Why do Chinese Firms Borrow Foreign Currency　Dominated Debt?

-----Evidence From Offshore USD Bond Issuance

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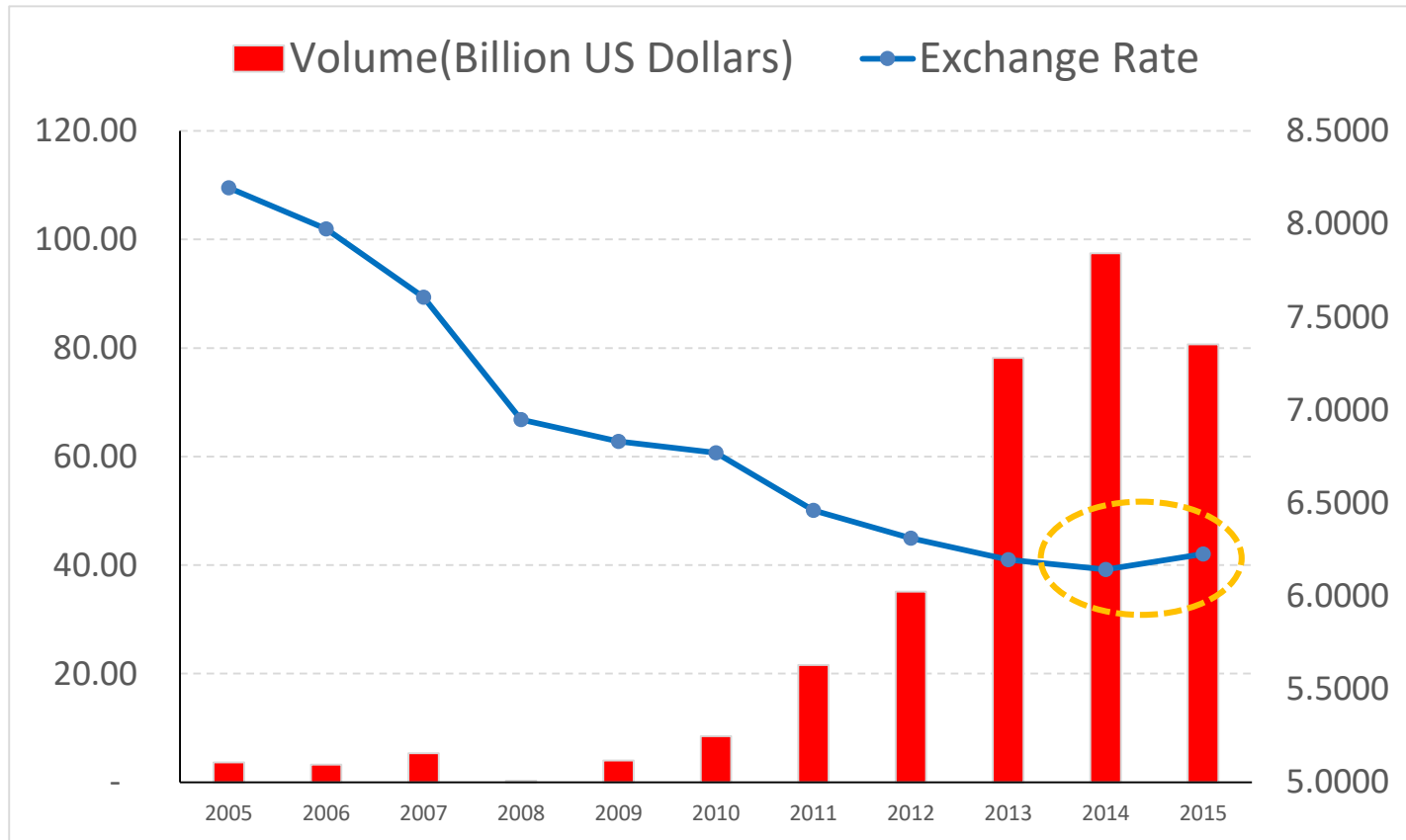# Background——Offshore Issuance of Firms From China

Figure1. The Volume of USD Bond Issuance and Nominal Exchange Rate(Yuan Against the Dollar)

