

Unsettled Issues in the Rise of American Inequality

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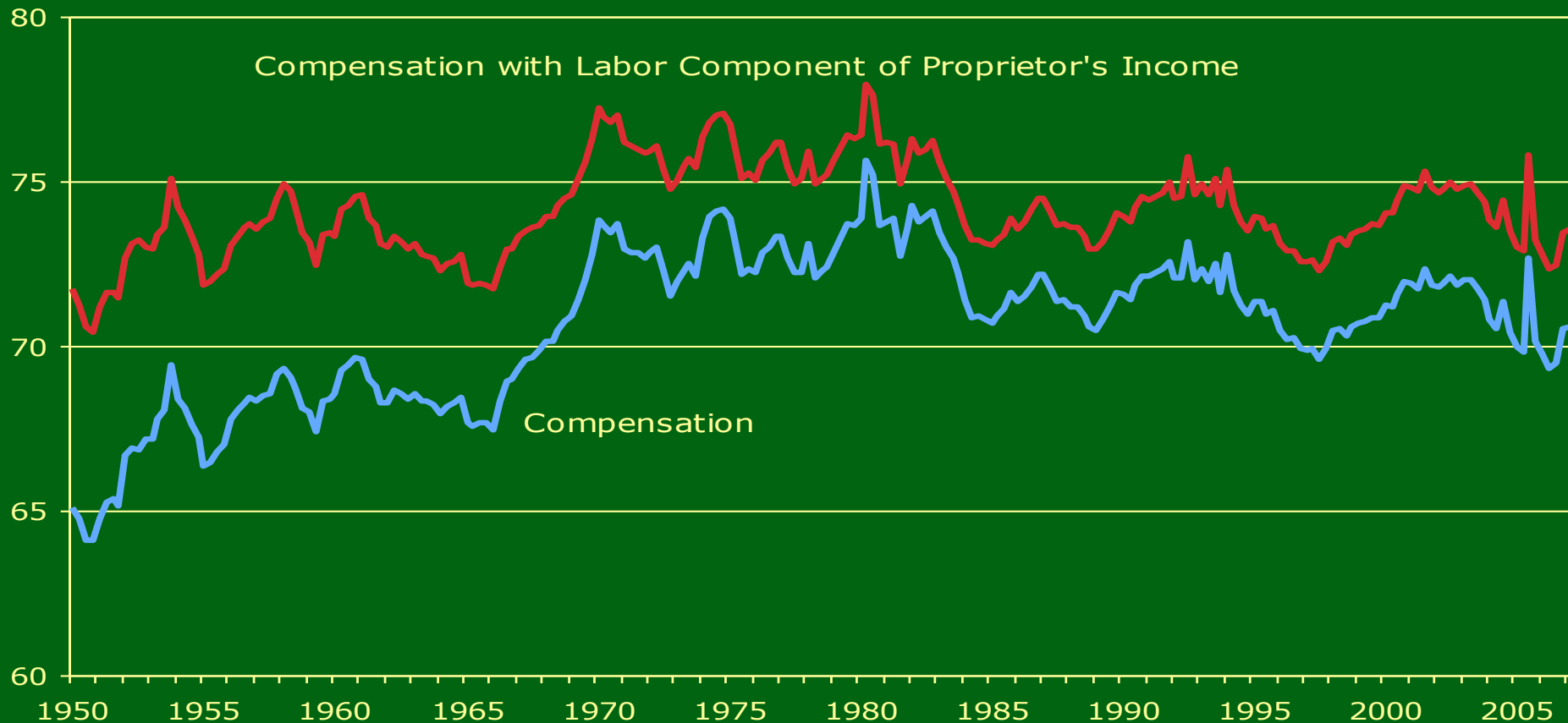
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Survey Paper on Rising Inequality in the U. S.

