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Public Sentiment and Observation about RMB Internationalization

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Abstract

The extent of RMB internationalization can be measured by two ways in two different perspective: one is using the RII indicator, in the perspective of international monetary function; the other is examining the public sentiment about RMB to indirectly reflect the acceptance of RMB worldwide, in the perspective of media attention.

Keywords: RMB Internationalization, Public Sentiment, Text Mining

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1. Analysis Methods and Techniques on International Public Sentiment

With the accelerating process of RMB internationalization, the share of RMB in international trade, direct investment and international credit gradually increases, ranking among the top 10 trading currency. RMB-denominated settlement, changes in RMB exchange rate, and monetary policy have an impact on the economic interests of a growing number of countries, whose companies and individuals linked to RMB more or less. Hence, the degree of national media coverage and attention to the RMB rises. There is no doubt that the attention itself embodies the internationalization of the RMB.

The miscellaneous international public sentiment includes both the mainstream media and non-mainstream media coverage, and motives involved with the specific content of RMB are quite different, not necessarily related to the internationalization of the RMB. Therefore, we need to design a scientific program to tap the intrinsic link between the international public sentiment and the internationalization of RMB by following the three steps.

First, use the Delphi method to invite experts on global monetary issues to select the world's major news media. According to these experts, we got the final English Media Directory and take their English website database for the study. Considering that the regional distribution of these media is uniform, and they are typical of print media and able to represent the mainstream media, thus, using them to study the internationalization of RMB is relatively credible and reliable.

Secondly, take the time period, 2001, when China joined the WTO, to the end of 2013, to tap the international mainstream media attention to RMB. Given that the major news media on RMB was really rare before 2008, for example, there is no report on RMB in 2003, we merge the statistics in and before 2008, accounting for the "2008 and before".

Thirdly, study these media and their focuses. Search news containing words like 'RENMINBI', RMB, CNY and then "Internationalization" and "International use" on their English websites and found out that there are a lot of international media reports about the RMB in recent years, but relatively a less number of reports about "Internationalization" and "International use". As the "RMB internationalization" is a domestic academic term and "the RMB cross-border use" is an official term of Chinese Government, the two terms are rarely used in international reports. Hence, we amended the technical path to analyze the public sentiment and identified RMB as searching object. Directly search news containing "RENMINBI", RMB, CNY news, and then tap the high-frequency words in the text database these news combine, forming the outcome of follow-up research.

Public sentiment analysis mainly uses the regular expression (Regular Expression): 1, LDA modeling, and 2, general text mining techniques.

2. Characteristics of the Public Sentiment towards RMB

The research on the public sentiment of RMB mainly focuses on two aspects, one is the longitudinal study on the evolution of international media attention to RMB, and

the other is the horizontal comparison between the economic activities of different countries and regions which concern about RMB. Table.2 gives statistics about reports that involved with RMB. According to the table and charts derived from it, we summarize some characteristics of international public sentiment.

2.1 RMB attracts more and more attention from the mainstream media.

Prior to 2008, there are accumulatively 259 pieces of reports about RMB from selected the 101 mainstream media. Along with a comprehensive start-up internationalization of the RMB, there is a sharp rise on the extent of global media attention to RMB, the number of reports increasing to 552 in 2010. And it doubled to 1334 in 2013. The annual average number of articles per media is more than 10. In the global mainstream media, measured by the number of reports, the United Kingdom, India, Canada, Australia are the top 4 countries which give most attention to RMB.

