

Re-examining RMB as An Anchor Currency

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Outline

- Motivation
- Literature Review
- Method and Data
- Major findings



Motivation 1

- An updated research (re-examining) of our paper (Xu and Yang, 2013)
 - RMB' role in East Asian currencies.
- Many changes during the past decade.
 - RMB internationalization
 - Starting from 2009, accelerating since 2011, slowing down since 2016
 - The rapid ascending role of RMB during 2011 to 2015 was mainly due to its continuous appreciation expectation against US Dollar and the interest rate margin between China and the US.
 - The idea and strategy of RMB internationalization has evolved too.
 - The promoting of RMB internationalization have moved on towards a real demand based rather than a carry-trade based since 2016.
 - The RMB internationalization has been emphasized through the opening of domestic financial market rather than the offshore market.
 - The Belt and Road Initiative has provided new opportunities for RMB internationalizations.



Motivation 2

- Many changes during the past decade.
 - Independent role of RMB in the international financial market
 - The reform of RMB exchange rate regime and the volatility of RMB has increased.
 - In the past, when the USD become stronger, RMB usually depreciates against USD and vise versa.
 - More recently, in 2021, RMB has appreciated against USD by 2 percent while USD appreciated too.
 - "A significant piece of the dollar dominance is that China has decided to stabilize their exchange rate around the dollar. " (Kenneth Rogoff)
 - The independent role of RMB and its implication and influence to the international monetary system should also be considered.

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Motivation 3

- In order to capture the changing and evolving role of RMB, this paper would decompose the currency basket of major currencies and check the role of RMB.
 - the major Asian economies
 - G10 developed economies
 - G20 developing countries
 - Belt and Road economies
 - African countries
 - Central and East European (CEE) economies
 - South American economies



Literature Review 1

- The basic method calculating currency basket (Frankel and Wei, 1994)
 - Regressing daily variation of one currency's exchange rate against basket currencies, such as US dollar, yen, euro (and RMB)
- The RMB should be carefully treated as it stabilized against USD.
 - Keep the time when renminbi (seemingly) floated against US dollar and abandon the time when renminbi pegged against USD (Subramanian and Kessler, 2013)
 - Two step: First regress renminbi against other reference currencies and get the residuals. Second, replace RMB with residual and run the regression (Chen, Peng and Shu, 2007).



Literature Review 2

- The RMB should be carefully treated as it stabilized against USD (continued)
 - Principal components approach (Spencer, 2013): calculate the principal components of currencies in the basket and compare the variation of principal components
 - Add market intervention (percentage change of foreign reserves of one country) into the equation (Frankel and Wei, 2007).
- Time-varying problem
 - Decompose the long term sample into several stages (Ogawa and Sakane, 2006; Sun, 2010; Subramanian and Kessler, 2013)
 - Expand the benchmark regression to a time-varying parameter model (Xu and Yang, 2013).

Method and Data 1

- Measurement equation:

Step2

$$d \ln\left(\frac{Y_{i,t}}{CHF_t}\right) = c + w(t)_{i,1} * d \ln\left(\frac{EUR_t}{CHF_t}\right) + w(t)_{i,2} * d \ln\left(\frac{JPY_t}{CHF_t}\right) + w(t)_{i,3} * d \ln\left(\frac{CNY_t}{CHF_t}\right) + w(t)_{i,4} * d \ln\left(\frac{USD_t}{CHF_t}\right) + \varepsilon(t)_i$$

- State equation:

$$\begin{aligned}w(t)_{i,1} &= \lambda w(t-1)_{i,1} + v(t)_{i,1} \\w(t)_{i,2} &= \lambda w(t-1)_{i,2} + v(t)_{i,2} \\w(t)_{i,3} &= \lambda w(t-1)_{i,3} + v(t)_{i,3} \\w(t)_{i,4} &= \lambda w(t-1)_{i,4} + v(t)_{i,4}\end{aligned}$$

$$d \ln\left(\frac{CNY_t}{CHF_t}\right) = c + \theta_{i,1} * d \ln\left(\frac{EUR_t}{CHF_t}\right) + \theta_{i,2} * d \ln\left(\frac{JPY_t}{CHF_t}\right) + \theta_{i,3} * d \ln\left(\frac{USD_t}{CHF_t}\right) + \omega_{i,t}$$

Step1

- w_t is the vector for estimated coefficients respectively for the four references. It should be noticed that this vector is time varying.



