

# The International Use of the Renminbi: Evidence from Japanese Firm-Level Data

RIETI-IWEP-CESSA JOINT-WORKSHOP  
**RMB INTERNATIONALIZATION**  
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# Motivation

- The use of the Chinese renminbi (RMB) has been increasing in recent years for trade invoicing, due to active promotion policies by the Chinese government.
- Since China plays a role of regional and global manufacturing hub and **foreign multinational companies (MNCs) actively operate in China**, it is necessary to investigate to what extent **MNCs use RMB for trade invoicing** especially in their **intra-firm trade**.
- However, no firm-level empirical evidence has been presented.

# This Paper's Contribution

- Utilizing the firm-level information obtained by the large-scale questionnaire surveys in 2010 and 2014, this study presents the new evidence of the use of RMB by Japanese MNCs operating in China and ASEAN countries.
- We found the following results:
  - Although RMB is extensively used for local sales and procurement in China, Japanese MNCs in China mainly use the U.S. dollar and yen in trade with other countries.
  - Japanese MNCs in China increased **the use of RMB in intra-firm trade with Japan.**
  - The RMB transactions will be growing further if it becomes easier for MNCs to conduct marry and netting for their trade settlement.

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- Overviews of RMB internationalization
  - Difference in Internationalization between Yen and RMB
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  - Share of Invoice Currency in Asia
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# RMB internationalization

- Many policy reforms aimed at increasing the use of RMB in cross-border transactions have been implemented by Chinese government.
- At the same time, the RMB related deposits, bonds, and derivatives in offshore markets have been expanding.
- Accordingly, the RMB internationalization has been promoted by both **policy-driven efforts** and market-driven forces.
- According to Eichengreen and Kawai (2014), the RMB internationalization has started by **focusing the use of the currency for trade-related purposes**.

# Recent RMB internationalization Policies

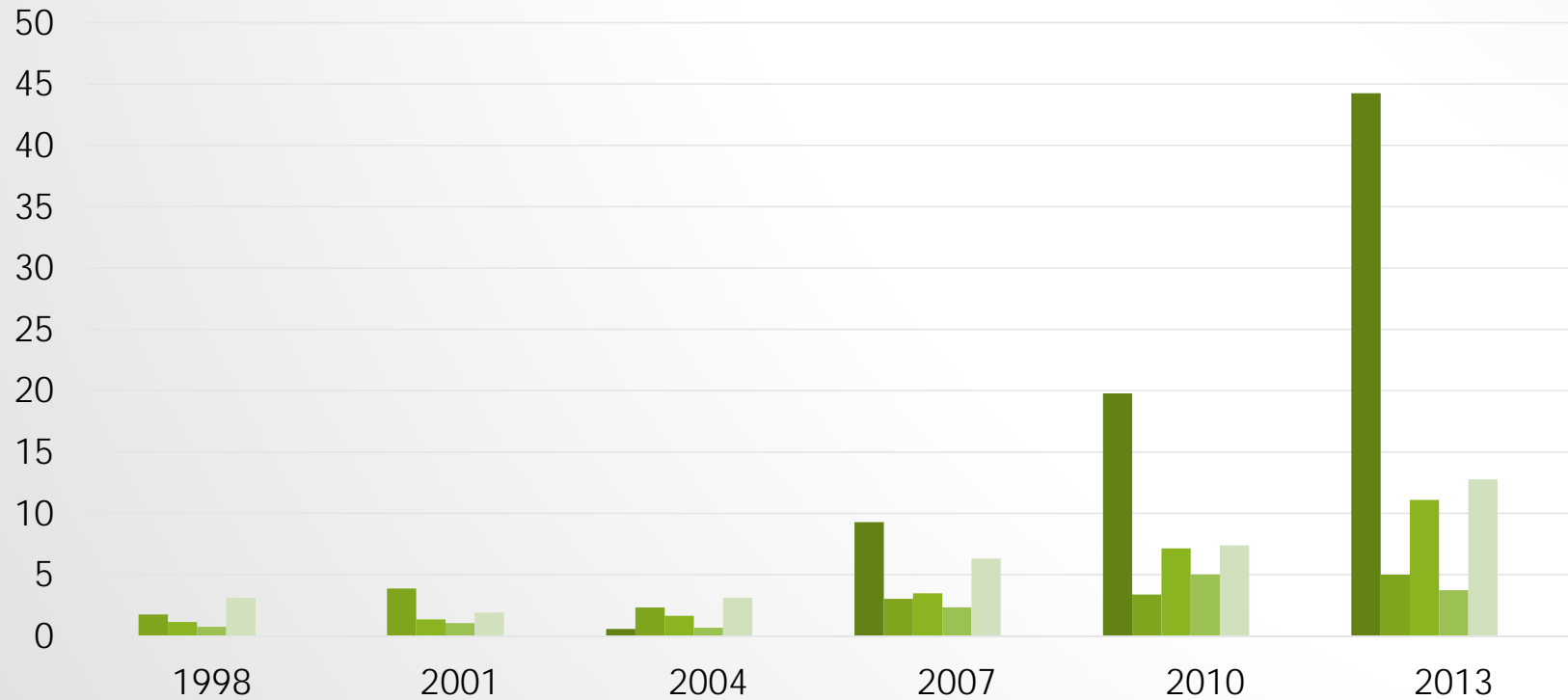
- **Bilateral currency swap agreements with various countries**
  - To provide RMB liquidity for trade and direct investment
  - 32 swap arrangements with worldwide foreign central banks (As of May 2015)
  - Promote cross-border trade and direct investment in RMB

- **Pilot scheme for use of the RMB in trade settlement**
- **Direct RMB trading with non-US dollar currencies**
- **Offshore market RMB (CNH)**
- **Official RMB clearing banks** now appointed in 15 countries across Asia, Europe, Middle East, and North and South Americas (as of Nov 2015)

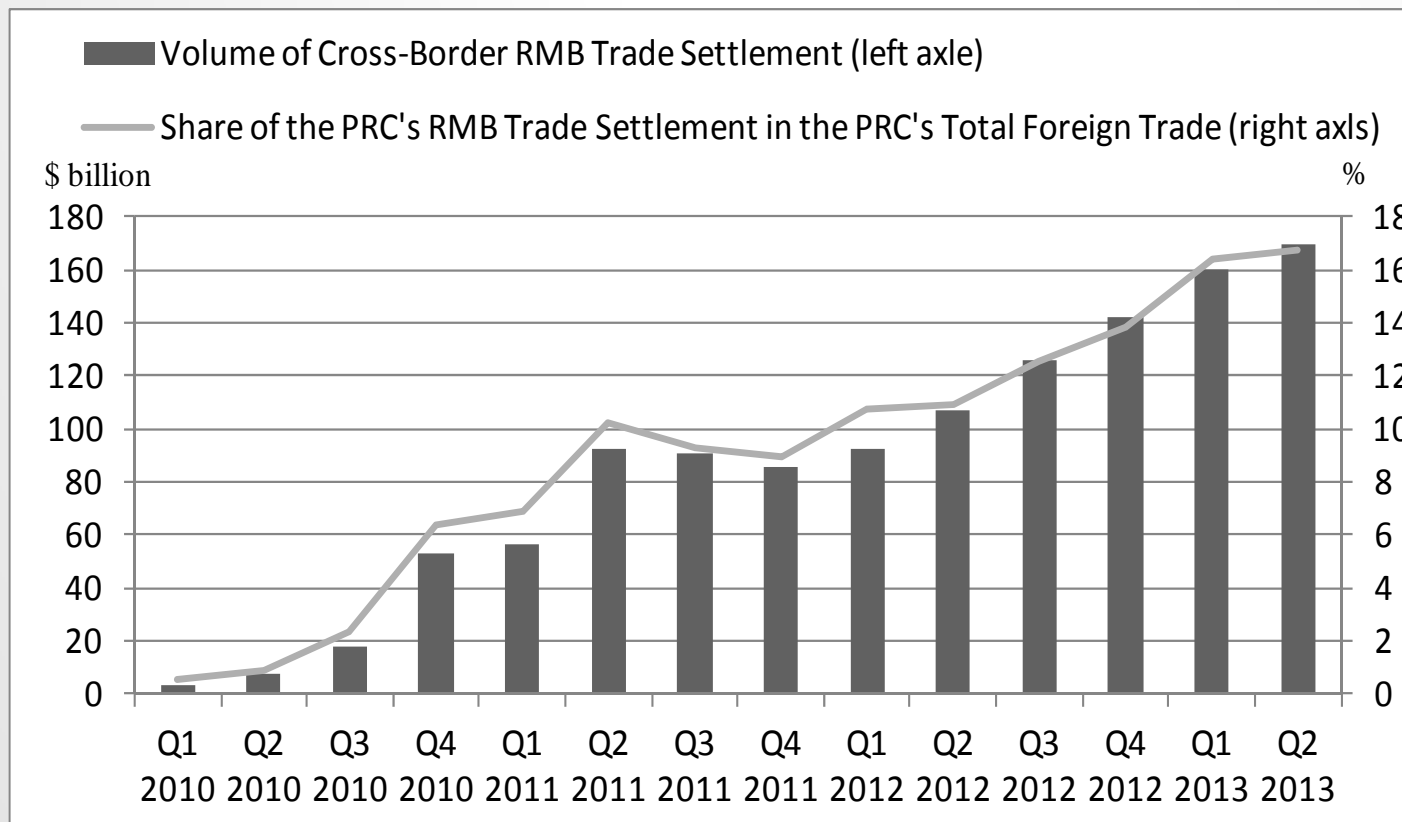
# OTC Foreign Exchange Turnover (BIS, 1998-2013)

(Daily average,  
1 billion US\$)

■ China ■ Indonesia ■ Malaysia ■ Philippines ■ Thailand ■ ■



# The Volume and Share of the RMB Trade Settlement



Sources: Eichengreen and Kawai (2014)

Data: CEIC, PRC Premium Database; International Monetary Fund, Direction of Trade Statistics.



