

Direct quote: HC per unit of FC.

i.e. HC/FC

Indirect quote: FC per unit of HC, FC/HC

Cross-rate: not including \$us

Triangular arbitrage:

When evaluating, convert all spot rates to have investment currency in BC (denominator)

then 1) Purchase greater rate 2) Sell lower rate.

Forwards | One point is 0.0001 except JPY

Premium, 27-29 e.g.; add to spot

Discount 29-24 e.g.; subtract from spot.

% premium/discount = $\frac{F-S}{S} \times \frac{100}{N}$ (%)

if $\Delta S_{CHF/AUD} = -20\%$, say

The \$ has depreciated relative to the CHF by 20%.

'Ideal Currency'

1) Exchange rate stability

2) Full financial Integration

→ No Capital or Investment Controls

3) Monetary independence.

Balance Of Payments (BOP)

Payment to foreigners Cr | Dr

entered into BOP as debit &

given negative sign

- Receipt from foreigners given credit with positive credit.

Current Account (CA)

- Exports (Cr)

- Imports (Dr)

- Primary Income (investment income, dividends, etc)

- Secondary Income (unilateral transfers, foreign aid, etc)

Financial Account (KA)

- Capital Inflow (cr)

- Capital Outflow (Dr)

Official Reserves

- Total Reserves held by official monetary Authorities

Net Errors & omissions

- untraceable monies

Assuming change in official reserves

& errors ≠ 0:

CA = - Financial Account.

Linking CA to National Income:

⇒ Y = National Income

C + I + G = domestic Spending/absorption

CA = Savings - Investment = Net

foreign Inv.

CA deficit → CA < 0 ; Borrowing abroad to finance spending

Credit

Debit

AC

Export goods or services

Import goods or services

Unilateral trs received

Uni. trs paid

Inc. domestic asset owned by foreigner

Dec. domestic asset owned by foreigner

Dec. foreign assets owned by home residents

Inc. foreign assets owned by home residents

Inc. liabilities to FC

Dec. liabilities to FC

KA

$$\text{Relative PPP} \rightarrow \text{exchange rate diff} = \text{inflation rate diff.}$$

$$\frac{S_{t+1}^{A/B} - S_t^{A/B}}{S_t^{A/B}} = \frac{\pi_A - \pi_B}{1 + \pi_B}$$

$$\frac{S_{t+1}^{A/B}}{S_t^{A/B}} = \frac{1 + \pi_A}{1 + \pi_B}$$

$$\text{Real Exchange Rate:}$$

$$E = \frac{S_{t+1}^{\text{Actual}}}{S_t^{\text{PPP}}} \quad E = 1 + \% \text{ over/under valuation}$$

$$E < 1, \text{BC undervalued}$$

$$E > 1, \text{BC overvalued}$$

$$\text{Interest Rate Parity}$$

$$\frac{F_{t+1}^{A/B}}{S_t^{A/B}} = \frac{1 + i_A}{1 + i_B}$$

$$\frac{F_{t+1}^{A/B} - S_t^{A/B}}{S_t^{A/B}} = \frac{i_A - i_B}{1 + i_B}$$

$$\text{Int. Fisher Effect}$$

$$(1+i) = (1+r)(1+\pi) \Rightarrow \frac{S_{t+1}^{A/B}}{S_t^{A/B}} = \frac{1+i}{1+i_B}$$

Arbitrage interest rates vs forward rates:
if the anticipated \$/BC appreciates relative

to forward:

1. invest in BC, borrow \$, sell @ expected future spot rate

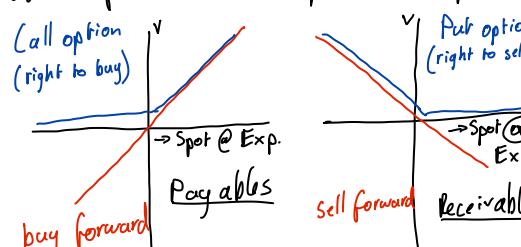
2. buy forward and sell @ expected future spot rate

