Econ 113: April 9, 2015

- Post-World War II Macro, continued
- 20th/21st Century Inequality Patterns
- Activity: Connecting Inequality & Macro
- Rise of Services
  - Macroeconomic Effect

Term Paper due Thursday April 16
Last Class is Thursday April 30

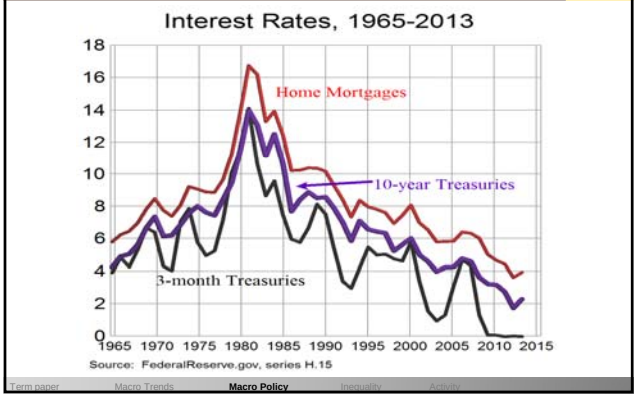
Leftovers/additions from Tuesday

- Fed's dual mandate (unemployment, too) added in 1978 Humphrey-Hawkins Bill
  - Be sure to read NYTimes article I tweeted out Wednesday http://nyti.ms/1GHgbrB and http://nyti.ms/1O2w1zC
- AS curve gave us "supply-side" policies
  - We understand that phrase differently today than in 1980
- Reasons the Phillips Curve shifts were figured out *after* it shifted for each of those reasons, not before

Policy Summary

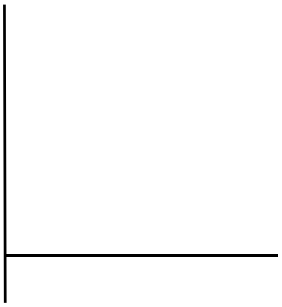
- 1950s & 1960s: "fine tune" the economy, mostly fiscal policy options
  - Remember Treasury-Fed Accord through 1951
- 1970s: "oh c**p" experiences
  - Vietnam War, higher inflationary expectations, OPEC oil crisis
- 1980s: Rhetoric didn't match policy; policy worked
  - *Rhetoric "supply-side"; Policy "raise interest rates" to lower AD*
  - *Theorists "let's assume always at full employment"*
- 1990s: Divergence of theory & policy
  - The Great Moderation, a whole lot of luck
- 2000s: And then it all came crashing down. . .

Interest Rate Policy

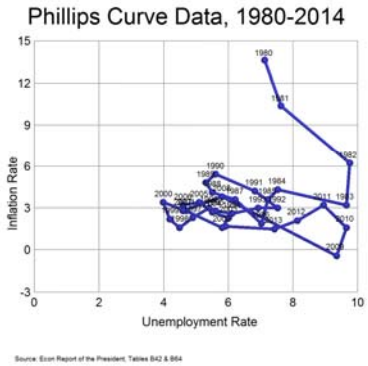


Movements Along vs. Shifts of PC

- If aggregate demand changes, ***move along*** Phillips Curve
  - Akin to shifts of AD "moving us along the AS curve"
- If prices change for some reason other than "change in AD," ***shift of*** Phillips Curve
  1. Change in inflationary expectations
  2. Cost shocks (i.e., "supply shocks")
  3. Change in labor productivity growth



And then PC shifted back in…many times



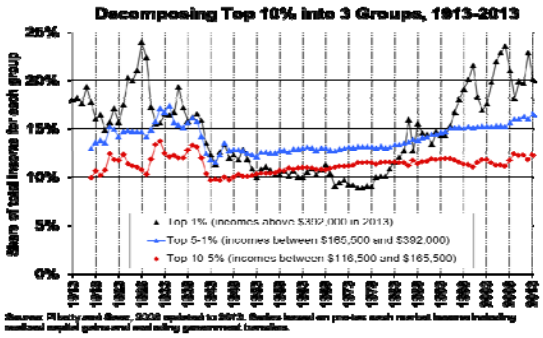
Source: Econ Report of the President, Tables B42 & B64

Income Distribution Worsens

Share of income going to top 10%

Source: Prof. Saez's website, http://eml.berkeley.edu/~saez/#income, specifically http://eml.berkeley.edu/~saez/TabFig2013prel.xls

