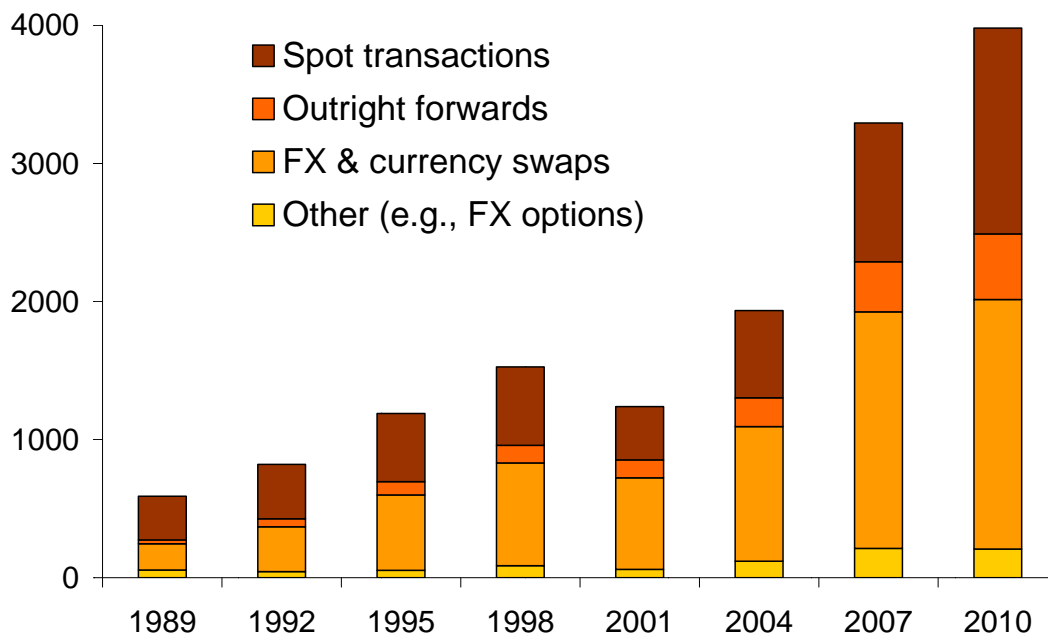


Foreign Exchange Market



Global Foreign Exchange Turnover
(Average daily central bank volume during April)

US\$ billions



Source: Bank for International Settlements (BIS) triennial surveys of central banks.



Euro Zone

- When it was launched on 1 January 1999, the euro became the new official currency of 11 member states, replacing the old national currencies in two stages.
- It was first introduced as an accounting currency for non-cash payments and accounting purposes, while the old currencies continued to be used for cash payments.
- Euro banknotes and coins were put into circulation for cash payments on 1 January 2002.
- All EU member states have committed to joining the euro, except for Denmark and the United Kingdom that have opt-out clauses exempting them from participation unless they choose to participate.
- Currently, there are currently 18 member states in the euro area.

1.	7.	13.
2.	8.	14.
3.	9.	15.
4.	10.	16.
5.	11.	17.
6.	12,	18.

Currency	Currency	Currency
AUD	Polish Zloty	PLN
CAD	Norwegian Krone	NOK
EUR	Hungarian Forint	HUF
GBP	Czech Koruna	CZK
JPY	Israeli Shekel	ILS
USD	Mexican Peso	MXN
NZD	Brazilian Real	BRL
CHF	Chinese Yuan	CNY
HKD	Malaysian Ringgits	MYR
SGD	Philippine Pesos	PHP
SEK	Taiwanese Dollars	TWD
DKK	Thai Baht	THB

Spot Market

- A market in which trades are made for immediate delivery (or within two business days for most spot currencies)
- Either currency can appear in the denominator of a foreign exchange quote

European Term/Quotation

- A foreign exchange quotation that states the foreign currency price of one US dollar

American Term/Quotation

- A foreign exchange quotation that states the US dollar
- price per foreign currency unit

Direct Term/Quotation

- The price of a unit of foreign currency in domestic currency terms

Indirect Term/Quotation

- The price of a unit of domestic currency in foreign currency terms

Special case of the British pound

- Foreign currency per pound
- Prior to 1971, one British pound was worth 20 shillings and each shilling was worth 12 pence

