

Unsettled Issues in the Rise of American Inequality

Robert J. Gordon and Ian Dew-Becker

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A Conference in Memory of David Gordon*
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A Convergence of Interests

- David was always deeply interested in the level and change in the extent of inequality
- In his last book *Fat and Mean*, he developed a detailed analysis of the interconnection between inequality and the bloat of corporate bureaucracy
- We'll come at the end today to look at his 1996 list of policy recommendations

David Would Be Right at Home with Today's News

- David Leonhardt, *NYT*, 4-4-07:
"3400 Layoffs send a Message to Millions"
- Circuit City Fired 8% of its workforce not because they were doing a bad job but because they were being paid too much
- This is another blow in the ongoing destruction of the private safety net (health care, retirement)
- And now we have the destruction of seniority pay
- David would have recognized this as his "corporate stick" writ large

Preview of Today's Talk

- Motivation: Sources of my new interest in inequality
 - The puzzling discrepancy between median and mean real wage growth
 - A measurement issue or an income distribution issue?
- Explanation of growing inequality
 - 90/10 ratio, CPS data, “the usual suspects”
 - 99.99/90 ratio, IRS data, superstars vs. CEOs
- Lack of time to talk about pre-existing causes of inequality from 1960s – race, gender, inherited human capital, family transmission of advantages from college-prep classes to tuition
- Read Heckman's recent work regarding overwhelming cost-benefit payoff of early childhood intervention

My interest in the rise of inequality

- Curiosity about how to resolve a puzzle
 - Start from the definition that
 - Labor's share of national income (S) equals the real wage divided by productivity
- $$S = WN/PY = (W/P)/(Y/N)$$
- Add the fact that labor's share has not changed appreciably in the last 50 years
 - That implies some definition of real wage growth must equal long-run productivity growth

The Mystery of the Mean vs. the Median

- Start with the fact that productivity has increased by 75 percent since 1972 (total economy)
- Thus average real wage growth must have been roughly the same
- Yet we keep hearing that median real wage growth was virtually *zero!* And median household income has done little better than that.

How to Resolve the Puzzle

- The IRS publishes income tax data that are heavily oversampled at the top
- This allows us to compare the median and mean directly
- How much have incomes increased at the 20, 50, 90, 95, 99, 99.9, and 99.99 percentile?
- 5 million data observations, and it took my co-author about a week to get the answer

Ian in SF, you can't see "MV=PY"



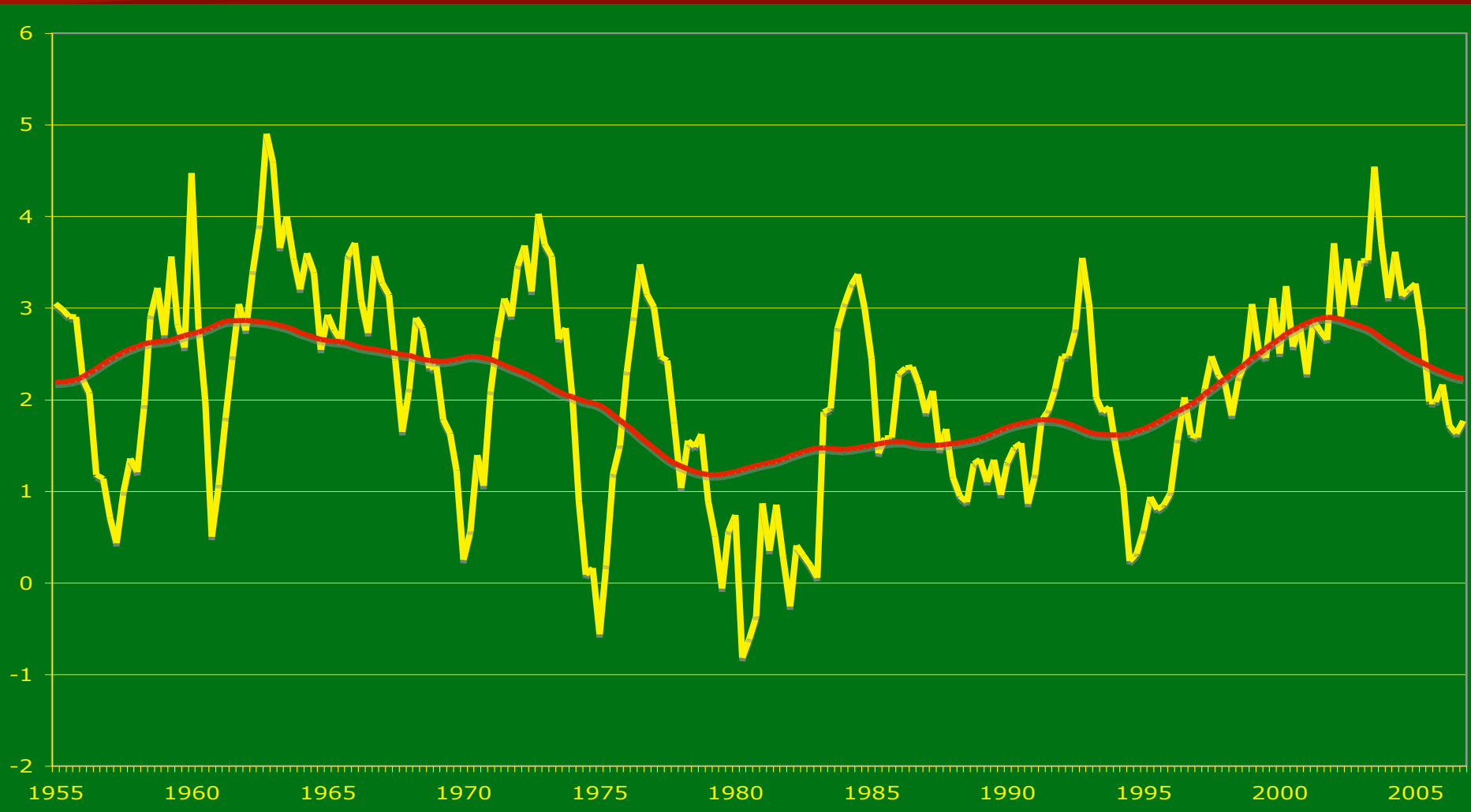
The New Elements in Our Data Analysis and Interpretation

- This presentation is a sequel to our 2005 *BPEA* paper, where we were the first to
 - Link the National Accounts with the IRS data
 - Unravel the puzzles of stable labor's share, rising mean wage income, and stagnant *median wage income*.
- Our explanation moves beyond the literature by
 - Distinguishing between causes at the bottom (0-90) and at the top (90-99.99)
 - At the top, trying to sort out explanations involving SBTC, Superstars, and CEO pay