Top 1, 5, and 10 % Income Groups



Source: Prof. Saez's website, http://eml.berkeley.edu/~saez/TabFig2013prel.xls

Gini coefficient, U.S., 1937-2004

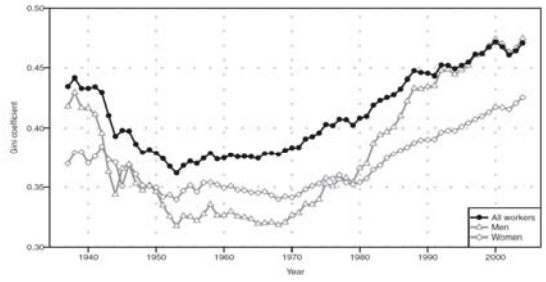
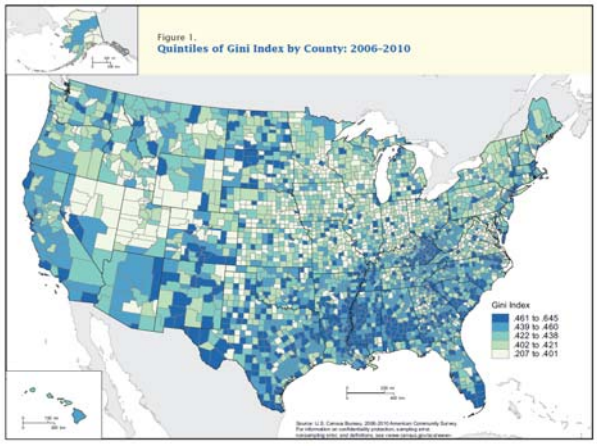
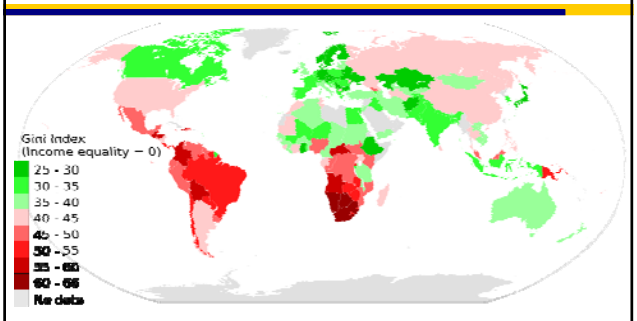


FIGURE I
Annual Gini Coefficients

Source: Kopczuk, Saez, and Song, "Earnings and Inequality & Mobility in the U.S.: Evidence from Social Security Data Since 1937," *QJE* (Feb 2010).



Gini coefficients by country, 2014



Source: http://commons.wikimedia.org/wiki/File:2014_Gini_Index_World_Map,_income_inequality_distribution_by_country_per_World_Bank.svg

Who are the top 1%

- 1920s, top 1% were wealthy class, (capital income)
- 2000s, top 1% are very highly paid (labor income)
  - Not due to aggregate change in $\frac{\textit{labor income}}{\textit{total income}}$
- In a study based on 1979-2005 tax returns, top 1% are…
  - Non-financial execs, managers, supervisors
  - Medical professionals
  - Financial professionals
  - Lawyers
    - Source: http://www.cbo.gov/sites/default/files/10-25-HouseholdIncome_0.pdf; see also https://www.cbo.gov/sites/default/files/12-23-effectivetaxrates_letter.pdf

Why the rise in income for top 1%

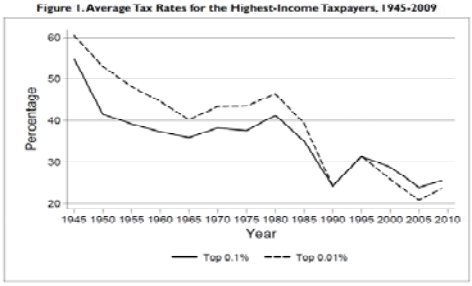
- Increased labor income
  - "Superstars" reach wider audiences due to technological changes in mass media
  - Very large pay increases for CEOs
    - Exercised stock options counts as "labor" income
  - In finance, deregulation and compensation for IPO risk

Why the rise in income for top 1%

- Increased labor income
- Changes in government taxes and transfers
  - Overall, taxes and transfers lower Gini coefficient
  - But today, less equalizing than 30 years ago
    - Transfers through Medicare (health care, age 65+) benefit all
    - Less generous transfers to low-income households
    - Taxes have become less progressive
      - Shift from income to payroll taxes

