


International Financial Markets

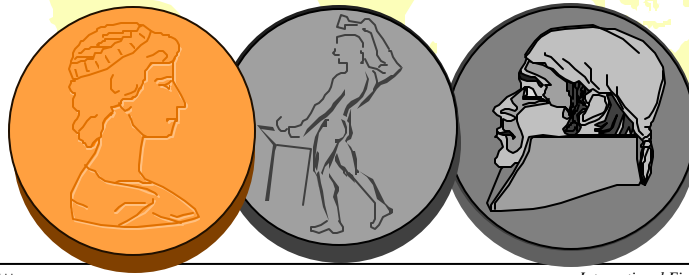
Prof. Ian Giddy
Stern School of Business,
New York University

What are the Global Financial Markets?

- 
- The Foreign Exchange Market
 - Eurocurrency Markets and Lending
 - International Bond Markets
 - International Equity Markets
 - Using the Global Capital Markets:
Investors' and Issuers' Perspectives

Policies and Exchange Rate Regimes

- Exchange rate systems--fixed vs floating
- Managed floating
- EMS-type currency blocs
- De facto blocs--the dollar



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The Eurocurrency Market

“A Eurodollar is a dollar deposited in a bank within a jurisdiction outside the United States”

- Separation of currency, institution and jurisdiction
- Why do people want Eurocurrency deposits and loans?
- Why is LIBOR the world's key benchmark rate?

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The Eurocurrency Market

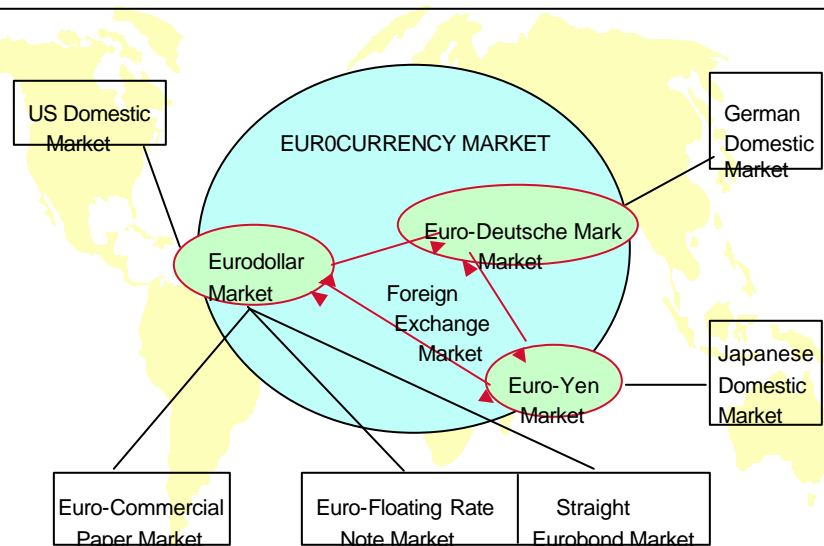
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Where the Eurocurrency Market Fits In



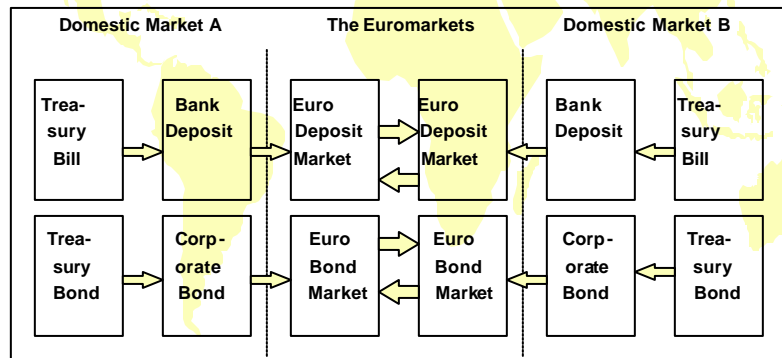
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Interest Rate Linkages in the International Money Market

Two stories to tell:

- Domestic vs. Euro
- Eurocurrency A vs. Eurocurrency B



Domestic versus Euro

The Eurodollar Premium

Market price of risk

versus

Cost of regulation

- *Eurodollar vs. U.S. Interest Rate*

Effective cost of domestic deposit

$$= \frac{\text{(interest rate + FDIC fees)}}{(1 - \text{reserve requirement})}$$

- *Capital controls and divided credit markets*

Foreign Exchange

- Mechanics and calculations
- How banks make money
- How banks hedge
- Tasks of the corporate FX manager

Foreign Exchange Quotations

0000 CITIBANK NEW YORK - FOREIGN EXCHANGE - PAGE 1		CINY				
	SPOT	1M0	3M0	6M0	12M0	
1615	DEM	152 40/50	31.8/5	94.5/94	193.5/2	397/394.0
1615	CHF	125 40/50	45.5/45	129/128	254/252	509/504.0
1618	FRF	516 00/30	91/89.5	269/265	531/526	1098/1083
1618	NLG	170 93/03	39.4/1	118/7.5	239.5/8	475/472.0
1618	BEF	31 37/40	6.9/6.6	20/19.3	40.5/39	83.0/80.0
1619	ITL	1522 /1524	376/384	950/970	1640/70	2475/2525
1618	JPY	111 35/45	52/51.7	151/0.5	288/287	572/569.0
1626	CAD	136 17/22	17/16.5	56/54.5	107/104	192/187
1619	GBP	156 45/55	6.3/6.1	11/10.5	16.5/15	31.5/27.5
1651	XEU	124 99/09	RATES	AT	CLOSE	MONDAY

Exchange Rates

Currency	How quoted	Spot (2 business days)	Forward (90 days)
British pounds (GBP)	US\$ per GBP	1.632	1.617
Japanese yen (JPY)	Yen per US\$	117.5	116.3

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Foreign Exchange Quotations

	Bid	Offer
Spot		
Forward points		
Rule:		
<i>add if bid < offer,</i>		
<i>subtract if bid > offer</i>		
Outright forward		

