Readings in International Economics

Autumn 2011 - Winter 2012

Lecture 2: Exchange rate (ER) regimes and fixed ER systems

18 October 2011

Overview of the previous class I

- The balance of payments (BOP): (1) current account (CA), (2) non-reserve portion of the financial account (FA), and (3) international reserve account

(1) Why do CA deficits/surpluses occur?

- A typical developing or emerging economy: CA deficit and FA surplus

(2) Why can CA deficits be dangerous? If CA deficit > FA surplus, the country has to obtain foreign loans; otherwise it will lose international reserves

- Loss of international reserves → fear of currency devaluation → "capital flight" → sharp fall in reserves (a BOP crisis, currency crisis)

Overview of the previous class II

(3) Why does China have "twin surpluses"? *(not a typical developing or emerging economy)*

(4) The problem of the so-called "global imbalances": a large US CA deficit and a large Chinese CA surplus

Possible causes

- *(1) undervaluation of the Chinese currency* (the RMB) relative to the USD
- *(2) excessive savings by the Chinese and excessive consumption by the Americans*
- *(3) the "global savings glut"* → a large portion of the "loose money" generated from CA surpluses entered the US economy in 2003-2007, pushing up the value of the USD/ pushing down US interest rates

Today's class (part I): ER basics

<u>Exchange rates (ER) and ER regimes</u>

- **(1) Two types of ER regimes: fixed and flexible**
  固定相場制、変動相場制

Various types of fixed ER regimes: hard and soft pegs

- **(2) Two types of ER: nominal and real**
  名目為替レート、実質為替レート
- **(3) Changes in the ER**
- (in the case of flexible ER) depreciation/appreciation
  。。。安／。。。高
- (in the case of fixed ER) devaluation/revaluation
  切り下げ／切り上げ

A large number of countries still use hard and soft pegs

Today's class (part II): fixed ER systems

<u>The evolution of the international monetary system: from fixed to a flexible ER system</u>

- **Fixed ER systems: the gold standard (1871 – 1914) and the Bretton Woods system (1944-1973)**
  金本位制、ブレトンウッズ体制
- Chapter 17 of the textbook (pp. 468-473)

<u>The evolution of money: from "commodity money" (for example, gold coins) to "fiat money"</u> (paper currency that has no underlying value; established by a government decree)

- commodity money → representative money → fiat money 本位貨幣、兌換紙幣、不換紙幣--フィアット通貨

Part I: ER basics

- **Nominal ER**: *the amount of currency A, which can be bought by one unit of currency B*; or the price in foreign currency of one unit of the domestic currency
- How to determine whether a currency is overvalued/ undervalued relative to another one?
- **The "real exchange rate" (RER)**: not about buying/ selling currencies, but about trading one country's goods for the goods of another
- The RER is expressed in *the amount of A country's good (for example, bushels of Canadian wheat) that can be bought by one unit of B country's good* (one bushel of US wheat) at the nominal ER

ER basics: how to compare currencies' purchasing power?