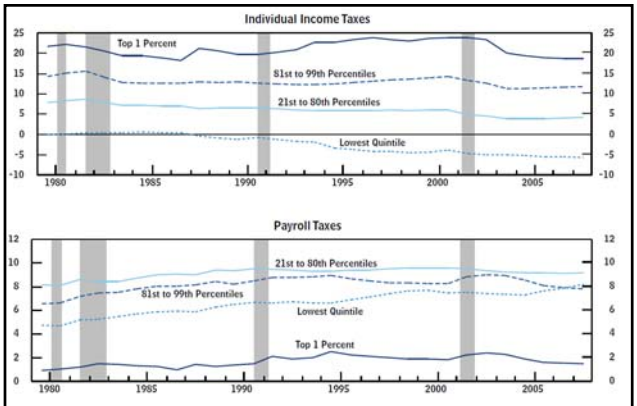
Average Tax Rates for Top 0.1%

Figure 1. Average Tax Rates for the Highest-Income Taxpayers, 1945-2009



Source: CRS calculations using Internal Revenue Service (IRS) Statistics of Income (SOI) information.
Note: The vertical axis is the average tax rate.

Source: http://graphics8.nytimes.com/news/business/0915taxesandeconomy.pdf



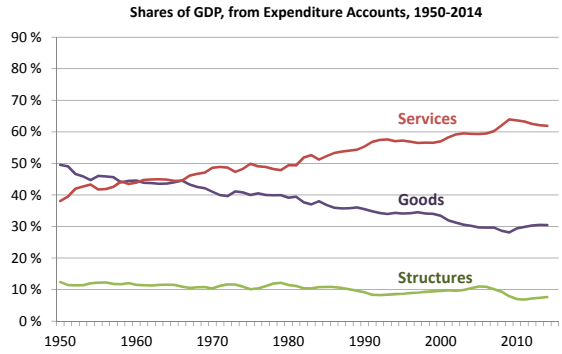
Activity: Connecting Inequality & Macro

- 1930s and 2000s, high Gini coefficient
- 1950s - 1970s and early 1980s, low(er) Gini coefficient

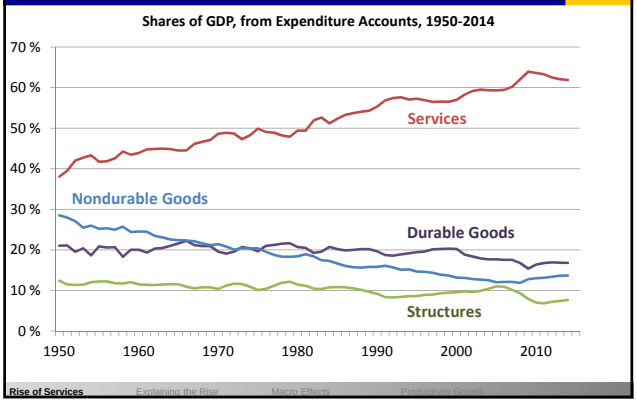
Discussion questions

1. (Think theory): what are ways that including inequality might change our macro models?
2. (Think history and theory): what are ways that including inequality might change our explanations of past recessions and/or recoveries?
   a) Be sure you remember that Gini was low in 1950s - 1970s

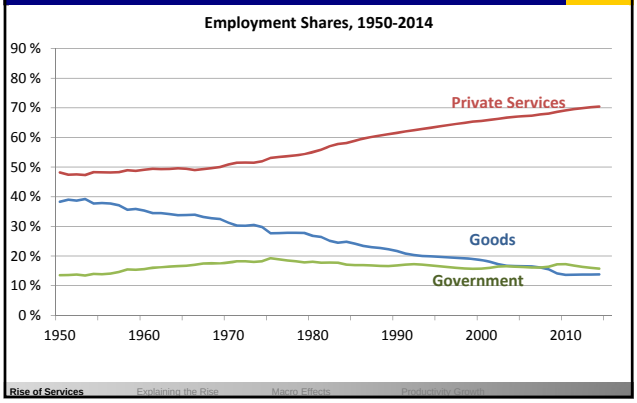
Mix of goods & services



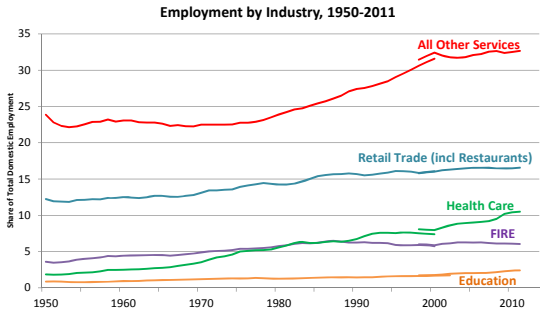
Break out "Goods"



Changes in the Labor Force



Breaking out "Services": Employment



Source: BEA.gov, Table 6.5 (Full-Time Equivalent Employees by Industry). SIC codes for 1950-1998; NAICS codes for 1998-2011. Some NAICS categories were combined for closer equivalency with SIC categories. Data accessed 4-16-13.