Background
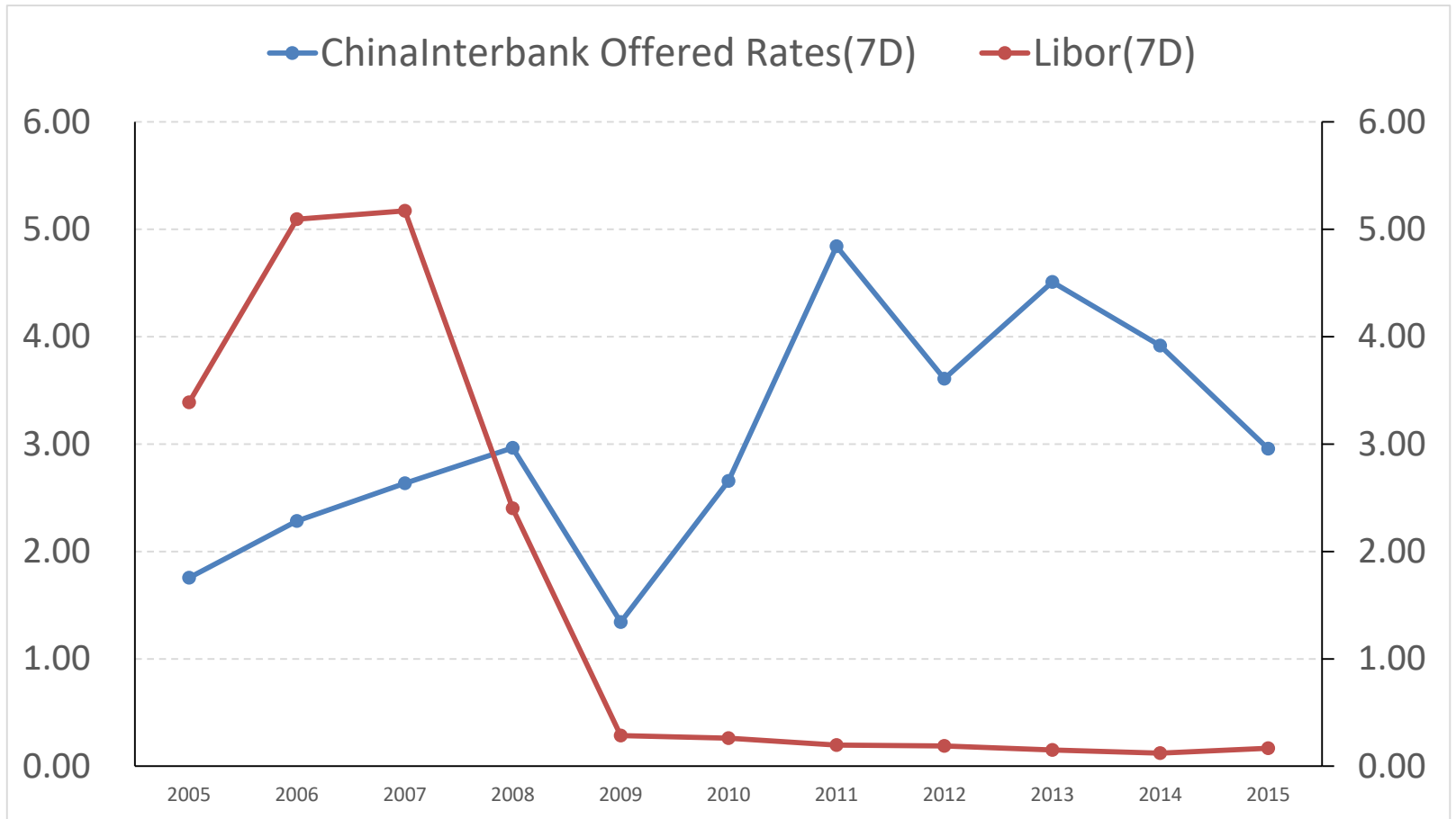
Figure2. The Change of Interest Rate Spread (China & USA)

Background

Outside
- Liquidity Feast caused by Fed's QE
- High Interest Rate Spreads → Motivation