Method and Data 2

- Sample period
 - Daily data, Jul. 21, 2005 to Dec. 30, 2021, from CEIC
- Sample economies
 - The Asian region
 - Ten ASEAN countries, South Korea and Taiwan
 - G10 developed countries
 - Britain, Canada, Australia, Sweden, New Zealand and Norway
 - G20 developing countries
 - Argentina, Brazil, India, Mexico, South Africa, Russia, Saudi Arabia and Turkey



Method and Data 3

- Sample economies
 - Belt and Road Economies
 - Selection criterion: top countries in terms of China's bilateral trade in goods and China's overall ODI scale, and the countries whose exchange rate data are available and have not been selected before for the three regions.
 - Africa: Nigeria, Zambia, Ghana and Egypt
 - CCE: Poland, Hungary, The Czech Republic, Romania and Bulgaria
 - Americas: Chile, Peru and Uruguay

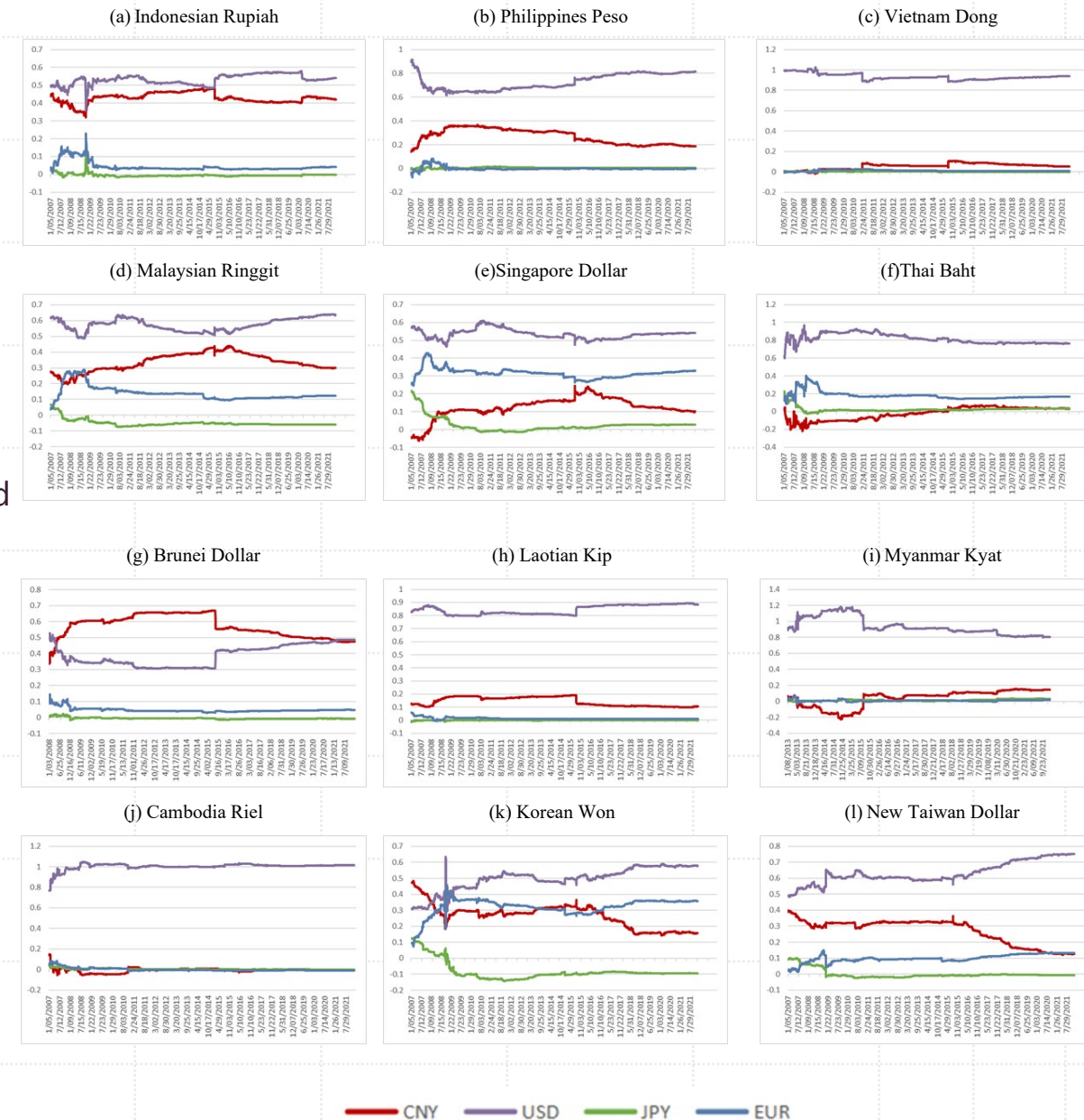


Major findings

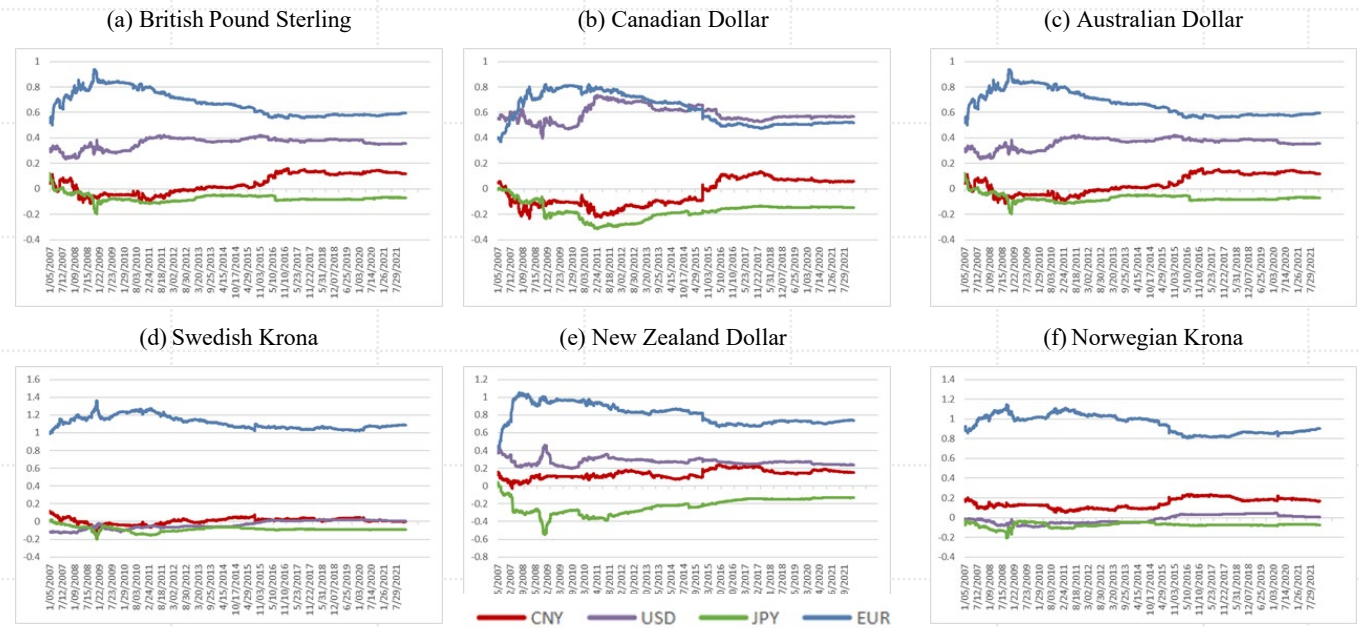
Asian region: RMB regionalization slowed down since 2015

