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# ECN 160B Lectures 24 - 25 International Macroeconomics

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# Fixed Exchange Rates

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- Two possible systems for fixing the exchange rates:
  - **Reserve currency standard**
    - Central banks peg the prices of their currencies in terms of a reserve currency.
      - The currency central banks hold in their international reserves.
  - **Gold standard**
    - Central banks peg the prices of their currencies in terms of gold.

## Fixed Exchange Rates: Implications of possible systems

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- The two systems have very different implications about:
  - How countries share the burden of balance of payments financing
  - The growth and control of national money supplies

## Reserve Currencies: US dollar at the end of World War II

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- **The Mechanics of a Reserve Currency Standard**
  - The workings of a reserve currency system can be illustrated by the system based on the U.S. dollar set up at the end of World War II.
    - Every central bank fixed the dollar exchange rate of its currency through foreign exchange market trades of domestic currency for dollar assets.
    - Exchange rates between any two currencies were fixed.

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# Reserve Currencies in the World Monetary System

- **The Asymmetric Position of the Reserve Center**
  - The reserve-issuing country can use its monetary policy for macroeconomic stabilization even though it has fixed exchange rates.
  - The purchase of domestic assets by the central bank of the reserve currency country leads to:
    - Excess demand for foreign currencies in the foreign exchange market
    - Expansionary monetary policies by all other central banks
    - Higher world output

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# The Gold Standard

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- Each country fixes the price of its currency in terms of gold.
- No single country occupies a privileged position within the system.
- **The Mechanics of a Gold Standard**
  - Exchange rates between any two currencies were fixed.
    - Example: If the dollar price of gold is pegged at \$35 per ounce by the Federal Reserve while the pound price of gold is pegged at £14.58 per ounce by the Bank of England, the dollar/pound exchange rate must be constant at \$2.40 per pound.

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# The Gold Standard

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- **Symmetric Monetary Adjustment with Gold Standard**
  - Whenever a country is losing reserves and its money supply shrinks as a consequence, foreign countries are gaining reserves and their money supplies expand.
- **Benefits & Drawbacks of Gold Standard**
  - **Benefits:**
    - It avoids the asymmetry inherent in a reserve currency standard.
    - It places constraints on the growth of countries' money supplies.

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# The Gold Standard

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- Drawbacks:
  - It places undesirable constraints on the use of monetary policy to fight unemployment.
  - It ensures a stable overall price level only if the relative price of gold and other goods and services is stable.
  - It makes central banks compete for reserves and bring about world unemployment.
  - It could give gold producing countries (like Russia and South Africa) too much power.

# The Gold Standard

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- **Bimetallic standard**
  - The currency was based on both silver and gold.
  - The U.S. was bimetallic from 1837 until the Civil War.
  - In a bimetallic system, a country's mint will coin specified amounts of gold or silver into the national currency unit.
  - It might reduce the price-level instability resulting from use of one of the metals alone.

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Example: 371.25 grains of silver or 23.22 grains of gold could be turned into a silver or a gold dollar. This made gold worth  $371.25/23.22 = 16$  times as much as silver.

# The Gold Standard

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- The Gold Exchange Standard
  - Central banks' reserves consist of gold and currencies whose prices in terms of gold are fixed.
    - Each central bank fixes its exchange rate to a currency with a fixed gold price.
  - It can operate like a gold standard in restraining excessive monetary growth throughout the world, but it allows more flexibility in the growth of international reserves.

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## Managed Floating and Sterilized Intervention

- **Perfect asset substitutability**
  - The foreign exchange market is in equilibrium only when the expected return on domestic and foreign currency bonds are the same.
  - Central banks cannot control the money supply and the exchange rate through sterilized foreign exchange intervention.
- **Perfect asset substitutability is unrealistic**

# Managed Floating and Sterilized Intervention

- **Imperfect asset substitutability**
  - Assets' expected returns can differ in equilibrium.
  - Risk is the main factor that may lead to imperfect asset substitutability in foreign exchange markets.
  - Central banks may be able to control both the money supply and the exchange rate through sterilized foreign exchange intervention.

