Potential Assessment of RMB Trade Settlement: Evidence from China's Export Enterprises

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November 2016, Peking

Contents

Literature

As to potential room, there are evaluations from different perspectives:

- **Evaluation based on the functions for international currency.** (Benjamin J. Cohen 1971; Peter B. Kenen 1983; Chinn and Frankel 2007；Gao and Yu 2011; Frankel 2012)
- **Evaluation based on the transaction network and the degree of specialization. (**Young 1928; Yang Xiaokai 1990; Cohen 1998)

Literature

Key findings:

- International trade is critical for assessing a currency's internationalization. (Xu and Li 2008)
- Low ERPT=local currency priced & High ERPT=Producer currency priced.(Engle 2006)

Motivation

- Without considering the global production network and processing trade
- Overestimate the potential of the RMB as an invoicing currency in cross-border trade
- Overestimate the potential of RMB internationalization.

Motivation

- Put the assessment into the GVC perspective
- Differentiate the processing trade form and the general trade form in the product level of SITC8 classification
- Observe the micro PTM behaviors in processing and general trade respectively.

Main results

- General trade exhibits stronger in PTM effect than processing trade.
- Processing trade owns a more powerful pricing power than the general trade.
- The ERPT/PTM effect on exports will especially be distorted by the high involvement into the global production network.
- If we analyze upon the aggregate data, we will probably overestimate the potential room for RMB’s cross board trade settlement.

The Theoretical Analysis

- The exchange rate transfer effect (EPT) index for the local currency expressed in the export price *P* and the exchange rate *e* between the elastic relationship. e is indirect pricing method.
- PTM is expressed in the export price *P* and the exchange rate *e* between the elastic relationship. e is indirect pricing method.

The Theoretical Analysis

Table 1 EPT Index and PTM Index Range and Its Meaning

EPT index range	PTM index range	Connotation
EPT=0	PTM=1	Exchange rate is completely passed, there is no behavior according to market pricing （Producer Currency Pricing）
EPT=-1	PTM=0	The exchange rate does not pass, there is according to market pricing behavior （Local Currency Pricing）
-1<EPT<0	0<PTM<1	Part of exchange rate the transfer, there is part of the pricing behavior
EPT>0	PTM>1	Excessive exchange rate, there is overshooting behavior
EPT<-1	PTM<0	Exchange rate transfer reversely

Empirical Model

In order to study the PTM characteristics of general trade and processing trade, this paper divides the sample data into two parts: general trade and processing trade, and carries out regression analysis. The regression model is as follows:

$$\ln P_{it} = \theta_t + \lambda_i + \beta_i \ln e_{it} + X + \mu$$

P_{it} is the price of RMB for export commodities. X is the enterprise characteristic variable. e_{it} is the indirect price method nominal exchange rate between CNY and the exporting country i's currency. θ is a time dummy variable, λ_i is the national dummy variable.

Empirical Model

Table 6 Description of Enterprise Feature Variables

Variable symbol	Variable name	Variable description
Debt	debt ratio	To represent the extent of the company's liabilities, the formula for calculation is (total liabilities / total assets).
Scale	Relative size	To represent the relative market forces of enterprises, with the sales revenue of enterprises accounted for the entire industry sales sales revenue share
Sub	Subsidies	The proportion of subsidies accounted for the entire industry of the the enterprise
PCL	Capital - labor ratio	First calculate the net fixed assets and the proportion of the number of employees, and then calculate the proportion of Ln (1+proportion) to get the capital labor ratio of enterprises
SOE	State-owned enterprise dummy variable	If the enterprise for state-owned enterprises, the value is 1, otherwise 0
Private	Private enterprise dummy variable	If the enterprise is a private enterprise, the value is 1, otherwise 0
Foreign	Foreign Enterprises Dummy variable	If the enterprise for foreign investment enterprises, the value is 1, otherwise 0

Data and Variables

The data selection and merger:

- According to the method of Dai Mi and Yu Miaojie (2014), this paper combines the NBS NBS database of industrial enterprises above the scale of 2000-2010 and the trade level database of the General Administration of Customs of China.
- Enterprises that do not meet the "above-scale" standard
- Missing of important financial indicators
- Current assets are larger than total assets and fixed assets are larger than total assets and depreciation is greater than accumulated depreciation and export value is greater than industrial sales

Data and Variables

The classification of trade data:

- The combined database contains a total of 11,3007 enterprises
- The enterprises engaged in general trade accounted for 58.29% .
- Only engaged in processing trade accounted for 10.2%
- Engaged in two kinds of trade enterprises accounted for 31.47%

Data and Variables

Table 2 the Proportion of Enterprises with Different Trade Patterns and Their Exports (2000-2010)		
Trade Pattern	Ratio of Enterprise Number	Ratio of Exporting Volume
General Trade	58.29%	18.81%
Processing Trade	10.2%	17.16%
Mixed Trading Enterprise	31.47%	64.03%

Data and Variables

This paper also compared the proportion of export processing trade of foreign-funded enterprises and non-foreign-funded enterprises in whole sample and mixed enterprises sample:

Table 4 Comparison of the Export of Processing Trade between Foreign-funded Enterprises Non-foreign-funded Enterprises (2000-2010)		
	Foreign-funded Enterprises	Non-foreign-funded Enterprises
Concentration of Processing Trade	79%	61%
Processing Trade Export / Export (Whole Samples)	73.07%	33.17%
Processing Trade Export / Export (Sample of Mixed Enterprise)	75.03%	45.70%

Regression Results

1.The impact of exchange rate movements on the general trade and processing trade export prices on commodity level:

- General trade has 8816 kinds of merchandise.
- Processing trade goods have 6836 species
- 6708 kinds of commodities contain these two kinds of trade modes
- Two kinds of export trade goods have a large overlap

Regression Results

1.The impact of exchange rate movements on the general trade and processing trade export prices on commodity level:

Table 7 The significant of the price of HS8 goods under the influence of exchange rate fluctuation in the general trade and processing trade

Exchange rate Significance level	Frequency		Percentage(%)		Accumulated Total (%)	
	general trade	processing trade	general trade	processing trade	general trade	processing trade
1% significance level	249	179	2.82	2.62	2.82	2.62
5% significance level	336	183	3.81	2.68	6.63	5.3
10% significance level	291	196	3.3	2.87	9.93	8.17
Not significant	7940	6278	90.06	91.84	100	100
Total	8816	6836	100	100		

Regression Results

1.The impact of exchange rate movements on the general trade and processing trade export prices on commodity level:

- First, the non-significant commodities accounted for a higher proportion. These insignificant goods include not only the case the can not reject the null hypothesis, that is, EPT = 0 (PTM = 1, the case of PCP), but also cases where the econometric model is unrecognizable. Because of the latter possibility, we can not conclude that China has strong pricing power on most export commodities

Regression Results

1.The impact of exchange rate movements on the general trade and processing trade export prices on commodity level:

- Second, whether the overall or the respective level of significance, the types of goods whose export prices impacted by the exchange rate fluctuations under general trade is more than processing trade, due to the two samples and the total sample have a large areas of overlap, the results are still convincing

Regression Results

2.The impact of enterprise characteristics on the general trade and processing trade export prices on commodity level:

- The debt ratio of the goods, the general trade, 61.85% of the debt ratio and commodity export prices are reverse.
- Processing trade in state-owned enterprises the nature of goods is significantly less than the other two types of business.
- In processing trade, 65% of the commodity nature of the foreign-funded enterprises and export prices is the opposite direction of change, and in the general trade, this proportion accounted for four percent

Regression Results

3.Analysis of PTM characteristics of general trade and processing trade at industry level:

Table 10 Industries with significant PTM feature under the general trade and its exchange rate coefficient