# Difference in Internationalization between **RMB** and **Yen**

- Since 2009, Bilateral currency swap agreements with various countries
- Pilot scheme for use of the RMB in trade settlement(2009)
- Offshore market RMB (CNH)
- Direct RMB trading with non-US dollar currencies
- Official RMB clearing banks

- ✓ Rapid and aggressive promotion
- ✓ **Cross-border trade settlement**
- ✓ Strong expectation of RMB appreciation

- 1960: Free Yen Accounts for nonresidents
- 1980: Amendment of Foreign Exchange and Foreign Trade Control Act
- 1984: Abolition of the real demand
- 1998:Amendment of Foreign Exchange and Foreign Trade Act

- ✓ Reluctant to internationalize the yen for trade settlement in the 1980s
- ✓ **Convertibility and capital openness**
- ✓ Prolonged stagnation of Japanese economy

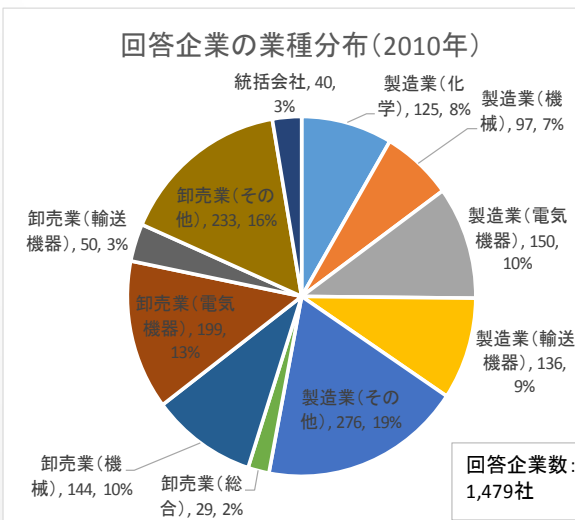
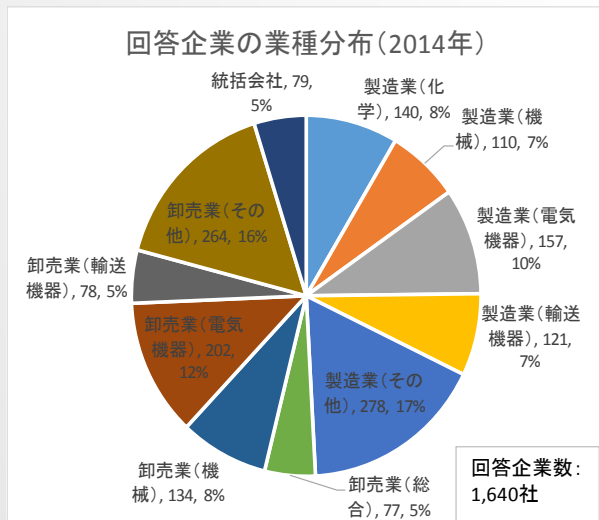
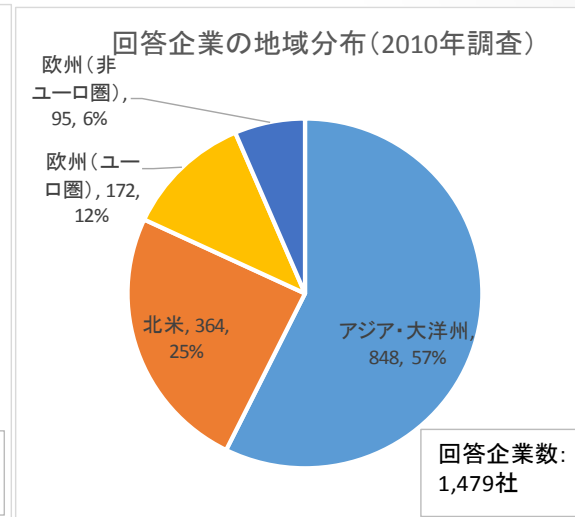
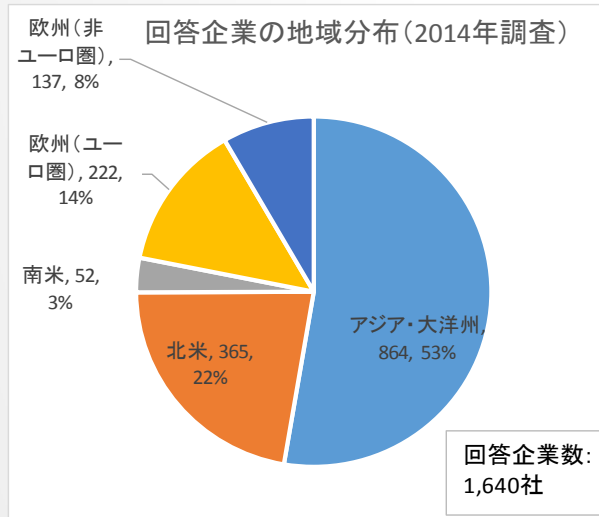
# Questionnaire surveys of Japanese Overseas Subsidiaries in 2010 and 2014

- Subsidiaries are chosen from the Toyo Keizai's Overseas Japanese companies database (the "OJC database").
- Questionnaire items focus on:
  - (i) **exchange rate risk management** of overseas subsidiaries.
  - (ii) the **choice of invoice currency** by source and destination, by trading partner (intra-firm or arm's length).

RIETI Questionnaire survey 2010:  
Sent to 16,020 ⇒ 1,479 (9.2%)  
Asia, Oceania, North America,  
Europe

RIETI Questionnaire survey 2014:  
Sent to 18,932 ⇒ 1,640 (8.7%)  
Asia, Oceania, North and South  
America, Europe

# Comparison of the Respondents



# Problems of invoice currency used for int'l trade

Problems of invoice currency used for international trade (# of firms to answer "yes")										Problems of invoice currency used for international trade (# of firms to answer "yes")								
Answers in 2010										Answers in 2014								
Foreign currency	Currency the firm uses in trade transactions	Currency that the firm suffers problems	Problems (multiple answers)							Currency the firm suffers problems	Currency the firm uses in trade transactions	Currency that the firm suffers problems	Problems (multiple answers)					Others
			Foreign exchange control regulations hinder non-residents' transactions of the currency	Capital controls and restrictions hinder the operational hedging (marry and netting)	Raising and investment of funds in that currency	High transaction costs involved with currency	High foreign exchange volatility	Others	Foreign exchange control regulations hinder non-residents' transactions of the currency				Capital controls and restrictions hinder the operational hedging (marry and netting)	Raising and investment of funds in that currency	High transaction costs involved with currency hedging	High foreign exchange volatility	Others	
US Dollar	1,224 (86.0)	714 (58.3)	3							1	22 (6.6)	18 (7.1)	18 (6.2)	53 (18.3)	247 (85.2)	13 (4.5)		
Euro	484 (34.0)	236 (48.8)	7							1	15 (2.7)	14 (3.8)	15 (5.0)	51 (13.8)	357 (87.5)	8 (3.8)		
Japanese yen	920 (64.6)	654 (71.1)	29							1	12 (4.0)	14 (3.7)	16 (4.0)	10 (13.5)	26 (94.7)	1 (2.1)		
Chinese Yuan	149 (10.5)	76 (51.1)	2							9	12 (29.3)	14 (34.1)	16 (39.0)	10 (24.4)	26 (63.4)	1 (2.4)		
Hong Kong Dollar	83 (5.8)	18 (21.4)	1							3	0	0	0	1 (5.0)	3 (75.0)	0 (0.0)		
Taiwan Dollar	44 (3.1)	14 (31.1)	1							1	0	0	0	0 (0.0)	0 (0.0)	1 (25.0)		
Korean Won	22 (1.5)	10 (43.8)	1							0	0	0	0	3 (100.0)	0 (0.0)	0 (0.0)		
Singapore Dollar	143 (10.0)	45 (31.1)	1							7	0	0	0	7 (22.2)	1 (77.8)	1 (11.1)		
Malaysian Ringgit	55 (3.9)	24 (43.6)	1							4	56 (3.7)	12 (21.4)	3 (25.0)	2 (16.7)	2 (25.0)	1 (66.7)	1 (8.3)	
Indonesia Rupiah	41 (2.9)	26 (63.4)	1							5	53 (3.5)	34 (64.2)	5 (14.7)	0 (0.0)	1 (2.9)	5 (14.7)	0 (0.0)	
Thai Baht	137 (9.6)	49 (35.8)	3							127	23 (8.3)	23 (18.1)	0 (0.0)	1 (4.3)	2 (8.7)	18 (78.3)	1 (4.3)	
Philippines Peso	23 (1.6)	10 (43.5)	2							18	5 (1.2)	5 (27.8)	0 (0.0)	0 (0.0)	1 (20.0)	0 (80.0)	0 (0.0)	
India Rupee	13 (0.9)	6 (46.2)	2							28	10 (1.8)	10 (35.7)	0 (0.0)	1 (10.0)	1 (10.0)	2 (20.0)	1 (60.0)	

High foreign exchange volatility

Capital controls and restrictions hinder the operational hedging, marry and netting.  
Raising and investment of funds in that currency.

High foreign exchange volatility

RIETI Questionnaire Survey 2010 "Questionnaire Survey on the Choice of Invoice Currency by Japanese Overseas Subsidiaries"

RIETI Questionnaire Survey 2014 "Questionnaire Survey on the Choice of Invoice Currency by Japanese Overseas Subsidiaries"

# Do you have any plan to expand the RMB transaction in future?

Do you have any plan to expand the Chinese yuan' transaction in future?