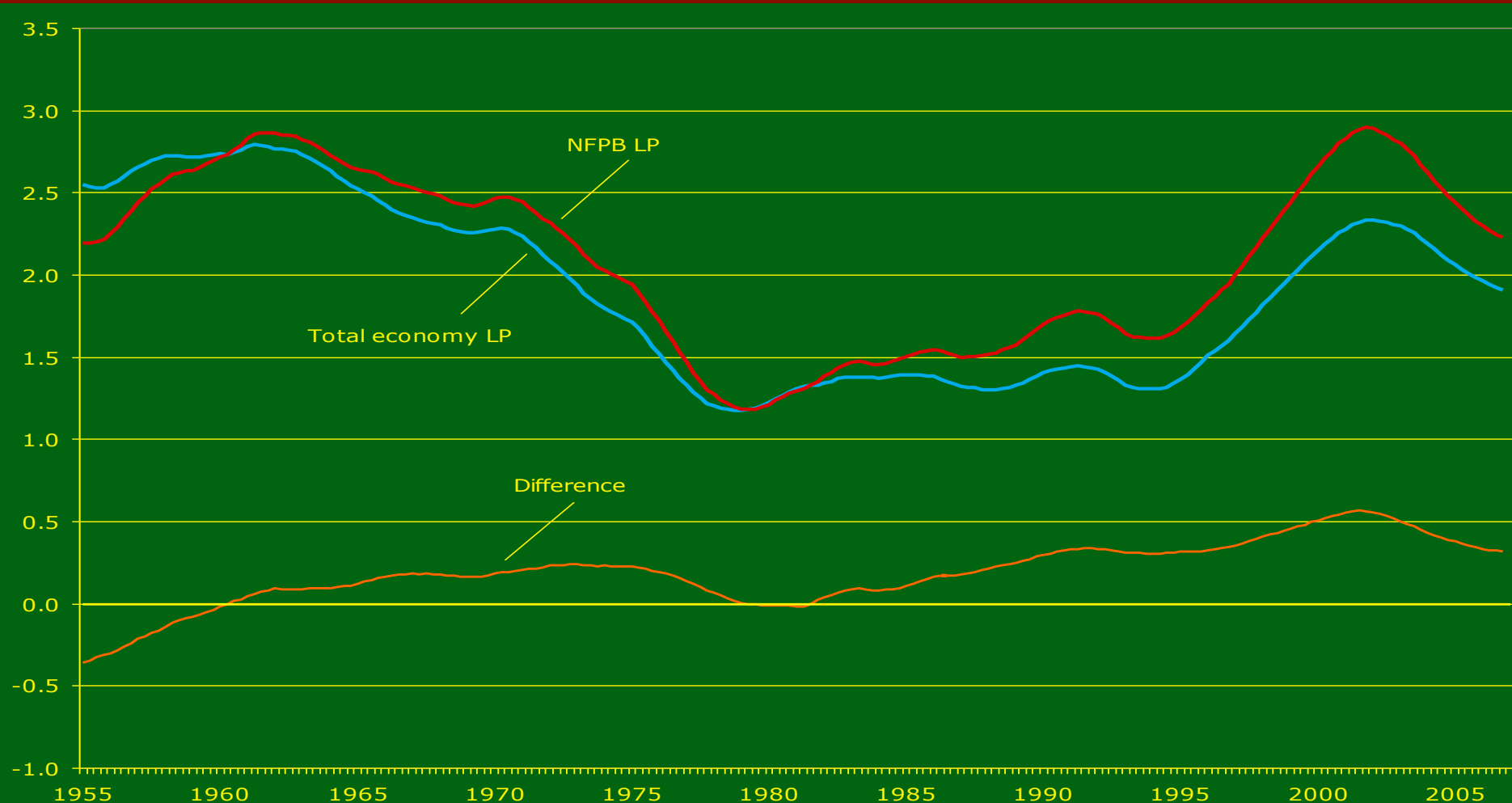
Our Headline Result in 2005

- *Over the period 1966-2001 only the top 10 percent of the income distribution had real compensation growth equal to or above the rate of economy-wide productivity growth*
- Today's presentation
 - Reviews our basic 2005 results
 - Updates macro data on productivity trends and labor's share
 - Provides a more complete review of explanations of increased US inequality at the bottom (0-90) and at the top (90-99.99)
 - Adds a preliminary review of international data

8-quarter Actual LP Growth vs. the Smoothed Trend (Nonfarm Private Business Sector)



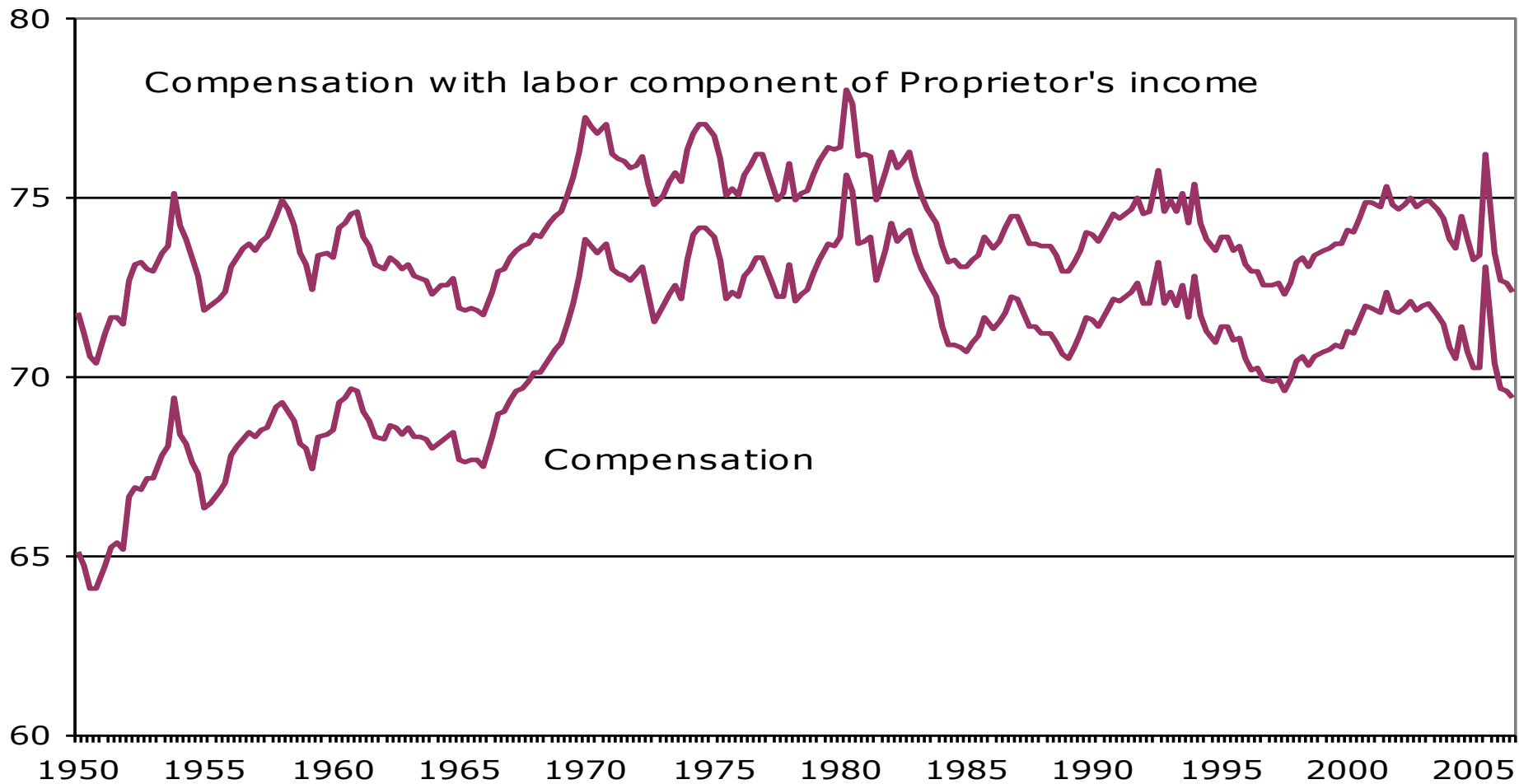
To Compare Total Economy Wages, Need Total Economy Productivity



Two Concepts of Labor's Share

- Two Concepts
 - Straightforward share of NIPA employee compensation
 - Add in labor's part of business proprietors' income
- Both concepts are expressed as a percentage not of GDP but of domestic income at factor cost (excludes depreciation and indirect bus taxes)
- What to notice
 - Up-down cycle 1997-2006 repeats 1987-97
 - Share was higher in 70s
 - Comprehensive concept no change since 50's

What has Happened to Labor's Share?