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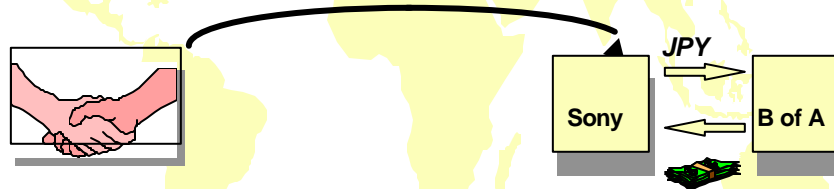
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Exchange Rates

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A Typical Forward Contract

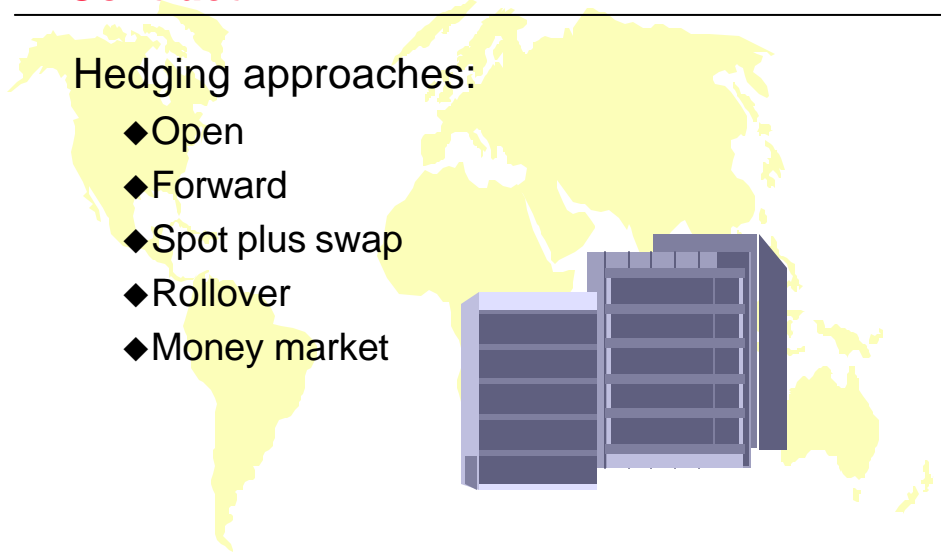
- We agree today to pay a certain price for a currency in the future



How Does the Bank Hedge a Forward Contract?

Hedging approaches:

- ◆ Open
- ◆ Forward
- ◆ Spot plus swap
- ◆ Rollover
- ◆ Money market



How Banks Hedge

Today

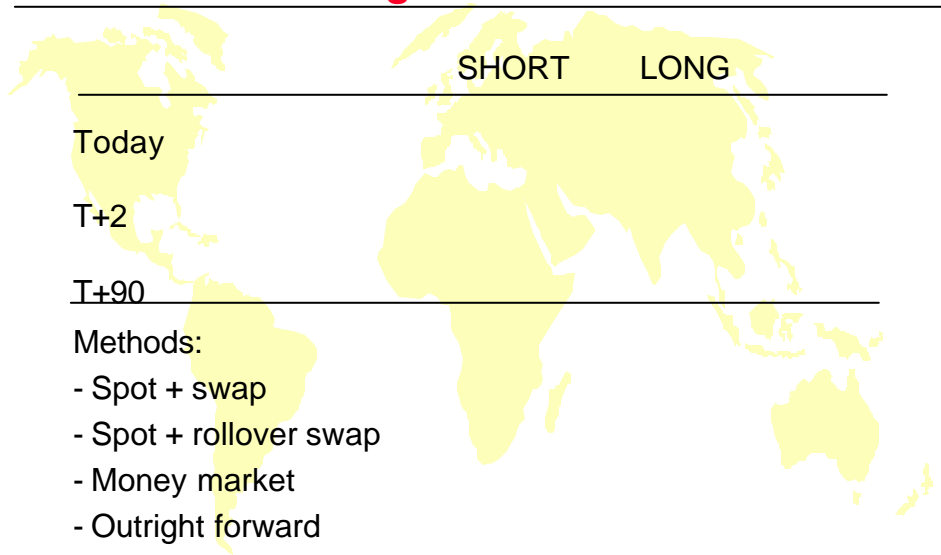
T+2

T+90

Methods:

- Spot + swap
- Spot + rollover swap
- Money market
- Outright forward

SHORT LONG



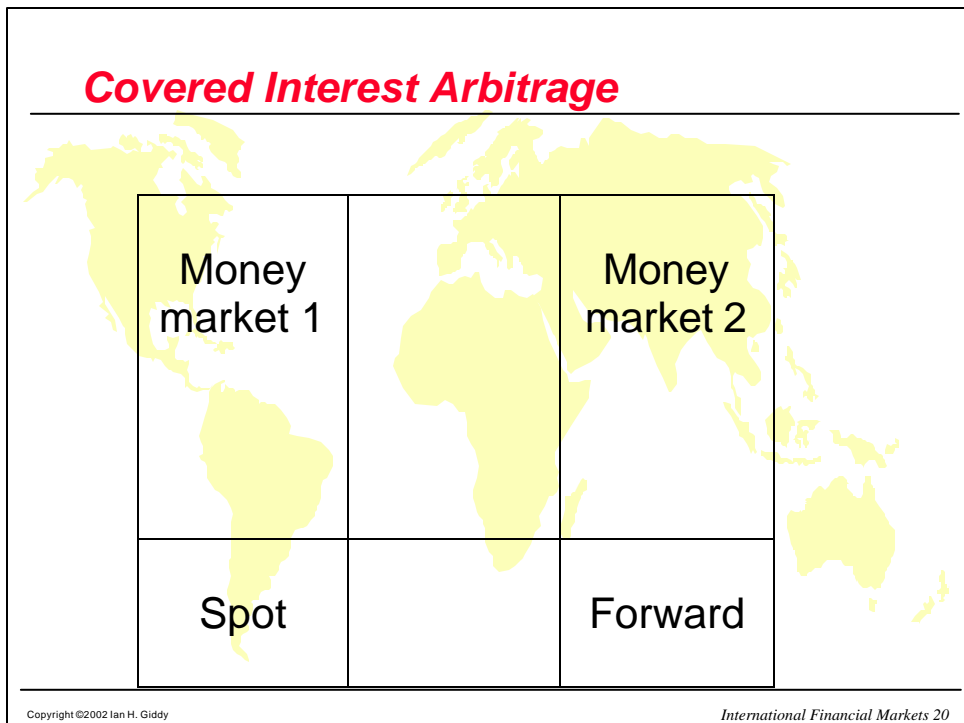
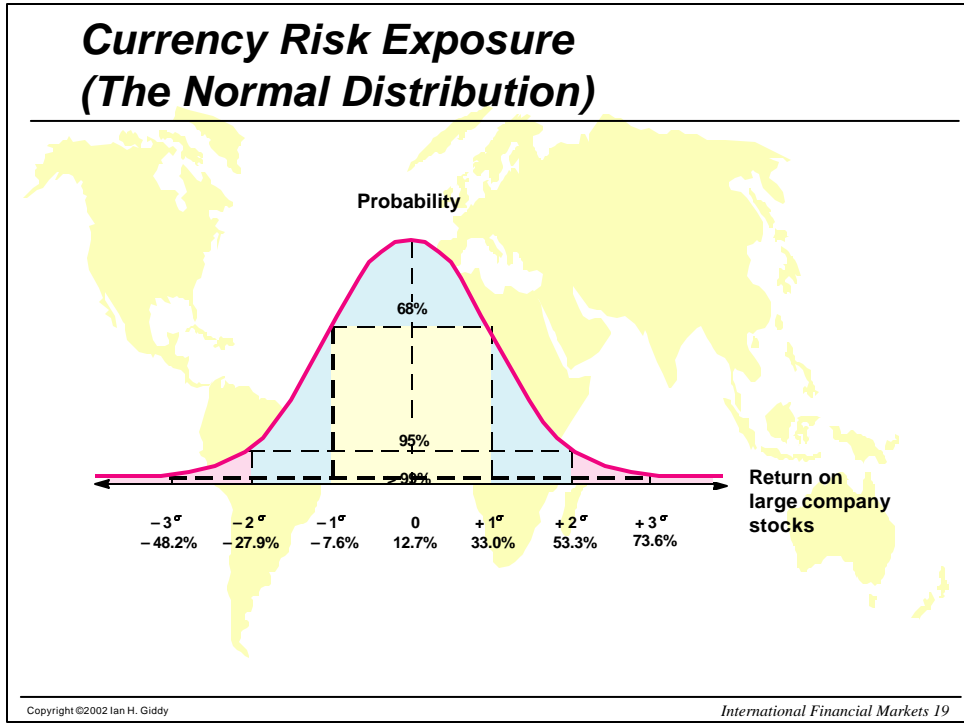


Diagram of a Dealing Room

Foreign exchange and Eurocurrency dealing are interrelated activities and so are done on the same trading floor.

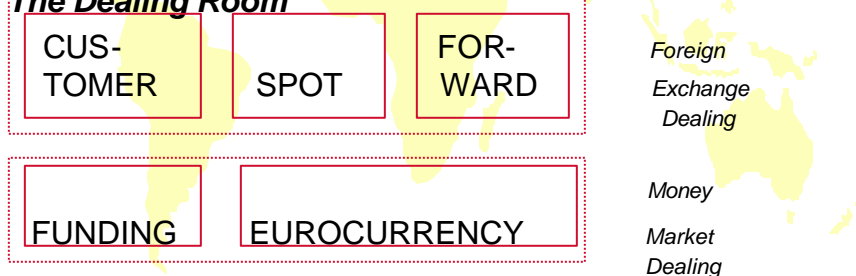
The Dealing Room



Diagram of a Dealing Room

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The Dealing Room



Funding a Eurokrona Loan

Three ways to fund:

- Take domestic krona deposit
- Take EuroKrona deposit

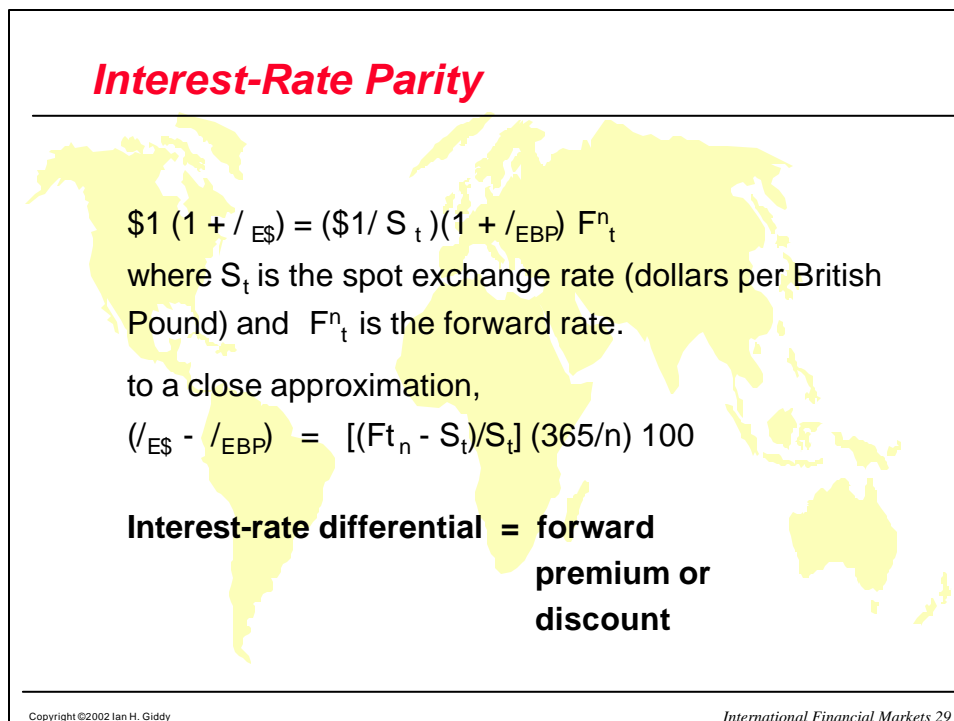
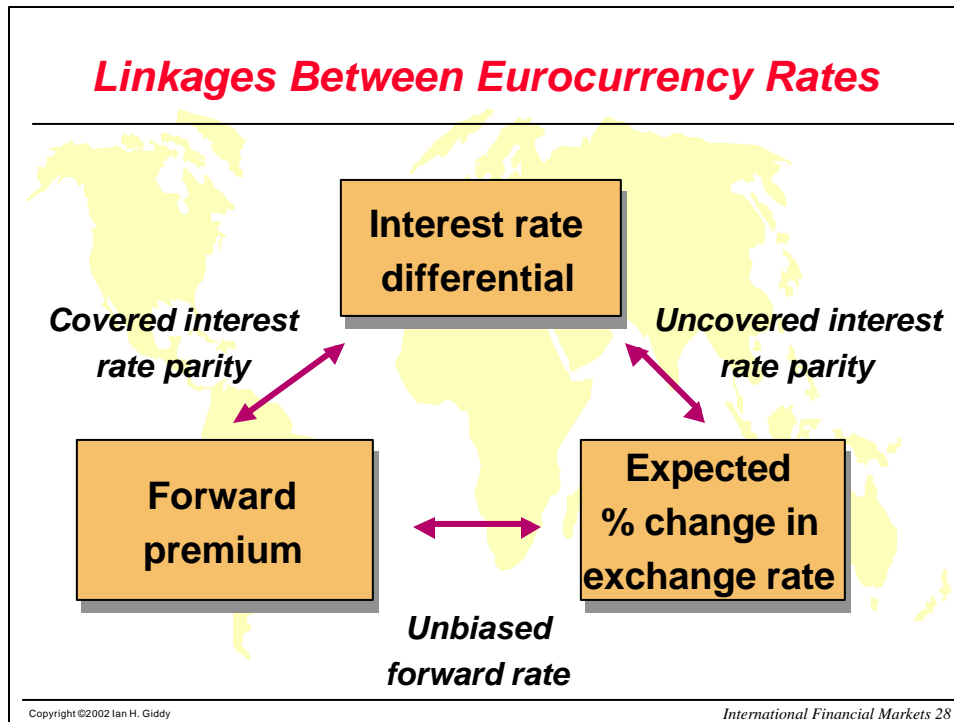
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Funding a Eurokrona Loan