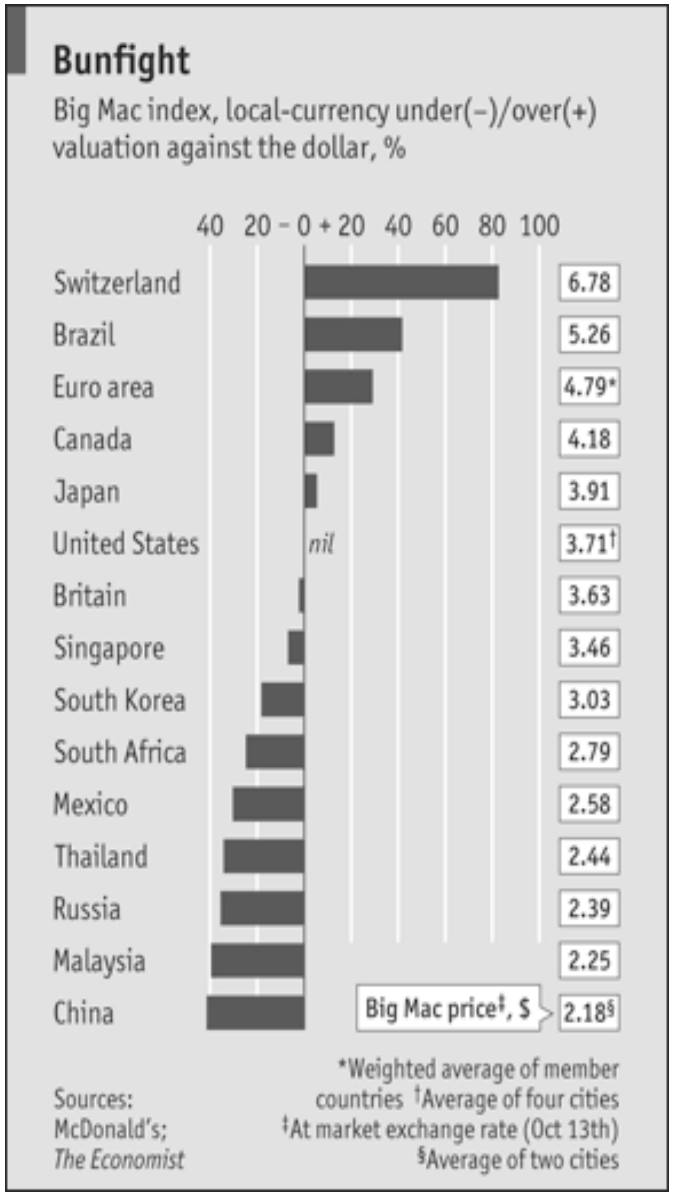
- **"Purchasing power parity" (PPP):** in the long run the ER should equalize the prices of an identical basket of goods and services in a pair of countries
- "Purchasing power" is the amount of goods and services that can be purchased with one unit of a certain currency. For instance, if a taco costs $2, the purchasing power of $1 is 0.5 tacos
- **The PPP exchange rate** is the exchange rate between two countries expressed in terms of how many goods and services can be purchased with each currency
- A famous example of the application of PPP is "The Economist's Big Mac Index"


The Economist
A week on the wild side
SELL!
SELL!
SELL!
SELL!
SELL!
SELL!
BUY!!
BUY!!
BUY!!

How is yuan undervaluation estimated by the Big Mac Index?

- **The Big Mac index calculated by "The Economist" since 1986**
- The 2010 calculations: in China, a Big Mac costs 14.5 RMB on average in Beijing, the equivalent of $2.18 at the nominal exchange rate; in the US, in contrast, the same burger sells on average for $3.71
- Since 14.5 RMB can buy as much burger as $3.71, one RMB should be worth $0.26 on the foreign-exchange market
- At the nominal ER, one RMB costs just $0.15, suggesting that the RMB is undervalued in real terms against the USD by about 42%