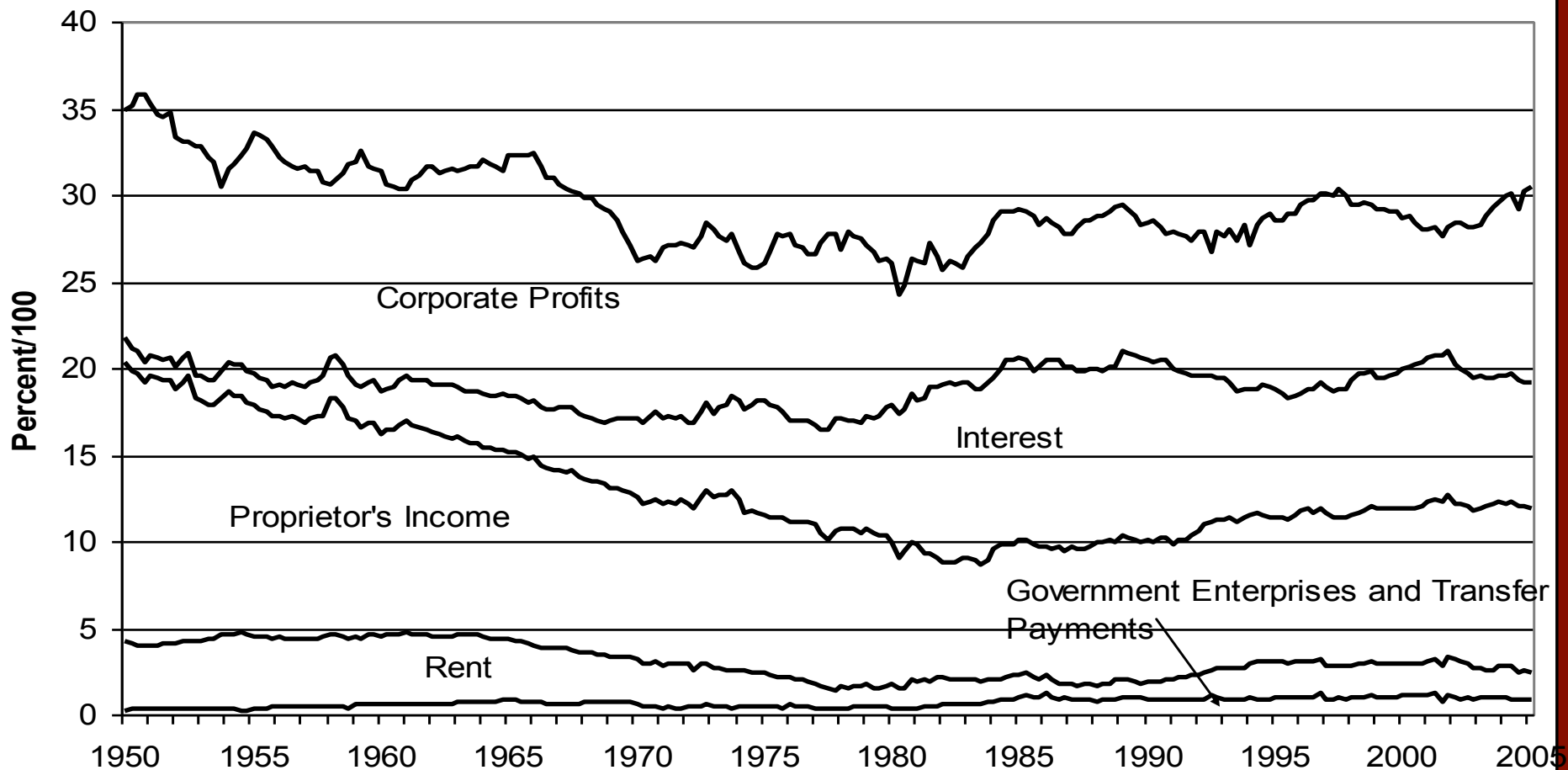


Lack of Connection between Labor's Share and Inequality

- Incomes were much more equal in 1950s but labor's share was the same (or lower for the narrow measure)
- Much of the rise in inequality > 90th percentile occurs in labor income, not capital income
- The main story is increased skewness within labor income, not a shift from labor to capital income

What is Happening with the Nonlabor Share?

Figure 2b. NIPA Nonlabor Income Share by Component, 1950-2005



Some Things to Think About

- Apparent regime change around 1966: sharp jump in labor's share, decline in capital share
 - No good explanation so far
 - Our macro data analysis helps by linking labor's share increase in late 1960s to the productivity growth slowdown
- Share is similar now to 1997. Smoothly varied in small range for past 30 years
- So what's all the fuss about? It's not that capital is gaining relative to labor, it's *who* is getting labor's share

The Inconsistent Wage Indexes: A Measurement Story

- 1954-2006
- NFPB LP Growth 2.27
- Real Comp per Hour (which price index?)
 - Private business deflator 2.15
 - Personal consumption deflator 1.84
 - CPI 1.48
- Average Hourly Earnings
 - 0.80, 0.49, 0.13
- Why AHE so low? Includes only production workers paid by the hour, not salaried workers

Our Micro Research: Linking the IRS and NIPA Data

- To whom do the benefits of productivity growth accrue?
- Our contribution is a measurement of income inequality with a direct comparison to productivity growth
- Thus we focus on which percentiles of the income distribution received real income gains
- We started noting that medians grew much slower than averages. Here we uncover the nuts and bolts of why this happened

Differences with Piketty-Saez on U. S.

- We have in common: reliance on tax data
- Their approach: look only at top 10% but over a long period (U. S. starting in 1913, France starting in 1901)
 - Their denominator (total income) is not from IRS but from national accounts
- We look at entire tax distribution from zero to 99.99 (not just 90-99.99)
 - Our denominator is total reported tax income, not national accounts (but we compare the two)
- At the end: comments on US vs. Canada, UK, France, and Japan

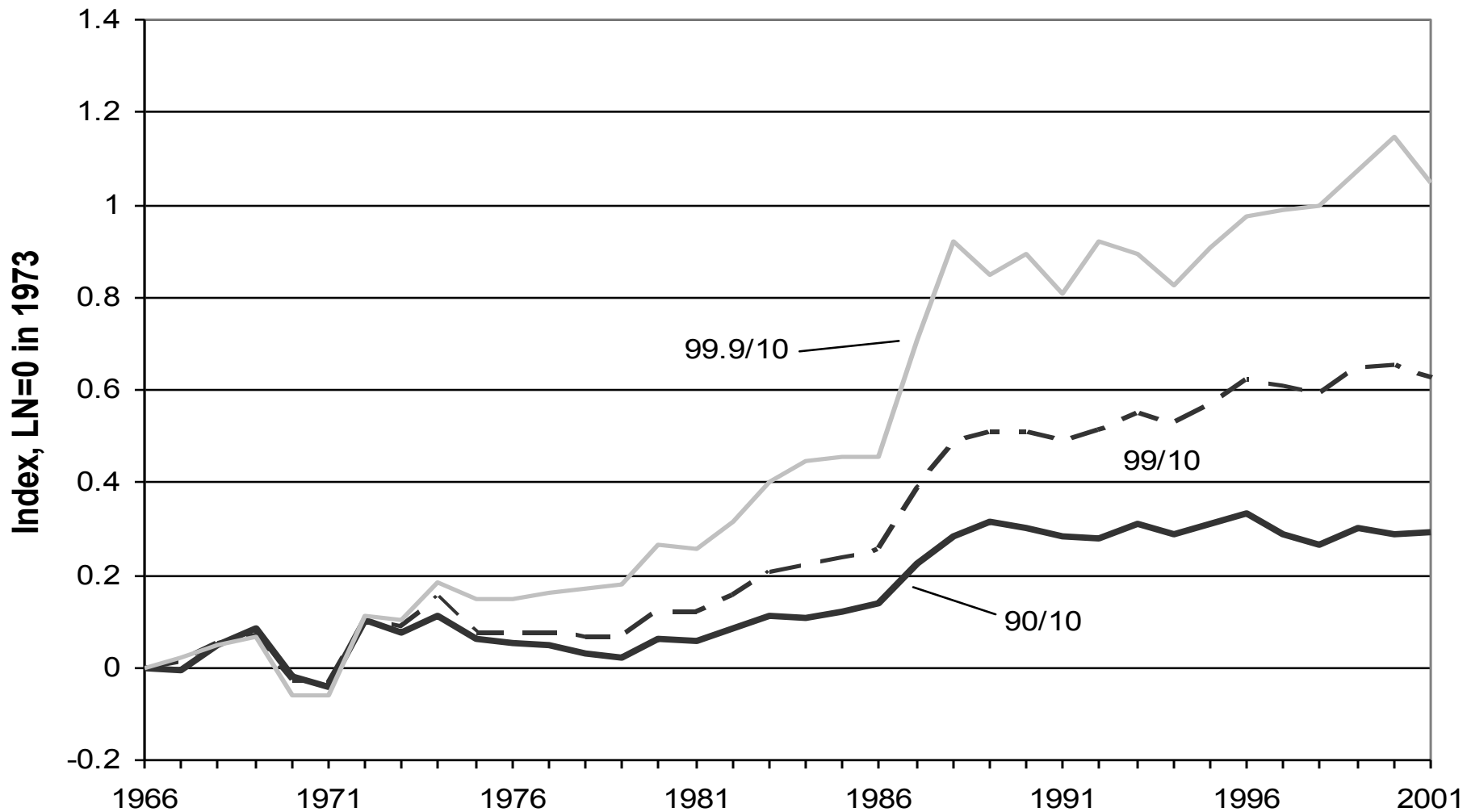
Sources of Income Inequality: IRS Microfile Data