Basic Exchange Rate Calculation

- Exchange rate can be thought as a ratio which can be computed as reciprocal

Exercise 1

Country	American Quote	European Quote	Direct Quote	Indirect Quote
Thailand			THB 55.00/GBP	
America	USD 1.20/EUR			
Japan		JPY 152.00/USD		
Britain				EUR 1.30/GBP

Exercise 2

Classify the following exchange rates into:

USD/GBP GBP/JPY HKD/USD MYR/JPY GBP/EUR JPY/HKD
 CNY/DKK MYR/USD USD/CNY JPY/USD USD/NOK EUR/USD

1. Direct Quotation in America
2. Indirect Quotation in Japan
3. European Quotation
4. American Quotation

Percentage Changes in FX Rates

Percentage change in the value of a foreign currency = $(S_1^{d/f} - S_0^{d/f}) / S_0^{d/f}$

Calculating Appreciations and Depreciations

- *Appreciation*: an increase in a currency value relative to another currency in a floating exchange rate system
- *Depreciation*: a decrease in a currency value relative to another currency in a floating exchange rate system

Revaluation and Devaluation

- Fixed exchange rate vs Floating exchange rate systems
- *Revaluation*: an increase in a currency value relative to another currency in a fixed exchange rate system
- *Devaluation*: a decrease in a currency value relative to another currency in a fixed exchange rate system

Example 1

Exchange Rate	31 st Dec 05	31 st Dec 04	31 st Dec 03	31 st Dec 02
THB/EUR	41.50	42.75	40.25	41.00
THB/GBP	65.25	60.10	63.05	61.00

Foreign Exchange market is a Dealer Market

- Dealer market
- Bid and Ask price

Bid/Ask Quotation

- Bid (Buy) Rate – Buying Rate
 - The rate at which a market maker is willing to buy the quoted asset
- Ask (Offer) Rate – Selling Rate
 - The rate at which a market maker is willing to sell the quoted asset

Example 2

<u>Bid</u>	<u>Ask</u>	<u>Bid</u>	<u>Ask</u>
THB 30.25/USD	THB 31.75/USD	USD /THB	USD /THB

Example 3

Bank	Bid	Ask
Kasikorn Bank	THB 48.50 /EUR	THB 49.50 /EUR
Bangkok Bank	THB 48.25 /EUR	THB 49.75 /EUR
Mickey Mouse Bank	THB 47.75 /EUR	THB 48.25 /EUR


Bid-Ask Spread

- Bid/Ask Spread = (Ask – Bid)/Ask
- Market Bid-Ask Spread
- Liquidity

Exercise 3

Use the next page exchange rate quotation to answer the following questions.

1. Wasawadt needs 25,000 Singapore dollars, how much of Thai baht he needs to use?
2. Idsara would like to convert 38,000 baht to currency of France, how much would he gets?
3. Nobita has 3,500,000 yens, how much he can spend in Bangkok?
4. With 1,000,000 baht, how much of Indonesian Rupiah can be converted into?
5. How much British pound could CNY 5,000,000 can be converted into?
6. Sue, Taiwanese, would like to have 3 million won for her travelling in South Korea, how much of Taiwanese dollars she needed?
7. You are going to go to 3 countries: United Kingdom, Sweden and France. You budgeted only 56,000 baht in each country. How much in total in Thai baht you needed today?
8. Souvenir shop at Suwannabhum Airport made the following sales: 1,000 US dollars; 12,000 yuan and 51,000 ringgit. How much in total should this shop recorded in Thai baht?