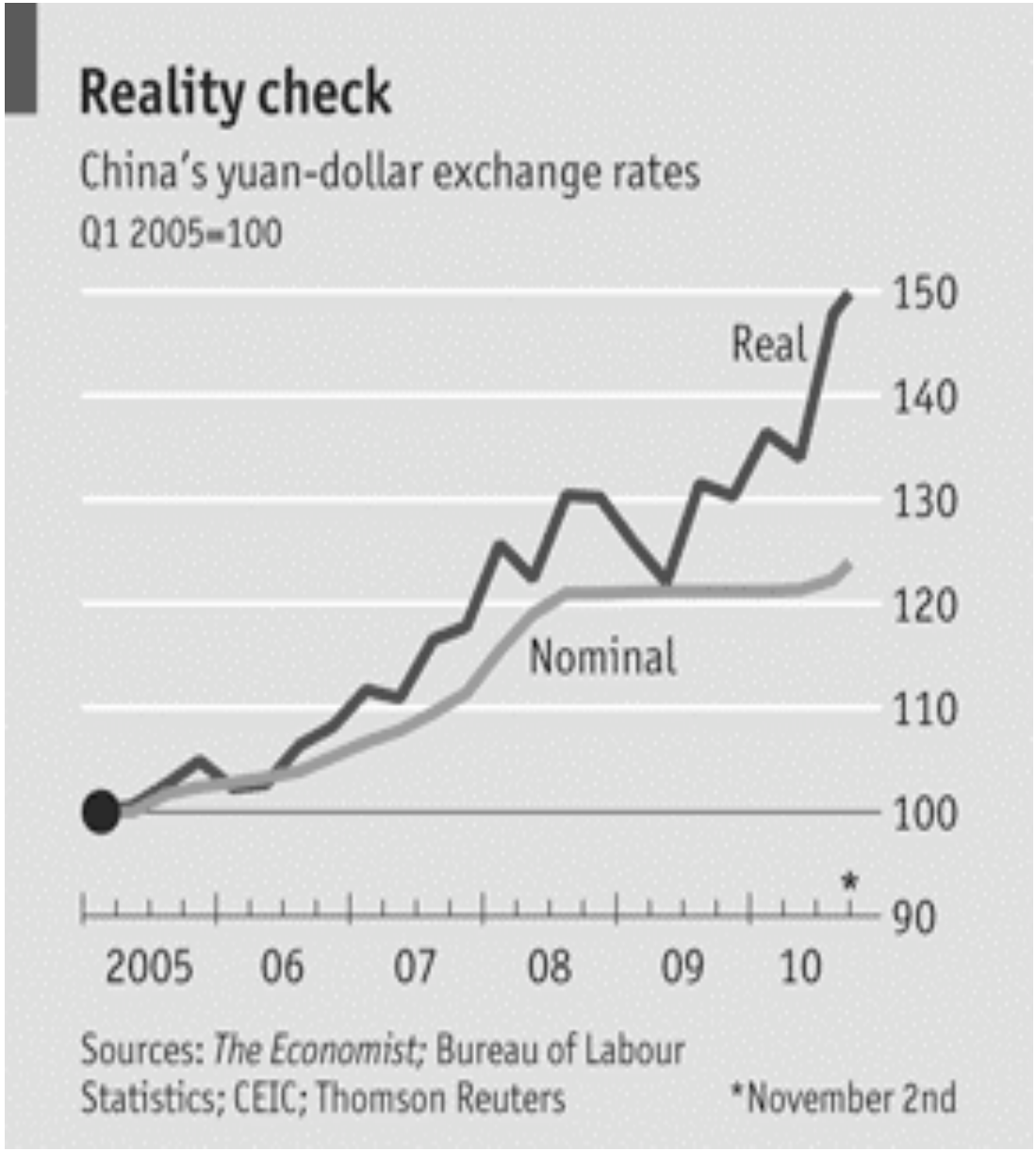
Currency over- and undervaluation according to the Big Mac Index (2010)



ER basics: how to measure the RER?

- Use the same basket of goods and services for a pair of countries
- The price of the basket (in the form of CPI) in each of the countries is used to represent the country's price level
- **The RER can be expressed as the ratio of the countries' price levels**
- **RER = e (Pf/P), where Pf is the foreign price level and P is the domestic price level**
- e is the nominal exchange rate (the price of one unit of the domestic currency in foreign currency units)

China's RER appreciation



Part II: fixed ER systems

(1) The gold standard (from around 1871 to 1914)

- 1.1 National currencies: gold coins and paper banknotes that were freely convertible into fixed quantities of gold
- The value of national currencies was defined in gold (the so-called "gold parities"). For example, 1 Jap. yen = 1.5 g. (1871); 1 French frank = 0.29 g (1873); 1 Goldmarks = 0.358 g., etc.
- 1.2 International reserves took the form of gold
- National currencies were fully or partially backed by the gold reserves

The gold standard: other characteristics

1.3 The cross rate between 2 currencies could be calculated on the basis of their "gold parities"

- For example, if the USD and GBP gold parities were $35 and £14.58 per troy ounce (about 31 grams of gold) ➔ the USD/GBP exchange rate would be $2.40 = £1
- **1.4 All countries were supposed to be in external balance due to the "automatic adjustment mechanism"**
- Countries with BOP deficits/surpluses lost/gained gold reserves ➔ smaller/bigger money supply ➔ a simultaneous fall/rise of prices ➔ real appreciation of currencies of BOP surplus countries ➔ reducing CA deficits/surpluses towards an equilibrium

The interwar period (1918 – 1939)

- Failed attempts to return to the gold standard at the pre-war parities
- The US and the UK returned in 1919 and 1925 respectively, Japan in 1930 but the UK and Japan had to abandon it again in 1931
- The Great Depression started in 1929 and continued in the 1930s
- Banking crises in many countries
- **"Beggar-thy-neighbor" policies**: protectionism (smaller international trade), competitive devaluations ("currency wars"), restrictions on capital flows