- Cross-sectional data for 1966-2001
 - Heavily oversamples rich
 - Allows analysis of top .1% or .01%
 - 100-200,000 returns per year
 - 3,000+ returns in top 0.01 percentile out of 13,000 total filers
- This study is based on roughly 5 million data points, a few more than the typical time series quarterly postwar data analysis!
- The IRS micro data file provides every type of income on tax returns – wages & salaries, rent, interest, dividends, business income, pensions

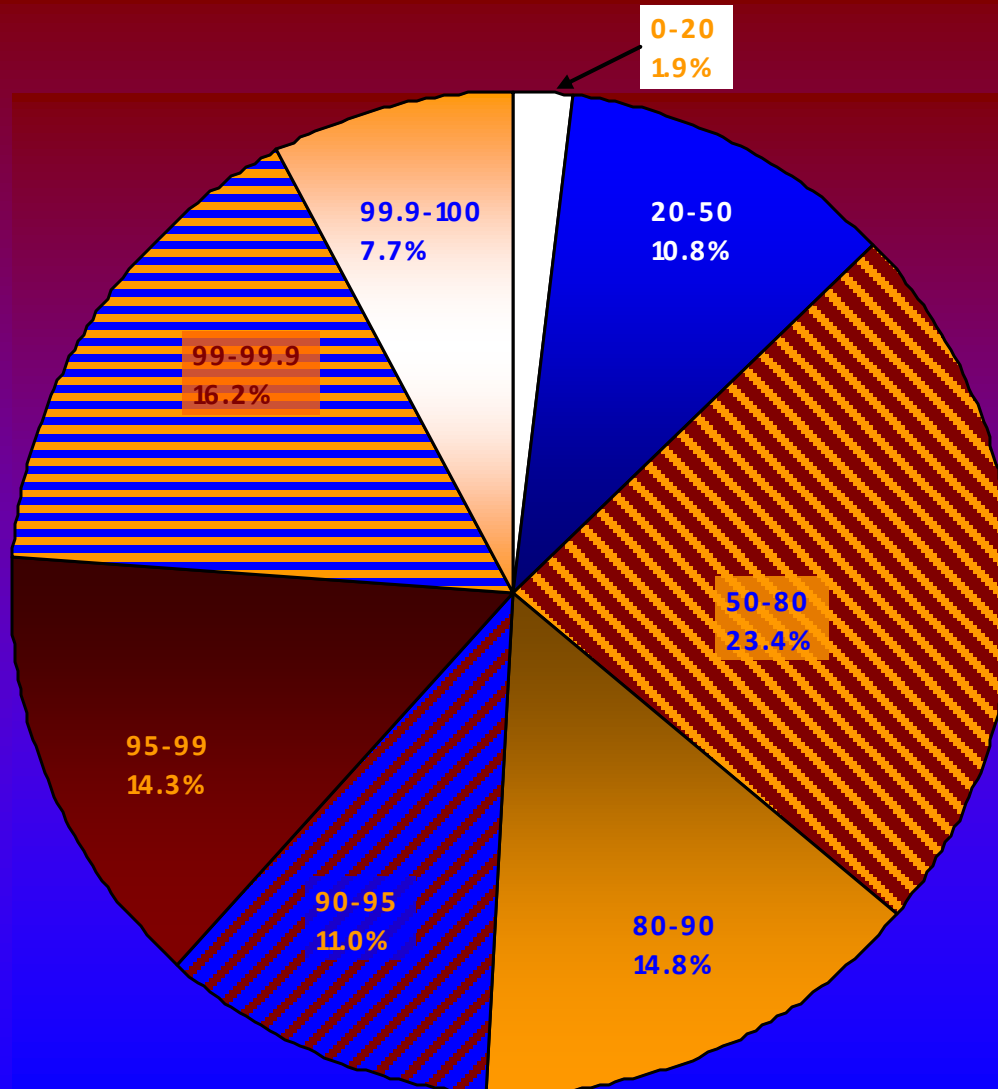
Advantages of IRS Data over CE/CPS Data Used by Others

- Other papers based on CE/CPS data understate increase in inequality
 - We find half of increase in inequality represented by 90/10 ratio, the other half is within 90-99.99
- CE/CPS data are top-coded, e.g., \$35,000+ in 1972-73
- Recall bias may vary with income
- IRS data are linked to actual records, W-2s and 1099's
- What do we add?
 - Adjusting for non-filers
 - Eliminating negative nonlabor income
 - Adjusting IRS income for fringe benefits and changing hours

Increased Skewness Above 90 is Missed by CPS Studies



Shares of New W&S, 1997-2001



What About Productivity?

- Need to adjust for the fact that nontaxable fringe benefits increased as a share of total income
 - No assumption about level of W&S/Comp, just that change is same for everyone
- Also need to adjust for the decrease in hours per tax unit to obtain an income per hour number
 - Assume changes in hours affect all equally

Almost Nobody Keeps Up, Basic Result for 1966-2001

- The headline result: *only the top 10% have experienced adjusted real income gains equal to or faster than productivity growth*
- Total economy LP growth 1.54%
- 90th percentile grows at 1.77%, 95th at 2.06%
- Everybody else slower than 1.54%
- Adjusted growth of median is only 0.9%