Three ways to fund:

- Take domestic krona deposit
- Take EuroKrona deposit
- Fund with dollars, hedged into krona
 - Take E\$ deposit
 - Do FX swap: sell USD spot, buy USD forward

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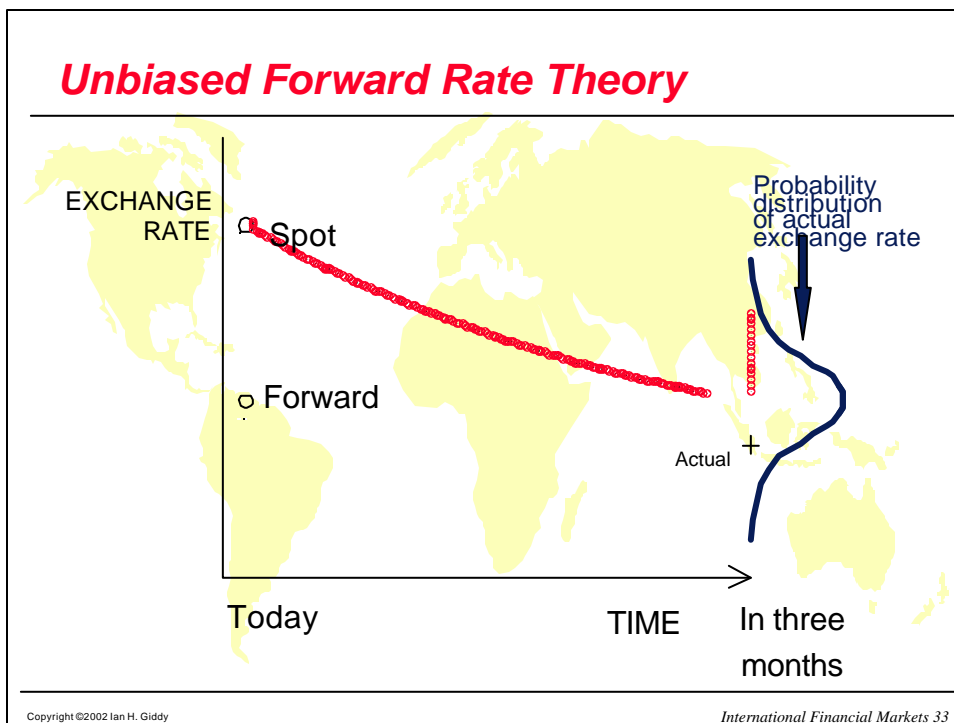
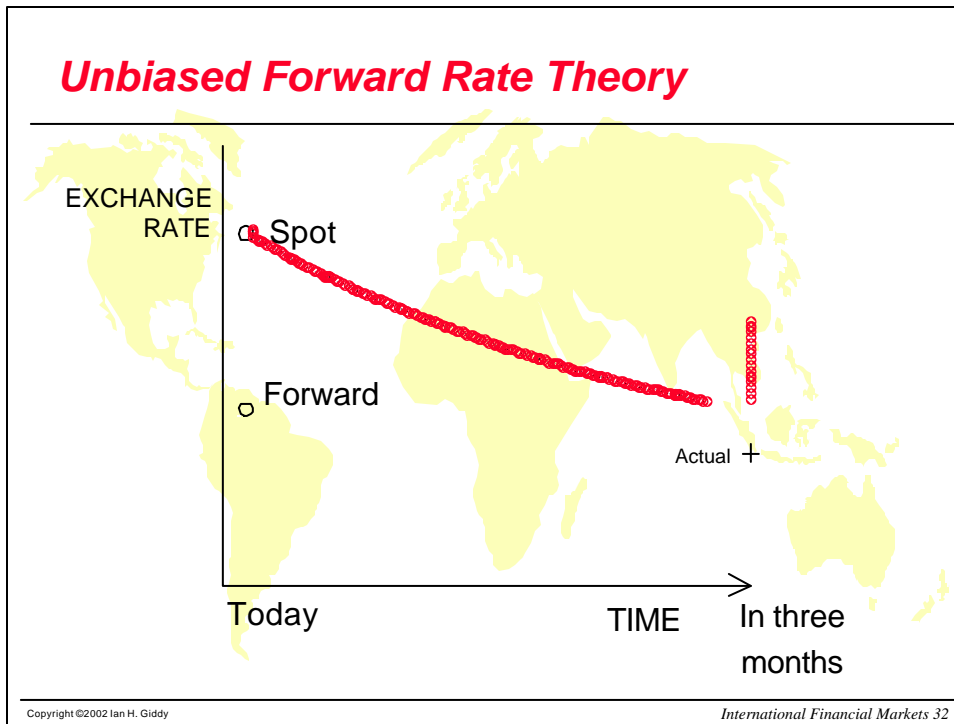
Example: Anglo's Funding

