserve	Default	GOV QUALITY	DIF- GOVQUALITY	CORRUP	DIF- CORRUP
GDP	1.00															
Credit_GDP	0.46	1.00														
Distance	-0.20	-0.16	1.00													
EXP	0.00	-0.07	-0.33	1.00												
IMP	0.14	0.01	-0.28	0.50	1.00											
FTA	0.12	0.02	-0.22	0.21	0.32	1.00										
FDI	0.14	0.16	-0.35	0.36	0.58	0.28	1.00									
OFDI	-0.21	-0.09	-0.12	0.16	0.12	0.00	0.15	1.00								
CAOP	0.28	0.38	-0.02	-0.08	-0.04	0.01	0.12	-0.13	1.00							
Inflation	-0.12	0.00	0.05	-0.01	-0.07	-0.03	-0.02	0.41	-0.16	1.00						
Foreign -reserve	-0.44	0.25	-0.33	0.11	0.27	0.04	0.22	-0.06	0.04	-0.04	1.00					
Default	-0.00	-0.19	0.22	-0.04	0.16	0.08	-0.05	-0.07	-0.07	-0.03	0.02	1.00				
GOVQUALITY	0.49	0.68	-0.14	-0.05	-0.21	0.07	0.21	-0.21	0.63	-0.18	0.13	-0.26	1.00			
DIF-GOVQUALITY	0.46	0.63	-0.09	-0.03	-0.06	0.02	0.22	-0.07	0.52	0.05	0.10	-0.21	0.83	1.00		
CORRUP	-0.44	-0.66	0.36	0.05	-0.23	-0.10	-0.23	0.20	-0.60	0.13	-0.12	0.20	-0.95	-0.86	1.00	
DIF-CORRUP	0.46	0.63	-0.05	-0.02	0.23	0.08	0.23	-0.10	0.53	-0.04	0.12	-0.17	0.88	0.94	-0.95	1.00

Source: BBVA Research

## Appendix 3

Table 7 Regression results when Philippines and Venezuela are treated as having BSAs with China

No. of Obs.		(1) 118	(2) 118	(3) 118	(4) 118	(5) 118
Gravity motif	GDP	0.458** (2.12)				
	DISTANCE	-1.197* (-1.79)	-1.520** (-2.17)	-1.587** (-2.28)	-1.909** (-2.52)	-1.753** (-2.49)
Trade motif	EXP	3.707* (1.70)	4.644* (1.82)	3.116 (1.45)	4.394* (1.71)	3.232 (1.49)
	FTA	1.704** (2.05)	1.905** (2.17)	2.026** (2.35)	1.820** (2.07)	2.034** (2.35)
Financial motif	FDI	44.44 (0.83)	60.28 (0.98)	66.43 (1.02)	66.10 (0.85)	70.64 (0.95)
	CAOP	-0.320 (-1.21)	-0.837** (-2.41)	-0.556* (-1.76)	-0.796** (-2.47)	-0.655** (-2.16)
Macro-economic soundness	INF	-0.049 (-0.52)	-0.000 (-0.07)	-0.043 (-0.52)	-0.001 (-0.10)	-0.001 (-0.07)
	DEFAULT	1.598 (1.46)	3.092*** (2.58)	2.424** (2.12)	2.928** (2.56)	2.447** (2.26)
Institutional motif	GOVQUALITY		1.701*** (2.69)			
	DIF-GOVQUALITY			1.269* (1.95)		
	CORRUP				-1.525*** (-3.05)	
	DIF-CORRUP					1.428*** (2.75)
	_cons	6.327 (1.03)	10.71* (1.74)	10.81* (1.76)	14.24** (2.15)	11.74* (1.94)
	R <sup>2</sup>	0.376	0.413	0.367	0.430	0.407

*t* statistics in parentheses.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: BBVA Research

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ISSN 1456-6184, online