	2010			2014			
	# of responded	Yes	No	# of responded	Yes	No	Others
Asia	755	160 21.2	572 75.8	623	99 15.9	501 80.4	23 3.7
Oceania	43	0 0.0	43 100.0	44	0 0.0	43 97.7	1 2.3
North America	273	6 2.2	262 95.8	204	3 1.5	196 96.1	5 2.5
South America					0 0.0	20 100.0	0 0.0
Europe(Euro area)	109	3 2.8	104 95.4	121	7 5.8	112 92.6	2 1.7
Europe(non-Euro area)	70	0 0.0	70 100.0	70	1 1.4	66 94.3	3 4.3
All	1,250	169 13.5	1,051 84.5	1,100	110 10.2	938 86.7	34 3.1

RIETI Questionnaire Survey 2010 and 2014 "Questionnaire Survey on the Use of the Japanese Yen and the Chinese Yuan by Japanese Overseas Subsidiaries"

Asia  
Yes, 15.9%

Europe  
Yes, 5.8%

Total  
Yes, 10.2%

# Do you have any plan to expand the RMB transaction in future? (Answer in 2014)

	Number of respondents	Do you have any plan to expand the Chinese yuan' transaction in future?			If you answer "Yes", why is the reason?			
		Yes	No	Others	Receipts in the Chinese yuan are increasing	Payments in the Chinese yuan are increasing	Chinese Yuan is becoming more tractable as the currency reforms by Chinese government are advancing	Others
All Countries	1,000	110	938	34	66	41	21	16
		10.2	86.7	3.1				
China	151	80	63	8	52	24	11	13
		53.0	41.7	5.3				
Hong Kong	39	10	26	3	6	7	3	0
Taiwan	46	2	41	3	0	0	1	1
Korea	22	0	20	2	0	0	0	0
Shingapore	62	3	54	5	0	0	2	1
		4.8	90.3	4.8				
Malaysia	65	1	64	0	0	0	0	0
		1.5	98.5	0.0				
Thailand	85	0	82	3	0	0	0	0
		0.0	96.5	3.5				
Indonesia	73	0	72	1	0	0	0	0
		0.0	98.6	1.4				
Philippines	17	1	14	2	0	0	0	0
		5.9	94.1	0.0				
Vetnam	29	2	26	1	2	1	1	0
		6.9	89.7	3.4				
India	29	0	28	1	0	0	0	0
		0.0	96.6	3.4				

China  
Yes, 53.0%  
HK  
Yes, 25.6%

Receipts in the RMB are increasing.

Payments in the RMB are increasing.

RMB is becoming more tractable as the currency reforms by PRC are advancing.

Do you have any plan to expand the ratio of transactions denominated **in the local Asian currency** in the future?  
(Answer in 2014)

Do you have any plan to expand the ratio of transactions denominated in the local Asian currency in the future?

	China	Hong Kong	Taiwan	Korea	Vietnam	Philippines	Thailand	Malaysia	Singapore	Indonesia	India
# of responded	158	42	48	20	32	18	92	68	65	79	32
Yes	63 39.9	7 16.7	7 14.6	0 0.0	6 18.8	5 27.8	22 23.9	13 19.1	12 18.5	22 27.8	9 28.1
No	89 56.3	31 73.8	38 79.2	19 95.0	26 81.3	13 72.2	69 75.0	53 77.9	51 78.5	54 68.4	23 71.9
Others	6 3.8	4 9.5	3 6.3	1 5.0	0 0.0	0 0.0	1 1.1	2 2.9	2 3.1	3 3.8	0 0.0

Do you have any plan to expand the ratio of transactions denominated in the local Asian currency in the future? (Answer in 2014)

If you selected "Yes" above, please select the relevant currency or currencies below. (Select all that apply)										
	China	Hong Kong	Taiwan	Vietnam	Philippines	Thailand	Malaysia	Singapore	Indonesia	India
# of responded	62	6	7	5	5	22	13	12	22	9
Chinese Yuan	61 (98.4)	5 (83.3)	3 (42.9)	2 (40.0)	1 (20.0)	1 (4.5)	0 (0.0)	1 (8.3)	0 (0.0)	0 (0.0)
Thai baht	1 (1.6)	0 (0.0)	0 (0.0)	1 (20.0)	0 (0.0)	21 (95.5)	5 (38.5)	7 (58.3)	2 (9.1)	1 (11.1)
Korean won	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Hong Kong \$	1 (1.6)	1 (16.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Singapore \$	0 (0.0)	1 (16.7)	1 (14.3)	1 (20.0)	1 (20.0)	2 (2.1)	4 (10.4)	4 (6.9)	0 (0.0)	1 (9.0)
Malaysian ringgit	0 (0.0)	1 (16.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)	10 (26.0)	3 (5.1)	0 (0.0)	0 (0.0)
Indoeshian rupiah	1 (1.6)	1 (16.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)	2 (5.2)	4 (6.9)	21 (95.5)	0 (0.0)
Philippin peso	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (60.0)	0 (0.0)	0 (0.0)	1 (1.7)	0 (0.0)	0 (0.0)
Taiwan \$	0 0.0	1 16.7	5 71.4	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Indian rupee	0 0.0	1 16.7	1 14.3	0 0.0	0 0.0	0 0.0	1 2.6	2 3.4	0 0.0	8 88.9
RIETI Questionnaire Survey 2014 "Questionnaire Survey on the Choice of Invoice Currency by Japanese Overseas Subsidiaries"										



# CNY vs. CNH

"Do you have any RMB transaction at the moment?"  
All 12.7%, Asia 19.44%

Do you have any transactions denominated in Chinese yuan at the moment?			
	# of responded	Yes	No
Asia	643 (100.0)	125 (19.4)	518 (80.6)
Oceania	43 100.0	1 2.3	42 97.7
North America	206 100.0	7 3.4	199 96.6
South America	20 100.0	0 0.0	20 100.0
Europe(Euro area)	123 100.0	5 4.1	118 95.9
Europe(non-Euro area)	10 100.0	2 2.9	8 97.1
All	1,105 (100.0)	140 (12.7)	965 (87.3)

If you selected "Yes" in the above question, please select which Chinese yuan you use.			
	# of responded	CNY (On-shore Chinese yuan)	CNH (Off-shore Chinese yuan)
Asia	120 (100.0)	102 (85.0)	18 (15.0)
Oceania	1 (100.0)	1 (100.0)	0 (0.0)
North America	7 (100.0)	4 (57.1)	3 (42.9)
South America	0 (0.0)	0 (0.0)	0 (0.0)
Europe(Euro area)	4 (100.0)	4 (100.0)	0 (0.0)
Europe(non-Euro area)	2 (100.0)	2 (100.0)	0 (0.0)
All	134 (100.0)	113 (84.3)	21 (15.7)

CNY 84.3%  
CNH 15.7%

# Please select the FX market where you transact RMB.

Please select the foreign exchange market where you transact the Chinese yuan. (Select all that apply)

	# of responded	Foreign exchange market in China	Foreign exchange market in Hong Kong	Off-shore Chinese yuan-Japanese yen market in Tokyo	Others
Asia	120 (100.0)	101 (84.2)	16 (13.3)	2 (1.7)	1 (0.8)
Oceania	1 (100.0)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
North America	7 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (14.3)
South America	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Europe(Euro area)	4 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (25.0)
Europe(non-Euro area)	2 (100.0)	1 (50.0)	0 (0.0)	0 (0.0)	1 (50.0)
All	134 (100.0)	111 (82.8)	17 (12.7)	2 (1.5)	4 (3.0)

FX market in China: 82.8%  
 FX market in Hong Kong 12.7%  
 Offshore RMB-Yen market in Tokyo 1.7%

Please select below to describe the CNH. (Select all that apply)

	# of responded	CNH is useful to hedge CNY transaction	We sometimes use CNH because of the regulation of the CNY transaction, however CNH is basically useless.	We do not use CNH because only CNY can be used for trade settlement.	Others
Asia	96 (100.0)	21 (21.9)	5 (5.2)	63 (65.6)	7 (7.3)
Oceania	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
North America	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
South America	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Europe(Euro area)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Europe(non-Euro area)	2 (100.0)	0 (0.0)	0 (0.0)	1 (50.0)	1 (50.0)
All	107 (100.0)	21 (19.6)	5 (4.7)	71 (66.4)	10 (9.3)

CNH is useful to hedge CNY: 19.6%  
 We sometimes use CNH because of regulation, but CNH is basically useless: 5 %  
 We do not use CNH because only CNY can be used for trade settlement: 66.4%

# Choice of Invoice Currency by Japanese Production Subsidiaries in Asia

- **Question:**

- To what extent Japanese production subsidiaries use RMB for trade invoicing?

=> Subsidiaries operating in Asia (and especially in China).