Industry	Exchange rate coefficient	Industry	Exchange rate coefficient	Industry	Exchange rate coefficient
12- Mollusks and fruits; industrial medicinal plants; straw, straw and feed	-0.66	52- cotton	-0.07	76- Aluminum and its products	-0.10
16- Meat, fish, crustaceans, and other aquatic invertebrates	-0.64	55- Chemical fiber staple fiber	-0.08	83- Base metal miscellaneous articles	-0.06
19- Cereal, grain flour, starch or pastries	-0.49	60- Knitted fabrics and crocheted fabrics	-0.10	84- Nuclear reactors, boilers, machinery, mechanical appliances and their parts	-0.08
20- Vegetables, fruits, nuts or other parts of the plant products	-0.26	65- Hat and its parts	-0.23	94- Furniture, bedding, mattresses, spring mattresses, soft cushions and similar filling products; luminaires and lighting fixtures; luminous signs, luminous nameplates and the like;	-0.16
40- Rubber and its products	-0.19	66- Umbrellas, parasols, canes, whips, whips and their parts	-0.21		
49- Books, newspapers, printed pictures and other printed matter; manuscripts, typing drafts and drawings	-0.18	68- Stone, gypsum, cement, asbestos, mica and the like	-0.16		

Regression Results

3.Analysis of PTM characteristics of general trade and processing trade at industry level:

Table 11 Industries with significant PTM feature under the processing trade and its exchange rate coefficient

Industry	Exchange rate coefficient	Industry	Exchange rate coefficient	Industry	Exchange rate coefficient
16- Meat, fish, crustaceans, molluscs and other aquatic invertebrates	-0.96	44- Wood and wood products; charcoal	-0.57	59- Impregnated, coated, coated or laminated fabrics; industrial textile products	-0.68
33- Essential oils and balms; fragrance products and make-toiletries	-0.37	48- Paper and paperboard; pulp, paper or cardboard products	-0.14	60- Knitted fabrics and crocheted fabrics	-0.14
39- Plastics and their products	-0.10	49- Books, newspapers, printed pictures and other printed matter; manuscripts, typing drafts and design drawings	-0.70	61- Knitted or crocheted clothing and accessories	-0.24
40- Rubber and its products	-0.24	56- Wadding and non-woven fabrics; special yarn; line, rope, cable, cable and its products	-0.23		

Regression Results

3.Analysis of PTM characteristics of general trade and processing trade at industry level:

Compared with the processing trade, the general trade shows stronger PTM. This is consistent with the previous analysis of the commodity level.

Conclusions

1.First of all, general trade exhibits stronger in PTM effect than processing trade. Both the analyses based on HS8 classification (product level) and H2 classification (industry level) show that, amongst the significant samples in our analysis, the general trade is featured by a relatively strong PTM effect, while the processing trade is rather weak in PTM mechanism. That is to say, it seems that the processing trade owns a more powerful pricing power than the general trade. The caparisons between table 9 and 8, or between table 11 and 10, both tell us the same point.

Conclusions

2.Second, PTM effect is stronger in general trade while weak in processing trade, could be explained by Mordechai Kreinin (2004). In the wake of the global production networks, production sharing changes the role of pass-through, to the extent that a country's exports enter into its imports and its imports become part of its exports. The ERPT effect on exports denominated in one currency is offset by the exchange rate effect on the import expressed in the other currency. China and other economies within East Asia are specially characterized by the integration into the global value chain. The ERPT/PTM effect on exports in this area will especially be distorted by the high involvement into the global production network.

Conclusions

3.Lastly, if we do not differentiate the general trade and the processing trade, and just analyse the PTM effect based on an aggregate trade data, at least for the case of China, probably we will underestimate the PTM effect. Because the processing trade shows a weak PTM effect comparing with the general trade, which does not mean the former has a stronger pricing power than the latter. That is to say, **if we analyze upon the aggregate data, we will probably overestimate the potential room for RMB's cross board trade settlement.**

Thank you!