

International Monetary System

- Just as people in different countries speak different languages, they also transact business in different currencies, requiring conversion from one type of money to another.
- The International Monetary System system comprises the *set of rules and practices that govern how debts are honored and paid between and among nations with different national monies*.
- When the system is functioning smoothly, all countries gain from international flows of goods, services, and capital – the system is an *int'l public good*. But when it breaks down or is poorly organized, nations are unable to sustain high levels of trade and investment.

The FOREX Market

- The FOREX market is where currencies are traded
- *Foreign exchange* is the currency of another country that is needed to carry out international transactions
- The market incorporates all arrangements used to buy and sell foreign exchange (not a physical place but a network of telephones, emails and faxes connecting all the large banks in the world).
- Operates 24 hours a day because major banks have offices all over the world. Biggest markets are in London, New York and Tokyo.
- Volumes traded daily are huge: \$1.5 trillion per day
- Most transactions involve exchange of \$US for other currencies. In large transactions, traders exchange one currency for \$US and then buy another currency with the dollar. The \$US is thus called a *vehicle currency*.

Exchange rates

- The price determined in the FOREX market is the *exchange rate*.
- The *exchange rate* is the price of one country's currency measured in terms of another country's currency. It converts values from one country's unit of measure (currency) to another country's unit of measure (currency).
- When a currency becomes more valuable relative to another currency it has *appreciated*. The price of foreign exchange has fallen (e.g, one \$US buys 130 yen instead of 120 yen previously).
- When a currency becomes less valuable relative to other currencies, it has *depreciated*. The price of foreign exchange has risen (e.g., \$US buys 110 yen instead of 120 yen previously).

Exchange rate determination

- *Demand and Supply*. Exchange rates are determined by the equilibrating interaction of buyers and sellers of currencies in the FOREX market.
 - *Demand* is a function of domestic residents' need for foreign exchange to consummate intended overseas transactions.
 - *Supply* is a function of foreign residents' need for \$US to consummate transactions in the US.
 - Two of the most important factors affecting demand and supply are relative *inflation rates* and relative *interest rates*.
 - Differences in price levels are a crucial aspect of exchange rates determination (see PPP below)

Exchange rates in the long run

- **Purchasing Power Parity (PPP):** a long-run theory that says that the exchange rate between two currencies should move toward the rate that would equalize the prices between an identical basket of goods and services in the two countries.

- “Big Mac” PPP:
$$p_{\text{Big Mac}}^{\pounds} = e * p_{\text{Big Mac}}^{\$}$$

where e is the pound/dollar exchange rate. If a Big Mac costs \$2 in the US and the pound/dollar exchange rate is 0.5, then PPP states that the price of a Big Mac in London should be £1.

- Empirical evidence on PPP mixed (many cases of “overvalued” and “undervalued” currencies). Real world far from assumptions of theory:
 - PPP falsely assumes there are no barriers to trade (tariffs), zero transportation costs, and no distortions caused by local taxes
 - Assumes perfect competition, but levels of competition vary across countries (lots of close substitutes for Big Mac in the US).
 - Big Mac not just a basket of goods. Prices must cover rents and costs of non-traded inputs. Deviations from PPP might reflect this.

How changes in currency values affect the nation

- **Example:** assume 2 countries (US, France), 2 currencies (\$US, ff) and one traded good (men's shirts).
- Price Comparison:
 - US-made shirts \$50
 - French-made shirts ff250
- Exchange rate: \$1 = 5 francs. The PPP condition:

	<i>US Shopper prices</i>	<i>French Shopper prices</i>
US-made shirt	\$50	\$50=ff250
French-made shirt	ff250=\$50	ff250

- Comparison shopping after the dollar *depreciates* (\$1 = 4 francs)

	<i>US shopper prices</i>	<i>French Shopper prices</i>
US-made shirt	\$50	\$50=ff200
French-made shirt	ff250=\$62.50	ff250

- The exchange rate affects the price competitiveness of all traded goods—it is thus the *single most important price in an economy*. It has a major impact on a country's wealth.

