Romer:

- Summarizes two JPE papers that use GNP and unemployment
- Volatility in these measures decreased after WW II
  - Partly due to Keynesian activism.
  - Rise of lots of economists involved directly in policy

"Look how bad the world was before WW II"

- Lots of volatility

How were the old series constructed?

- commodity output and census data used to interpolate GNP
  - commodities are much more volatile than GNP should be,
  - Romer corrects this by looking at deviation from trend

Unemployment - until CPS in 1948, all there are are 10 year censuses. Assumed labor force was constant over time, but labor force participation should be pro-cyclical

"Romerize" the data - take good data and make it bad

- Less of a role for Keynesian stabilization policy.

- Romer finds that volatility has remained relatively constant
- With a spot labor market, there should be less volatility than with long-term contracts.

To construct a more accurate GNP series, need to have a good price deflator.

Boskin commission - the CPI has a bias.

- Laspeyres - base period: long-time ago
  - doesn't take into account substitution
- Paasche - base period: present

Laspeyres is upward biased
Paasche is downward biased
Can use the geometric mean: Fisher ideal

Biases:
- quality increases
  - e.g. heart attack treatment prices have greatly increased, but so has quality
- product innovation
  - takes a while to introduce new goods into the CPI.
- outlet bias - it depends where a product is bough

- Hausman: "Does the BLS know that Walmart exists?"
  - Samuelson, "That's interesting, Jerry. What's WalMart?"

CPI doesn't deal well with housing prices and rental prices.

Little work done on CPI bias before 1970
- none on overall bias
- Nordhaus - did some work on lighting

Boskin commission:
- bias is probably larger now than earlier
  - much more rapid technological change
  - number of goods higher
  - service goods have become more salient in the economy.

Food as share of expenditures has decreased and recreation has increased.
- Econometrics textbooks count as recreation.

Use food and recreation as indicator goods
- income elasticities substantially different from one.
- food non-durable
- recreation reflects hours of work.

Estimation strategy:

- 2 households - identical in total expenditure, but one spends lower share of total expenditure on food.
- $w_{ijt} = \varphi + \pi(\ln P_{I,jt} - \ln P_{N,j,t}) + \beta(\ln \bar{Y}_{ijt} - \ln P_{jt}) + x'\theta + u_{ijt} + \sum_{t=1}^{T} \delta_t D_t$.

I - indicator good
N - non-indicator good
D_t - indicator for time = t.

- $\{\delta\}_{t=1}^{T}$ picks up cpi bias.

Data:

- Consumer Expenditure Surveys
  - early surveys covered specialized population
  - focused on upper working class
  - need enough overlap in income
- Make restrictions to newer data so that it is comparable to the older data.
- adjust for inflation annually - monthly during WWI.
- very high quality surveys in 1917

Can you take a single Engel curve going from 1880s to 1990s? No.

- Can pool 1888-1935 } cannot pool 1888-1994
- Can pool 1960-1994 }

- Price volatility was higher in 1970s than in 1960s
- CPI was improved in 1980s.

Why is there bias in 1920s / 1930s?

- New consumer goods
  - light bulbs, cars, refrigerators
  - rise of chain stores in 1920s
- housing boom