For most economies in this region, the proportion of RMB in its currency basket has declined after 2015-2016. The role of RMB has declined significantly for Malaysian Ringgit, Singapore Dollar, Brunei Dollar, Korea Won and New Taiwan Dollar. Most of them are high income economies. This shows the shrinking of offshore market and the depreciation of RMB has led to a declining role of RMB in the major developed currencies in the Asian regions. This has a prolonged effect. Although RMB has regained its momentum after 2016, its role in these currencies has not recovered.

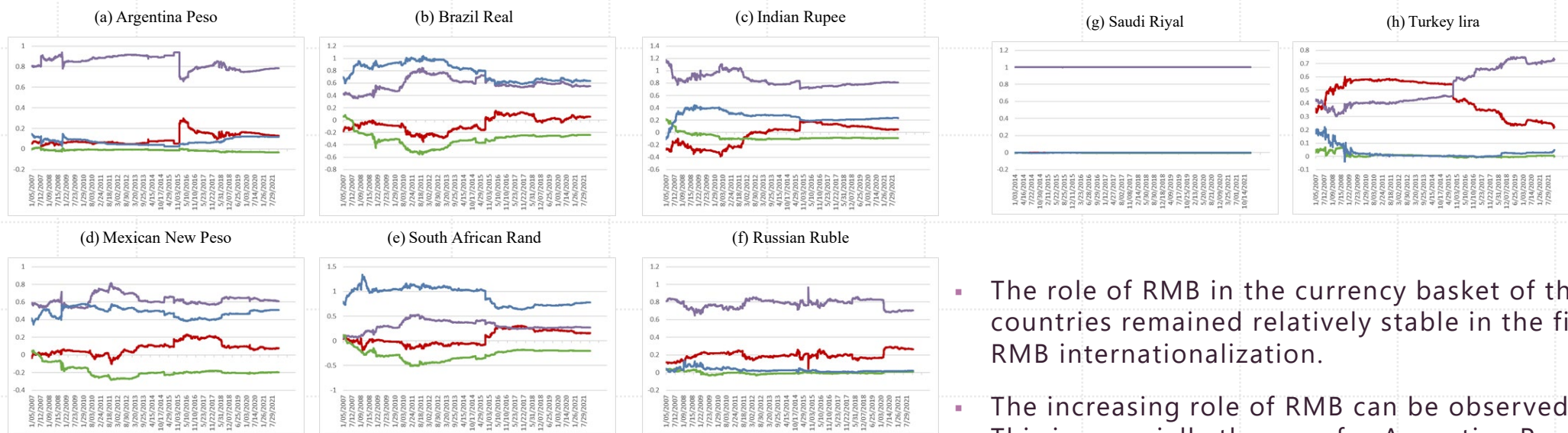
For the developing economies in ASEAN, the role of RMB was less significant and so as the level of the declining in most cases in 2015. For Thai Baht, Vietnam Dong, Myanmar Kyat and Cambodia Riel, the role of RMB is relatively small. But RMB's role has slightly increased after 2016 in Vietnam Dong and Myanmar Kyat, showing a tighter link between China and Vietnam as well as Myanmar. The role of RMB in Philippines Peso and Laotian Kip has gradually declined during recent years for about ten percentage point. For Indonesian Rupiah, the role of RMB was stable.



