UP, UP, AND AWAY

A presentation on inflation

MEASURING CHANGING PRICES

$i_n = \left(\frac{p_n}{p_0}\right)^{\frac{1}{n}} - 1$

$p_n \prod(1 + in) = p_0(1+i_1)(1+i_2)\ldots(1+i_n)$

Inflation-change in price for a certain good/ service

p_n = price at some period n

i_n = average inflation rate over n periods

Inflation-rise in price

Deflation- decrease in price

LESSER OF TWO EVILS?

Inflation- value goes down

- All assets go down in valve so constant investment and improvements are necessary
- Consumers will keep spending since prices were cheaper yesterday
- Preferred in small controlled doses
- Targets: 2% in developed economies and <x% in developing economies

Deflation- value goes up

- All assets go up in value despite productive value
- Consumers will slow spending since they expect prices to go down
- Avoid if possible
- Natural tendency is deflation
  - Processes get more efficient
  - "Competition" drive prices down to a limit

REAL RATES - FISHER'S EQUATION

- $1 + r = (1 + R)(1 + i)$
- $1 + r = 1 + R + i + Ri$
- $r = R + i + Ri$
- $R = \frac{r-i}{1+i}$
- $R \approx r - i$

- R = real rate
- r = nominal rate
- i = inflation rate

MEASURING THE MEASUREMENTS

The Indexes

CONSUMER PRICE INDEX (CPI)

- Headline Inflation
- Cost of Living Index
- weighted average of all price categories that Urban consumers are most likely to consume: Food, Energy
- Averages the price of 8,018 items in over 20 different regions
- Core-CPI- ignores Food and Energy
- CPI

PERSONAL CONSUMPTION EXPENDITURE (PCE) DEFLATOR

- Preferred measure of inflation by the Fed
- Derived from the PCE – the total spending by consumers
- More accurate than CPI because PCE deflator doesn't depend on a fixed basket of goods

PRODUCER PRICE INDEX (PPI)

- Like the CPI but from Producers' perspective
- Wholesale Price Index (WPI)/Commodity Index
- PPI

MARKET POINTERS

- Safe assets should be about equal to rate of inflation and some more

- Break Even Inflation = Treasury yield_t – TIPS yield_t
- TIPS is indexed to CPI

WE DID IT TO OURSELVES

Causes of inflations

WHAT CAUSES INFLATION?

- Monetary Policy
- Cost Push/ Demand Pull
- Expectations
- Currency

TOO MUCH OR TOO LITTLE MONEY (MONETARY POLICY)

- mv = pq = GDP
- Money Supply (m) * Velocity of Money (v) = Price (p) * Quantity (q) = GDP
- v and q are supposedly to be steady variables, so m and p are directly correlated
- Money Supply is controlled by the Federal Reserve through Reserve Requirements and Fed Open Market Committee (FOMC)

MONETARY POLICY CONTINUED

Reserve Requirement

- Banks must hold a certain percentage of capital/deposits
- Rest are loaned out
- M = $\frac{1}{R}$

FOMC

- Board of Governors vote to either drain or expand the money supply or do nothing
- Expand: FOMC buys loans/ bonds from banks
- Drain: FOMC sells government bonds to banks

GOVERNMENT MANDATED INFLATION

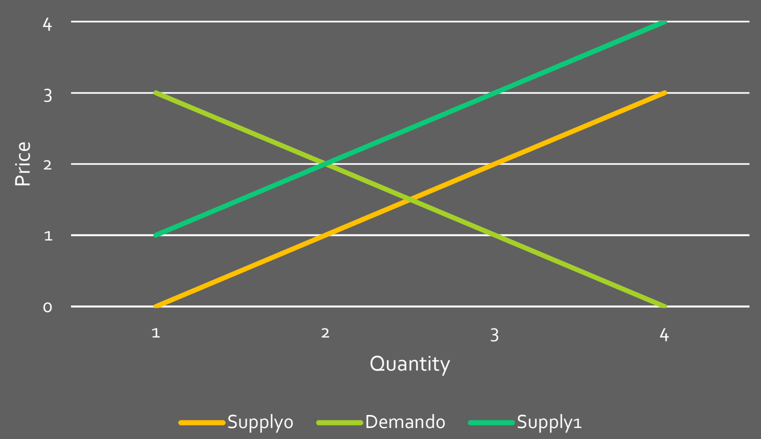
- Federal Reserve Reform Act of 1977: Fed was given explicit mandate to “maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.”