Why the rise of services?
(Rowthorn & Ramaswamy: covered in section)

Internal explanations

1. Productivity growth faster for manufacturing than services
   - Even if no change in demand, would see shifts in employment
2. Income elasticity of demand greater for services than goods

External explanations

3. Trade patterns (key: southern=developing; northern=developed)
   - Cheap (southern hemisphere) labor used to produce goods
   - Imports substituted for domestic goods manufactures in northern countries
   - Result: decreased D for manufacturing labor (esp low-skill jobs) in north
   - Thus, northern hemisphere **labor** shifts to producing services

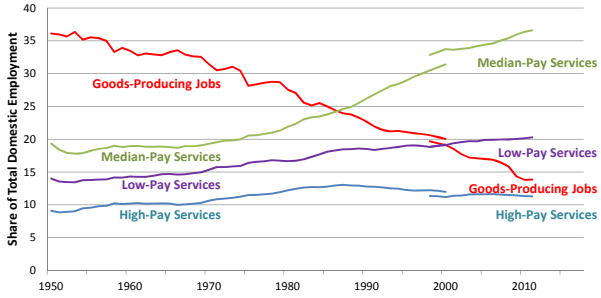
Changes in industries providing inputs

Contributions to Output of Goods and of Services, Benchmark years, 1947 - 2007

	Output of Goods				Output of Services			
	% of inputs that are				% of inputs that are			
	Ag & Mining	Goods	Services	Value Added	Ag & Mining	Goods	Services	Value Added
1947	13.6	36.2	11.0	36.3	2.1	12.2	20.1	65.1
1967	7.0	38.3	13.4	38.6	1.2	10.2	23.0	65.0
1987	6.5	33.7	17.3	42.0	0.9	8.5	24.6	65.5
1992	6.2	34.2	19.4	39.9	1.1	7.4	23.2	67.9
1997	6.0	35.5	24.0	34.1	0.7	6.1	25.8	67.0
2002	6.0	33.1	22.0	38.4	0.6	6.6	29.2	63.0
2007	9.5	33.5	20.7	35.9	0.8	7.2	30.4	61.1

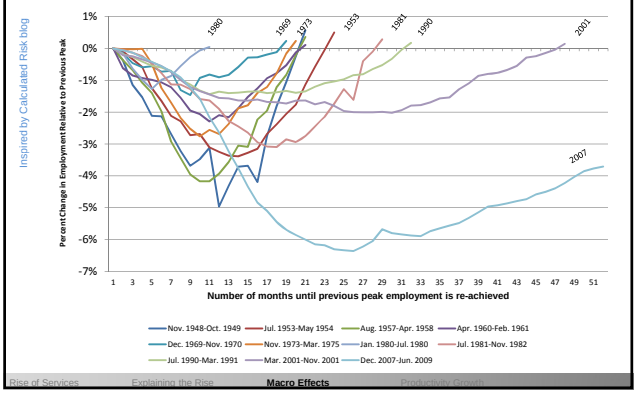
Source: Olney & Pacitti, "Goods, Services, and the Pace of Economic Recovery," Table 11.

Relative Pay: Services vs Manufacturing

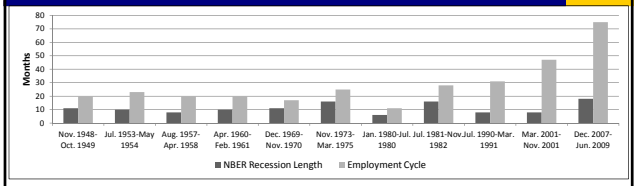


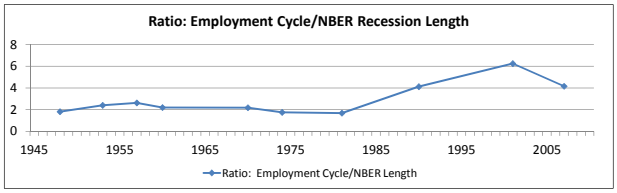
Source: Bureau of Economic Analysis, NIPA Tables 6.5 and 6.6 (accessed July 2013). SIC codes for 1950-2000; NAICS codes for 1998-2011. Categories that can be matched across SIC-NAICS transition were sorted based on wages per full-time equivalent worker in 1950 & 2011. Median-pay services fell within 5 percent of median wage: transportation, health services, and all other services. High-pay service jobs: FIRE and legal. Low-pay service jobs: retail trade and restaurants, accommodations, educators.