Futures

⇒ Clearing houses mark-to-market

Day	Futures Price (USD/FC)	Change in price	Gain/loss	Margin
t	1.3321	0	0	2000
t+1	1.3315	-0.0006	-\$75	\$1925
t+2	1.3304	-0.0011	-\$1325	\$17875
t+3	1.3288	-0.0016	-\$200	\$1412

Value of Forwards & Options @ Expiration



American option; exercise at any time between the date of writing & expiration

intrinsic value	Call	Put
in the money	$\max(S_t - X, 0)$	$\max(X - S_t, 0)$
at the money	$S_t - X > 0$	$X - S_t > 0$
at the money	$S_t - X = 0$	$X - S_t = 0$

Transaction Exposure

- gains/losses that arise from settlement receipts / payables.

Hedging FC Receivables

→ Sell futures or forwards (short)

→ Buy put option

→ Money market hedge;

→ borrow foreign currency to be received

→ convert to domestic currency

→ invest for future use

Hedging Payables

→ buy futures/forwards, Buy Call

→ borrow home currency

→ convert to foreign currency, invest.

Proponents of Hedging:

- ⇒ agency costs; managers prefer less risk
- ⇒ reduction of risk in future cash flows.
- ⇒ less financial distress
- ⇒ improves planning capability of firm.
- ⇒ individuals do not have the same access to hedging instl.

Hedging Economic exposure

$$E_t = \frac{S_t^{\text{Actual}}}{S_t^{\text{PPP}}} = \frac{P_t}{P_{B,t}}$$

$$E_t = \text{real exchange rate}$$

$$P_{A,B} \text{ price of goods}$$

$$\Delta E = E_{t+1}^{A/B} - E_t^{A/B}$$

$$\Delta E \text{ positive, B appreciates.}$$

Particulars	BC strengthens	BC weakens
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Direct Exposure

- sales abroad
- Source abroad/IMP
- profits abroad/Exp
- finance abroad
- Invest abroad

Indirect Exposure

- Competitor sources abroad
- Supplier sources abroad

BC strengthens	BC weakens
Unfavourable	Favourable
Favourable	Unfavourable
Unfavourable	Favourable

Managing Exposure

⇒ Pricing strategy/Product strategy ⇒ increase price of goods?

Market Segmentation

- ⇒ caused by government constraints and investor perceptions
- Information barriers - Market liquidity
- Transaction costs | - Regulatory barriers
- Foreign Exchange risk | - Country Risk
- Political Risk

⇒ Take conservative approach:

⇒ Adjust NPV for political risk

⇒ Diversify political risk

⇒ Minimise exposure:

⇒ JV | Use local debt |

⇒ Purchase Insurance

⇒ Lloyd's London AIG | Government export credit agencies

Cost of Capital

$$WACC = E(r_e) \frac{E}{V} + E(r_d) \frac{D}{V} (1-t)$$

$$E(r_e) = r_f + \beta_c (r_m - r_f); \beta_c = \frac{\text{cov}(r_m, r_f)}{\text{var}(r_m)}$$

Domestic CAPM

$$E(r_i) = r_f + \beta_i^{\text{Domestic}} (r_m^D - r_f); \beta_i^{\text{Domestic}} = \frac{\text{cov}(r_m^D, r_i)}{\text{var}(r_m^D)}$$

CAPM Error - World vs Domestic

$$\text{Error} = (\beta_i^{\text{Domestic}} \times \beta_i^{\text{World}} - \beta_i^{\text{World}}) \times [r^{\text{World}} - r_f]$$

$$NPV = -I_0 + \sum_{t=1}^{\infty} \frac{CF_t}{(1+r)^t}$$

Cash flow statement

- Sales
- costs (operating costs)
- Depreciation & Amortisation
- = EBIT
- + Depreciation & Amortisation
- Taxes
- = Net Operating Profit After Tax
- Capital expenditure
- Change in NWC
- Increase (decrease) in other assets (liabilities)
- = Free cash flow to firm
- Interest expenses
- Preferred dividends
- Principle repayments
- + Proceeds with new debt issues
- = FCFF

