

International Finance Notes

Lecture 1 – Introduction

Major differences between domestic and international finance are the existence of **foreign exchange risk** as well as **political risk** if we are moving into less regulated countries.

When working with exchange rates, it is important to pay attention to units in order to get the correct currencies in the final answer. **Cross rates** are where we express one item in terms of the value of another, as shown on the right.

Bid-Ask Spread – equal to the ask price less the bid price, difference enables the banks to profit from offering foreign exchange services.

Globalisation has been a major trend of the last 50 years, with comparative advantage being the economic underpinning for all countries experiencing gains from trade around the world.

Before 1875: Bimetallism – gold and silver were both used as standard forms of money and international payment. Fell out of favour since gold and silver prices could fluctuate relative to each other which made countries using both very inefficient.

1875-1914: Classical Gold Standard – gold and national currencies were convertible to each other at a stable ratio. Global exchange rates were set by how each currency was respectively pegged against gold, creating highly stable exchange rates that were conducive to international trade and investment. Gold standard fell apart because newly minted gold is so restricted and so capacity for growth was seriously hampered.

1915-1944: Interwar Period – exchange rates were very volatile as countries competitively devalued their currencies to gain advantages in the world export market. Major issue was that no one would credibly hold their rates, international investment plummets during the turmoil.

1945-1972: Bretton Woods System – US dollar was pegged to the gold (at \$35/oz) and other currencies were pegged to the US dollar. This rectified the lack of credibility because there was a world superpower that could enforce countries complying with the gold standard.

1973-Present: Flexible Exchange Rate System – Jamaica Agreement in 1976 removes the pegging, mainly due to the US entering a recession because its currency had become massively overvalued as a result of being the global standard currency. Nowadays, most developed currencies are floating but some remain pegged (China and others).

Most recent major currency experiment is the Euro, clearly reduces exchange rate risk and thus improves foreign investment within the Eurozone but means that countries cannot change their currency to respond to localised risks that may be emerging.

Lecture 2 – Balance of Payments

In August 2019, US Treasury Secretary declared China to be a “currency manipulator”, though the IMF disagreed. US imposed 10% on Chinese goods as a result, to compensate for what they saw as unreasonably low currency rates set by the CCP to gain advantage in the export markets.

Currency Manipulator has a large trade surplus, which puts upward pressure on its currency value. The country uses this surplus to buy foreign currency to keep its own currency from rising in value. This is prevented under the **US Trade Enforcement Act 2015**. Countries that fill 3 criteria can be sanctioned: a trade surplus with the US, an overall current account surplus and one-sided intervention in the FOREX market.

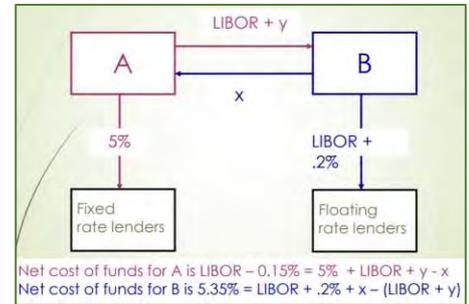
The **Balance of Payments (BOP)** account is the statistical record of a country’s international transactions over a certain period of time presented in the form of **double-entry bookkeeping**. Double-entry means each transaction has two entries: one is the traded item, the other is the payment of the item. Money flowing out is (-), while money flowing in is (+). For example, BHP export \$1m AUD of iron ore to a Chinese steelmaker, this will be reported as a

• Suppose one GBP is 1.5 AUD, and one RMB is 0.2 AUD.
– 1.5 AUD/GBP; 0.2 AUD/RMB

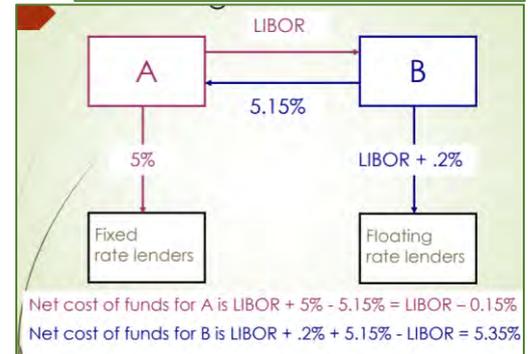
• What is the price of GBP in terms of RMB?
– $1.5 \frac{\text{AUD}}{\text{GBP}} \div 0.2 \frac{\text{AUD}}{\text{RMB}} = 7.5 \frac{\text{RMB}}{\text{GBP}}$
– 7.5 RMB/GBP
– 1 GBP is 7.5 RMB.