Inside
- RMB Appreciation Expectation
- RMB Internationalization → Channel
- Bulks of Policies to Encourage Firms Finance Offshore
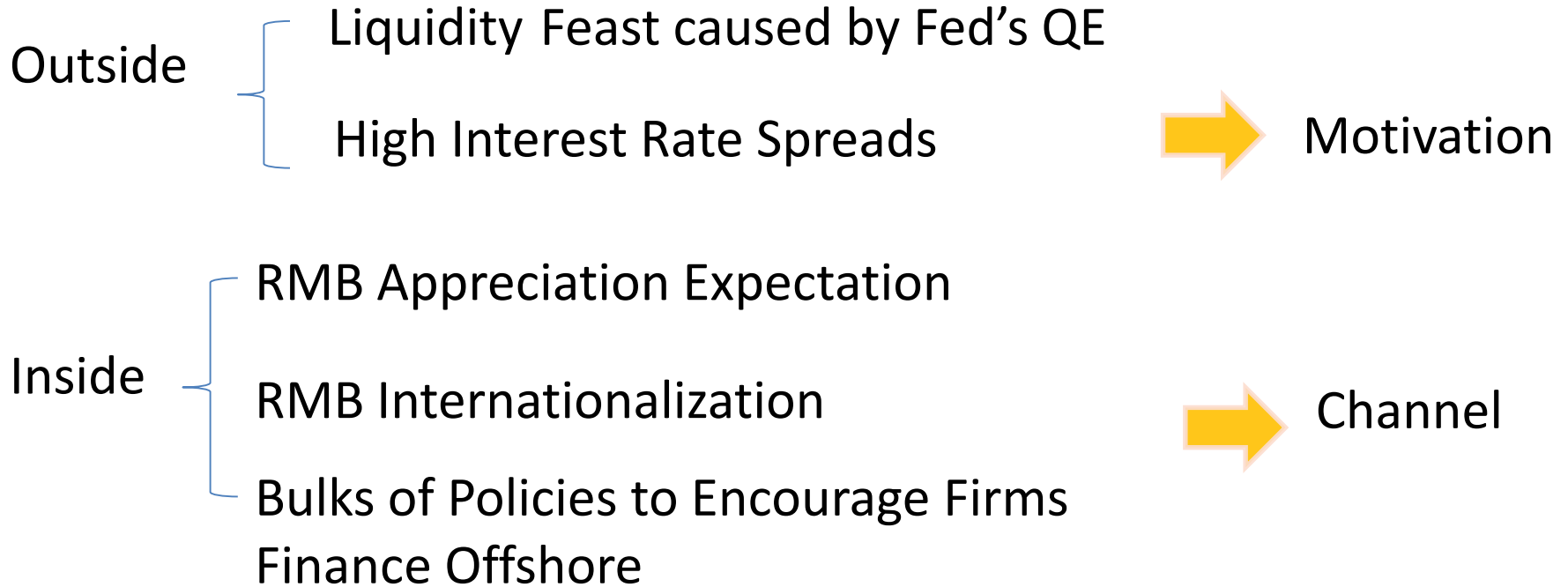
Related Literature

What we know about the offshore foreign currency dominated corporate bond in the global bond market?

- Characteristics of firms: larger, more leveraged (Gozzi et, 2015)

Focus ➡️

- Motivations: larger and involve more fixed interest rate contracts (Claessens and Schmukler , 2007)

- Motivation: firms with already high cash holdings are more likely to issue US dollar-denominated bonds. (Shin, 2015)

- Possible risks: balance sheet effect and currency mismatch (Galiani, Levy-Yeyati and Schargrodosky, 2003)