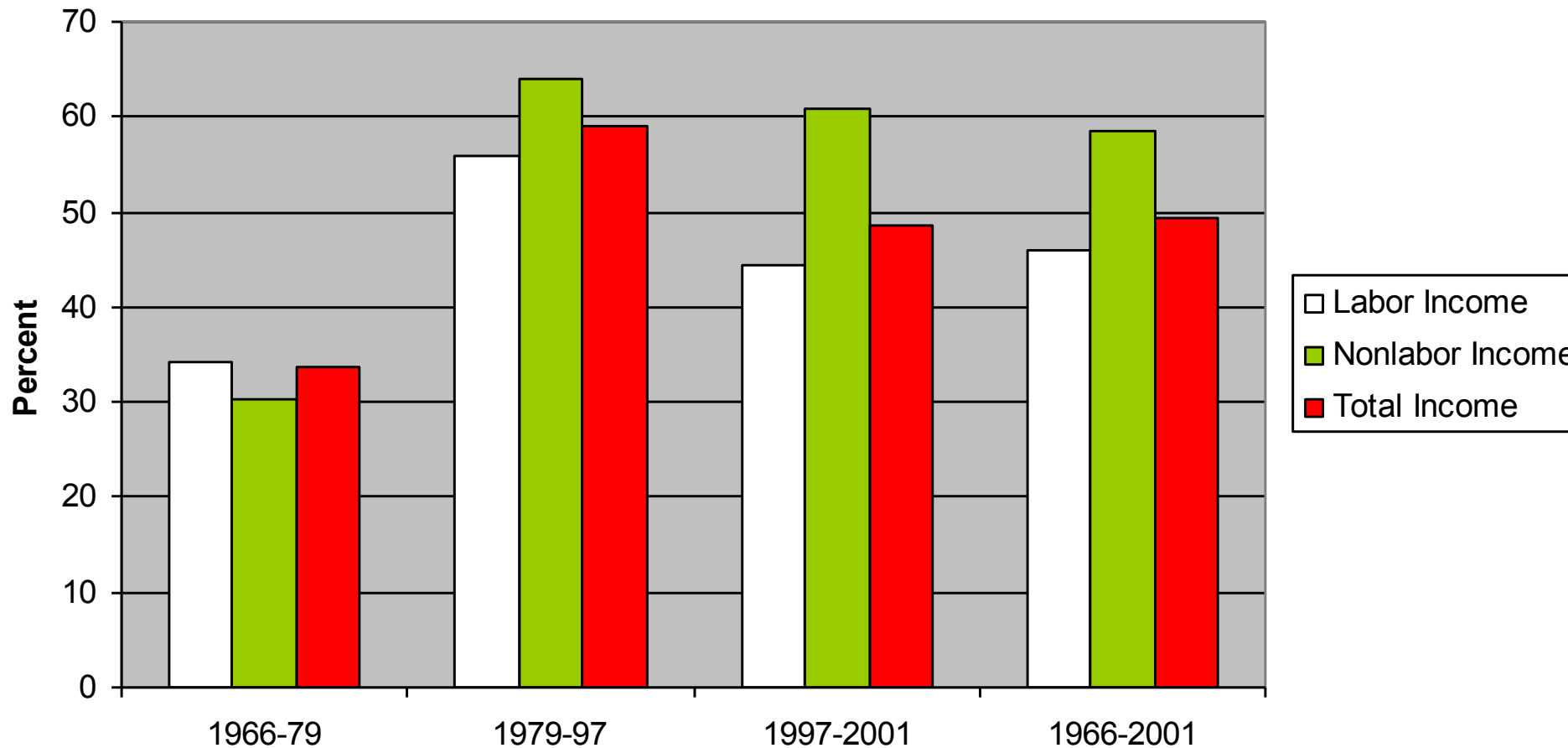
Adjusted Growth Rates

| Year | Adjusted Percentiles | | | | | | | Percent Wage Share of Compensation |
|----------------------------|----------------------|--------|--------|--------|---------|---------|---------|------------------------------------|
| | 20 | 50 | 80 | 90 | 95 | 99 | 99.9 | |
| 1966 | 7,242 | 23,667 | 42,127 | 52,683 | 63,367 | 99,872 | 220,653 | 90.5 |
| 1972 | 8,554 | 27,059 | 49,960 | 63,817 | 77,094 | 120,862 | 270,320 | 88.1 |
| 1979 | 8,916 | 26,402 | 53,717 | 69,531 | 84,790 | 137,918 | 342,009 | 83.7 |
| 1987 | 8,353 | 26,562 | 57,064 | 76,457 | 96,591 | 169,973 | 517,644 | 82.6 |
| 1997 | 8,496 | 26,436 | 58,549 | 82,285 | 108,012 | 215,039 | 692,955 | 83.1 |
| 2001 | 9,335 | 28,559 | 63,715 | 90,473 | 120,630 | 239,982 | 806,157 | 83.2 |
| Percent Change | 28.9 | 20.7 | 51.2 | 71.7 | 90.4 | 140.3 | 265.4 | |
| Average Annual Growth Rate | 0.73 | 0.54 | 1.18 | 1.55 | 1.84 | 2.50 | 3.70 | |
| Hours Adjusted Growth | 0.95 | 0.76 | 1.40 | 1.77 | 2.06 | 2.72 | 3.92 | |

| Gap Between Productivity and Hours-Adjusted Growth | | | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|------|------|--|
| Years | 20 | 50 | 80 | 90 | 95 | 99 | 99.9 | |
| '66-'72 | 1.89 | 1.35 | 1.96 | 2.31 | 2.38 | 2.29 | 2.50 | |
| '72-'79 | -0.37 | -1.32 | 0.07 | 0.26 | 0.39 | 0.92 | 2.39 | |
| '79-'87 | -2.45 | -1.56 | -0.88 | -0.45 | 0.00 | 0.98 | 3.55 | |
| '87-'97 | -1.39 | -1.61 | -1.30 | -0.83 | -0.44 | 0.79 | 1.36 | |
| '97-'01 | 0.75 | 0.33 | 0.51 | 0.77 | 1.16 | 1.14 | 2.18 | |
| Average | -0.62 | -0.81 | -0.17 | 0.20 | 0.49 | 1.15 | 2.35 | |

Labor vs. Nonlabor vs. Total Income (Fig 9 in paper)

Figure 12.
Share of Top 10 Percent in Increase of Real Income, \$2000, Selected Intervals, 1966-2001



Evidence on Income Mobility

- While inequality was increasing, there was no change in mobility (Bradbury-Katz, decade-long transitions within quintiles)
 - About 50% in penthouse are still there one decade later, same for basement
 - About 3% make it from basement to penthouse in one decade and vice versa
 - Lots of churning between 20 and 80 percentiles
- Bottom Line: Increased inequality has not been offset by increased mobility
- Opulence of penthouse has increased relative to basement

Causes of Increased Inequality: Current Debate Based on CPS

- Common Focus on Skill-Biased Technical Change (SBTC) to Explain 90/50 or 90/10
- Since supply of college graduates has increased, SBTC says that demand must have increased more than supply
- Focus on Timing (1980s vs. more gradual process culminating in 1990s)

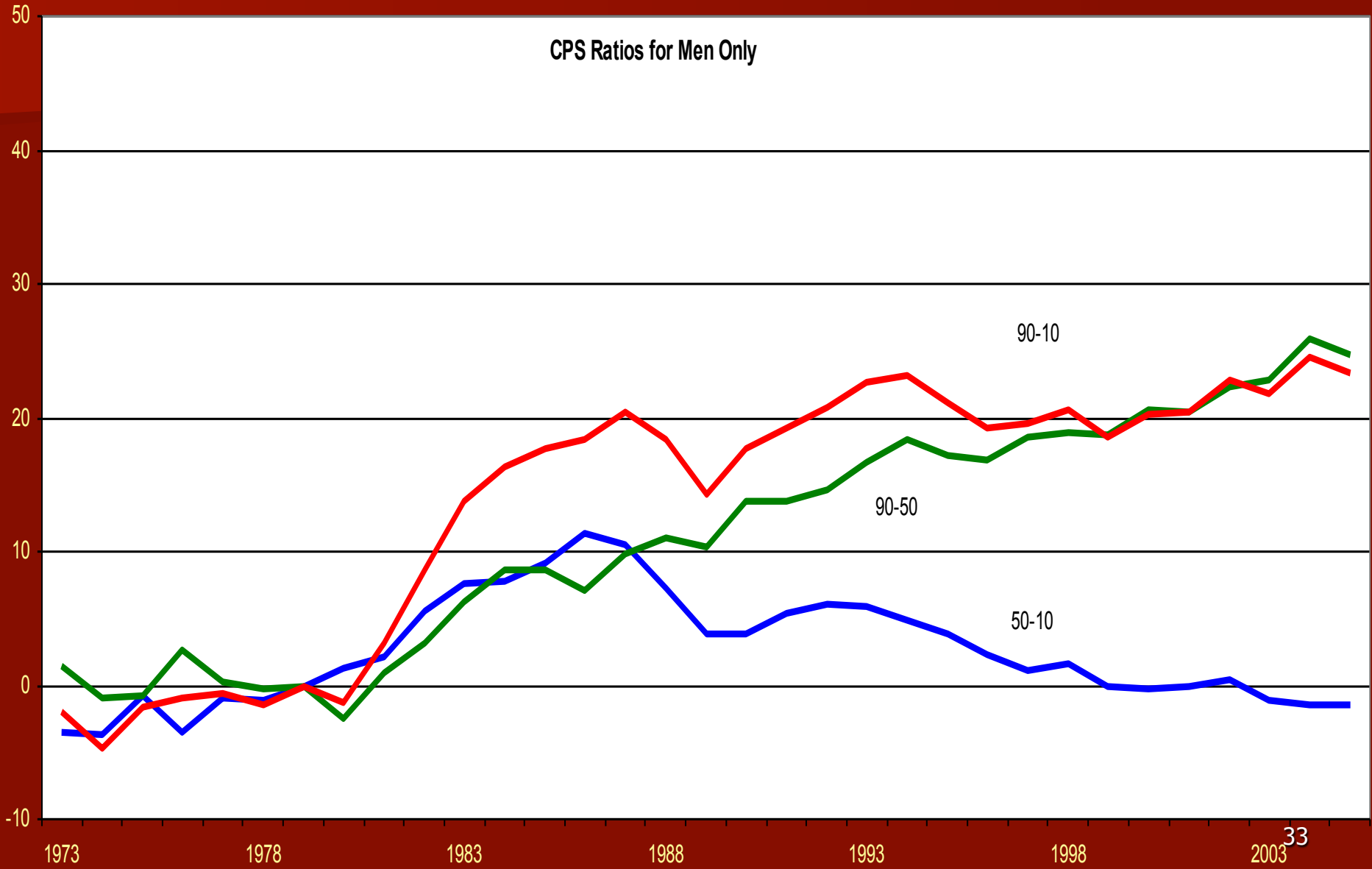
The Failure of the SBTC Explanation

- SBTC Doesn't Explain
 - 1989-97 real compensation of CEOs up by 100 percent
 - Real compensation jobs related to computer science increased only 4.8 percent
 - Real compensation of engineers declined 1.4 percent
 - Fully half (49%) of income gains in the occupational group "managers"
 - Almost none in occupational groups related to computers
- Why no increase of CEO ratio to average worker in Europe, just in U. S.?