• The *notation* of the currency pair is the one that we will use in this subject (and the textbook).
– 1.1 AUD/USD means 1 USD = 1.1 AUD.

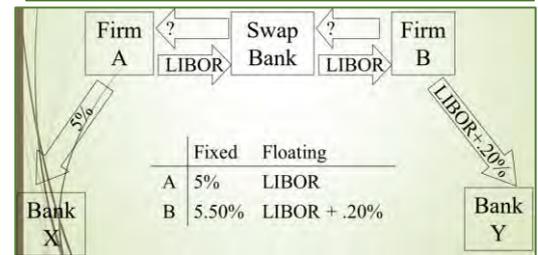
Consider the example begun at the bottom of the previous page. This shows how swaps can actually be used to mutually save money on borrowing costs. This diagram shows how both can get **lower interest rate costs than those available to them on the open market**. This result is similar to comparative advantage argument for trade, since **B has a comparative advantage in borrowing in the floating market relative to A**. Thus, when do these swaps, each firm should borrow in the format in which they have a comparative advantage and then swap to benefit.



Quality spread differential (QSD) – difference between the interest rate spreads in each market (floating and fixed). Represents the **total possible additional savings** given the rates being offered to respective firms. For example, in the case above $QSD = (5.5 - 5) - (LIBOR + 0.2 - LIBOR) = 0.3\%$. Typically, we assume that two parties share the savings equally, as on the right where each party benefits by 0.15%. Solving for x and y sets how the gains are split up (note there will always be a free variable, set $y=0$).



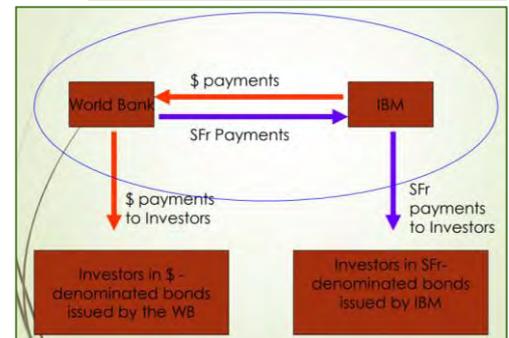
Typically, these sorts of swaps are facilitated through an intermediary (called a **swap bank**) such as a dealer (invests and swaps later) or broker (only finds counterparties). This means that our QSD is now split between 3 parties, with the swap bank taking a share of the gains as a fee. This can be most easily solved by drawing the diagram on the right and solving for the question marks according to **what each companies final borrowing costs should be based on their share of the QSD**.



Currency swap is similar but allows companies to borrow in different currencies where another has a comparative advantage in borrowing in a particular currency. Unlike interest rate swaps, **the payments (including principal amounts) are all made**, since they cannot be netted off as they are in different currencies. The first currency swap was between IBM and the World Bank in 1981. Europeans viewed IBM as having lower default risk than the world bank and Americans disagreed.

	SFr	US\$
IBM	Swiss Treasury	US Treasury + 0.45%
World Bank	Swiss Treasury + 0.20%	US Treasury + 0.4%

Now, we will move to the **valuation of an existing swap**. Once a swap is agreed, changes in the interest rate or exchange rates could change the value of these swaps over time. In general, a swap has no value at $t=0$, due to equilibrium factors. One way to approach this is to value a currency swap as a **package of long-term forward currency contracts**. The more common way though, is to value it as a **portfolio of two bonds** and use the present value to price the swap.



A five year currency swap involves two triple-A rated borrowers and is set at current market interest rates. The swap is for US\$100 million against NZ\$ 200 million at the current spot exchange rate of 2.00 NZ\$/US\$.

The interest rates are 10% in US\$ and 7% in NZ\$, or annual swaps of US\$10m for NZ\$14m.

Please confirm that the value of this swap is zero.

A year later the interest rates have dropped to 8% in US\$ and 6% in NZ\$, and the exchange rate is now 1.90 NZ\$/US\$.

$$Swap = PV_{NZD}(r_{NZD}) - \frac{S_{NZD}}{\$} \times PV_{\$}(r_{\$})$$

$$Swap = \frac{14}{1.06} + \frac{14}{1.06^2} + \frac{14}{1.06^3} + \frac{214}{1.06^4} - 1.9 \left(\frac{10}{1.08} + \frac{10}{1.08^2} + \frac{10}{1.08^3} + \frac{110}{1.08^4} \right)$$

$$Swap = NZD 4.34m \text{ or } \frac{4.34}{1.9} = \$2.28m$$

Clearly the seller of the swap that receives dollars for NZDs has realised this loss and the buyer who receives NZD and pays dollar will have a profit. Note, the quote of the exchange rate implies the NZD receiver is the buyer. Another example is →

A currency swap has a remaining life of 18 months. It involves exchanging interest at 14% on £20 million for interest at 10% on \$30 million once a year.