- Anglo-American, the natural resources conglomerate, is seeking 3-month US\$ funding.
 - ◆ Anglo can fund in the US CP market at 5.5%
 - ◆ Or in the Eurosterling market at 6.7%
 - ◆ The BP is:
 - spot \$1.5484, 3-mo forward \$1.5454
 - ◆ *Which is cheaper?*

Anglo's Answer

It's cheaper for Anglo-American to borrow in the US CP market. Reason:

- ◆ US: simply borrow for 3 months
 - Cost: $\$1(1+5.5\%/4) = 1.01375$
- ◆ UK: borrow British pounds, change into dollars at spot rate, cover by buying sterling at 3-mo forward rate to repay the pounds
 - Cost: $(\$/1.5484)(1+6.7\%/4)1.5454 = 1.01478$



Unbiased Forward Rate

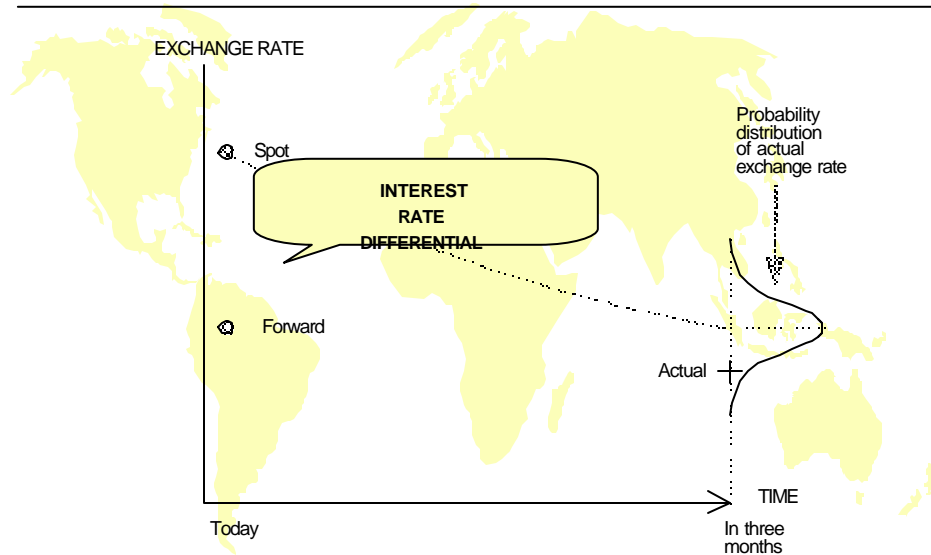
Forward premium or discount

= Expected annual rate of change of the exchange rate

That is,

$$P_{\$/DM} = E(R_{\$/DM})$$

International Fisher Effect



International Fisher Effect

$$i_{E\$} = i_{EDM} + E(R_{\$/DM})$$

That is,

**Interest-rate differential
equals
Expected annual rate of change of
exchange rate**

Cost of Hedging

Type of Hedge	Cost of Hedging
Forward	Forward premium
Money Market Hedge (Borrow to match assets)	Interest rate differential
Do nothing	Expected rate of change of exchange rate

Law of One Price

$$p = Sp^*$$

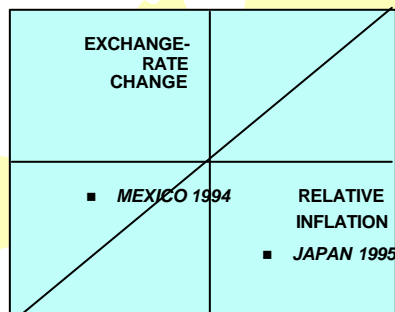
The Price of Tin

In New York	On the Kuala Lumpur Market	On the London Metal Exchange
273c per lb. = US\$6.02 per kilogram ^a	15.37 ringgit per kilogram = US5.70 per kilogram ^b	US\$5830 per tonne = US5.83 per kilogram ^c

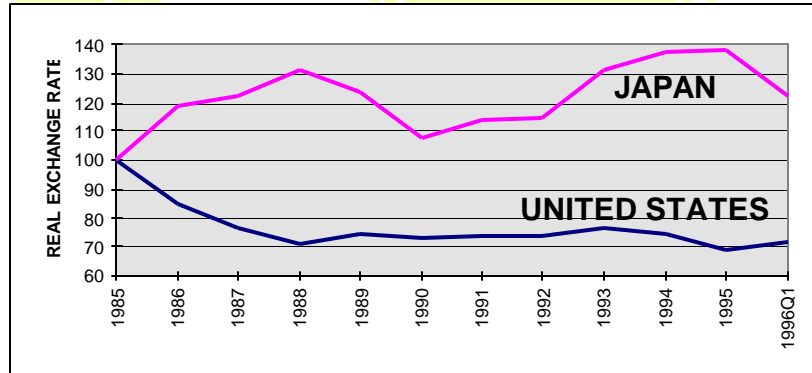
^a1 avoirdupois pound = 0.45359 kilograms
^bUS\$1 = 2.6965 Malaysian ringgit on the date of calculation
^c1 tonne = 1000 kilogram.
 All data taken from the Commodities section of the London *Financial Times*.

