INFLATION, INTEREST RATES, AND HYPERINFLATION

Demand for goods depends on the *real* interest rate:

$$Y = A(Y, i-\pi)$$

Demand for money on the *nominal* interest rate:

$$M/P = L(Y, i)$$

In the long run, economy tends to natural rate of output Y_n. This means that it tends to "natural" real interest rate $i-\pi = r_n$

Recipe for steady inflation: let M grow at a steady rate

$$\Delta M/M = g_M$$

Then guess that price level also grows at a steady rate $\pi = g_M$, and that real interest rate remains at r_n. Then

$$\Delta(M/P)/(M/P) = \Delta M/M - \Delta P/P = 0$$

So M/P constant; Y constant at Y_n, i constant at $r_n + g_M$

End of story

But notice that higher π => higher i => lower M/P

SEIGNORAGE: THE REVENUE FROM MONEY PRINTING

Government gets "revenue" by printing additional money; the *real* revenue is

$S = \Delta M/P$ (change in money supply divided by price level)

or rewrite it

$S = (\Delta M/M)(M/P) = g_M(M/P)$

In steady inflation, however, $i = r_n + g_M$ - and M/P is a decreasing fn. of i

So seignorage does not necessarily increase with rate of money growth; typical shape is "inverted U":

But what if the government "needs" seignorage greater than maximum?

Turn the equation around:

$$\frac{\Delta M}{M} = \frac{S}{M/P}$$

As people start to expect inflation, M/P falls; this means $\Delta M/M$ rises; means further fall in M/P, etc.

Result:

Hyperinflation!!

FIXED EXCHANGE RATES AND DEVALUATION

Aggregate demand in an open economy with a fixed exchange rate:

No monetary policy! $i = i^*$

So $Y = A(Y, i^*) + NX(Y, Y^*, EP^*/P)$

Higher P means lower output because it makes our goods less competitive on world market

Meanwhile, AS curve: $P = P_{-1}G(Y, z)$

Suppose we increase E (a devaluation):

A devaluation can produce only a temporary expansion in output. But suppose for some reason the economy is currently below Y_n. Then a devaluation can "truncate" the process of adjustment, eliminating need for a prolonged deflation:

OPTIMAL CURRENCY AREA: Tradeoff between macroeconomic advantages of devaluation or floating, microeconomic advantages of fixed rates or common currency (reduced costs of doing business, less uncertainty)

Should two countries fix rates, perhaps adopt common currency?

Factors to consider:

1. Labor mobility (makes adjustment easy)

2. Large volume of trade (makes uncertainty costly)

3. Fiscal arrangements (can cushion adjustment)

4. Similarity of economic structure

5. Credibility issues

Some interesting cases: Europe; Argentina; Australia; Mexico; Canada