Table 1: The Number of Reports on RMB by the Mainstream Media around the World (2008-2013)

COUNTRY	2008	2009	2010	2011	2012	2013	Total
Africa					4	2	6
Asia			66	92	169	181	508
East Asia			21	27	67	25	140
South Asia			20	37	67	116	240
Southeast Asia			23	24	29	23	99
West Asia			2	4	6	17	29
Europe	259	168	422	296	325	1041	2511
European Union			17	4	5	24	50
France			5	2	1	9	17
Germany			10	10	3	1	24
Russia				1	2	1	4
Turkey			23	35	38	13	109
UK	259	168	367	244	276	993	2307
North America		3	39	41	88	67	238
Canada			37	38	46	30	151
USA		3	2	3	42	37	87
Oceania(Australia)			24	36	47	43	150
South America			1	1			2
Argentina				1			1
Mexico			1				1
Total	259	171	552	466	633	1334	3415

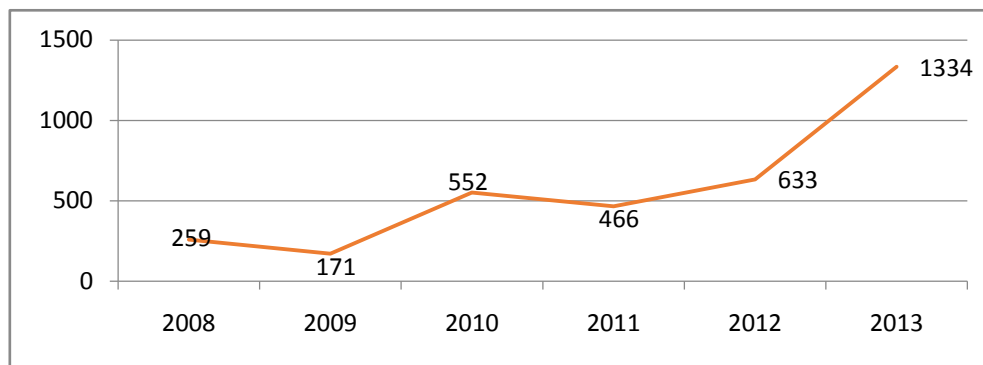


Figure 1: The Number of Reports on RMB by the Mainstream Media around the World

2.2 Media attention varies greatly in different regions and nations, with Europeans tops.

Before 2008, reports about RMB exist only in European's, precisely, only in UK's mainstream media. The media coverage extended to Asia, Africa, Latin America, Oceania and the number of reports has doubled and doubled in the next 3 years. European media is the main force, RMB-related reports from them accounted for more than half of the world related reports. It is worthwhile to note that reports from the United Kingdom accounts for more than 80% of Europeans reports, indicating that as the world's largest financial center, UK was more involved with RMB and London paid more attention to the prospect of RMB as international currency. In addition, unexpectedly, Turkey paid more attention to RMB than Germany, France and other traditional large EU countries, indicating that there may be a new breakthrough in economy and trade between China and Turkey. In addition, since 2010, as China participated in the European sovereign debt crisis mitigation plans and increased direct investment in the European Union, media in Germany and France, the two core countries in EU, showed great interest in RMB. there is an significant increase in the number of reports, and the coverage density of German is much higher than that of France, which shows a positive correlation to the growing trade and investment between the Chinese and German.



Figure 2: The Comparison of the Number of Reports on RMB by the Mainstream Media in Different Regions and Nations (2008-2013)

2.3 The Asian media is giving more attention RMB.

The number of reports showed a gradual increase in East Asia, Southeast Asia and South Asia since 2010, peaking at 163 pieces in 2012. In addition to the European media, the number of reports involving RMB from Asia media accounted for more than half of rest reports, and India from South Asia has the highest frequency, with a total of 240 articles from 2009 to 2013. Particularly, in 2013, when the attention to RMB declined globally, the number of reports soared by 73% to 113 pieces in India. This shows that financial cooperation mechanisms among BRIC countries, international monetary system reform, and the RMB internationalization attract much concern in India. What's more, in 2013, the number of reports about RMB increases from 6 to 17 in Saudi Arabia in one year.

2.4 North America shows a strong interest to RMB in the recent 2 years.

Although the cross-border use of RMB mainly happens in peripheral areas of China and Asia, it has a great shock in North America. In 2012 and 2013, there is a significant rise in the number of reports on RMB in U.S.A and Canada, about 40 pieces of reports annually. Overall, having a closer economic relationship with China, United States has fewer reports on RMB than India, which is only 87 pieces.