- **2 types of invoicing data:**

- Firm-level data (share):

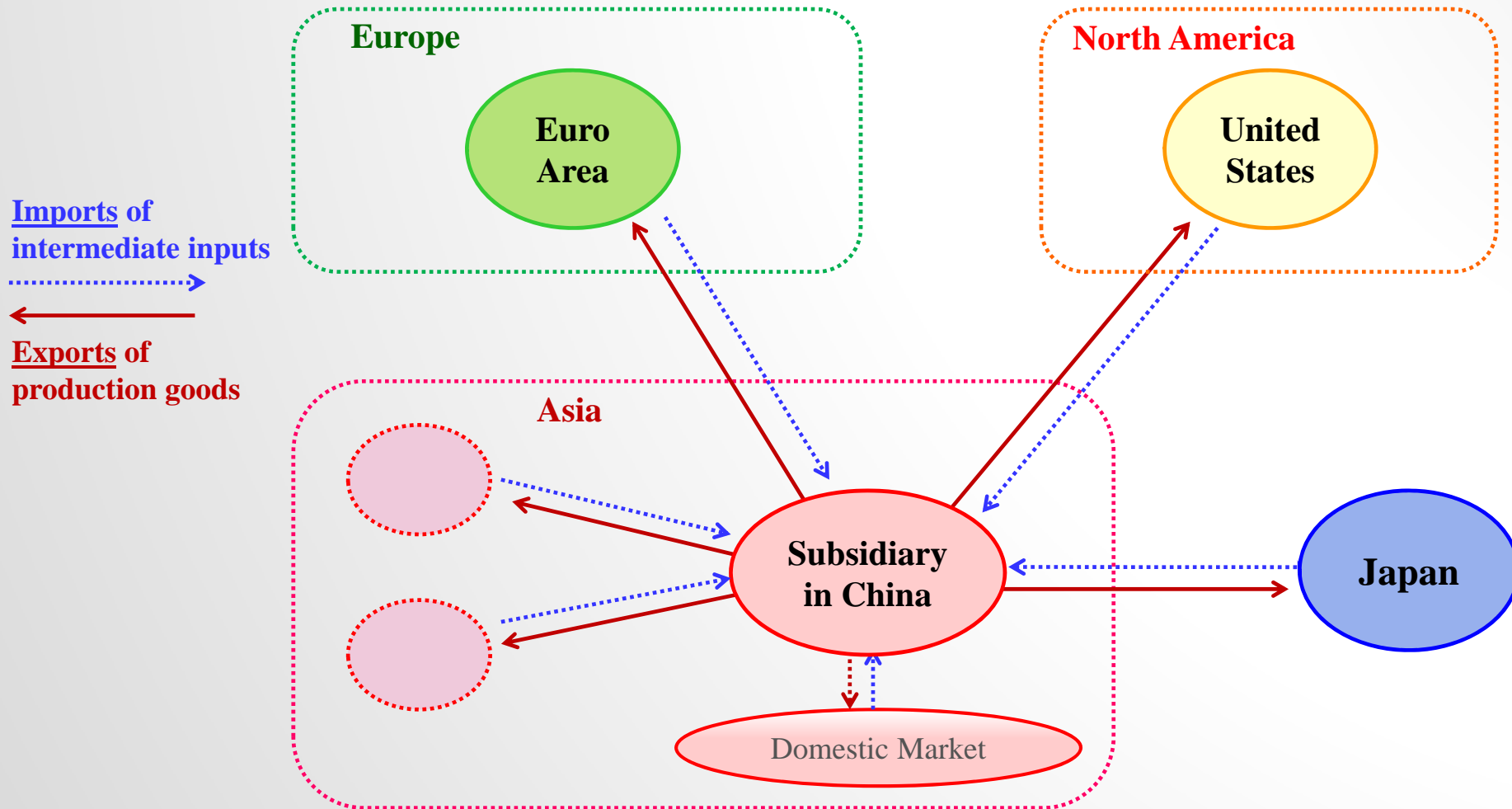
- (1) Local procurements/sales; Imports from and exports to (2) Japan and (3) other countries.

- Product-level data (number of transactions):

- (i) By trading partner (intra-firm trade or arm's-length trade)
- (ii) By destination countries

# Sketch

—**Invoicing Decision** by Japanese Production Subsidiaries—

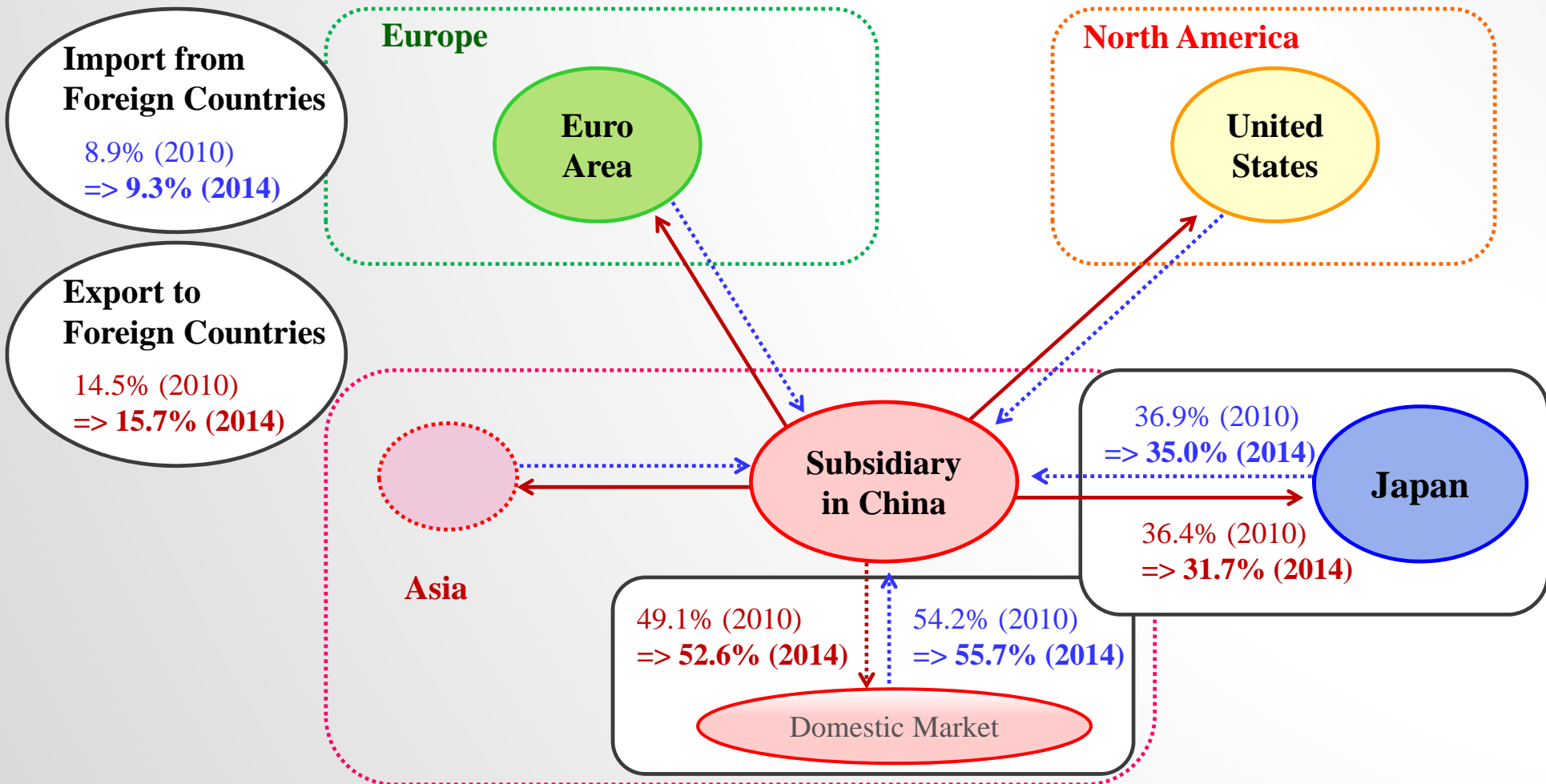


# Trade Pattern: Subsidiaries in Asia

	2010				2014			
Source Country/Region Breakdown	Number of Respondents	(a) Imports from Japan (%)	(b) Local Procurements (%)	(c) Imports from Others (%)	Number of Respondents	(a) Imports from Japan (%)	(b) Local Procurements (%)	(c) Imports from Others (%)
<b>Asia</b>	<b>490</b>	<b>34.8</b>	<b>48.6</b>	<b>16.6</b>	<b>365</b>	<b>34.1</b>	<b>45.9</b>	<b>19.7</b>
China	133	36.9	54.2	8.9	106	35.0	55.7	9.3
Hong Kong	19	38.2	31.4	30.4	6	31.0	31.3	37.7
Taiwan	28	35.2	50.9	13.9	21	50.9	33.7	8.7
Korea	16	40.8	50.5	8.8	8	59.4	29.1	11.5
<b>ASEAN-6</b>	<b>277</b>	<b>33.3</b>	<b>47.4</b>	<b>19.3</b>	<b>206</b>	<b>32.2</b>	<b>42.5</b>	<b>25.4</b>
Other Asia	17	29.9	38.8	31.3	18	26.2	49.7	24.1
Exports and Sales Destination	Number of Respondents	(a) Exports to Japan (%)	(b) Local Sales (%)	(c) Exports to Others (%)	Number of Respondents	(a) Exports to Japan (%)	(b) Local Sales (%)	(c) Exports to Others (%)
<b>Asia</b>	<b>492</b>	<b>28.0</b>	<b>47.9</b>	<b>24.1</b>	<b>342</b>	<b>26.0</b>	<b>50.3</b>	<b>23.7</b>
China	135	36.4	49.1	14.5	96	31.7	52.6	15.7
Hong Kong	19	42.8	26.2	31.0	6	31.7	23.2	45.2
Taiwan	28	14.8	54.7	30.5	20	17.6	55.5	27.0
Korea	16	30.6	58.1	11.3	8	4.5	91.3	4.3
<b>ASEAN-6</b>	<b>276</b>	<b>25.4</b>	<b>44.7</b>	<b>29.9</b>	<b>197</b>	<b>26.0</b>	<b>46.1</b>	<b>27.9</b>
Other Asia	18	6.8	91.2	2.1	15	10.8	72.6	16.6