Currency	Description	Bank Note		Buying Rates		Selling Rates Bill-DD-TT
		Buying Rates	Selling Rates	Sight Bill	TT	
 USD1	USD: 1-2	31.69	33.06			
 USD5	USD: 5-20	32.03	33.06			
 USD50	USD: 50-100	32.47	33.12	32.62	32.72	32.97
 GBP	United Kingdom	50.71	52.17	51.01000	51.14250	51.74500
 EUR	Euro Zone	40.31	41.34	40.49750	40.59500	41.09500
 JPY	Japan (:100)	27.93	29.25	28.01875	28.08500	28.52125
 HKD	Hong Kong	4.13	4.32	4.19750	4.21125	4.25875
 MYR	Malaysia	9.23	9.96	Unquote	Unquote	Unquote
 SGD	Singapore	24.90	25.62	25.06250	25.13000	25.56875
 BND	Brunei	24.39	25.59	-	-	-
 CNY	China	5.03	5.51	5.28625	5.33375	5.39125
 IDR	Indonesia (:1000)	2.06	3.03	2.46460	2.49675	2.85335
 INR	India: 50-1000	0.48375	0.56250	-	-	0.55750
 KRW	Korea	0.0272	0.0338	-	-	-
 LAK	Laos (:1000)	3.70	4.29	-	-	-
 PHP	Philippines	0.52	0.78	-	-	0.74750
 TWD	Taiwan	0.85	1.19	-	-	-
 AUD	Australia	27.95	29.09	28.22250	28.30750	28.74500
 NZD	New Zealand	25.36	26.57	25.48750	25.57000	25.99750
 CHF	Switzerland	33.40	34.35	33.63250	33.73750	34.20000
 DKK	Denmark	5.25	5.54	5.43500	5.45000	5.52000
 NOK	Norway	4.65	4.89	4.78000	4.79500	4.86250
 SEK	Sweden	4.25	4.47	4.37375	4.38500	4.44875
 CAD	Canada	28.20	29.07	28.53750	28.60000	29.01250
 RUB	Russia	0.61	0.76	-	-	-
 VND	Vietnam (:1000)	1.15	1.63	-	-	-
 ZAR	South Africa	2.31	3.16	-	-	-
 AED	United Arab Emirate	7.31	9.34	-	-	-
 BHD	Bahrain	63.22	87.81	-	-	-
 OMR	Oman	62.38	86.43	-	-	-
 QAR	Qatar	7.19	9.33	-	-	-
 SAR	Saudi Arabia	7.18	9.28	-	-	-

[Unit : Baht per 1 unit of foreign currency]

Exercise 4

Use the exchange rate quotation on the previous page to compute indirect quotation in Thailand.

	Bid	Ask
USD: 1-2		
USD: 5-20		
USD: 50-100		
GBP		
EUR		
JPY		

Exercise 5

- | | Bid | Ask | |
|----|----------------|----------------|-----------------|
| 1. | GBP 0.6877/USD | GBP 0.8641/USD | Compute USD/GBP |
| 2. | EUR 0.7134/AUD | EUR 0.9911/AUD | Compute AUD/EUR |
| 3. | CHF 1.1557/USD | CHF 1.9002/USD | Compute USD/CHF |
| 4. | THB 5.5900/CNY | THB 6.9012/CNY | Compute CNY/THB |
| 5. | EUR 1.2570/GBP | EUR 1.7921/GBP | Compute USD/CHF |

Cross Exchange Rate

- Third exchange rate computed from two foreign exchange rates where these two have the same currency but the cross rate, third exchange rate, does not have this same currency.

Example 4

1. Given, THB 35.00/USD and THB 25.00/CHF Compute CHF/USD.
2. Given, USD 0.95/EUR and EUR 0.71/CHF Compute CHF/USD.

Exercise 6

Fill in the following table:

Key Currency Cross Rates							
	Dollar	Euro	Pound	SFranc	Peso	Yen	CdnDir
Canada	1.0385	1.2715	1.5220		0.0812	0.0113	...
Japan		112.80	135.02	79.805	7.2075	...	88.714
Mexico	12.783		18.733	11.072	...	0.1387	12.309
Switzerland	1.1545	1.4134		...	0.0903		1.1116
U.K.	0.6824		...	0.5911	0.0534	0.0074	0.6570
Euro		...	1.1970	0.7075		0.0089	0.7865
U.S.	...	1.2243		0.8662	0.0782	0.0109	

Late New York Trading
Wednesday, June 2

Source: Reuters

Example 5

Currency	Bid	Ask
US dollar	THB 41.15 /USD	THB 42.80 /USD
Pound	EUR 0.60/GBP	EUR 0.60/GBP
Euro	EUR 0.80/USD	EUR 0.90/USD
Singapore dollar	SGD 2.10/EUR	SGD3.80/EUR