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## Managed Floating & Sterilized Intervention I

- Equilibrium in the foreign exchange market:

$$R = R^* + (E^e - E)/E + \rho \quad (17-2)$$

where:

$\rho$  is a **risk premium** that reflects the difference between the riskiness of domestic and foreign bonds

- The risk premium depends positively on the stock of domestic government debt

$$\rho = \rho(B - A) \quad (17-3)$$

where:

$B$  is the stock of domestic government debt

$A$  is domestic assets of the central bank

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### Foreign Exchange Market Equilibrium Under Imperfect Asset Substitutability

When domestic and foreign currency bonds are perfect substitutes, the foreign exchange market is in equilibrium only if the interest parity condition holds:

$$R = R^* + (E^e - E)/E$$

(17-1)

This condition does not hold when domestic and foreign currency bonds are imperfect substitutes.

## Managed Floating & Sterilized Intervention II

- The Effects of Sterilized Intervention with Imperfect Asset Substitutability
  - A sterilized purchase of foreign assets leaves the money supply unchanged but raises the risk adjusted return that domestic currency deposits must offer in equilibrium.
  - Figure 17-8 illustrates the effects of a sterilized purchase of foreign assets by the central bank.
    - The purchase of foreign assets is matched by a sale of domestic assets (from  $A^1$  to  $A^2$ ).

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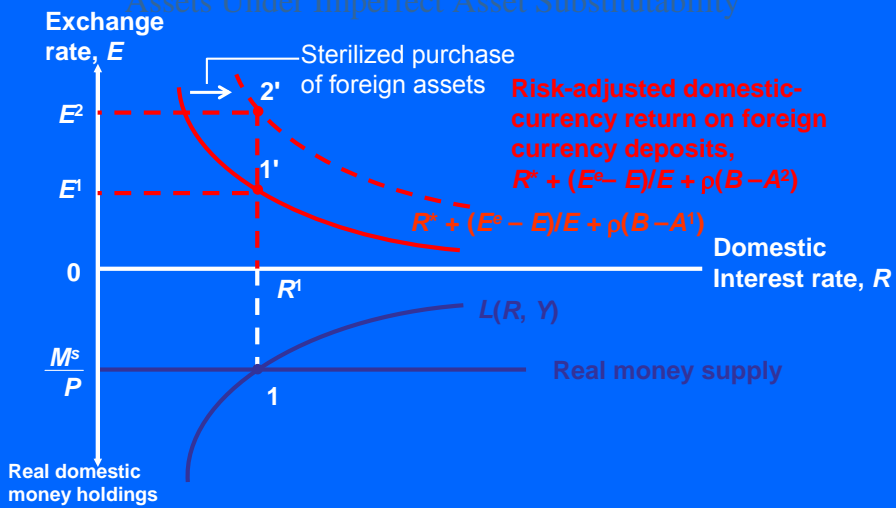
Since domestic assets are sold  $\rightarrow$  A (CB holdings of domestic assets) decreases,

Risk premium  $\rho = \rho(B - A)$  increases:

$A \downarrow \rightarrow \rho \uparrow$

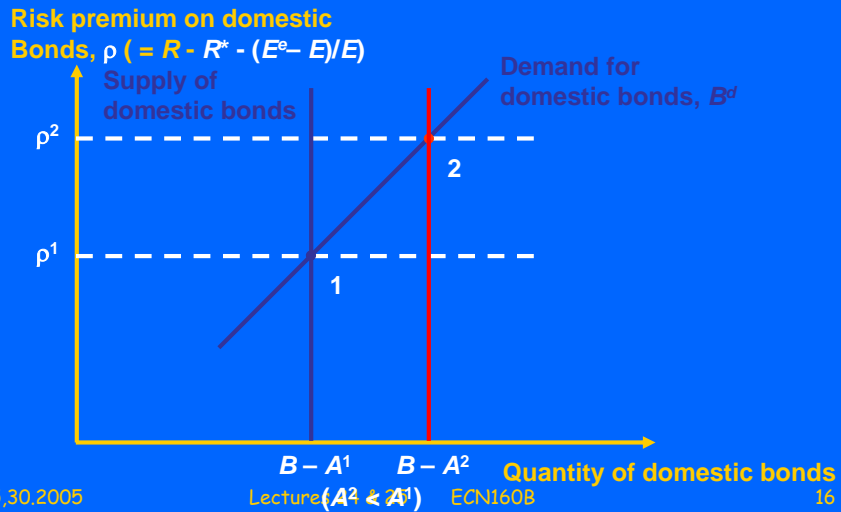
# Managed Floating and Sterilized Intervention

Figure 17-8: Effect of a Sterilized Central Bank Purchase of Foreign Assets Under Imperfect Asset Substitutability



## Appendix I: Equilibrium in the Foreign Exchange Market with Imperfect Asset Substitutability

Figure 17A1-1: The Domestic Bond Supply and the Foreign Exchange Risk Premium Under Imperfect Asset Substitutability



Demand does not change, but supply raises if CB sells domestic bonds. In this case, country risk premium increases.