Developed countries: “New kid in town (for a while)”



- A novelty of this paper is that we have considered role of RMB in the basket of the certain developed economy's currencies. Since the foreign exchange market is dominated by several major currencies, the internationalization of RMB would have been more meaningful if certain role of RMB in these currencies' basket has been observed.
- For the traditional international currency- British Pound, the changing role of RMB in it is worth mentioning. The role of RMB in sterling has increased from almost 0 to 10% at the first round of RMB internationalization. And the “2015 shock” has not terminate the role of RMB in British Pound Sterling, rather, the role of RMB has enhanced between 2016-2017 and accounted for about 20% in the Sterling's basket. This proportion has remained stable since then. The development of offshore market in London has pushed up the role of RMB in Sterling basket. The similar pattern can be observed in the basket of Canadian Dollar.
- For Australian Dollar and New Zealand Dollar, the role of RMB has gradually declined since 2016. For Swedish Krona and Norwegian Krona, the currency basket remains stable during the past 15 years.



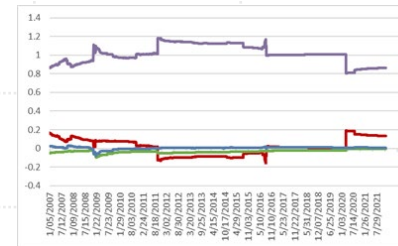
- The role of RMB in the currency basket of these developing countries remained relatively stable in the first round of RMB internationalization.
- The increasing role of RMB can be observed since 2016. This is especially the case for Argentina Peso, Brazil Real, Indian Rupee and South African Rand. It can initially be attributed to the depreciation wave that happened in developing countries during that period. But the RMB's role remained at a high level and was relatively stable in the baskets of these currencies, which cannot simply be attributed to the currency co-movement.
- It is worth emphasizing the pattern of RMB in Russian Ruble's basket. For Russian Ruble, there was a jump of RMB's role in its basket in 2020 from 20% to 30%. Correspondingly, the role of USD in the basket of Ruble has declined for about 10 percentage point. Showing the willingness of de-dollarization in Russia and the potential replacement role of RMB. This has also provided evidence of the potential cost of US's sanction and its adverse effect to the Dollar's international role.

Other developing countries: Keep going

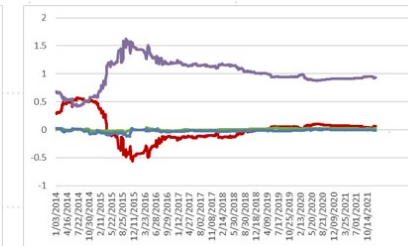
Belt and Road Economies-Africa: Fear of Floating

- The role of USD has dominated the currency basket for all four currencies in most of the period. The proportion of USD was around 100 percent at most time. The role of RMB in the currency basket remained relatively mute.
- Firmer trade and investment ties will not directly lead to enhancing role of the corresponding currency.
- Against this background, the potential role of RMB in this region should be carefully studied. Certain provisions of RMB internationalization in African region should be prioritized in order to solve the currency mismatch and the original sin.