Purchasing Power Parity: Theory and Evidence

$$\frac{S_{t-1} - S_t}{S_t} = \frac{I - I^*}{1 + I^*}$$

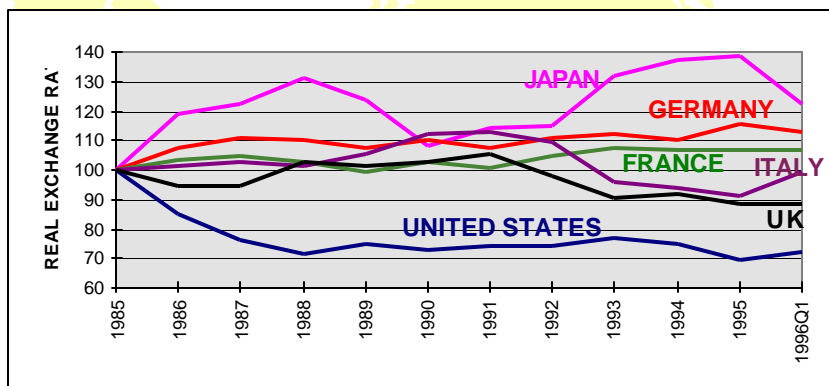


Deviations from Purchasing Power Parity

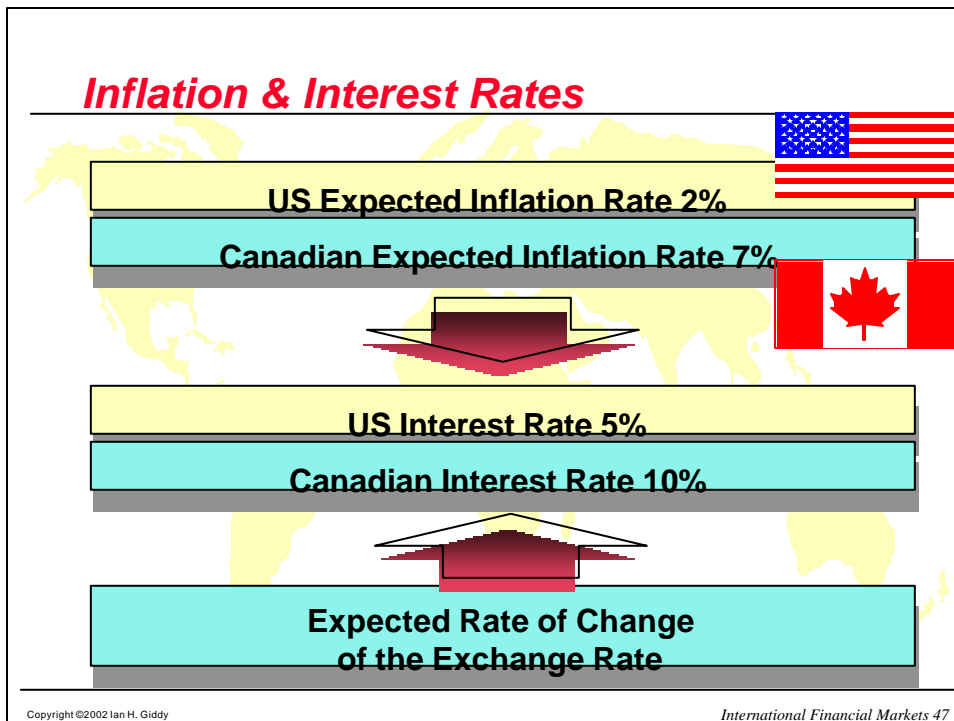
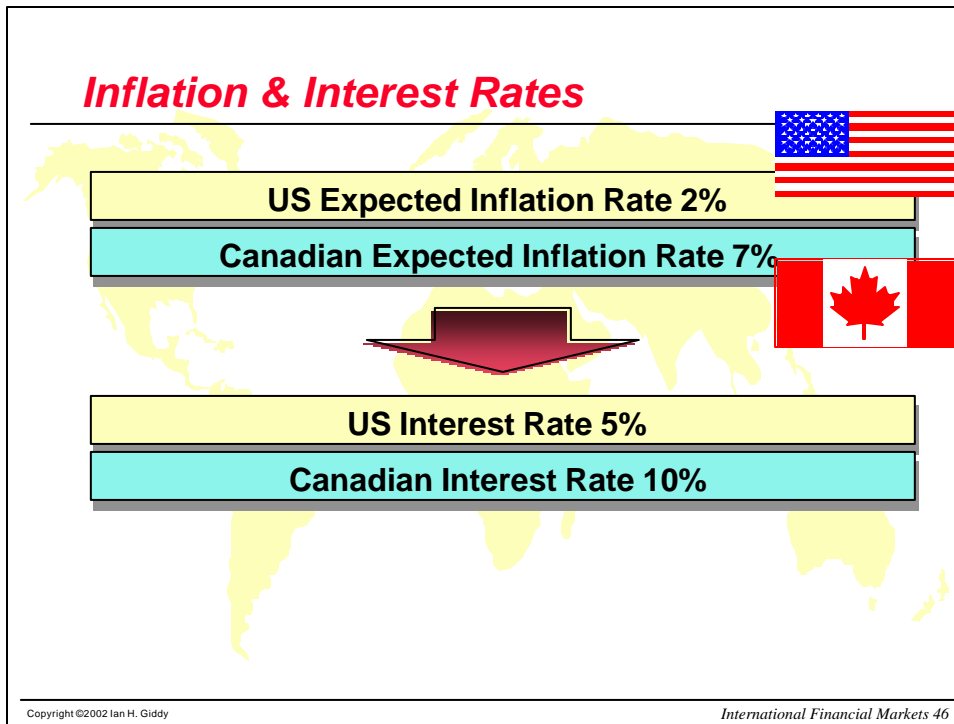


Source: JP Morgan. Index of real effective exchange rate versus 18 industrial country currencies, adjusted for change in relative wholesale price of domestic manufactures. A fall in the index indicates improved international competitiveness.