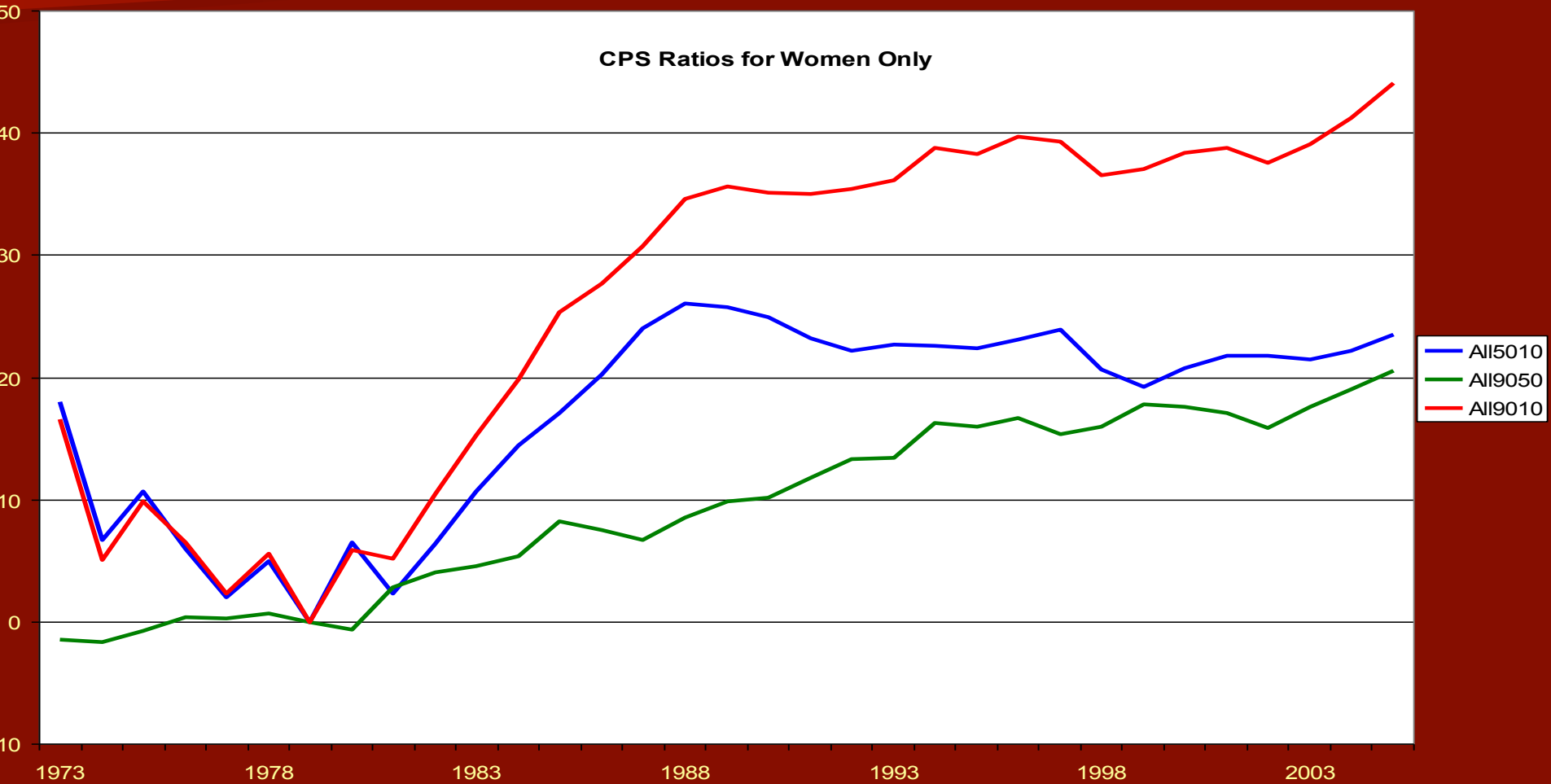
Income Inequality below 90th Percentile

- Many articles and hypotheses focus on the timing of changes in the 90-50 and 50-10 ratios
- Key fact: Big decline in real minimum wage 1981-86
- We had previously looked only at data on men and women combined
- But the time path for men and women is quite different, and here we present ratios from the latest CPS data (EPI web site)

Ratios 1973-2005 for Men



Ratios 1973-2005 for Women



Organizing Principle for 90-10 Ratio: Reversal of the Great Compression

- Elements of the great compression of the income distribution in 1940-70: rise of unions, disappearance of imports and immigration
- Reversal: decline of unions, rise of imports and immigration
- Extra elements: equalizing influence of high school educ 1910-40 and min wage

The Role of Deunionization

- Everyone agrees it mainly affects men
- Main source is Card-Lemieux-Riddell
- Main conclusions:
 - Union wage distribution compressed
 - Small effect, just for males, maybe 14 percent of growth in variance of male wages 1973-2001
 - SOWA 2006-07 has similar conclusions in a different metric

Second Aspect of Great Compression: Imports

- Trade, Imports, Job Displacement
- SOWA imply job losses across the income distribution
 - No real impact on the income distribution
 - Perhaps slightly more job losses at the bottom
- Trade has bigger impact on manufacturing employment; raises inequality if lost mfg jobs are above average wages

Third Aspect of Great Compression: Immigration

- Fact: Since 1970 triple the flow of immigrants as ratio of population and share of foreign-born workers in the labor force
- Borjas-Katz reduced form approach
 - Lower real wages of domestic workers by 3% 1980-2000
 - Loss reached 9 percent for domestic workers without a HS degree

Challenge to Borjas-Katz from Ottaviano and Peri (2006)

- Replace Partial Equilibrium by General Equilibrium
- When Immigrants arrive, they stimulate capital investment (they rescue previous central city ghettos)
- Substitution is not general, immigrants compete with each other in particular occupations
 - Implication: New immigration drives down wages of existing foreign-born residents
- Thus we may have been asking the wrong question, not about the impact on native Americans but on the wages and skills of the entire population including the immigrants themselves

Minimum Wage

- Circumstantial Evidence
- Minimum wage hits women harder than men
- 50-10 ratio for women increased much more than for men and increased permanently
- It is hard to think of another convincing hypothesis than the influence of the minimum wage on the 50-10 ratio for women

Skill-biased Technical Change

- The gradual increase in 90-50 for both men and women lends plausibility to this hypothesis
- Our paper disputes some anti-SBTC arguments that are based on timing
- We endorse Autor-Katz-Kearney in broadening the concept of SBTC to encompass five groups, “nonroutine interactive” down to “routine manual”
- Reason for skepticism: occupational group data show low wage increases for engineers and computer experts, fast for “managers”

Increased Inequality at the Top, 99.99 vs. 90.0 percentile

Previous hypotheses (Kaplan-Rauh):
trade theories (Heckscher-Ohlin)
increasing returns to generalists (A-K-K)
stealing theories (Bebchuk et al)
social norms (Piketty-Saez)
greater scale (Gabaix and Landier)
SBTC (Katz and Murphy)
Superstars (Rosen)

In this context, our 2005 paper introduced the Superstar vs. CEO distinction

- Our critics of 2005 said “superstars account for too little” but we explicitly included
 - Entertainment stars
 - Sports stars
 - Lawyers
 - By implication textbook authors, painters, musicians

Inequality at the Top: Superstars and CEOs

- Sherwin Rosen on the “Economics of Superstars”
 - Steep earnings-talent gradient at the top
 - “Hearing a succession of mediocre singers does not add up to a single outstanding performance”
- Earnings premium of superstars depends on the size of the audience
 - Magnification through technical change: phonograph, radio, television, cable television, CDs

Critique: There Aren't Enough Superstars

- Entry level to IRS 99.99 percentile in 2001 was \$3.2 million
 - 99.99 percentile accounted for \$83 billion
- *Forbes* magazine “celebrity 100”
 - Total is \$3.1 billion, average \$31 million
 - Many more celebrities not included
 - Brian Williams, Katie Couric, Matt Lauer, Jay Leno, David Letterman . . .