3. Comparison about Focuses to RMB in International Public Sentiment

Through mining and analyzing high-frequency words from the 101 selected media databases, we found out that the international community's focus to RMB is mainly involved with economy and trade. From 2013 onwards, reports about RMB are more involved with Finance, such as foreign exchange, securities, and investment and so on. Media focuses varies continentally, but most are concerned about bilateral economic and financial transactions with local characteristics.

3.1 The International Public Sentiment Focuses on Trade and Finance

Analysis on the use of high-frequency words associated with RMB in media coverage can accurately reflect the focus of public opinion. Figure.3 shows the top 25 high-frequency words from reports between 2010 and 2013, with "Economy", "Bank", "Market", "Finance", "Trade" ranking the top 5. RMB exchange rate ranked ninth in terms of frequency, attracting widespread concern.

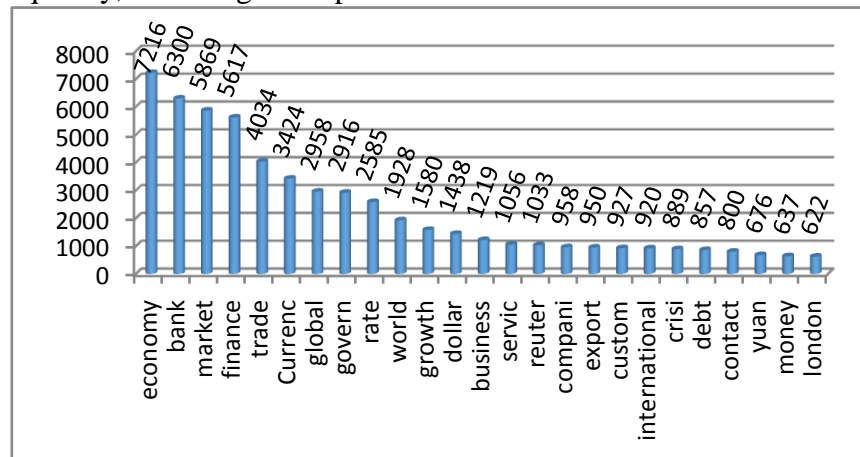


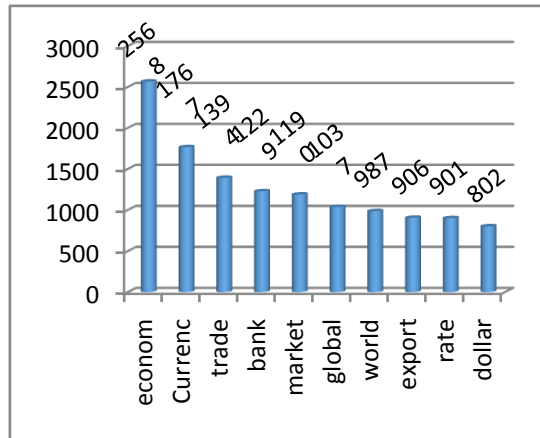
Fig.3 The Number of High-frequency Words Associated with RMB around the World

In fact, the international use of the RMB has also drew a lot of media coverage , linking RMB and the world economy , globalization and the international community . In these reports on RMB, "Global " , " World " and " International " frequently appears, ranking seventh 10th and 17th respectively. It is worth mentioning that the "London" as a place ranked 25th among high-frequency words, suggesting that the UK is very sensitive to the internationalization of the RMB with intense social concern.