Are cycles longer in service-dependent economies?



Longer & longer recoveries





What might connect these two patterns?

- Recovery requires increased production of output
  - Output = Domestic Sales of goods & of services, Foreign Sales of goods & of services, and changes in goods inventory
- Anticipations channel
  - Goods can be produced in *anticipation* of ↑demand
    - Supply creates its own demand . . .
      - Goods-producers *anticipate* ↑demand, produce for inventory, pay workers, who ↑demand
      - A recovery takes hold and builds upon itself
  - Services can not be produced ahead of demand
      - Service-providers must wait for actual ↑demand. Wait. Wait. Wait.

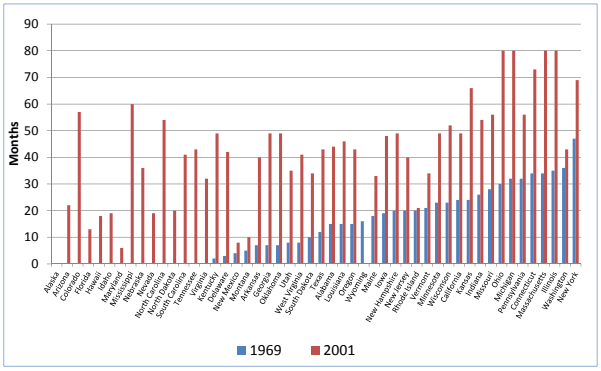
Connections, continued

- Exports channel
  - Goods can be exported; most services cannot be exported
    - Exceptions: tourism, and international finance
    - Demand for tradables can spur economic recovery
    - As economy produces more services, tradables are smaller share
      - Reducing role for external demand
- Upshot: Recoveries will be slower to take hold in more service-dependent economies

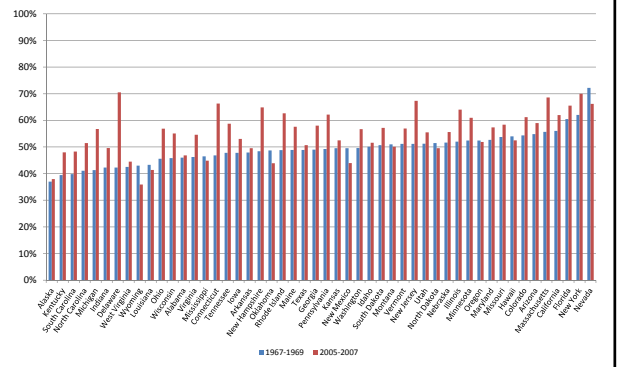
Empirical Strategy

- Is cycle length dependent on the share of services?
- Panel of U.S. states for 5 recessions, 1969 - 2001
  - Dependent variable: # months employment peak-to-peak
  - Key independent variable: Services/GDP, 3-yr average of (t, t-1, t-2)
  - Control for length & depth of downturn
  - Include state and year fixed effects (FE)

Variation in Cycle Length by State, 1969 & 2001



Variation in Services Share by State, 1969 & 2007



Employment Cycle

	OLS with Time & State Fixed Effects		
	Excluding States that Never Recover	*Excluding States that Never Recover or Never Enter Recession*	*Also Excluding High Finance & High Accommodation States*
	(1)	(2)	(3)
Service Share of GDP	**1.029*** (0.331)**	**0.796** (0.368)**	**0.921** (0.351)**
Depth of downturn	7.946*** (0.424)	8.056*** (0.467)	7.847*** (0.453)
Length of downturn	1.233*** (0.157)	1.211*** (0.163)	1.367*** (0.198)
n	239	208	191
Recession FE	yes	yes	yes
State FE	yes	yes	yes
F-statistic	207.7	152.0	148.8
Within R^2	0.90	0.89	0.89

Notes: * p < 0.10, ** p< 0.05, *** p < 0.01. Robust standard errors clustered by state in parentheses. Length is residual of actual length versus predicted length. Predicted length calculated from a linear regression with time and state FE of length on depth and service share, with same data restrictions.

Counterfactual Exercise

- How much longer is the recovery from 2007-2009 due simply to the rise of services over the past half century?
  - Predict cycle length using actual % services and actual depth for 2007-2009
  - Counterfactual: predict cycle length using % services from 1955-57 and actual depth for 2007-2009
  - Compute difference
- Result: Recovery from 2007-2009 downturn was about 50% longer than it would have been had downturn been in 1955