The New "Census" of Sports Stars

- 2820 athletes in major league baseball, basketball, football
- Total income \$7 billion, or \$2.48 million each
- Time series on baseball back to 1988
 - Average increased from \$354,000 to \$2.1 million
 - Inflation-adjusted increase 8.9 percent compared to 6.0 percent for top 99.99

Broadening the Concept of a Super-star

- Superstars include top-paid lawyers, doctors, even economists who refuse to leave Harvard when offered megabucks to go to Columbia
- A few economists make millions by writing textbooks
- Phenomenon of “continuity”.
 - Wall street salaries raise salaries of business school finance professors, which in turn raise salaries of economics professors
 - Increased pay of CEOs raises pay of next 4 and less so the next 20 or next 100 top managers

The CEO Phenomenon

- This is where the real money is in the 99.99 percentile
- 1989-2000 CEO compensation increased 342 percent compared to 5.8 percent for median hourly wage
 - But this hasn't happened in Europe (UK and Canada are in between)

Kaplan-Rauh vs. Our 2005 Paper

- The question is how much of the *WAGE AND SALARY INCOME (W-2)* can we find of the top 0.01 percent? (entry level \$3m)
- In our 2005 paper we claimed we could find about 60 percent
- Kaplan-Rauh said we were wildly wrong
- But in our new paper we come up with 63 percent

Core of the Difference

- First reason
 - Our simple arithmetic mistake
 - Kaplan-Rauh look at actual distribution not averages
- But the second reason is the big one
 - They look at contribution of executive pay to total AGI income including capital incomes, taxable pensions, and capital gains
 - Their denominator includes all those retired movie stars living on upper 5th avenue and in Beverly Hills mansions
 - We just looked at W-2 Wage and Salary income

We asked a different question and the right question

- How much of total W-2 income in the top 0.01 percent is accounted for by top corporate executives (1500 * 5)?
- Answer 20%
- Adding in all of Kaplan-Rauh's other executives (private firms, lawyers, sports and entertainment stars) brings up to 63%
- QED: We were right in 2005: superstars and CEOs explain the explosion of inequality at the top

Substantive Hypotheses about CEOs

- William Shakespeare (*Hamlet*, I, iv):
 - “Something is Rotten in the State of Denmark”
- Why distinguish CEOs from Superstars?
 - Because they can choose their own salaries
 - Because they bribe directors compensation committees with perks and stock options
 - Because they are involved in criminal activity on a daily basis

Bebchuk-Grinstein Study (2005)

- 1500 Firms
 - Average \$14.3 million for CEO
 - Average \$6.4 million for top five officers (exactly the mean income of 99.99)
 - Total of \$48 billion is more than half of income in 99.99
- Cause? Compensation increased 76% more than can be explained by firm size, rate of return, or growth of rate of return
- Flaw? If stock price/earnings ratio increases, then CEO pay could be explained by stock prices not rate of return

Alternative Theories of CEO Pay Ranging from Equilibrium to Conspiratorial

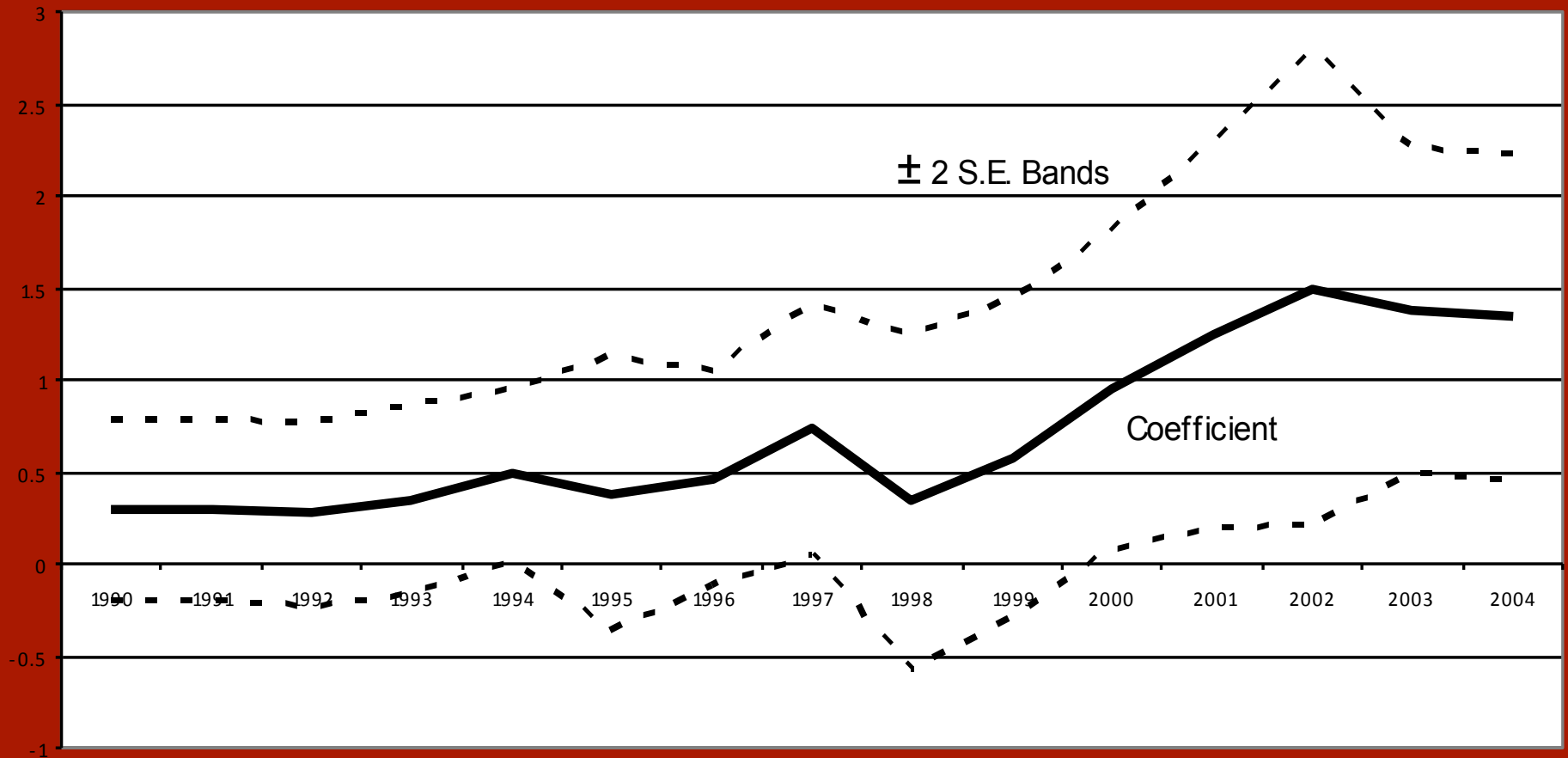
- “Arms-length Bargaining Perspective” (Supply and Demand)
- CEO Pay Proportional to Market Cap
 - Gabaix - Landier
- “Managerial Power” Perspective
 - Limited only by “outrage constraint”
- “Scratch my Back” Model (The “Lake Wobegon Effect”)
 - Garrison Keillor (U. S. public radio weekly two hours). “Where all the men are strong, all the women are beautiful, and all the children are above average”

The Startling Hypothesis of Gabaix-Landier

- CEO Pay is Proportional to Market Cap
- The Elasticity of CEO Pay to Market Cap = 1.0
- This is True in all Eras and all Countries
- Any Shortfall of CEO Pay in Europe is due to Shortfall in Market Cap
- A frontal attack on those who question the arbitrariness of CEO Pay in the US
 - Accounting Scandals
 - Backdating of Stock Options

Gabaix's Hypothesis that Elasticity of CEO Pay to Market Cap = 1.0

Figure 1. 20-Year Rolling Regressions of CEO Compensation on Firm Size as in Gabaix and Landier's Table II



Note: The x-axis lists the final year of the regression; standard errors reported are robust.