# Trade Pattern

—Japanese Production Subsidiaries in China—



# Questionnaire Survey Data (1)

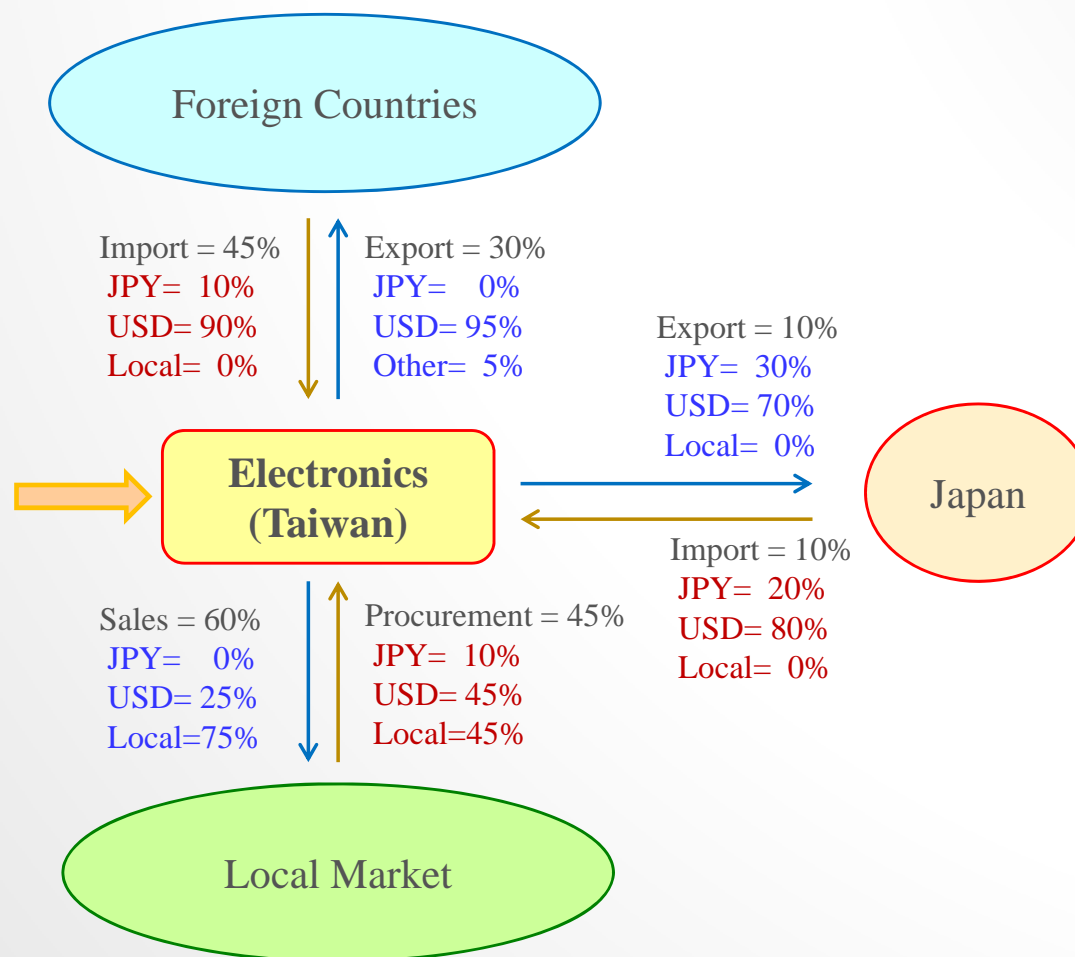
- **Invoice Decision of Production Subsidiaries:**
  - We focus on the invoicing practices of Japanese production subsidiaries.  
=> We obtained **two types of data**.
- **[1] Firm-level data:**
  - We obtain the firm-level data on invoice currency (share).
    - **Export/Sales**: 3 destinations (to Japan, to local market, and to foreign countries (excluding Japan)).
    - **Import/Procurement**: 3 sources (from Japan, from local market, and from foreign countries (excluding Japan)).
    - No information by product and by trading partner.

# Case 1: Electronics Subsidiary in Taiwan

— Firm-level Data on Invoice Currency Share —

We obtained the firm-level data on invoice currency in exports to and in imports from 3 countries/regions (Japan, Local country, & Foreign Countries)

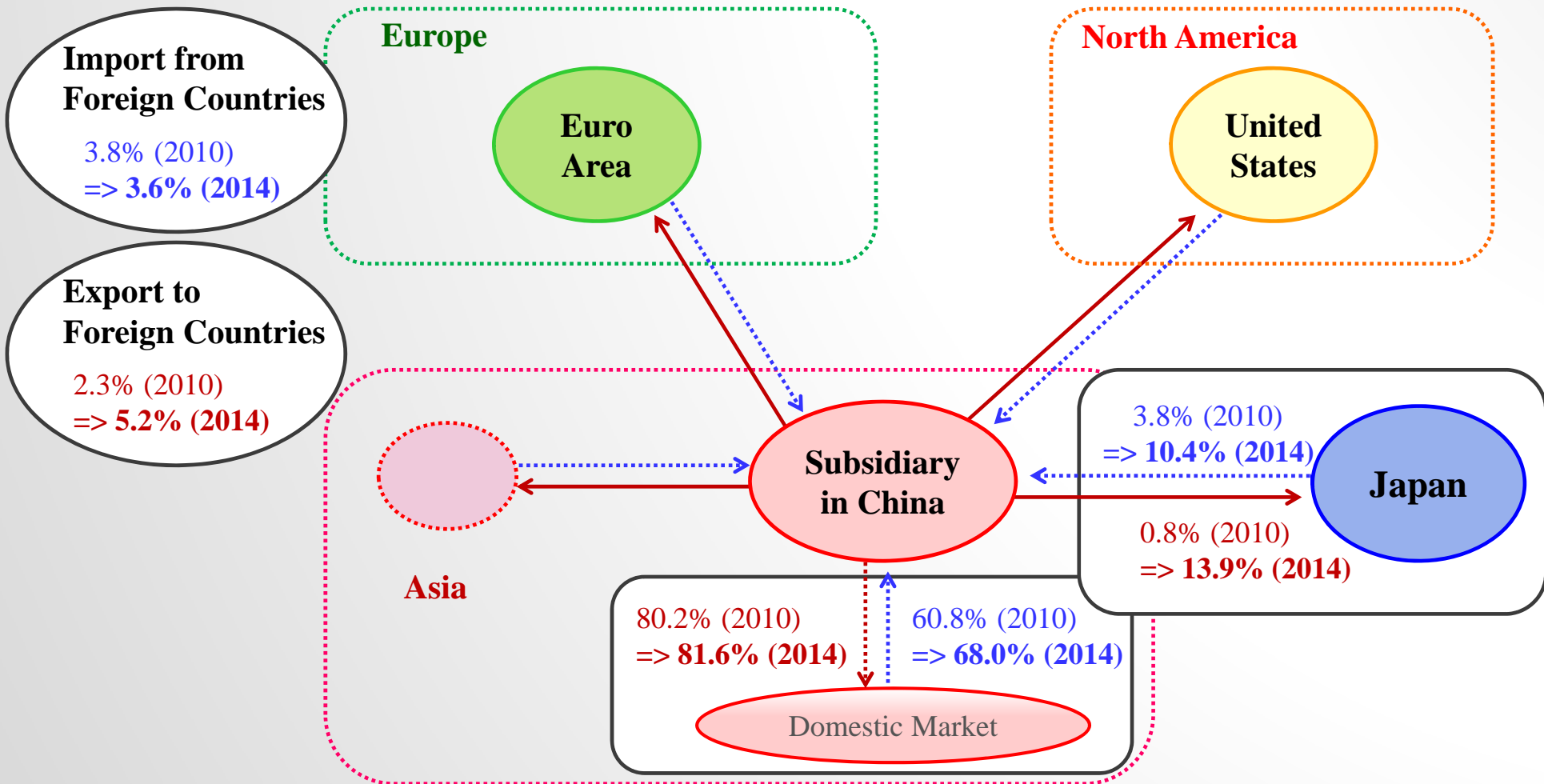
We also obtained the export and import share of each destination/source country.





# RMB Invoicing

—Japanese Production Subsidiaries in China—



# Share of Invoice Currency in Production Subsidiaries' Procurements of Intermediate Inputs from **Local Market**

<b>2014 Survey</b>	Number of Respondents	(a) Yen (%)	(b) US Dollar (%)	(c) Euro (%)	(d) Renminbi (%)	(e) Local Currency (%)	(f) Others (%)
<b>Asia</b>	<b>319</b>	<b>11.8</b>	<b>28.9</b>	<b>0.3</b>	<b>20.3</b>	<b>36.9</b>	<b>1.8</b>
China	95	8.6	20.9	0.2	68.0	2.1	0.2
Hong Kong	4	10.0	56.3	0.0	0.0	33.8	0.0
Taiwan	18	24.3	18.2	0.6	0.8	56.1	0.0
Korea	7	21.4	20.1	0.7	0.0	57.7	0.0
<b>ASEAN-6</b>	<b>182</b>	<b>12.6</b>	<b>35.4</b>	<b>0.3</b>	<b>0.1</b>	<b>48.7</b>	<b>2.9</b>
Other Asia	13	1.5	7.3	0.0	0.0	90.0	1.2
<b>2010 Survey</b>							
<b>Asia</b>	<b>456</b>	<b>13.3</b>	<b>25.9</b>	<b>0.5</b>	<b>17.4</b>	<b>41.3</b>	<b>1.6</b>
China	126	13.0	22.8	0.3	60.8	1.9	1.2
Hong Kong	14	24.7	41.6	0.2	11.1	22.4	0.0
Taiwan	25	15.2	13.8	0.1	0.0	70.9	0.0
Korea	14	20.1	8.1	1.1	0.0	70.6	0.0
<b>ASEAN-6</b>	<b>263</b>	<b>12.3</b>	<b>29.6</b>	<b>0.6</b>	<b>0.4</b>	<b>55.3</b>	<b>1.9</b>
Other Asia	14	13.6	7.1	1.4	0.0	70.7	7.1

