Macroeconomics

MECN 450
Winter 2004

Topic 3: Monetary Policy and Inflation continued
Main topics:

- What is “money”?
- The Federal Reserve and Monetary Policy
- Money and prices
- Money, prices, and exchange rates

Greenspan’s Conundrum

If I ignore output/employment and focus on (low) inflation, I develop lots of credibility as an “inflation hawk”

This credibility lets me loosen monetary policy without inciting inflation

…but if I do this too often, I sacrifice my credibility and hence, my effectiveness.
Friedman’s Solution:

A constant money growth rule

Remove the temptation to intervene in the economy
Develop “perfect credibility”
… but give up counter-cyclical monetary policy

Money in an Open Economy: Money and Exchange Rates

In an open economy, there is an additional “price” affected by monetary policy
The exchange rate is the price of currency in terms of other currencies
For example, the yen/dollar exchange rate is currently 105.6 ¥/$
**Nominal vs. real exchange rates**

- The nominal exchange rate (which we usually see) gives the prices of the two currencies.
- The real exchange rate gives the prices of goods in the two economies.
  - real exchange rate =

This equals one if “purchasing power parity” holds, so that equivalent goods have equal prices (adjusting for exchange rates) in different countries.

---

**For example, the Economist’s Big Mac Index, shows a real exchange rate**

- Even without PPP, this can be useful
  - Rewrite the definition of the real exchange rate
    \[ e_{real} = \frac{e_{nominal} P_{domestic}}{P_{foreign}}, \text{ or } e_{nominal} = \frac{e_{real} P_{foreign}}{P_{domestic}} \]
  - And rewrite in growth rates (percentage changes)

The percent change in the nominal exchange rate equals the percent change in the real exchange rate, plus the difference between foreign and domestic inflation.
The percent change in the nominal exchange rate equals the percent change in the real exchange rate, plus the difference between foreign and domestic inflation.

High domestic inflation leads to a depreciation of the nominal exchange rate.

High foreign inflation leads to an appreciation of the nominal exchange rate.

Exchange rates are determined in the foreign exchange (FX) market.

- Exchange rates are asset prices.
- The Central Bank’s monetary policy affects the supply (and therefore the price) of these assets.
What happens to the exchange rate if the Central Bank expands the money supply?

- In the short run, a monetary expansion tends to reduce domestic interest rates.
- This reduces the demand for domestic assets and currency.
- The exchange rate falls, or depreciate.
  - A monetary expansion
    - Reduces interest rates and currency demand
    - Stimulates inflation and reduces the nominal exchange rate.
Expansionary monetary policy tends to depreciate the currency

Tight monetary policy tends to appreciate the currency
Fixed exchange rates

What if the exchange rate cannot adjust, because the government has a "fixed exchange rate" regime?

The government has "pegged" an exchange rate.

How does monetary policy work?

consider another monetary expansion ...

Now, e cannot fall by market forces. At the official exchange rate, supply exceeds demand.
The government must purchase the excess supply, or let the exchange rate fall (float).

The government supports the official exchange rate by buying and selling its own currency.

- The Central Bank uses other assets (like currencies, or gold) to purchase its currency.
- These are the Central Bank's reserves.
- A country can only support its own currency to the extent that it has reserves to spend for this purpose.
A speculative attack can turn an overvalued currency into an exchange rate crisis

When reserves are exhausted...

- The exchange rate must be devalued
- ...or allowed to float.
- If the Central Bank tried to defend the currency, it lost reserves.
- Real effects may be substantial.
The link between monetary policy and exchange rates means:

- A country can choose its monetary policy to target domestic interest rates.
- Or the country can choose its monetary policy to target (peg) the exchange rate.
- **But it can't do both!**
- A fixed exchange rate regime comes at the cost of domestic monetary policy.

*If you peg to the (dollar, euro, yen) your monetary policy is set in (Washington, Frankfurt, Tokyo)*

What does this say about maintaining a currency union (like the EU & the euro)?

The participating countries cannot have an independent monetary policy!

In order to maintain a peg to the euro, each country must give up its own monetary policy.

The European Central Bank (ECB) becomes key.
The European Monetary Union (EMU) and the European Central Bank (ECB)

In 1999, 11 countries were admitted to the “Euro Zone” and the Euro began trading electronically

Austria  Belgium  Finland  France  Germany  Ireland  Italy  Luxembourg  Netherlands  Portugal  Spain

In 2001, Greece met the convergence criteria and joined

In 2002, National currencies were eliminated
The euro became the sole currency

The United Kingdom, Denmark, and Sweden remain in the European Union, but outside the EMU

The convergence criteria required

- The inflation rate must remain within 1.5% of the three EU countries with the lowest rate
- Long-term interest rates must be within 2% of the three lowest interest rates in EU
- Exchange rates must be within 15% of Europe's “irrevocable” exchange-rate mechanism for two years preceding membership in the EMU
- The fiscal deficit must be less than 3% of GDP
- The government debt must be less than 60% of GDP
The “Stability Pact” has been clearly violated

- Even France and Germany are outside the fiscal restrictions
  - No sanctions have been imposed
- During the recession, government deficits increased
  - Officials deplore the “inability to do their homework when times were good” (IMF)
  - But why should they if there is no penalty?
    - Credibility?

Next:

- Government spending and taxes
- How does fiscal policy affect the economy?
- How are fiscal and monetary policy related?