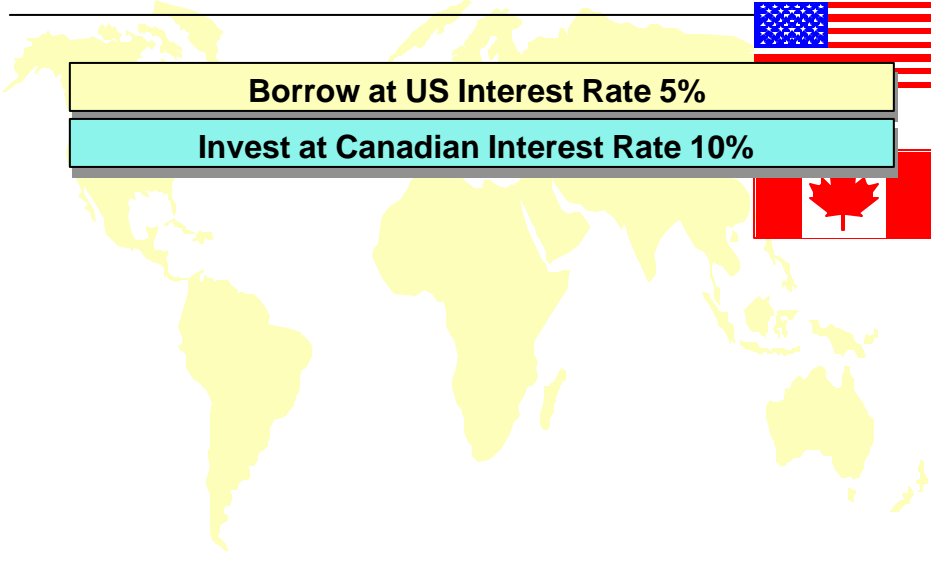
Deviations from Purchasing Power Parity



Source: JP Morgan. Index of real effective exchange rate versus 18 industrial country currencies, adjusted for change in relative wholesale price of domestic manufactures. A fall in the index indicates improved international competitiveness.



Inflation & Interest Rates

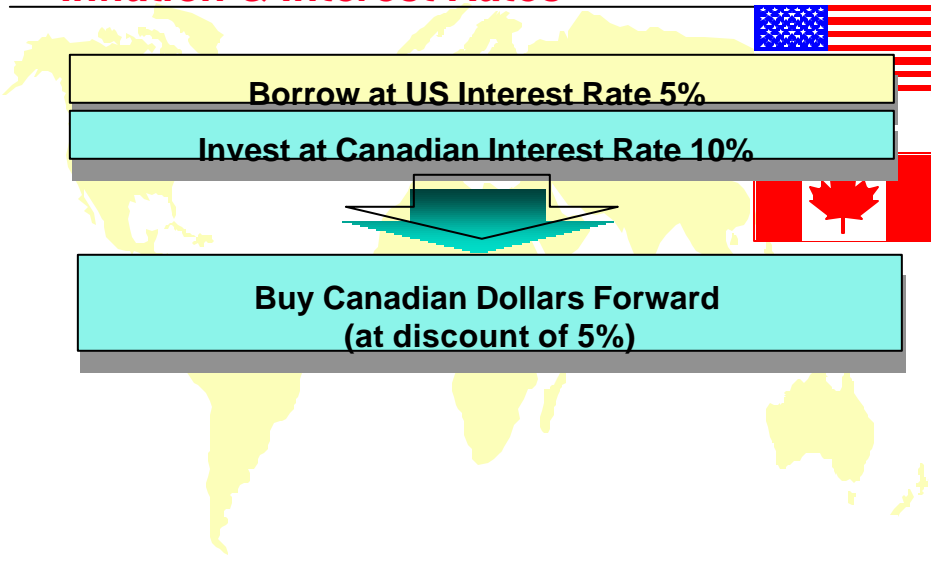


Borrow at US Interest Rate 5%

Invest at Canadian Interest Rate 10%

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Inflation & Interest Rates

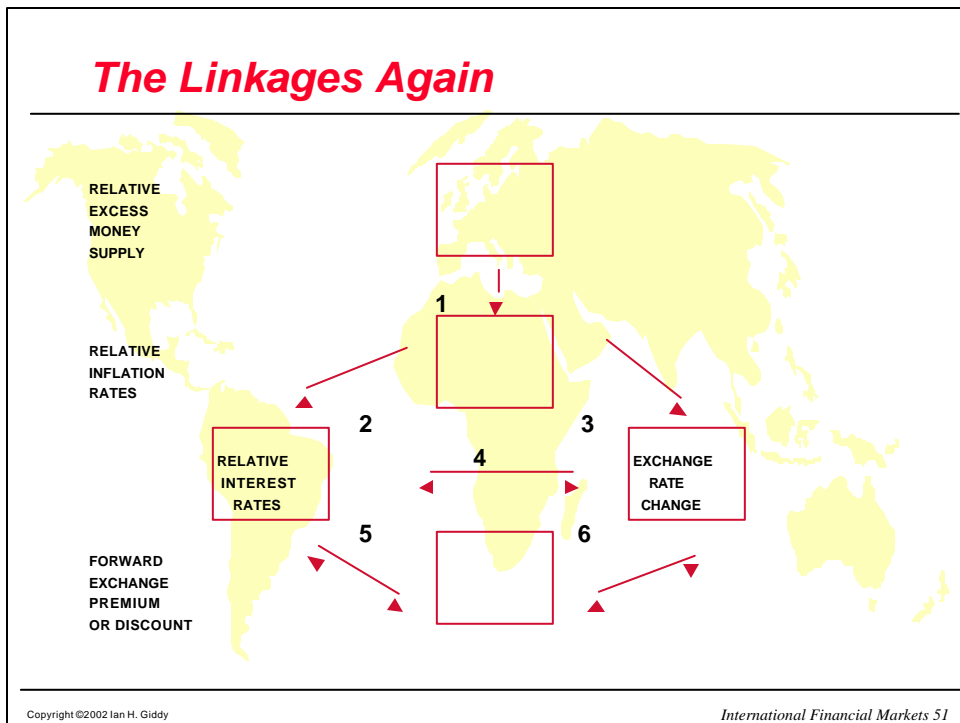
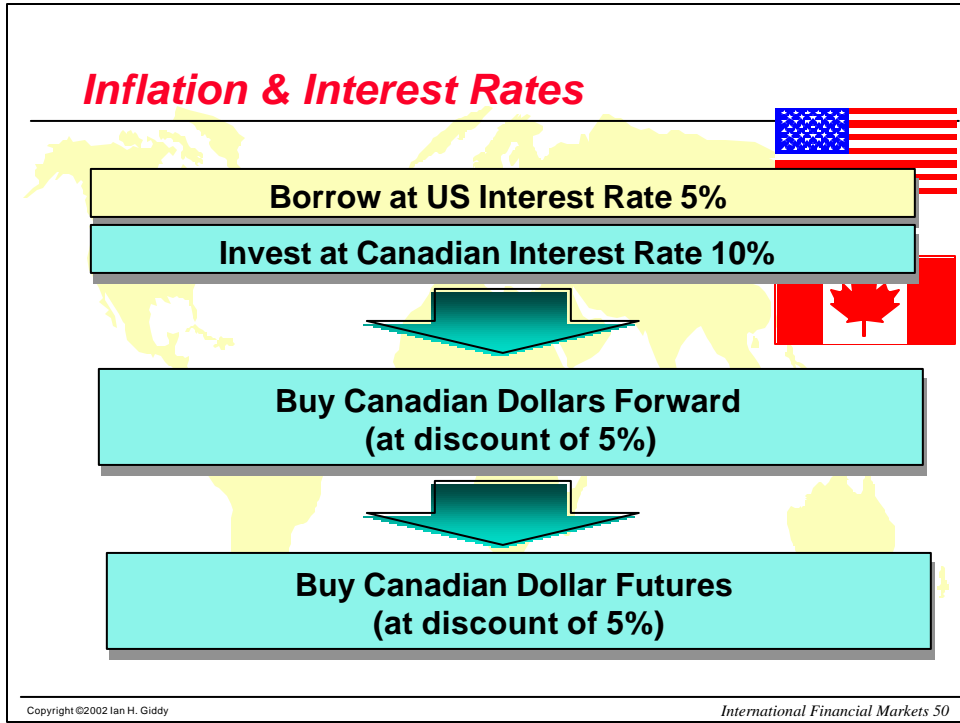