PV tax shields

⇒ If D expected to remain stable:

$$PV(TS) = \frac{t_c r_d D}{r_A} = t_c D$$

⇒ leverage ratio $\frac{r_d}{D/V}$ expected to remain constant:

$$PV(TS) = \frac{t_c r_d D}{r_A} \quad r_A = \text{return on assets}$$

⇒ risk of $t_c r_d D$ similar to that of firm

Country Risk Premiums

Bond default spreads:

$$\text{Spread} = \text{Yield}_{\text{Emerging Mkt}} - \text{Yield}_{\text{USA}}$$

Relative Equity market Std. dev

$$\text{Risk prem}_{EM} = \text{Risk Prem}_{DM} \times \frac{\sigma_{EM}}{\sigma_{DM}}$$

$$\text{Country Prem} = \text{Risk Prem}_{EM} - \text{Risk Prem}_{DM}$$

Separation of ownership & control

⇒ Separation between ownership & control gives rise to a range of issues.

Protect shareholder interests:

- ⇒ Board of Directors
- ⇒ takeover markets to remove inefficient managers
- ⇒ Monitoring by blockholder
- ⇒ Align managers through compensation
- ⇒ Clearly defined fiduciary duties

Shareholder protection

- ⇒ Role legal origin / Dual class shares / Pyramid Structures (eg VW group) / Cross-holdings (own each other)

Common law:

⇒ Enforcement is a private matter, through civil litigation. Award damages

Civil law:

⇒ Code violation is a criminal matter, criminal penalties (fines, imprisonment)

Buy Cheap, Sell Expensive
Profit = sell - buy

Quality of Law enforcement:

- ⇒ Efficiency of legal system / Rule of Law
- Corruption / Risk of expropriation / Quality of accounting standards

International Diversification

Foreign exchange returns:

$$R_{AUD}^{MSFR} = (1 + R_{USD}^{MSFR})(1 + \Delta S_{USD}) - 1$$

Volatilities / Variance & Returns

$$E(r_p) = \sum_{i=1}^N w_i E(r_i)$$

$$\text{Var}(r_p) = \sum_{i=1}^N (w_i)^2 \text{Var}(r_i) + 2 \sum_{i=1}^N \sum_{j=i+1}^N w_i w_j \text{cov}(r_i, r_j)$$

$$\text{cov}(x, y) = \rho_{x,y} \sigma_x \sigma_y ; \rho = \text{correlation}$$

Why Home bias?

⇒ Domestic equities provide superior inflation hedge

⇒ institutional & legal restrictions

⇒ Extra taxes / transaction costs

⇒ Natural tendency to invest in the familiar

Why cross-list?

⇒ Lowering COC; improve liquidity, 'Bond' to better regulatory environment

⇒ Broaden shareholder base

International Tax issues

Non comp. company selling in Singapore, e.g.

	Double Taxation	Exclusion	Credit
Singapore			
⇒ Branch Profit Tax (17%)	100 17 <hr/> 83	100 17 <hr/> 83	100 17 <hr/> 83
Australia			
Net Sing. Profit	83	83	83
Gross up	0	0	17
Tax (30%)	83 24.9 <hr/> 0	83 0 <hr/> 0	100 30 <hr/> 0
Tax credit	0 <hr/> 0	0 <hr/> 0	17 <hr/> 0
Tax due	24.9 <hr/> 0	0 <hr/> 0	13 <hr/> 0

Capital Import Neutrality - Exclusion

" Export Neutrality - Credit

Types of Tax:

Corporate (income); direct tax, paid directly to taxpayer

Withholding tax; tax on passive income, dividends, interest, royalties

Value-Added Tax; indirect tax.

National Tax Environments

- Worldwide Taxation; taxed on their world wide income, no matter the country earned

- Territorial taxation; taxed based where the transaction occurred

Transfer pricing

⇒ If parent company has high (low) taxes, don't (do) recognise income there, have affiliates pay high (low) transfer prices.

⇒ to stop over/under transfer prices;

⇒ imposed by government on unrelated but willing buyer/seller

⇒ Managerial incentives

Cross-crediting

⇒ offset foreign tax credits with foreign tax deficits in the same period.