The term structure of interest rates is currently flat in both the U.S. and the U.K. If the swap were negotiated today, the interest rates exchanged would be \$8% and £11%. All rates were quoted with annual compounding.

The current exchange rate is \$1.65 = £1.

What is the value of the swap (in USD) to the party paying dollars?

	0	6	18
		£2.8m	£2.8m
		-\$3m	-\$3m
Value of the swap to the party paying dollars:			
		$\$8,335,659 = \left[\frac{\£2.8m}{(1.11)^{1/2}} + \frac{\£2.8m}{(1.11)^{3/2}} \right] \times \frac{\$1.65}{\£1}$	
		$-\$5,559,669 = \frac{-\$3m}{(1.08)^{1/2}} + \frac{-\$3m}{(1.08)^{3/2}}$	
		\$2,775,990	

- **Product Life Cycle** – new products can become mature markets and growth slows, with foreign competitor products becoming cost-competitive. This means costs become a more important factor and so FDI can assist with this
- **Shareholder Diversification** – can provide direct diversification to investors if there are significant barriers to the cross-border flow of capital. In modern markets, this is likely a poor justification, despite being hugely popular in the 1960-1980s period

Greenfield investments usually draw strong government support, since they create jobs, bring new businesses to the country. Conversely, **cross-boarder M&A** is often frowned upon since they often lead to job losses and cede foreign ownership.

The table on the right shows that while M&A often increases the size of the pie (creates value), this is often at the advantage of **target companies** and the **expense of acquirers**.

FDI also requires consideration of **political risk** and whether countries uphold the rule of law. These risks include **macro risk** (large scale interruption of foreign operations) and **micro risk** (specific industries taken out by political developments). More specifically, we need to consider **transfer risk**, **operational risk and control risk** (governments take control of foreign-owned businesses).

On the right is an example of **political risk analysis of Vietnam** from 2011.

To hedge political risk, it is better to be more integrated with local operators, either through JV or financing from local banks. Companies also purchase insurance to protect themselves.

Country of Acquirer	N	R&D/Sales (%)		Average Wealth Gain (U.S. \$millions)	
		Acquirer	Target	Acquirer	Target
Canada	10	0.21	0.65	14.93	85.59
Japan	15	5.08	4.81	227.83	170.66
U.K.	46	1.11	2.18	-122.91	94.55
Other	32	1.63	2.80	-47.56	89.48
All	103	1.66	2.54	-35.01	103.19

Sovereign Rating: Moody's: B2, Outlook: Stable; S&P: BB-, Outlook: Negative	
Political Strengths <ul style="list-style-type: none"> • Political Stability with Communist Party in government since end of the country's civil war in 1975 • Widespread support for the CPV (Vietnam Communist Party) reflects its success in raising living standards and creating and maintaining security 	Economic Strengths <ul style="list-style-type: none"> • Transformation to market oriented economy since late 1980s • High GDP growth facilitated by foreign investment • Well educated and cheap labor force • Sizeable natural resources and advantageous location
Political Weaknesses <ul style="list-style-type: none"> • Inconsistent and evolving regulations • Unreliable legal system and corruption • A lack of financial transparency, insufficient protection for minority owners, and poor corporate governance 	Economic Weaknesses <ul style="list-style-type: none"> • Large fiscal and trade deficits and weak banking system • Plethora of state-owned enterprises and less diversification • Industry and credit policies favor state-owned enterprises
Political & Governance Indicators <ul style="list-style-type: none"> • World Bank Ranking: Ease of doing business 78th/183 • Freedom House - Political rights and civil liberties Not Free • Transparency International Ranking - Corruption Perception Index 116th/180 • OECD country risk rating 5 (Scale: 0-7, 0 is least risk, 7 is highest risk) 	Economic Indicators <ul style="list-style-type: none"> • GDP (\$US bn) 104 • GDP per capita (\$US) 1,174 • Real GDP growth (15 year average, %) 7.3 • Fiscal balance (% of GDP) -6.4 • Public debt (% of GDP) 53.0 • Foreign direct investment (% of GDP) 6.6 • Current account (% of GDP) -3.8 • External debt (% of GDP) 42.1 • Foreign reserves (% of GDP) 11.6