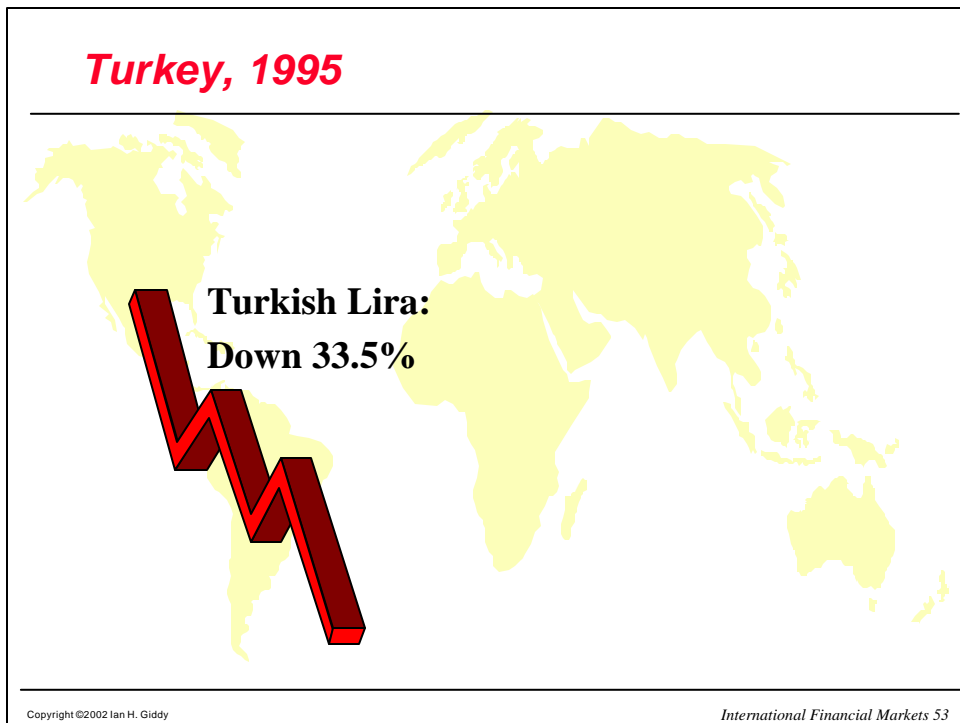
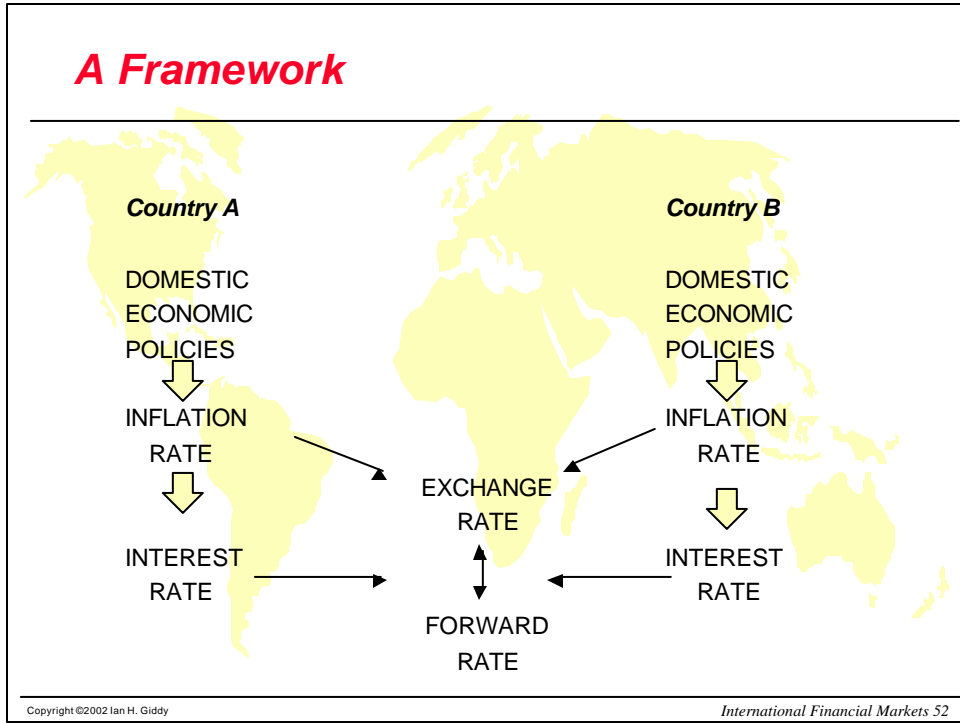
Borrow at US Interest Rate 5%

Invest at Canadian Interest Rate 10%

Buy Canadian Dollars Forward
(at discount of 5%)

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