

## Need to know

- $\frac{70}{g}$  rule
- $Y = C + I + G + NX$
- $S = I$
- $Y = AK^\alpha L^{1-\alpha}$
- $\Delta K = sY - \delta K$
- $r = i - \pi$
- $S_I = -NX$
- $S_p + S_g + S_I = I$

- $MV = PY$

- $g_P = \pi = g_M - g_Y$

Once you see correct answer, move on!

No essay questions, no definitions.

Key is understanding

Review notes, problem sets, sample exam

$$S_I = -NX$$

Boomerang Principle: we give foreigners our currency for their goods, and they invest that currency in our economy. Like a boomerang, money comes back again (as “international savings” )

$$\underbrace{S_p + S_g + S_I}_{resources} = I$$

Net foreign assets is the sum of claims the country has on foreign countries. Obviously, if this is negative, then foreigners have net claims on domestic country.

With current account deficits, a country's *Net Foreign Assets* fall.

U.S. has a net foreign *liability* position (or negative net foreign assets.)

No free lunch.

What determines private savings?

Consumption/Saving

Interest Rate

Wealth

Current Income (Keynes)

$$C = \gamma Y$$

Permanent Income Hypothesis:

All of future income/wealth determines consumption (and hence savings) today

Example with Fiscal Policy

Bush Fiscal Policy

## Long-Run Theory of Inflation

Oil Shocks

Recession

“Too much money chasing too few goods”

Equation of Exchange:

$$MV = PY$$

Assume price of all goods in  $P$ . (When prices differ,  $P$  refers to a price level like CPI.)  $Y$  is quantity of goods.  $V$  is money velocity; i.e., speed it “gets around.” At macro level,  $PY$  is nominal GDP.

Example: Suppose two of us do a trade. You give me something you made, I give you 20. Then I make something, and you give me 20. Note that

- Money supply is 20
- Money changed hands twice; so velocity  $V$  is 2
- Total value of transactions is 40
- Price level  $P$  is 20
- Quantity of goods produced is 2

In this simple example  $MV = PY$

$$20(2) = (20)(2)$$

## The Quantity Theory of Money (Friedman)

Explains long-run trends in inflation (not so good for short-run ups and downs that can be caused by once-off oil price increases etc)

Can answer questions like, e.g., why do some countries have persistently high inflation?

$$MV = PY$$

The Quantity Theory makes two assumptions

1. Money is Neutral
2. Velocity is constant



More useful in terms of growth rates:

$Y = XZ$  then

$$g_Y = g_X + g_Z$$

Since  $MV = PY$ ,

$$g_M + g_V = g_P + g_Y$$

$$g_M = g_P + g_Y \Rightarrow g_P = g_M - g_Y$$

If  $g_Y \approx 0$ , then

$$g_M \approx g_P$$

Costs of inflation: real interest rates

Financial Intermediation breaks down

Inflation tax: when governments print money, the higher prices reduce everyone's purchasing power, thus acting like a tax. Again, no free lunch to printing money.