Fixed ER systems: the Bretton Woods (BW) system I

(2) The Bretton Woods system (from 1944 to 1973)

- 2.1 Fixed but adjustable exchange rates
- The US dollar was the only currency convertible into gold at the parity of $35 per ounce → the world's only reserve currency
- All other currencies pegged to the US dollar at fixed exchange rates (for example, $1 = 360 yen; $1 = 4.20 DM, etc.)
- Calculation of cross rates (for example, the DM/yen exchange rate)
- 2.2 Central banks held both gold and US dollars as international reserves

John M. Keynes and Harry D. White

The Bretton Woods system II

- 2.3 Privileged position of the reserve currency country (the US): it could expand its money supply without losing international reserves
- Monetary expansion in the US (implying a weaker USD) would lead to automatic increase in money supply abroad
- Because the other central banks had to purchase the newly printed USD to maintain the fixed exchange rates
- Therefore, they had to expand their domestic money supply, i.e. to follow passively the US monetary policy
- 2.4 Asymmetry: the costs of adjustment are not borne by the reserve currency country

The Bretton Woods system III

Adjustment of BOP imbalances under the BW system

- (1) IMF loans to countries with BOP deficits upon certain conditions
- (2) The fixed exchange rates could be "adjusted" (currency devaluation/revaluation) upon the agreement by the IMF
- (3) Restrictions on capital flows

<u>But as private capital mobility increased in the 1960s</u>

➔ speculative attacks on national currencies leading to forced devaluations (e.g. the devaluations of the GBP and the FF in 1967 and 1969)

The fundamental problem of the Bretton Woods system

- **2.5 The so-called "Triffin dilemma" (Robert Triffin, 1960)**
- **The reserve currency country (the US) has to simultaneously achieve its domestic monetary policy goals and meet other countries' demand for reserve currency**
- During the 1950s-1960s the US had to provide large amounts of USD to ensure the economic growth of Western Europe and Japan
- For example, the Marshall Plan (1948-1952), the opening the US market to Western European and Japanese exports, providing USD as international reserves for non-US central banks
- But eventually non-US central banks' USD holdings exceeded the US gold reserves ➔ the confidence of other countries in the USD as the reserve currency was undermined

The collapse of the Bretton Woods system in 1971-1973

- Mounting US fiscal expenditures in the 1960s due to the military costs of the Vietnam war and the increasing social welfare costs
- Partly financed by printing too many US dollars → a declining trust in the USD
- Strong market expectations of USD, GBP and FF devaluation + DM and JPY revaluation → gold outflows from the US
- The convertibility of the USD into gold suspended in 1971 (the so-called “Nixon shock”)
- Transition to flexible exchange rates since 1973

Comparison of the gold standard and the Bretton Woods systems

Similarities

- (1) fixed exchange rates
- (2) relative price stability

Differences

- (1) under the BW system, the exchange rates could be adjusted
- (2) restrictions on capital movements under the BW system
- (3) the costs of adjustment were not borne by the reserve currency country (an asymmetric system)

Drawbacks of the gold standard (Ch.17, p. 472)

- **(1) excessively strong constraints on the use of monetary policy to fight unemployment** (in a global recession all countries should expand money supply together but this would increase the price of gold in terms of national currencies)
- **(2) the prices of goods may fluctuate widely due to the changes in gold's relative price in terms of output** (the latter is influenced by new gold discoveries)
- **(3) excessively strong incentives for central banks to increase their gold reserves may lead to shrinking money supply** (central banks compete for gold reserves by selling domestic assets) ➔ deflation and economic recession?

The remaining part of the second assignment (for 25 Oct.)

- (3) Is the currency of the country selected by you under- or overvalued towards the US dollar (in real terms)?

Discussion questions (for 25 Oct.)

- 1. What are the main factors influencing exchange rates (for example, why is there a divergence between China and Vietnam?)
- 2. Pros and cons of fixed ER for developing and emerging economies.
- 3. Pros and cons of yuan appreciation. Would a stronger yuan really help to redress the CA imbalances?
- 4. Why have BOP crises in developing and emerging economies become quite rare recently?
- 5. What are the reasons for high inflation in many emerging economies? What's the impact of ER appreciation/depreciation on inflation?
- 6. Hard vs. soft pegs: which is better? What do you think about official dollarization in Panama, Equador, and Zimbabwe?