Exchange Rate Regimes

- Nations can choose to let market forces determine exchange rates (as above). This is known as a *floating exchange rate regime*. Alternatively, a nation can choose to adopt a *fixed exchange rate regime* (e.g., the gold standard). Whether a country adopts a floating or a fixed rate regime (or something in between), it is making a choice that involves economic and political trade-offs.
- *Mundell-Fleming* conditions define the basic trade-offs (see Cohen). If a government wants the benefits of fixed exchange rates (more international trade and investment) it must give up either domestic monetary policy independence or it must limit international capital flows. If a government wants to preserve its monetary policy freedom, it must give up either fixed exchange rates or place constraints on international capital flows.

Table 1: Burgernomics

The hamburger standard

	Big Mac prices		Implied PPP* of the dollar	Actual \$ exchange rate 30/03/99	Under(-)/over (+) valuation against the dollar, %
	in local currency	in dollars			
United States†	\$2.43	2.43			
Argentina	Peso2.50	2.50	1.03	1.00	+3
Australia	A\$2.65	1.66	1.09	1.59	-32
Brazil	Real2.95	1.71	1.21	1.73	-30
Britain	£1.90	3.07	1.28‡	1.61‡	+26
Canada	C\$2.99	1.98	1.23	1.51	-19
Chile	Peso1.25	2.60	5.12	4.24	+7
China	Yuan9.90	1.20	4.07	8.28	-51
Denmark	DKr24.75	3.58	10.19	6.91	+47
Euro area	Euro2.52	2.71	0.97§	1.08§	+11
France	Ffr17.50	2.87	7.20	6.10	+18
Germany	DM4.95	2.72	2.04	1.82	+12
Italy	Lire4,500	2.50	1,852	1,799	+3
Netherlands	fl5.45	2.66	2.24	2.05	+10
Spain	Pta275	2.43	154	155	0
Hong Kong	HK\$10.2	1.32	4.20	7.75	-46
Hungary	Forint299	1.26	123	237	-48
Indonesia	Rupiah14,500	1.66	5,967	8,725	-32
Israel	Shekel13.9	3.44	5.72	4.04	+42
Japan	¥294	2.44	121	120	0
Malaysia	M\$4.52	1.19	1.86	3.20	-51
Mexico	Peso19.9	2.09	8.19	9.54	-14
New Zealand	NZ\$3.40	1.82	1.40	1.27	-25
Poland	Zloty5.50	1.38	2.26	3.98	-43
Russia	Rouble33.5	1.35	13.79	24.7	-44
Singapore	S\$3.20	1.85	1.32	1.73	-24
South Africa	Rand8.60	1.38	3.54	6.22	-43
South Korea	Won3,000	2.46	1,235	1,218	+1
Sweden	SKr24.0	2.88	9.88	8.32	+19
Switzerland	Sfr5.90	3.97	2.43	1.46	+64
Taiwan	NT\$70.0	2.11	28.8	33.2	-13
Thailand	Baht52.0	1.38	21.4	37.6	-43

*Purchasing-power parity: local price divided by price in United States
 †Average of New York, Chicago, San Francisco and Atlanta ‡Dollars per pound §Dollars per euro
 Source: McDonald's

The “Big Mac” PPP Index from *The Economist*

The first column shows local-currency prices of a Big Mac; the second converts the prices into dollars.

The third column calculates Big Mac PPPs (local currency price/American price of 2.43).

The final column shows the undervaluation or overvaluation of the currency at actual exchange rates.

Figure 1: The “Unholy Trinity”

(only 2 of the 3 following objectives are possible at one time)

<i>(i)</i> <i>Fixed</i> <i>Exchange-</i> <i>Rates</i>	<i>(ii)</i> <i>International</i> <i>Capital</i> <i>Mobility</i>	<i>(iii)</i> <i>Domestic</i> <i>policies</i> <i>aimed toward</i> <i>full</i> <i>employment</i>
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YES	YES	NO	= Gold Standard
YES	NO	YES	= Bretton Woods
NO	YES	YES	= 1973 - today