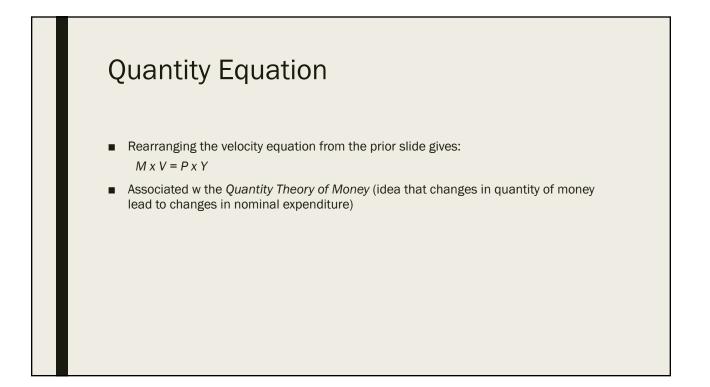


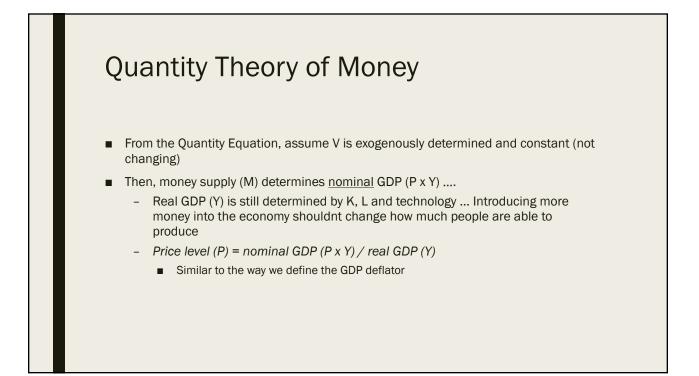
Velocity

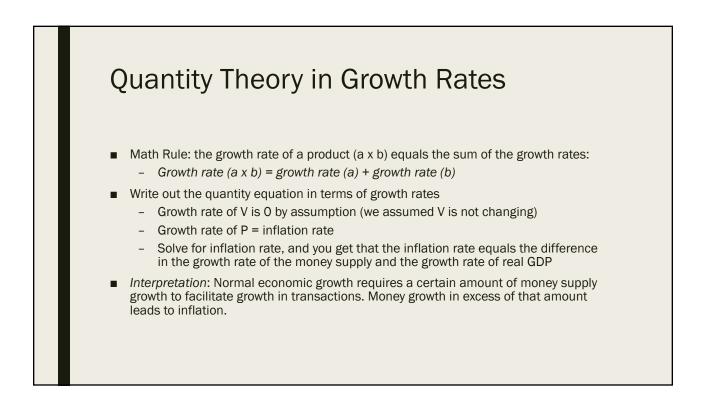
- Velocity of money = the number of times the average dollar bill changes hands in a given time period; (the rate at which money circulates)
 - Example: If in 2015 there were \$500 billion in transactions and the money supply was \$100 billion, then the average dollar was used in 5 transactions. Each dollar would have had to been used on average that many times.
 - Equation:
 - Velocity (V) = Value of all Transactions (T) / Money Supply (M)
 - Use nominal GDP as a proxy for total transactions (T ~= P x Y)
 V = (P x Y) / M
 - Difference between nominal GDP and total value of transactions?

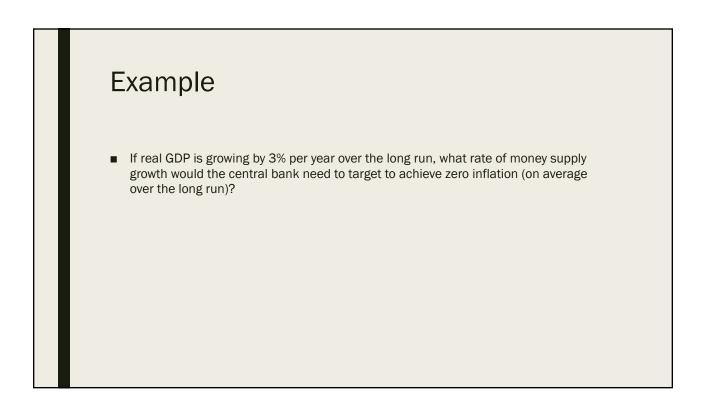


Money Demand

- M/P = <u>real money balances</u> = the purchasing power of the money supply
 - Note, this is similar to other cases where we divide by P to look at variables in "real" terms
- Money Demand Function: (M/P)^d = L(i, Y)
- Ignoring i for the moment: we can write money demand as (M/P)^d = kY
 - Where k is how much money people wish to hold for each dollar of income
 - This connects money demand to the quantity equation: k = 1 / V
 - When k is large, people hold lots of money relative to their incomes, and V is small, meaning money changes hands infrequently

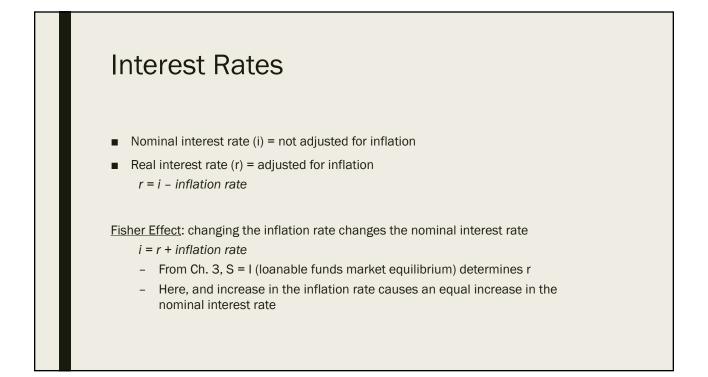






QTM Prediction

- Growth in Y (real GDP) depends on factors of production and technological progress.
 We take those as fixed (given outside the model) for now.
- The QTM predicts a one-for-one relation between changes in the money growth rate and changes in the inflation rate. A change in this money growth rate, under this theory, should cause an equal change in the inflation rate.
- In data, countries with higher money growth rates do tend to have higher inflation rates.



Example

Suppose V is constant, M is growing at 5% per year, Y is growing at 2% per year, and r = 4.

- Solve for i.
- If the Fed increases the money growth rate by 2 percentage points, what is the change in i.
- If the growth rate of Y falls to 1% per year, what happens to the inflation rate? What would the Fed need to do to keep the inflation rate constant?