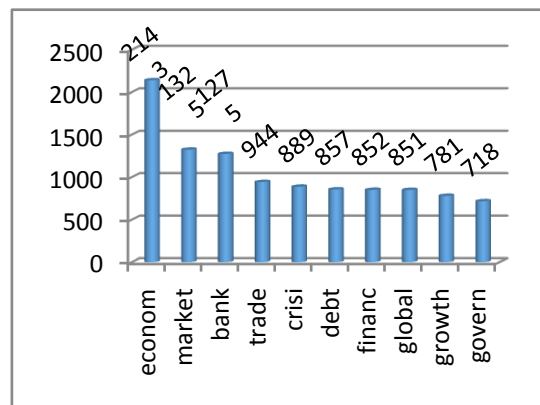
RMB internationalization is a product of the 2008 international financial crisis, embodying the international monetary system reform. It is also fully reflected in international public opinion. In RMB-related reports, "dollar " , "Crisis " , "debt " , " currency " ranked 12th, 20th, 21th and 24th relatively in the high-frequency words. Quite a number of news reports analyze the financial crisis and debt analysis in the U.S. dollar -dominated international monetary system, suggesting that RMB internationalization an inevitable trend.

3.2 The Focus of International Public Opinion Varies with the International Economic and Financial Situation

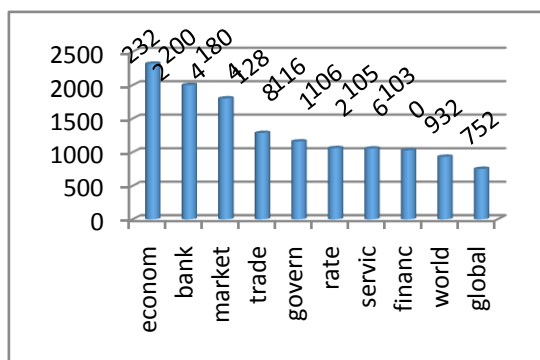
The international financial crisis forced the world to a painful readjustment of economic structure, leading to a dramatic change in international political, economic, monetary situation accordingly. This change will, undoubtedly, be reflected among media coverage in the first time, as we can see it from the different focuses of reports. Figure.4 reflects the changes in high-frequency vocabulary from 2010 to 2013.



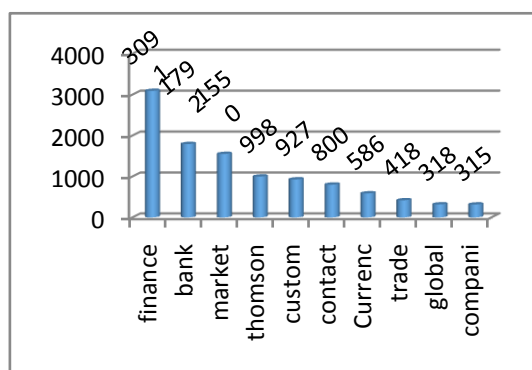
Top 10 high-frequency words associated with RMB in media coverage in 2010



Top 10 high-frequency words associated with RMB in media coverage in 2011



Top 10 high-frequency words associated with RMB in media coverage in 2012



Top 10 high-frequency words associated with RMB in media coverage in 2013

Figure 4: The Change of the Focuses to RMB over the Years

Changes in high-frequency words show that as time went on, "Finance " and the " Bank " is getting more and more attention , the ranking of "bank" increased year by year , from fourth in 2010 to third in 2011 and ranked second in 2012 and 2013 . "Finance" has not yet been in top 10 before 2010, ranking 7th and 8th in 2011, 2012 first in 2013. On the contrary, "Trade" retreated from second in 2010 and to 4th in and 8th in 2013. In fact, this change is highly consistent with the process of RMB internationalization. RMB internationalization started from RMB -denominated trade settlement, but its development relies on promotion the banking and financial transactions.

3.3 The Focuses of the Continents Are with Local Characteristics

China is the world's largest trading nation, the cons and pros in RMB-denominated settlement are quite different. Analyzing their focuses is conducive to grasp the channels through countries to know, accept and recognize RMB, which is beneficial to extend the use of RMB.

The focuses to RMB vary greatly in different years, and countries and regions pay more attention to the affairs which they are involved with. Ranking the words in terms of frequency in different years and continents; we can see the general changes in public opinion. (See Table.2)

As the teaching philosophy, theoretical foundation, etc. of projects teaching is quite different from that of traditional teaching, thus it should have its own application process.