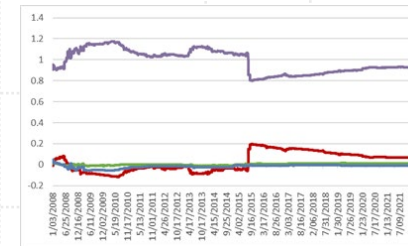
(a) Nigeria Naira



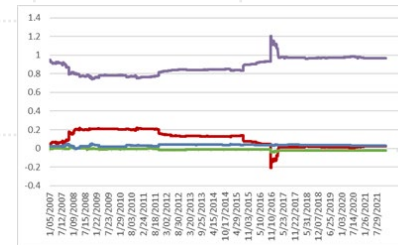
(b) Zambia Kwacha



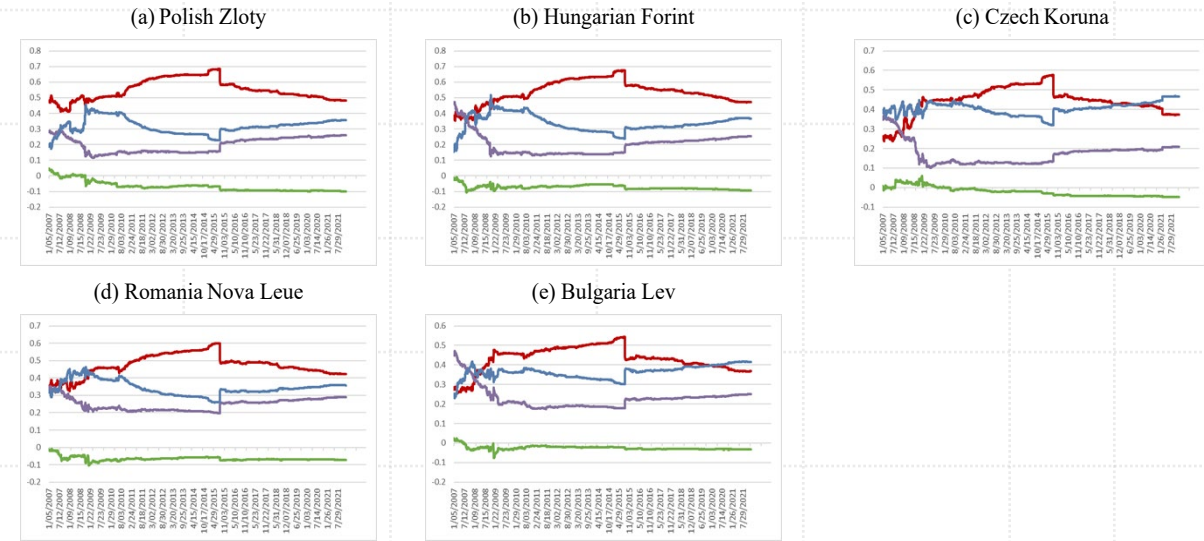
(c) Ghana Cedi



(d) Egyptian Pound

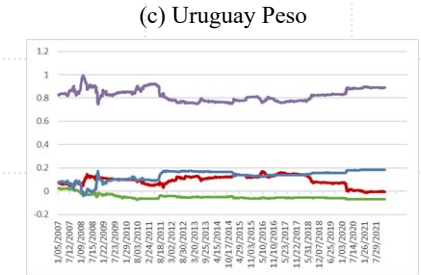
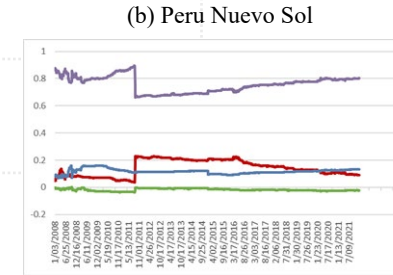
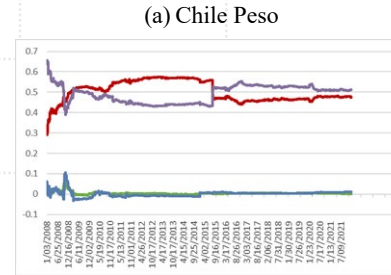


- The pattern of RMB in the basket has been quite similar with its Asian counterparties, and even more optimistic.
- Although encountering some distraction and declining trend can be observed since 2016, RMB still remains the most important currencies in CCE country currencies' baskets and accounted for about 30-40 percentage point in these baskets. Up till now, RMB remained No.1 in the currency basket of Polish Zloty, Hungarian Forint and Romania Nova Leue, and ranked No. 2 in Czech Koruna and Bulgaria Lev.
- Compared with African region, the demand of currency diversification in CCE country is relatively high. And in this region, Dollarization is not a big problem. The anchor currency competition is more prominent due to the existence of Euro. The policy within this region is also in favor of RMB internationalization. The potential should be further studied.



Belt and Road Economies: Hidden CEE

Belt and Road Economies- South America



- RMB has showed a significant role in Chile peso's basket. The role of RMB and USD was quite similar in the basket, accounting for 50% and 50% respectively. Unlike other commodity exporters such as Australia, the role of RMB in Chile peso was very stable in recent years.
- For Peru Nuevo Sol and Uruguay Peso, RMB's role has declined in recent years and the role of the USD has enhanced.



Thank you!