# Share of Invoice Currency in Production Subsidiaries' Imports of Intermediate Inputs from Japan

2014 Survey	Number of Respondents	(a) Yen (%)	(b) US Dollar (%)	(c) Euro (%)	(d) Renminbi (%)	(e) Local Currency (%)	(f) Others (%)
<b>Asia</b>	<b>288</b>	<b>48.2</b>	<b>43.7</b>	<b>0.4</b>	<b>3.0</b>	<b>4.4</b>	<b>0.4</b>
China	82	43.9	44.5	0.0	10.4	1.2	0.0
Hong Kong	5	17.0	83.0	0.0	0.0	0.0	0.0
Taiwan	18	49.2	28.7	0.0	0.0	21.8	0.3
Korea	8	71.9	10.6	0.0	0.0	17.5	0.0
<b>ASEAN-6</b>	<b>159</b>	<b>49.0</b>	<b>47.0</b>	<b>0.6</b>	<b>0.0</b>	<b>2.7</b>	<b>0.7</b>
Other Asia	16	59.4	28.6	0.0	0.0	11.9	0.1
<b>2010 Survey</b>							
<b>Asia</b>	<b>422</b>	<b>54.0</b>	<b>40.3</b>	<b>0.4</b>	<b>1.0</b>	<b>3.9</b>	<b>0.4</b>
China	110	48.1	47.7	0.0	3.8	0.0	0.5
Hong Kong	16	57.8	41.6	0.0	0.0	0.6	0.0
Taiwan	27	63.2	32.6	0.0	0.0	4.3	0.0
Korea	13	87.3	11.2	0.0	0.0	1.5	0.0
<b>ASEAN-6</b>	<b>243</b>	<b>53.5</b>	<b>39.5</b>	<b>0.7</b>	<b>0.0</b>	<b>6.1</b>	<b>0.1</b>
Other Asia	13	56.5	35.9	0.0	0.0	0.0	7.5

# Share of Invoice Currency in Production Subsidiaries' Imports of Intermediate Inputs from **Other Countries** (exc Japan)

<b>2014 Survey</b>	Number of Respondents	(a) Yen (%)	(b) US Dollar (%)	(c) Euro (%)	(d) Renminbi (%)	(e) Local Currency (%)	(f) Others (%)
<b>Asia</b>	<b>205</b>	<b>6.8</b>	<b>80.4</b>	<b>4.2</b>	<b>0.7</b>	<b>4.5</b>	<b>3.4</b>
China	34	8.9	84.2	2.9	3.6	0.0	0.3
Hong Kong	5	0.0	82.0	0.0	2.0	16.0	0.0
Taiwan	8	8.8	79.4	11.9	0.0	0.0	0.0
Korea	4	12.5	87.5	0.0	0.0	0.0	0.0
<b>ASEAN-6</b>	<b>141</b>	<b>6.1</b>	<b>80.7</b>	<b>4.1</b>	<b>0.0</b>	<b>5.3</b>	<b>3.8</b>
Other Asia	13	9.0	64.5	6.4	0.0	7.7	12.5
<b>2010 Survey</b>							
<b>Asia</b>	<b>282</b>	<b>6.1</b>	<b>79.0</b>	<b>5.6</b>	<b>1.0</b>	<b>4.9</b>	<b>3.5</b>
China	49	4.0	77.5	11.9	3.8	0.5	2.2
Hong Kong	12	12.8	68.6	0.3	4.6	13.8	0.1
Taiwan	12	1.5	94.8	0.4	0.0	1.7	1.7
Korea	5	16.0	74.2	9.8	0.0	0.0	0.0
<b>ASEAN-6</b>	<b>191</b>	<b>6.6</b>	<b>79.4</b>	<b>4.3</b>	<b>0.1</b>	<b>5.6</b>	<b>4.0</b>
Other Asia	13	1.1	74.8	8.2	0.4	7.7	7.8

# Share of Invoice Currency in Production Subsidiaries' Sales in Local Market

2014 Survey	Number of Respondents	(a) Yen (%)	(b) US Dollar (%)	(c) Euro (%)	(d) Renminbi (%)	(e) Local Currency (%)	(f) Others (%)
<b>Asia</b>	<b>299</b>	<b>3.2</b>	<b>23.2</b>	<b>0.6</b>	<b>23.8</b>	<b>47.2</b>	<b>2.0</b>
China	87	2.5	13.1	0.9	81.6	0.9	1.0
Hong Kong	4	5.0	84.5	0.0	0.0	10.5	0.0
Taiwan	19	2.9	19.7	0.0	0.0	77.4	0.0
Korea	8	10.1	14.0	4.4	0.0	71.5	0.0
<b>ASEAN-6</b>	<b>168</b>	<b>3.5</b>	<b>29.4</b>	<b>0.3</b>	<b>0.0</b>	<b>64.2</b>	<b>2.5</b>
Other Asia	13	0.0	1.7	0.0	0.0	90.6	7.7
<b>2010 Survey</b>							
<b>Asia</b>	<b>414</b>	<b>4.9</b>	<b>21.5</b>	<b>0.2</b>	<b>21.9</b>	<b>50.6</b>	<b>0.9</b>
China	112	2.2	13.5	0.3	80.2	3.6	0.3
Hong Kong	14	0.0	49.5	0.0	0.0	50.5	0.0
Taiwan	26	5.4	17.9	0.1	0.0	76.7	0.0
Korea	12	9.6	16.3	0.0	0.8	73.3	0.0
<b>ASEAN-6</b>	<b>234</b>	<b>6.5</b>	<b>25.4</b>	<b>0.3</b>	<b>0.3</b>	<b>66.1</b>	<b>1.4</b>
Other Asia	16	0.0	6.4	0.0	0.0	93.6	0.0

# Share of Invoice Currency in Production Subsidiaries' Exports to Japan

2014 Survey	Number of Respondents	(a) Yen (%)	(b) US Dollar (%)	(c) Euro (%)	(d) Renminbi (%)	(e) Local Currency (%)	(f) Others (%)
<b>Asia</b>	<b>209</b>	<b>37.8</b>	<b>52.2</b>	<b>0.0</b>	<b>4.7</b>	<b>4.8</b>	<b>0.4</b>
China	71	39.3	45.4	0.0	13.9	1.4	0.0
Hong Kong	5	16.0	84.0	0.0	0.0	0.0	0.0
Taiwan	12	49.2	42.5	0.0	0.0	8.3	0.0
Korea	4	100.0	0.0	0.0	0.0	0.0	0.0
<b>ASEAN-6</b>	<b>113</b>	<b>35.8</b>	<b>56.2</b>	<b>0.0</b>	<b>0.0</b>	<b>7.2</b>	<b>0.8</b>
Other Asia	4	0.0	100.0	0.0	0.0	0.0	0.0
<b>2010 Survey</b>							
<b>Asia</b>	<b>313</b>	<b>46.0</b>	<b>48.0</b>	<b>0.2</b>	<b>0.2</b>	<b>5.6</b>	<b>0.0</b>
China	93	47.8	50.8	0.7	0.8	0.0	0.0
Hong Kong	12	29.6	70.4	0.0	0.0	0.0	0.0
Taiwan	17	43.5	56.5	0.0	0.0	0.0	0.0
Korea	10	79.0	10.0	0.0	0.0	11.0	0.0
<b>ASEAN-6</b>	<b>177</b>	<b>43.8</b>	<b>46.8</b>	<b>0.0</b>	<b>0.0</b>	<b>9.3</b>	<b>0.0</b>
Other Asia	4	75.0	25.0	0.0	0.0	0.0	0.0

# Share of Invoice Currency in Production Subsidiaries' Exports to Other Countries (exc Japan)

2014 Survey	Number of Respondents	(a) Yen (%)	(b) US Dollar (%)	(c) Euro (%)	(d) Renminbi (%)	(e) Local Currency (%)	(f) Others (%)
<b>Asia</b>	<b>220</b>	<b>6.0</b>	<b>80.7</b>	<b>2.9</b>	<b>1.7</b>	<b>5.4</b>	<b>3.3</b>
China	54	7.3	79.6	4.5	5.2	1.9	1.6
Hong Kong	5	4.0	93.0	1.0	0.0	2.0	0.0
Taiwan	16	6.3	79.0	0.9	5.7	6.3	1.9
Korea	3	6.7	93.3	0.0	0.0	0.0	0.0
<b>ASEAN-6</b>	<b>133</b>	<b>5.9</b>	<b>80.5</b>	<b>2.7</b>	<b>0.0</b>	<b>7.4</b>	<b>3.5</b>
Other Asia	9	0.1	82.8	1.1	0.0	0.0	16.0
<b>2010 Survey</b>							
<b>Asia</b>	<b>323</b>	<b>8.6</b>	<b>77.5</b>	<b>3.2</b>	<b>0.7</b>	<b>6.6</b>	<b>3.4</b>
China	68	8.4	76.5	4.6	2.3	1.4	6.8
Hong Kong	12	5.4	70.8	0.4	2.5	20.8	0.0
Taiwan	19	5.5	82.5	1.6	0.0	10.3	0.1
Korea	8	16.9	69.5	7.4	5.6	0.6	0.0
<b>ASEAN-6</b>	<b>208</b>	<b>9.1</b>	<b>77.2</b>	<b>3.0</b>	<b>0.0</b>	<b>7.6</b>	<b>3.0</b>
Other Asia	8	0.0	100.0	0.0	0.0	0.0	0.0