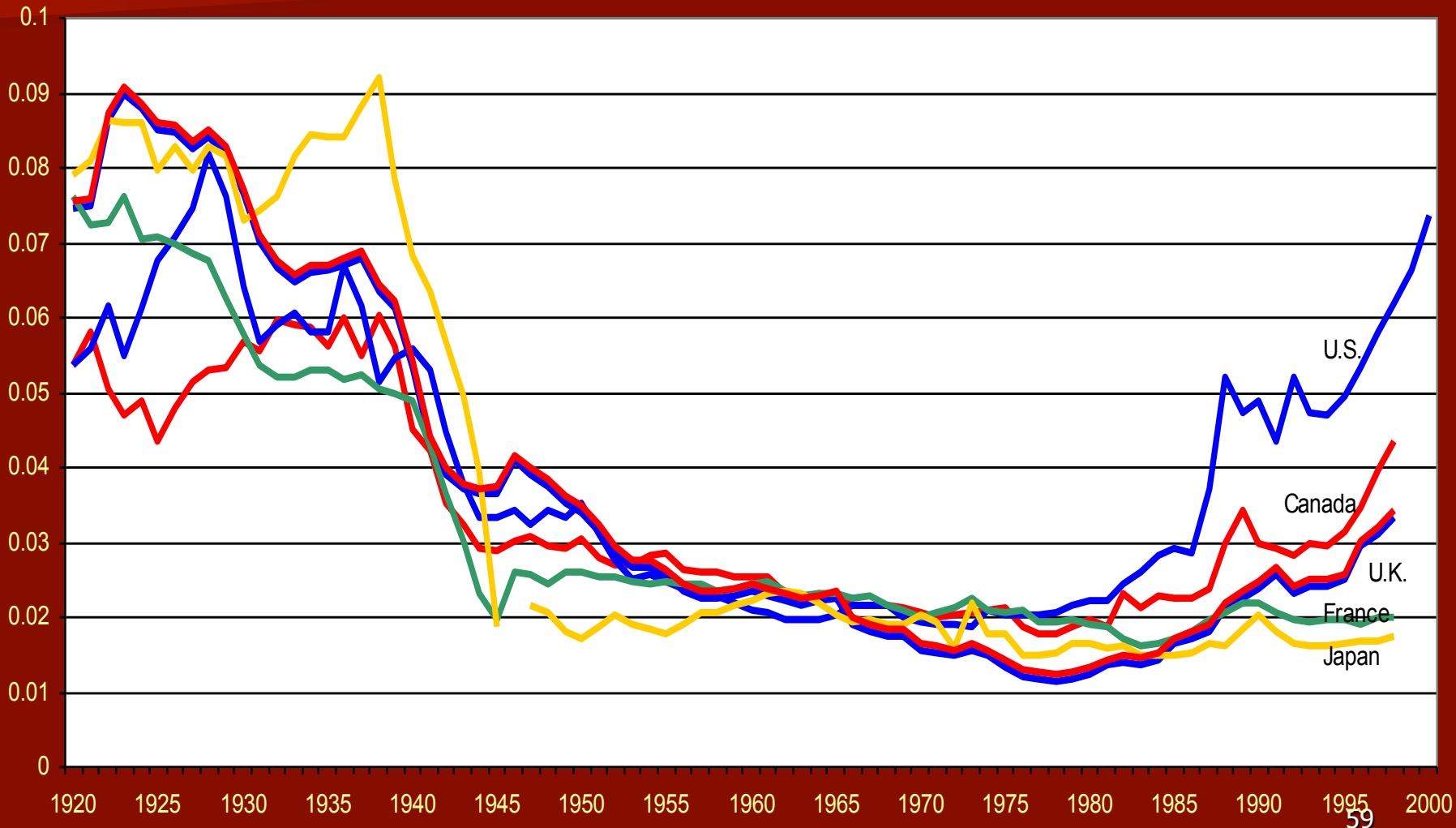
Why Say More? Just Read Newspapers

- Nardelli kicked out as CEO of Home Depot after six years in which stock price declined
 - Compensation package on the job \$240m
 - Golden Parachute \$210m
 - Maybe some overlap, but who cares?
- Bebchuk on Steve Jobs and Apple in WSJ 01/06/07 (“Inside Jobs”)
 - Massive backdating of options
 - Bebchuk paper “Lucky CEOs” this is a massively widespread and pervasive practice. 12% of public firms were involved.

The International Comparison Puzzle

- Data based on the share of the top 1% or 0.1% uniformly show that income inequality in the US grew the most after 1970 (US vs. Canada-UK-France-Japan)
- Data on CEO pay show much higher ratios of CEO/avg worker in US than anywhere else
- Next slide shows ratios for the top 0.1% from 1920 to 1998 (Piketty-Saez and co-authors)
- This includes labor and capital income (dividends, business proprietors) but not capital gains

Income Share of Top 0.1 Percent, Five Countries, 1920-1998



Explanations of Piketty-Saez

- Big decline from 1920s to 1950s was due to destruction of capital income
 - Losses in Depression and WWII
 - Destruction, bankruptcies, inflation
 - Progressive taxation to finance the war
- Switzerland makes the case
- Post-1970 in English-speaking countries the “working rich” have replaced the “rentiers”

How to Explain US-UK vs. France and Japan?

- Simple story of increased demand for “executive skills” won’t work, because why not in all countries?
- “Social norms” preserving equality in Japan and France prevent competition-driven increase in executive pay (loss of efficiency)
- US execs have learned to steal from shareholders (no gain of efficiency)

Conclusions and Further Research

- Not just income and wealth are concentrated, but real income *growth*
- Not just true of capital income, also of wage and salary income
- 80-90% of the wage distribution does not enjoy wage gains equal to productivity growth
- Lots of research left to do, starting with explanation of cross-country differences

What would David Say?

- His book illuminated numerous dimensions of “American Exceptionalism”
- He emphasized the “corporate stick,” with a bloated bureaucracy disciplining workers and cutting their pay and fringe benefits
- He would favor the conspiratorial interpretation of increased CEO pay and link it to other traits of American management

In Addition to Circuit City, David would point to US airlines

- Pay of unionized workers pushed down 30 to 50 percent during bankruptcies of US, UA, DL, NW
- Emerging from bankruptcy, top management awarded themselves 10% of newly created shares of stock
- CEO of UA takes home \$25-30 million from reorganization while unionized employees take home virtually nothing

David Rejected Alleged Tradeoff Between Efficiency and Equality

- Today David would be on firmer ground, because of the outstanding economic performance in the last decade of all the Nordic countries (DK, FI, SD, NO)
- Recent study of Sweden shows no increase in inequality ex-cap gains
- Equal income distribution, preservation of welfare state, minimal child poverty
- Combined with productivity growth at or above the EU average

David's "Big Three" Explanations

- Decline in the Real Minimum Wage
- Erosion of "Union Reach and Power"
- Emergence of the "Disposable Employee"
 - Circuit City Example
 - Louis Uchitelle's book "The Disposable American"

Parallel Set of Policy Recommendations

- Raise the real minimum wage
- Ease path to unionization
- Make “contingent employment” less attractive
- Establish an investment bank to reward good firms
- Increase support of education and training

My policy recommendations have a similar goal but a different emphasis

- Raise marginal tax rate on top 1% from 33% to 50%
- Introduce single-payer government supported health care to eliminate tie of medical care to employment (Big 3 vs. Toyota)
- Eliminate tie of US primary-secondary education funding to local property taxes
- Raise gas taxes by enough to double the price of gasoline from \$3 to \$6 (gradually) and rebate revenue in the form of tax credits to the poor
- Follow Heckman by pouring money into early-childhood intervention programs for the children of poor families