Exercise 7

Compute cross rate of the following exchange rates:

	Bid	Ask	Bid	Ask	Compute
1.	AUD 2.3163/GBP	AUD 2.6643/GBP	GBP 0.1214/EGP	GBP 0.1682/EGP	AUD/EGP
2.	EUR 0.6555/USD	EUR 0.8117/USD	ZAR 11.305/EUR	ZAR 12.511/EUR	ZAR/USD
3.	MYR 3.8995/USD	MYR 4.3216/USD	USD 2.1055/NZD	USD 2.9817/NZD	MYR/NZD
4.	CHF 2.7150/GBP	CHF 3.1220/GBP	SGD 3.5761/GBP	SGC 3.9118/GBP	SGD/CHF
5.	CAD 1.4141/AUD	CAD 1.8900/AUD	EUR 1.0050/CAD	EUR 1.2971/CAD	AUD/EUR
6.	AUD 2.5630/USD	AUD 2.9630/USD	USD 1.9243/GBP	USD 2.2680/GBP	AUD/GBP
7.	MYR 4.1992/EUR	MYR 4.8260/EUR	EUR 1.6655/NZD	EUR 1.9809/NZD	NZD/MYR

Forward Exchange Rate Market

- *Forward market*: a market for forward contracts in which trades are made for future delivery according to an agreed-upon delivery date, exchange rate, amount and quality
- trade at a prearranged date and price

Foreign Exchange Quotations for the Swiss Franc

	Outright Quote CHF/USD (European terms)		Outright Quote USD/CHF (American terms)		Mid-Rates Quoted in the financial press	
	Bid	Offer	Bid	Offer	CHF/USD	USD/CHF
Spot rate	1.7120	1.7128	0.5838	0.5841	1.7124	0.5840
1-month forward	1.7169	1.7179	0.5821	0.5824	1.7174	0.5823
3-month forward	1.7256	1.7267	0.5791	0.5795	1.72615	0.5793
6-month forward	1.7367	1.7379	0.5754	0.5758	1.7373	0.5756

Mid-rates are averages of bid and ask rates

Forward Point Quotations	
1-month forward	49 – 51
3-month forward	136 – 139
6-month forward	247 – 251

Percentage forward premiums or discounts

$$= (F_1^{d/f} - S_0^{d/f}) / S_0^{d/f}$$

Forward premium

- A currency whose nominal value in the forward exchange market is *higher* than in the spot exchange market

Forward discount

- A currency whose nominal value in the forward exchange market is *lower* than in the spot exchange market

Exercise 8

Given the following outright quotation, compute forward point quotations.

Outright Quote

	Bid	Ask
Spot Rate	THB 31.20/ USD	THB 31.90/ USD
1-month ForwardRate	THB 31.30/ USD	THB 32.02/ USD
3-month ForwardRate	THB 31.34/ USD	THB 32.08/ USD
6-month ForwardRate	THB 31.41/ USD	THB 32.16/ USD

Forward Point Quote

	Bid	Ask
Spot Rate	THB 31.20/ USD	THB 31.90/ USD
1-month Forward Rate		
3-month Forward Rate		
6-month Forward Rate		

Exercise 9

Given the following forward points quotation, compute the outright quotations.

Forward Point Quote

	Bid	Ask
Spot Rate	THB 55.50/ GBP	THB 61.80/ GBP
1-month Forward Rate		30 –25
3-month Forward Rate		35 –27
6-month Forward Rate		41 –32

Outright Quote

	Bid	Ask
Spot Rate	THB 55.50/ GBP	THB 61.80/ GBP
1-month Forward Rate		
3-month Forward Rate		
6-month Forward Rate		

Exercise 10

FORWARD POINT QUOTATION

3-month forward exchange rate 102 – 93
 6-month forward exchange rate 119 – 98

Fill in the following table. For forward premium and forward discount, compute from Mid-rate.

OUTRIGHT QUOTATION

	BID THB/NZD	ASK THB/NZD	Mid-Rate	Bid-Ask Spread	Forward Premium	Forward Discount
Spot rate	27.81	30.89				
3-month forward rate						
6-month forward rate						