Table 2: The Change of the Focuses to RMB in Different Regions and Nations over the Years

	Before 2009	2010	2011	2012	2013
Africa	-			Trade, bond, proprietary, client, income, revenue,	Specular, system, tax, transact, trillion

				equity	
East Asia	-	University, professor, faculty, science, economy, growth, rate, invest, export, corporation, demand	Fund, japan, invest, company, bond, exchange	Taiwan, island, state, Japanese, dollar	University, professor, faculty, science, reserve, Hong Kong, corporate
South Asia	-	India, reserve, deficit, rupee, export	India, trade, Singapore, global, power, rupee, infrastructure	Trade, nation, Indian, foreign, growth, invest	,offense, ,agree, rupee, recommend, disagree
Southeast Asia	-	Police, Indonesia, fund, export, invest, trade, exchange, industrial, capital, dollar, nation	Hong Kong, Indonesia, intern, ASEAN, region	North, dollar, Indonesia, state, region	Bond, Indonesian, inflate, increase, plan
West Asia	-	Brand, trade, blond, export, fashion	Malaysia, Islam, fund, capital, ICM, offer, product, service	Billion, Islam, issuance, sector, industry, manage, plus, continue	Hong Kong, yen, growth, Japan, IMF, monetary, value
Europe	currency, market, dollar, economy, trade, rate, company, one, turn, price	currency, economy, world, market, global, one, last, export, policy, dollar	Crisis, debt, photography, finance, growth, trade, Europe	London, need, now, Chinese, time, growth	Continue, custom, seen, without, try, contact, describe
Canada (North America)	-	Canada, dollar, percent, business, reserve, global, trade, bond, today, right, last	Reserve, trade, intern, interpret	Fur, reserve, invest	Digit, reserve, main, investor
USA	dollar, hold, policy, trade,	Dollar, company, exchange, value, cost, custom,	Apple Store, debt, iPhone, Asia, iPad, buy,	Dollar, billion, growth, rate, invest, fund	Dollar, billion, investor,

	currency, deficit, dunk, fiberglass	factory, foreign, job, mobile	Obama		export
South America	-	-	Inflate, agriculture, export, devalue	-	-
Oceania	-	-google, chrome	Euro, global, intern, trade, dollar, monetary	Wine, Penfolds, drinker	invest, dollar, fund, growth

Public sentiment analysis shows that European countries concerns more about the macro areas involved with RMB, such as the markets, trade, banking, finance, government control, crisis and economic growth. Their focus transfers to finance and banking in recent two years.

North American media focuses on US dollar, deficit, foreign exchange reserves, income, trade and other issues; while United States is more concerned about the high-tech exported to China. In addition, in 2009, the North American countries were very concerned about specific issues about optical glass, attention to finance, reserves, and investment significantly increased in 2010.

Because the dollar is the dominant currency today and RMB internationalization will affect dollar to some extent, so the U.S.A's attitude toward the RMB is very complex. Thus, public sentiment in USA is worthy of a separate analysis. the United States is a very self, very pragmatic country. Before 2012, there are few reports about RMB in the United States, with relatively divergent topics and low frequency of high-frequency words. For example, in all reports mentioned RMB in 2011, Apple is the word with highest frequency and its main products iPhone, iPad are also ranking among the top in high-frequency words, suggesting that American concern for the RMB due to the Chinese heat for Apple products. After 2012, there is a surge in the number of reports on RMB and also in high-frequency words, indicating that the U.S. mainstream media began to focus on the impact of the internationalization of the RMB. Trade, markets, banks, funds, investments, bonds are the focuses of American on RMB.

Research on South American news media includes those of Brazil, Argentina. Due to the economic structure, trade patterns and geographic distance and other reasons about South America, they paid less attention to RMB. In all those reports from 2004 to 2013, there was only one piece involved with RMB in Brazil in 2010 and in Argentina in 2011 and related reports focus on the import, export, trade, inflation, and agriculture.