- Ben Bernanke: First Chairman to give explicit inflation goal

COST PUSH/DEMAND PULL

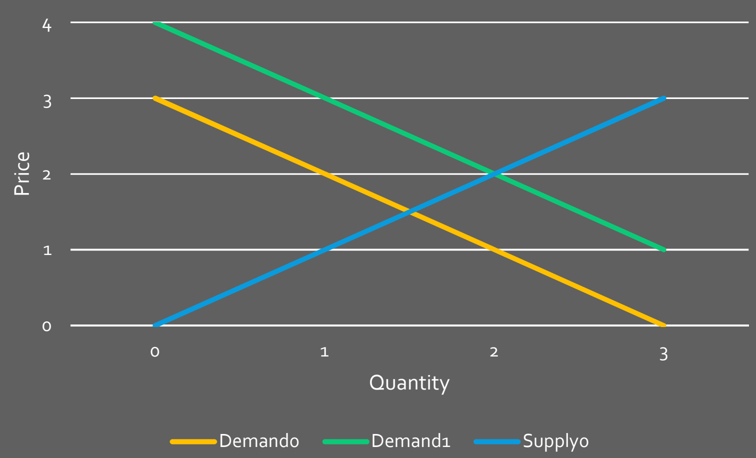
Cost Push

- Cost to produce item has increased and suppliers passes on costs to consumers



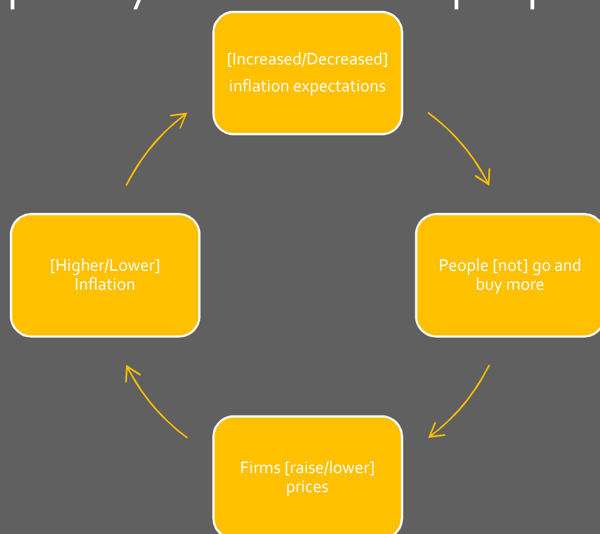
Demand Pull

- Demand outstrips Supply



EXPECTATIONS - FEEDBACK

- Prices go up because people buy more because people think the price will go up



- Prices go down because people buy less because people think the price will go down

IMPORTING INFLATION (CURRENCY)

- Everything else held constant a weaker currency will increase price of imports

$1=₠1

Weaker Dollar

$2= ₠1

INFLATION PROBLEMS

- mv=pq
- Forcing free money
  - Venezuela
  - Zimbabwe
  - Developing nations that are dependent on foreign capital
  - South America (Going from Right to Left then Left to Right)
  - Eastern Europeans after WWII
  - Germany
  - Ancient civilizations trying fiat currency/caught devaluing currency

WHY DO PRICES FEEL SO HIGH?

- Sticky Wages and Sticky Prices
- Fake news

STICKY WAGES AND STICKY PRICES (MARK UPS)

Sticky Wages

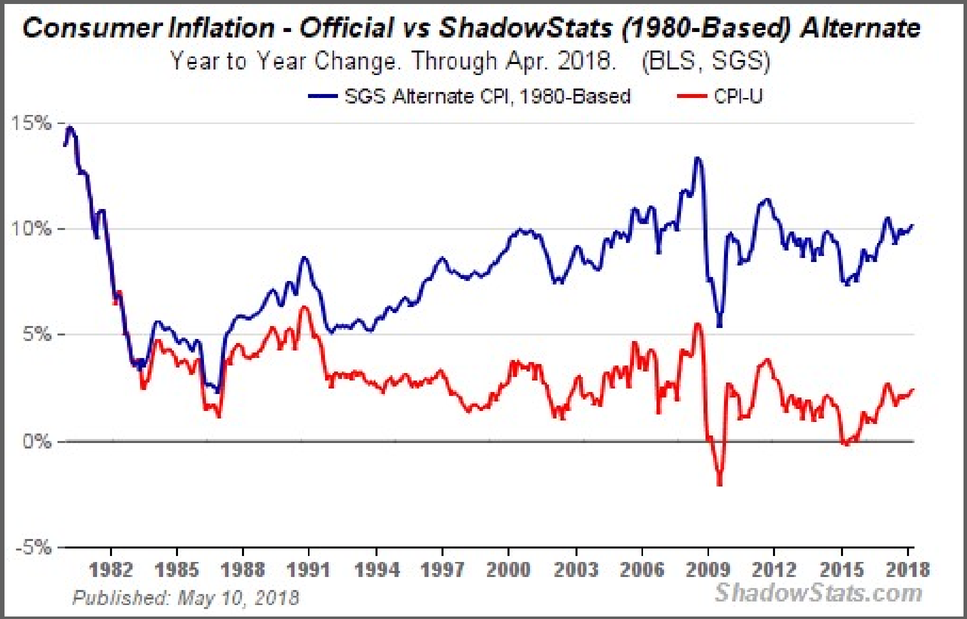
- Wages are the last price to go up since workers have lowest bargaining power
- Wages are first to go down during recessions

Sticky Prices

- Prices are the last thing to go down since business aim to have a certain margin

FAKE NEWS

- http://www.shadowstats.com/
- Over time methods calculating economic indicators were changed for political reasons



REALITY, THE CRITICISMS

- CPI is an average of many products across many different regions
- Causes of inflation affect people differently
- Inflation assumes the value of a product is the same
  - Items gets more expensive but, we can do more