Background: Capital account liberalization is a gradual process.(PBC, 2012)
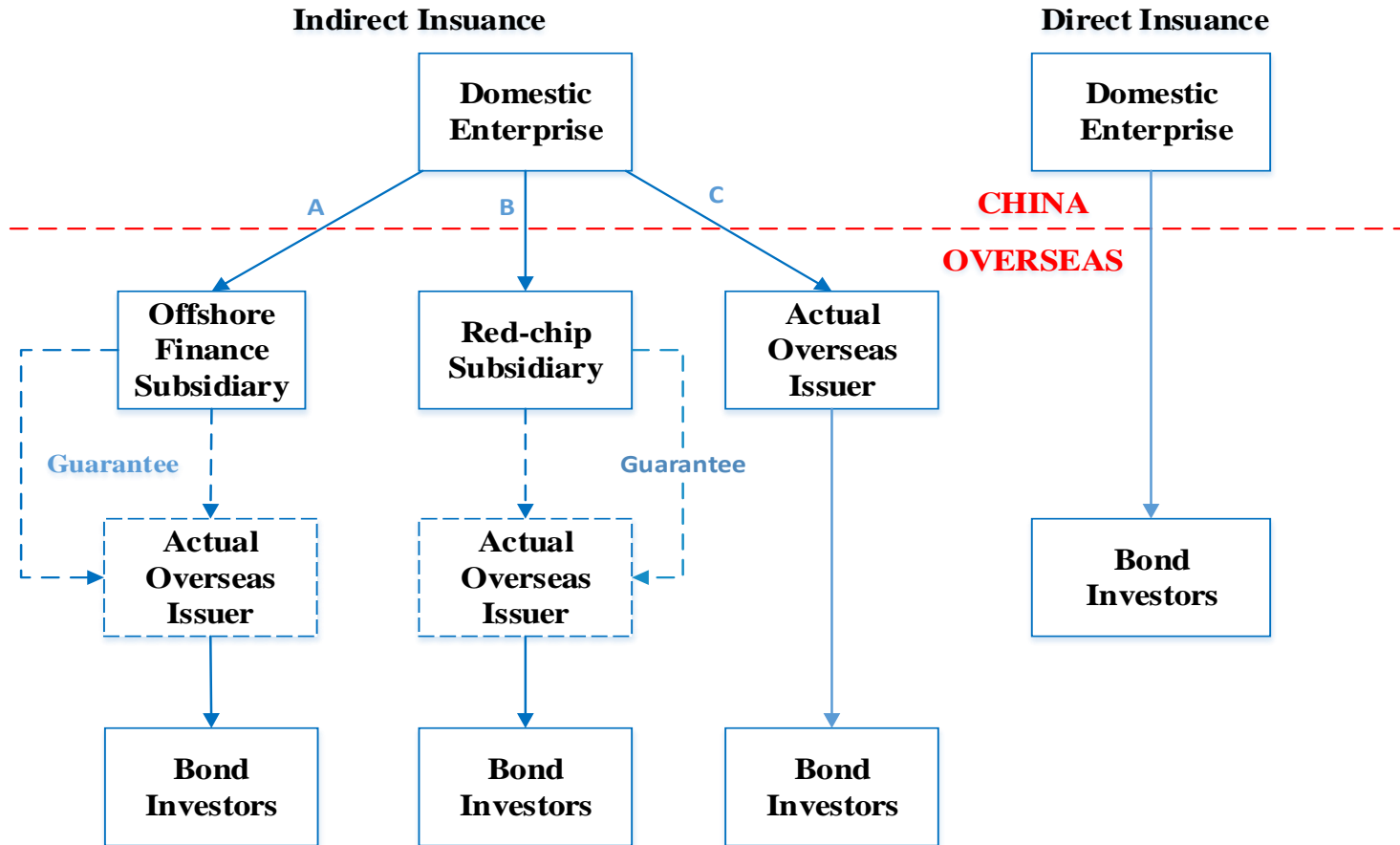
Figure 3 How China's Firm Issue Foreign Currency Dominated Bonds

	Approval Process	Grading	Financing Cost	Returning Funds Back
Indirect Ways:				
Structure A	Easy	Low	High	Easy
Structure B	Easy	High	Low	Easy
Structure C	Hard	High	Low	Hard
Direct Issuance (Only 3 issuance)	Hard	High	Low	Easy

- China's 4-Trillion-Yuan Investment Plan in 2009 provide markets with plenty of investment opportunity
- Different roles that SOE and POE play in China

Driven Factors of Financing Outside

- Pecking Order: The pecking order hypothesis supposes firms make use of internal cash resources firstly and resort to external debt financing only when internal cash resources are not sufficient. It predicts a negative relation between cash and bond issuance.

- Carry Trade: It means that due to cross–border arbitrage, the higher the difference in interest rates, the higher is the level of foreign currency debt.

- Precautionary Issuance: Companies use the funded money into real projects expenditure.

Key Indicators:

- Cash: the sum of cash and short-term assets scaled by total assets
- Ctindex: divide the interest rate differential by the implied volatility derived from three-month at-the-money exchange rate options, a measure that captures the ex ante attractiveness of carry trades.
- FinDep:(Capital expenditures -Cash flow from operations) / Capital expenditures.

Control Group Indicators:

- Size: logarithm of total assets
- Leverage: total debt divided by total assets
- Roa

Situation 1

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┌─────────────────────────────────────────────────────────┐
│              Real Money Demand Motivation                │
└─────────────────────────────────────────────────────────┘
                           ↓
┌─────────────────────────────────────────────────────────┐
│  First Test: Pecking Order                               │
│                                                          │
│  Result: cash — Significantly Negative ★ (Initial        │
│  Evidence)                                               │
└─────────────────────────────────────────────────────────┘
                           ↓
┌─────────────────────────────────────────────────────────┐
│  Second Test: Carry Trade Hypothesis                     │
│                          ┌ No correlation: Excluding CT  │
│                          │ Motivation ★                  │
│  Result: Carry Trade Index┤ Significantly positive:      │
│                          │ Accompanied by CT             │
│                          └ Motivation                    │
└─────────────────────────────────────────────────────────┘
                           ↓
┌─────────────────────────────────────────────────────────┐
│  Third Test: Precautionary Hypothesis                    │
│                                                          │
│  Result : FinDep—Positive & Significant ★                │
└─────────────────────────────────────────────────────────┘
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Situation 2