## Should Fed be Independent?

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- *Case For:*
  1. Independent Fed likely has longer-run objectives, politicians don't: evidence is independence produces better policy outcomes throughout the whole
  2. Avoids political business cycle
  3. Less likely that government budget deficits will be inflationary
- *Case Against:*
  1. Fed may not be accountable
  2. Hinders coordination of monetary and fiscal policy
  3. Fed has often performed badly in the past

## Malaysian Central Bank: 1985-1994

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- Malaysian Central Bank & its Financial Guerilla war [Malaysian CB = Bank Negara]
- How does it started:
- G-5 (US, Japan, Germany, France & Britain) meet on September, 22, 1985, and announce  
    "the intention to encourage appreciation of non-dollar currencies"
- Market reaction: Dollar free fall
- The situation with Bank Negara as a result. Negara dollar reserves suddenly evaporated in their value (Negara used to have \$4.8 billion) → Negara started a sort of financial guerilla war against world leading economic powers

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Source: Millman, "Vandals Crown"

*How Rebel Currency Traders Overthrew The World's Central Banks*

p. 226-230 "Hidden Risks"

## Bank Negara

- Malaysian Central Banker (former Price Waterhouse accountant) Tan Sri Dato' Jaffar bin Hussein in 1988 admits:
  - Bank Negara "honest-to-God trading" gives 40% of CB total overseas income (up from 20% a year before)
  - Negara currency trading made West (US & Europe) fear Malaysia
  - Jaffar exploited the greed of Western Bankers
    - Mechanism - similar to LTCM unwinding

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Jaffar proudly notes that Negara had a reputation of running one of the most sophisticated currency operations in the world

"exchange rate volatility since Plaza agreement of September 1985 has changed the stakes of the game"

Prime Minister Mahathir bin Mohamad: "what is wrong with our protecting our own interest? Why is it when they [rich nations] can protect their interests we cannot? I can't understand it"

## Bank Negara: An Example

- Negara used to place several simultaneous transactions of £100 million [Such orders move markets].
- I.e., they were selling pounds short to trigger market panic
- September 21, 1990 sale of £ 500 - 1 billion £ → £ down 4 cents
- British banks incurred heavy losses. They attempted to form a cartel against Negara, but their foreign competitors accommodated Negara traders at non-cartel prices

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Jaffar proudly notes that Negara had a reputation of running one of the most sophisticated currency operations in the world

“exchange rate volatility since Plaza agreement of September 1985 has changed the stakes of the game”

Prime Minister Mahathir bin Mohamad: “what is wrong with our protecting our own interest? Why is it when they [rich nations] can protect their interests we cannot? I can't understand it”

## Bank Negara collapse

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- 1992 loss of \$3.6 billion when Britain withdrew from European Exchange Rate Mechanism (ERM) and £ collapsed, and then Negara lost \$2.2 billion more.
- In 1994 Negara was insolvent and bailed by Malaysian ministry of finance.
- Jaffar resigned attributing losses to "poor judgment" (He expected Britain to maintain the discipline of ERM)

# The Analysis of Negara Case

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- Analysis:
  - an exception? [yes]
  - a rule of exceptions? [yes]
- US Central Banker comment:
  - "If they tried this on any organized exchange in the world they'd go to jail"
  - In the unregulated international currency markets, there were neither police, nor jailers or jailed: only rough justice of the vandals
- Negara behavior was an equivalent of financial terrorism

## Next Lecture

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- Chapter 17 continued, and we will start Ch. 18 (time permits)
- European Union
- Your preparation: read KO, Chapter 17

## Summary of Today

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- Chapter 17
- Fixed Exchange Rates
- Gold Standard
- Risk Premium
- Negara case of "honest to God trading"
- Have a nice day