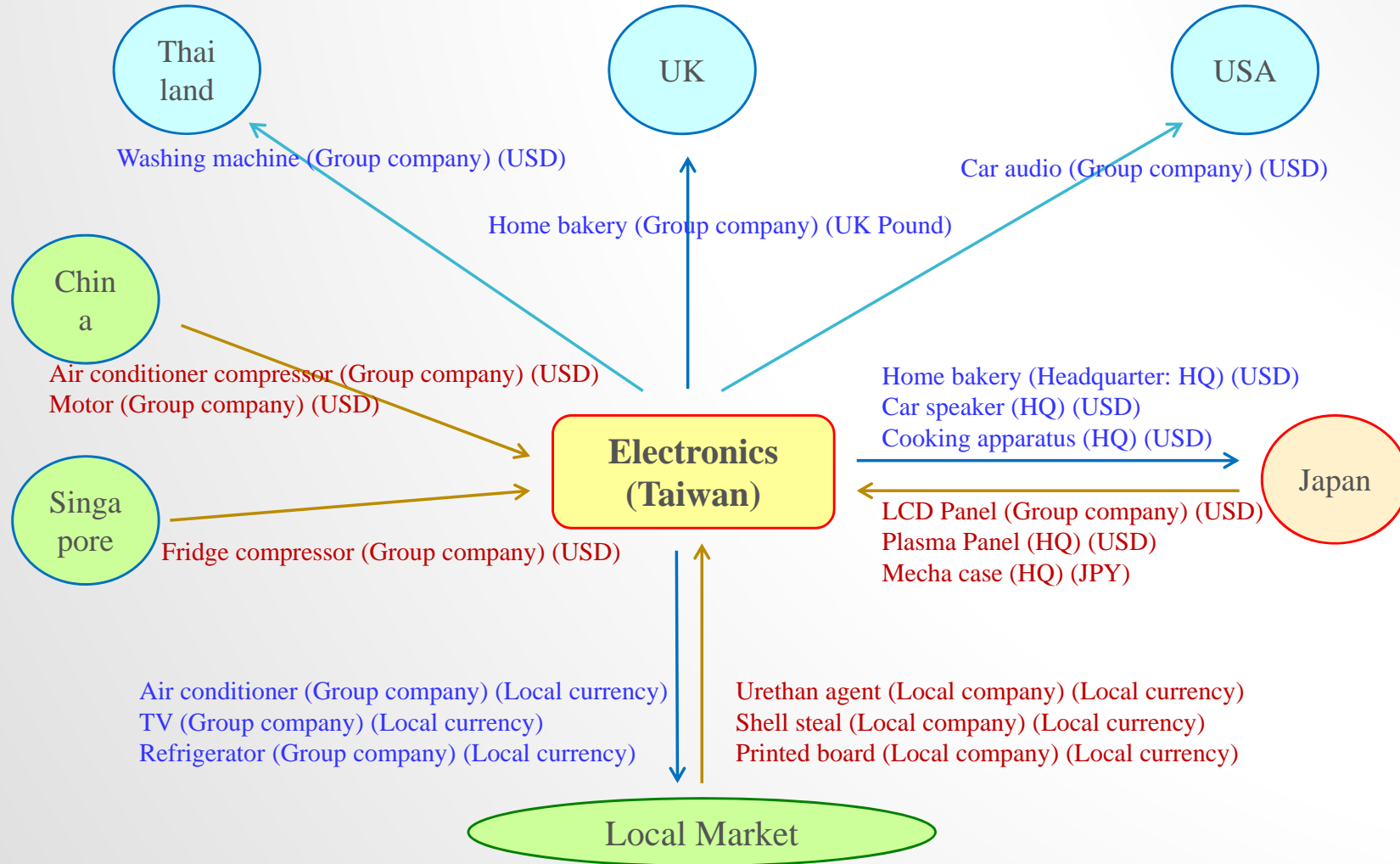
# Questionnaire Survey Data (2)

- [2] Product-level data:
  - We obtain the product-level information on top 3 products in each of 3 regions (Japan, local country and foreign countries).
  - Subsidiary's exports:
    - **Which product?** => Name of the export product.
      - “Intermediate input” or “Final consumption goods”?
      - “Homogeneous” or “Differentiated” products? (<= Rauch, 1999)
    - **Trading partner?** => “Intra-firm” or “Arm’s length” trade?
    - **Destination country?**
  - Subsidiary's imports:
    - We obtain the same information on “**which product?**” “**trading partner?**” and “**source country?**” in subsidiary's imports of intermediate goods.



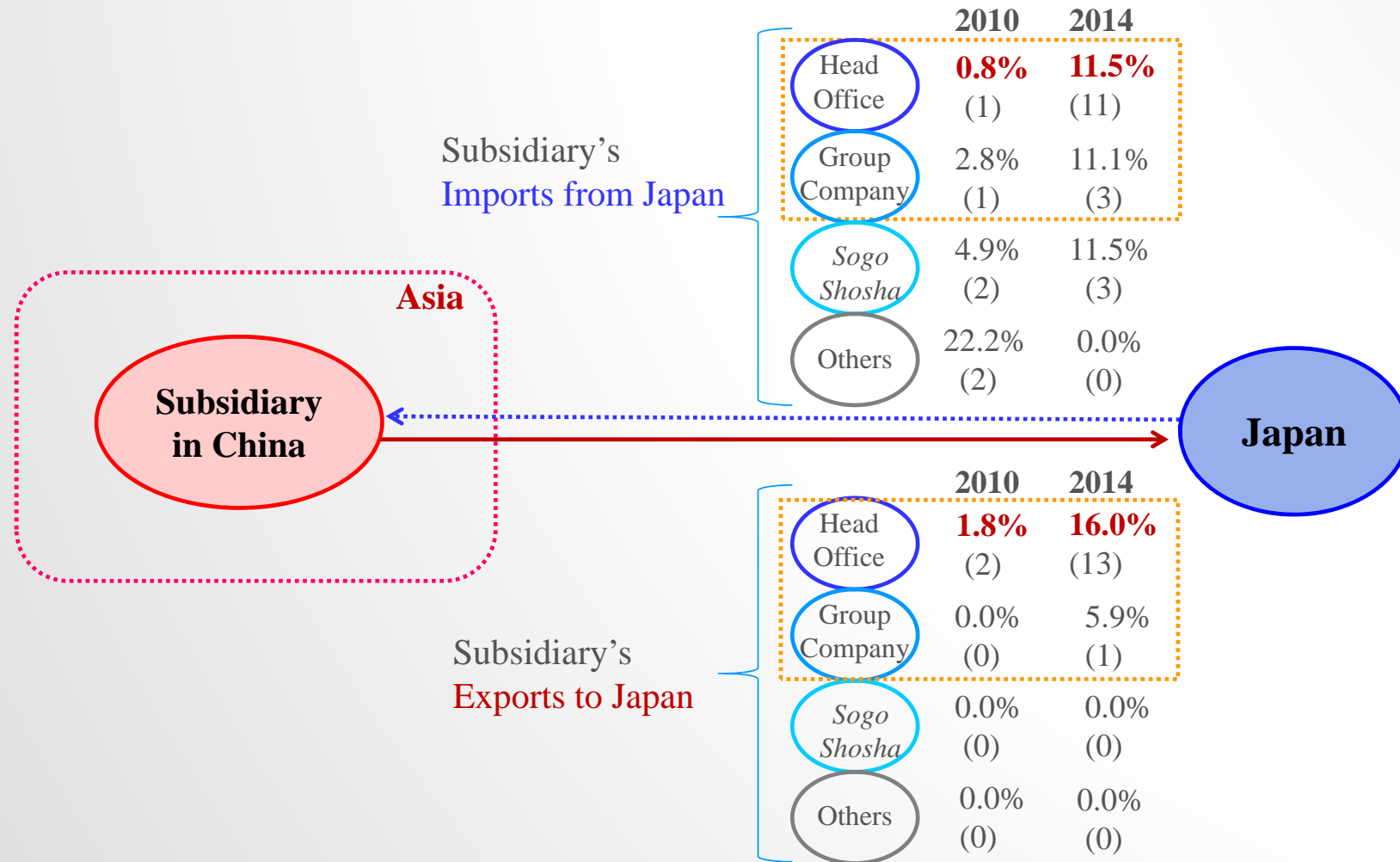
# Case 2: Electronics Subsidiary in Taiwan