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                    ┌─────────────────────────────────────┐
                    │       Carry Trade Motivation         │
                    └─────────────────────────────────────┘
                                     ⬇
                    ┌─────────────────────────────────────┐
                    │  First Test: Pecking Order Hypothesis│
                    └─────────────────────────────────────┘
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● Cash: Positive & Significant

Cash: No Correlation ■

Strong Possibility

Cannot Exclude the Possibility

Second Test: Carry Trade Hypothesis

Identification of Arbitrage Motivation

● CT Index: Positive & Significant

CT Index: Positive & Significant ■

Third Test : Precautionary Inssuance

FinDep : No Correlation (post-action Inditification

A. Sample Issuances

Year Issue	Frequency	Company	Volume（$）	A-Share	HK Stock Market	Three Board
2005	9	7	3,680,000,000	2	5	0
2006	8	6	3,260,000,000	0	6	0
2007	10	6	5,365,000,000	1	5	0
2008	1	1	300,000,000	0	1	0
2009	8	5	4,015,000,000	1	4	0
2010	22	18	8,520,000,000	2	16	0
2011	34	28	21,630,000,000	4	24	0
2012	51	33	35,138,294,824	9	24	0
2013	84	56	78,179,718,305	18	37	1
2014	98	57	97,460,473,000	15	41	1
2015	71	42	80,661,703,823	18	24	0
2016(1-6)	28	22	28,402,031,000	8	14	0
Total	424	281	366,612,220,952	78	201	2

B. Sample Issuances

Viable	Obs	Mean	Std	min	max
Cash	1214	0.29	0.16	0.00	0.92
Total Assets	1214	8.75E+10	2.20E+11	8.52E+07	2.41E+12
ROA	1213	5.54	8.03	-147.54	47.23
Implied Volatility	11	2.80	0.89	1.61	4.38

Logit Regression——Packing Order and Carry Trade Hypothesis

variable	Dollar Bond issurance	
CTindex（L1）		0.731457*
		(1.71)
Realcash（L1）	-0.25333	-0.25333
	(-0.27)	(-0.27)
size（L1）	0.06214	0.06214
	(0.67)	(0.67)
leverage（L1）	0.89022	0.89022
	(1)	(1)
roa2	705.096***	705.096***
	(2.93)	(2.93)
Year F.E.& Industry F.E.	Y	Y
SOE/POE F.E.	Y	Y
Observations	2750	2750

The obvious differences between SOE and POE——Tobit Regression

variable	F.Dollar Bond issurance/totol bond issurance		
	All	SOE	POE
CTindex	0.136802***	0.091116	0.188091**
	(2.42)	(1.46)	(2.58)
ERvol	18.25898	9.988632	33.23041
	(1.17)	(0.58)	(1.66)
realcash	-0.27234*	-0.66037***	-0.10083
	(-1.97)	(-3.04)	(-0.66)
size	-0.12328***	-0.15383***	-0.03879
	(-8.68)	(-7.36)	(-1.66)
leverage	-0.2341*	0.028449	-0.55125***
	(-1.64)	(0.11)	(-2.83)
roa2	65.33126***	-66.3289	143.1016***
	(2.09)	(-0.55)	(3.85)
YearF.E.& IndustryF.E.	Y	Y	Y
SOE/POE F.E.	Y	N	N

Precautionary Hypothesis

variable	Dollar Bond issurance		
	All	SOE	POE
FinDep	0.000796	0.006858*	0.000753
	(1.23)	(1.74)	(1.18)
Realcash（L1）	-1.40363*	-0.52789	-1.18466
	(-1.88)	(-0.39)	(-1.19)
size（L1）	0.333394***	0.33061**	0.386522
	(4.25)	(2.33)	(3.34)
leverage（L1）	0.428222	-2.93938*	1.263189
	(0.62)	(-1.9)	(1.58)
roa2	8.317103***	2.565785	8.437751***
	(4.6)	(0.57)	(3.95)
Year F.E.& Industry F.E.	Y	Y	Y
SOE/POE F.E.	Y	N	N
Observations	1375	553	822

Key Conclusions

Key Hypothesis	All	SOE	POE
Packing Order(Cash)	-&*	-&***	No correlation
Carry Trade(CT Index)	+ & ***	No correlation	+**
Precautionary (FinDep)	No correlation	+&*	No correlation

Thank you.