Asian countries have extensive and complex with links with China in politics, economy, military and finance. The goal of RMB internationalization in the first phase is to become an regional currency area in Asia. As China has signed free trade agreements with some East Asian, Southeast Asian countries, China has built close

economic relations with them. Relatively speaking, the trade scale is smaller between China and South Asia, West Asia. In order to deeply study the Asian focus on public opinion, we divide Asia into four regions--East Asia, Asia , South Asia, Southeast Asia, West Asia.

1. The reports mentioned RMB in Japan and South Korea focus on economy, finance, bank, bond, international reserves, the relationship between yen and RMB. From the specific content of high-frequency words, we can see that they showed greater interest in universities, research than in economy. Focuses of 2012 also includes Taiwan and islands, reflecting the impact of the political situation on concerns about RMB.

2. Choose India as the representative of South Asian countries. There are a growing number of reports on RMB since 2010, peaking in 2013. India's concern about RMB is directly related to currency internationalization, since the reports on RMB is always associated with " currency ", " Russian ruble ", " dollar" and other words. In the Indian view, as denominated currency in trade or investment, there exists competition between RMB and U.S. dollar or Russian ruble. In addition, India's concern about RMB also includes banking, trade, economy growth, governance and infrastructure.

3. Southeast Asia's focus on RMS is much more straightforward. the most relevant word with RMB is "currency", followed by "trading" and "market", and then by "finance ", "bank". With the increase in the scale of authorized issue of RMB, funds, bonds and investment become the focus of reports. Compared to other regions, Southeast Asia may pay the most attention to the internationalization of RMB, with "international" and "global" among high-frequency words. Not only that, "dollar" is also closely related to the frequency of RMB, suggesting that RMB internationalization do impact U.S. dollar.

4. Saudi media represent the West Asia. In Saudi reports on RMB, "dollar", "Islam" appears frequently, as well as "Japan" does. Since Saudi Arabia is an oil-exporting country and the U.S.A, Japan are the main oil-importing countries, and U.S. dollar is the dominated currency in export, indicating that Saudi Arabia is concerned about the impact of RMB internationalization on oil export revenues. In addition, 2013 IMF reform is also a high frequency words in Saudi reports.

5. As the representative of Oceania, Australian media were most concerned with network and browser before 2012 and focused on wine in 2013. One brand of wine is "Penfold", in China called " benfu " , being very popular in the mainland market , and hotspot of media. Like other regions, the focus of Australian media turned to investment banking, trade, finance and globalization.

6. There are no relevant reports on RMB in Africa before 2012. After that, reports focused on the economy and finance. "Trade" tops in the two years as the focus of reports, followed by foreign exchange, banking, finance, economy, bonds and so on.

Summary

This article reflects the attention in RMB of the global main media through Text mining and the attention in RMB itself is also one of the characteristics of the internationalization of the RMB. Mining results show that Europe remained constant

attention in RMB, the attention for the rest of the world, especially in South Asia and Southeast Asia has increased in recent years. At the same time, different continent focus on the same topics such as economic and financial field, but they all focus on the different fields which reflects the economic relationship between China and these countries. The results suggest that public opinion can really reaction even in advance on the internationalization of the RMB, and the Chinese should pay more attention in the public opinion guidance to the international main media appropriately in the process of promoting the internationalization of the RMB.

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References

- Blei D M, Ng A Y, Jordan M I. Latent dirichlet allocation[J]. the Journal of machine Learning research,2003,3: 993-1022.
- Blei D M, McAuliffe J D. Supervised topic models[J]. arXiv preprint arXiv:1003.0783, 2010.
- Chang J, Blei D M. Relational topic models for document networks[C]//International Conference on Artificial Intelligence and Statistics. 2009: 81-88.
- Easley D, Kleinberg J. Networks, crowds, and markets[M]. New York: Cambridge University Press, 2010.
- Scott J. Social network analysis[M]. SAGE Publications Limited, 2012.