— “Product-level” Data on Invoice Currency —



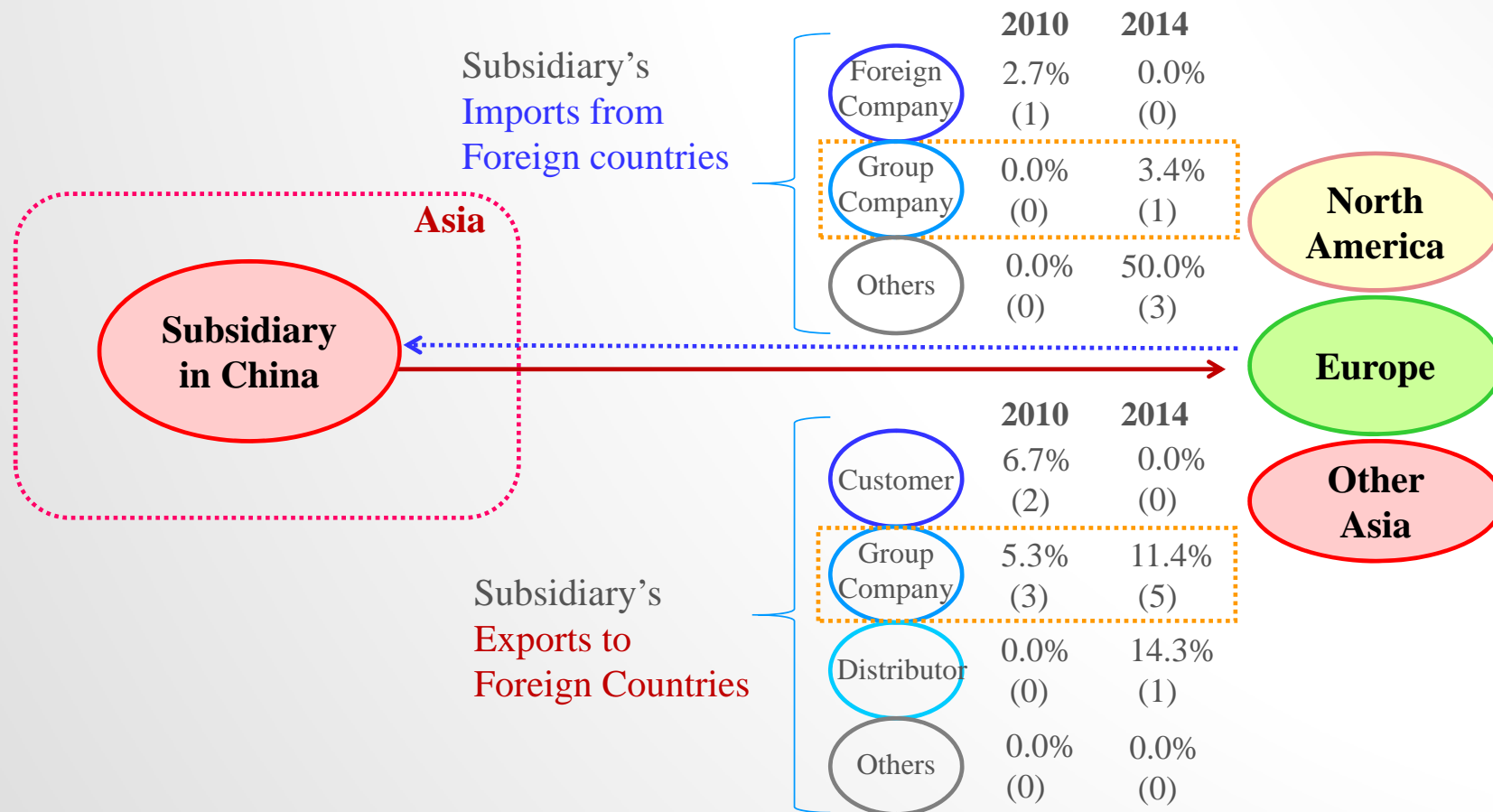
# RMB Invoicing in Intra-Firm Trade

—Japanese Production Subsidiaries in China: **Trade with Japan**—



# RMB Invoicing in Intra-Firm Trade

—Japanese Production Subsidiaries in China: *Trade with Foreign Countries*—







Imports from Abroad (%)	Asia		China		ASEAN-6	
	2010	2014	2010	2014	2010	2014
1. Foreign Company						
1. JPY	3.0	1.1	2.7	0.0	2.7	1.5
2. USD	80.5	88.8	78.4	100.0	81.9	88.8
3. Euro	8.7	6.1	16.2	0.0	8.7	6.0
4. Renminbi	0.9	0.0	2.7	0.0	0.0	0.0
5. Local	5.2	2.2	0.0	0.0	4.7	1.5
6. Others	1.7	1.7	0.0	0.0	2.0	2.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
2. Group Company						
1. JPY	7.2	3.4	4.5	0.0	6.3	5.4
2. USD	80.3	85.3	77.3	93.1	80.2	82.4
3. Euro	2.6	4.3	9.1	3.4	1.0	5.4
4. Renminbi	0.0	0.9	0.0	3.4	0.0	0.0
5. Local	2.6	1.7	4.5	0.0	3.1	1.4
6. Others	7.2	4.3	4.5	0.0	9.4	5.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
3. Others						
1. JPY	2.4	2.3	0.0	16.7	3.2	0.0
2. USD	80.0	88.6	83.3	33.3	79.4	96.8
3. Euro	4.7	0.0	11.1	0.0	1.6	0.0
4. Renminbi	0.0	6.8	0.0	50.0	0.0	0.0
5. Local	4.7	0.0	0.0	0.0	6.3	0.0
6. Others	8.2	2.3	5.6	0.0	9.5	3.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

## Invoice Currency Share in Imports from and Exports to Other Countries

Imports from Foreign



Production Subsidiaries



Exports to Foreign

Exports to Foreign (%)	Asia		China		ASEAN-6	
	2010	2014	2010	2014	2010	2014
1. To Customers						
1. JPY	7.3	9.6	20.0	18.8	3.9	7.4
2. USD	82.9	86.0	70.0	81.3	87.4	85.2
3. Euro	1.6	0.0	0.0	0.0	2.4	0.0
4. Renminbi	1.6	0.0	6.7	0.0	0.0	0.0
5. Local	4.7	3.7	0.0	0.0	3.9	6.2
6. Others	2.1	0.7	3.3	0.0	2.4	1.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
2. To Group Companies						
1. JPY	6.0	5.0	3.5	0.0	8.1	6.4
2. USD	77.2	75.7	78.9	72.7	74.3	78.2
3. Euro	4.3	5.7	5.3	11.4	4.1	3.8
4. Renminbi	1.3	3.6	5.3	11.4	0.0	0.0
5. Local	7.3	7.1	3.5	2.3	9.5	9.0
6. Others	3.9	2.9	3.5	2.3	4.1	2.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
3. To Distributors						
1. JPY	0.0	2.8	0.0	0.0	0.0	0.0
2. USD	88.4	88.9	91.7	85.7	84.2	95.5
3. Euro	0.0	2.8	0.0	0.0	0.0	4.5
4. Renminbi	0.0	5.6	0.0	14.3	0.0	0.0
5. Local	9.3	0.0	0.0	0.0	15.8	0.0
6. Others	2.3	0.0	8.3	0.0	0.0	0.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
4. To Others						
1. JPY	11.8	0.0	0.0	0.0	18.2	0.0
2. USD	64.7	100.0	0.0	100.0	72.7	100.0
3. Euro	0.0	0.0	0.0	0.0	0.0	0.0
4. Renminbi	0.0	0.0	0.0	0.0	0.0	0.0
5. Local	0.0	0.0	0.0	0.0	0.0	0.0
6. Others	23.5	0.0	0.0	0.0	9.1	0.0
TOTAL	100.0	100.0	0.0	100.0	100.0	100.0

## 2014 Survey Data:

Invoice Currency Choice in Exports of Production Subsidiaries in Asia, in Greater China (Ch, HK, Tw), and in ASEAN6



Japanese subsidiaries in Asia, Greater China, and ASEAN6:

- In exports to foreign countries, **intra-Asian trade** accounts for the largest share.



Choice of invoice currency:

- 80 percent or more are invoiced in U.S. dollar.
- RMB is used only in Greater China area.

Production Subsidiary's Exports to:		Share			Number of transactions		
		Asia	Greater China	ASEAN6	Asia	Greater China	ASEAN6
1. To U.S.	1. JPY	0.0	0.0	0.0	0	0	0
	2. USD	93.3	94.1	91.7	28	16	11
	3. Euro	0.0	0.0	0.0	0	0	0
	4. RMB	3.3	5.9	0.0	1	1	0
	5. Local	3.3	0.0	8.3	1	0	1
	6. Others	0.0	0.0	0.0	0	0	0
	TOTAL	100.0	100.0	100.0	30	17	12
2. To EU	1. JPY	4.5	11.1	0.0	1	1	0
	2. USD	59.1	33.3	70.0	13	3	7
	3. Euro	36.4	55.6	30.0	8	5	3
	4. RMB	0.0	0.0	0.0	0	0	0
	5. Local	0.0	0.0	0.0	0	0	0
	6. Others	0.0	0.0	0.0	0	0	0
	TOTAL	100.0	100.0	100.0	22	9	10
3. To Others	1. JPY	0.0	0.0	0.0	0	0	0
	2. USD	86.7	100.0	75.0	13	3	6
	3. Euro	6.7	0.0	12.5	1	0	1
	4. RMB	0.0	0.0	0.0	0	0	0
	5. Local	0.0	0.0	0.0	0	0	0
	6. Others	6.7	0.0	12.5	1	0	1
	TOTAL	100.0	100.0	100.0	15	3	8
4. To Asia	1. JPY	8.2	7.9	7.3	16	5	9
	2. USD	82.6	79.4	85.5	161	50	106
	3. Euro	0.0	0.0	0.0	0	0	0
	4. RMB	2.6	7.9	0.0	5	5	0
	5. Local	4.6	3.2	5.6	9	2	7
	6. Others	2.1	1.6	1.6	4	1	2
	TOTAL	100.0	100.0	100.0	195	63	124

# Concluding Remarks

- **Findings:**

- Although RMB is extensively used for local sales and procurement in China, Japanese MNCs in China mainly use the U.S. dollar in trade with other countries. Yen is used mainly for trade with Japan.
- Little evidence is obtained on the growing use of RMB in Japanese MNCs' international trade along the production chain in Asia. Possible exception is intra-firm trade between China and Japan.

- **Implications:**

- RMB transactions started to grow gradually in intra-firm trade between China and Japan.
- The RMB transactions will be growing further if it becomes easier for **MNCs** to conduct **marry and netting** for their trade settlement.