

What is Inflation

- Up until now, we have largely been assuming that prices remain relatively constant throughout the course of the analysis

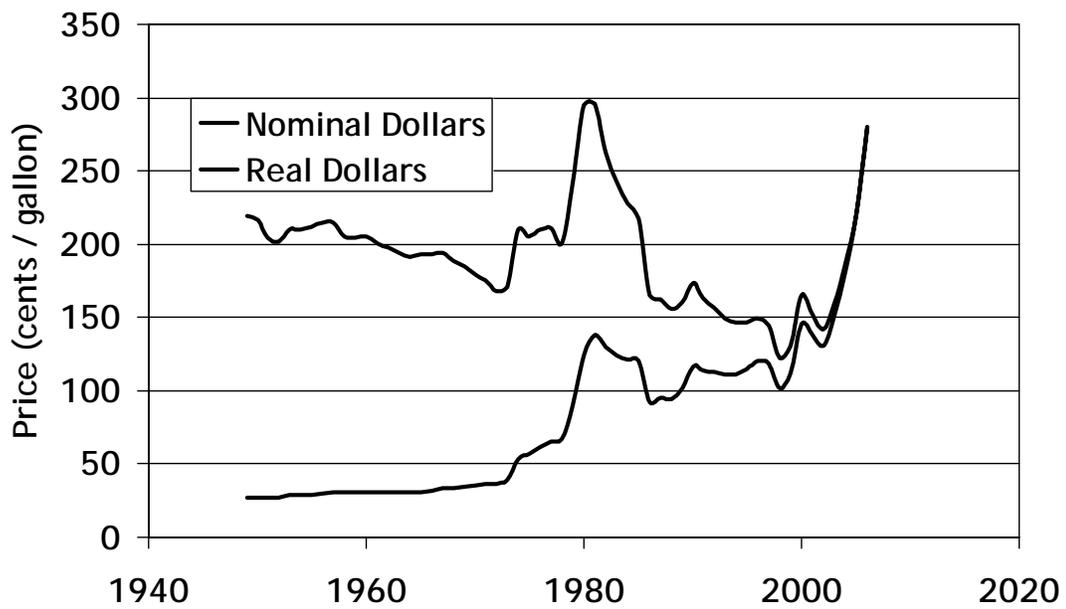


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Price of Gasoline in US

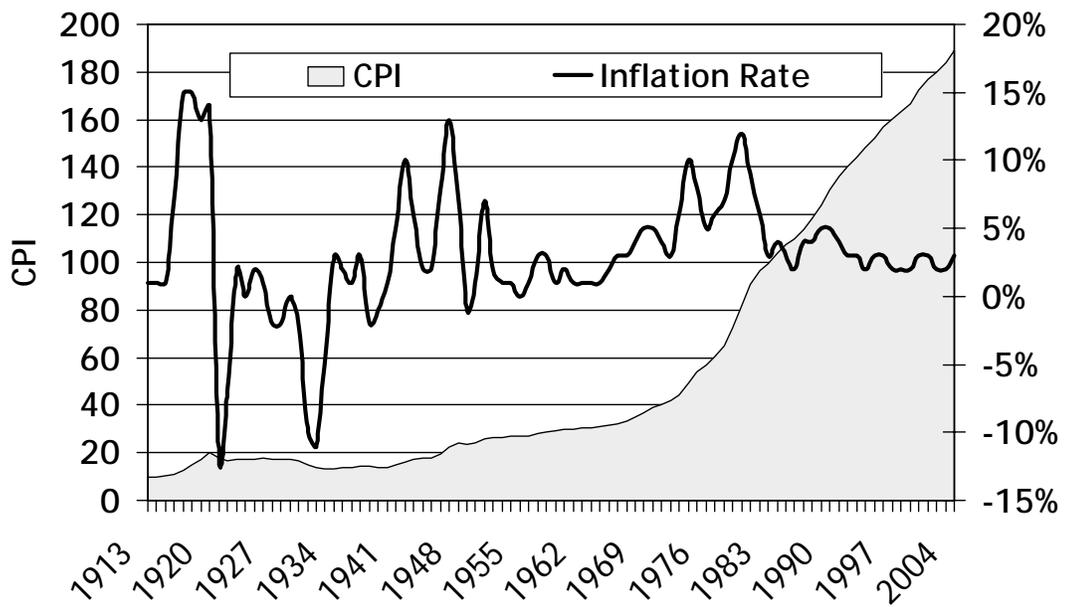


CPI & PPI

- General price inflation
 - Increase in the average price paid for goods and services → reduced purchasing power of money
- Consumer Price Index (CPI)
 - Average change in the price of a basket of consumer goods
 - Food, shelter, medicine, transport, apparel, etc.
 - Formally tracked by federal government since 1967
- Producer Price Index
 - Average change in price of basket of industrial goods
 - Tracked by Standard Industrial Classification (SIC) code
- Both indices are measured against a base period (Originally, 1967, now a weighting of 1982-1984) = 100



Historic Statistics on Inflation



Terminology

- Actual dollars
 - Number of dollars associated with a cash flow when it occurs
 - Synonyms: Nominal, current, inflated dollars
- Real dollars
 - Dollars adjusted to a common purchasing power
 - Synonym: Constant
- Market interest rate
 - Money paid for the use of capital that includes a market adjustment for anticipated inflation
- Inflation free (Real) Interest Rate
 - Money paid for the use of capital that does NOT include an adjustment for anticipated inflation



Mapping Actual and Real Dollars

- Actual dollars in year k can be converted to real dollars of constant purchasing power of any base period b



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Choosing the correct interest rate for your analysis

Also known as:

Now What Do I Do?



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Correct Interest Rate: 3 Possible Cases

- 1) Cash flows known in Constant Dollars
- 2) Cash flows known in Actual Dollars
- 3) Cash flows known in mixed basis

3 is easy → Either convert all to Constant Dollars or convert all to Actual Dollars and see appropriate method as follows

Choosing the Correct Interest Rate

- Cash flows in constant dollars →

Use the inflation-free rate



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Choosing the Correct Interest Rate

- **Cash flows in Actual dollars**
 - **Deflation Method**
 - Convert cash flows into constant dollars and use inflation-free rate
 - **Adjusted Discount Method**
 - Compute Market based rate from inflation free and general inflation
 - Compute Equivalent Worth using Market Based Rate



Finding the Market Based Rate

- Consider the two step Deflated Method
 - Adjust cash flows based on inflation = $1 / (1+f)^n$
 - Discount cash flows using inflation free = $1 / (1+i')^n$