- Comprehensive Scope: Labor's Share, Inequality at the bottom, at the top, consumption inequality, and international differences
- Overlaps the territory of Autor-Katz about the bottom and Piketty-Saez about the top
- Excluded: college wage premium, transmission of inequality through race, gender, inherited human capital

Rising Inequality has Nothing to do with Labor's Share

**Figure 1a. NIPA Labor Share With and Without Proprietor's Income,
1950-2007**



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

The Bottom vs. the Top

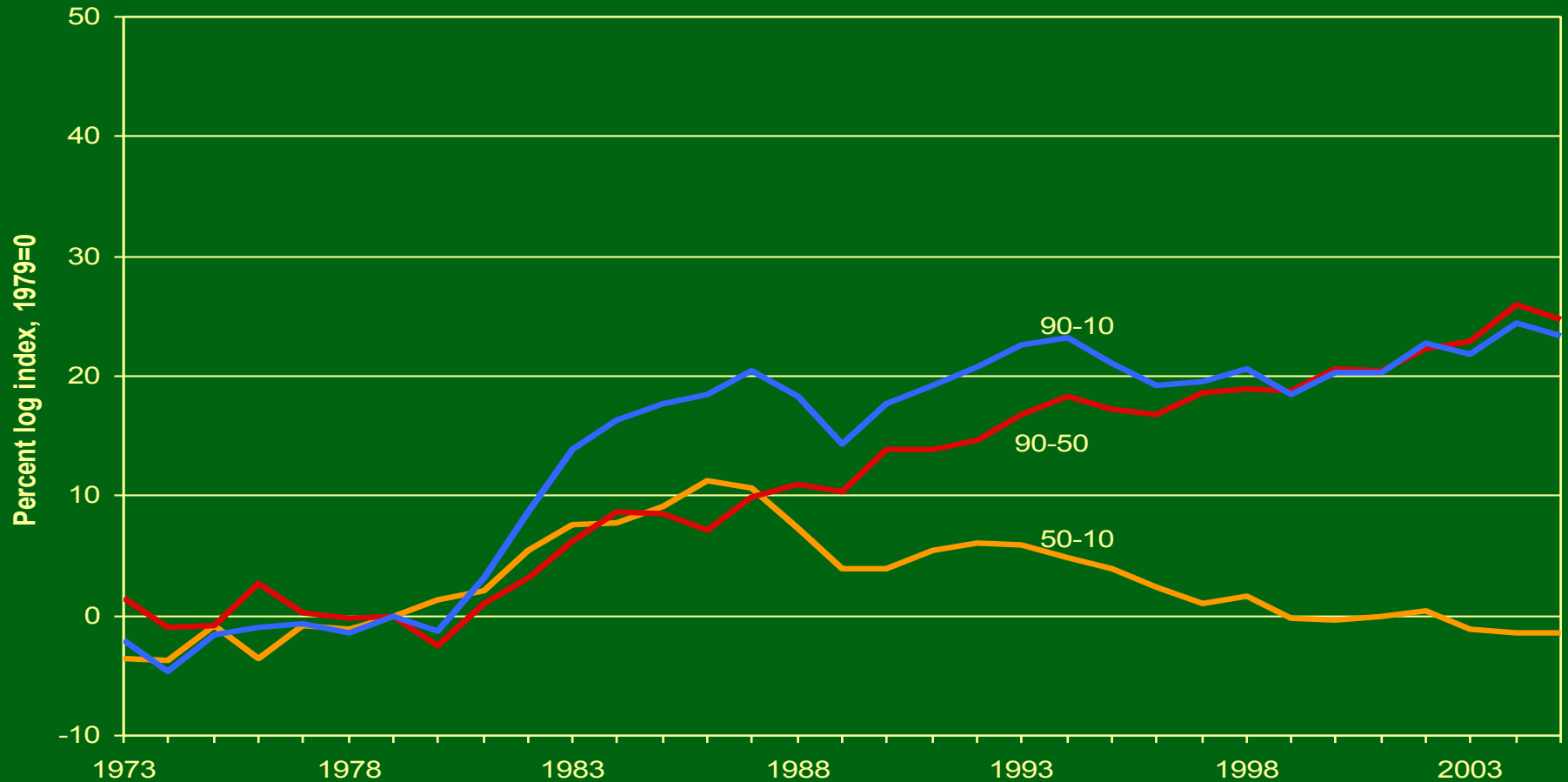
- CPS conventionally used to study “bottom 90” but top-coding makes it useless to look inside the top 10%
- IRS tax data is oversampled at the top, allows distinction between top 1%, 0.1%, 0.01%
- We use both to assess hypotheses
- Let’s look first at the bottom 90

Point of Departure: Goldin-Margo “Great Compression”

- Path of inequality U-shaped
 - High before 1930
 - Low 1940-1970
 - Rising after 1970 back to 1920s levels
- Three factors compressed and reversed
 - Rise and fall of unions (decline fast 1980-86)
 - Fall and rise of imports
 - Fall and rise of immigration
- Fourth factor prominent in literature, decline in real minimum wage, esp. 1980-86

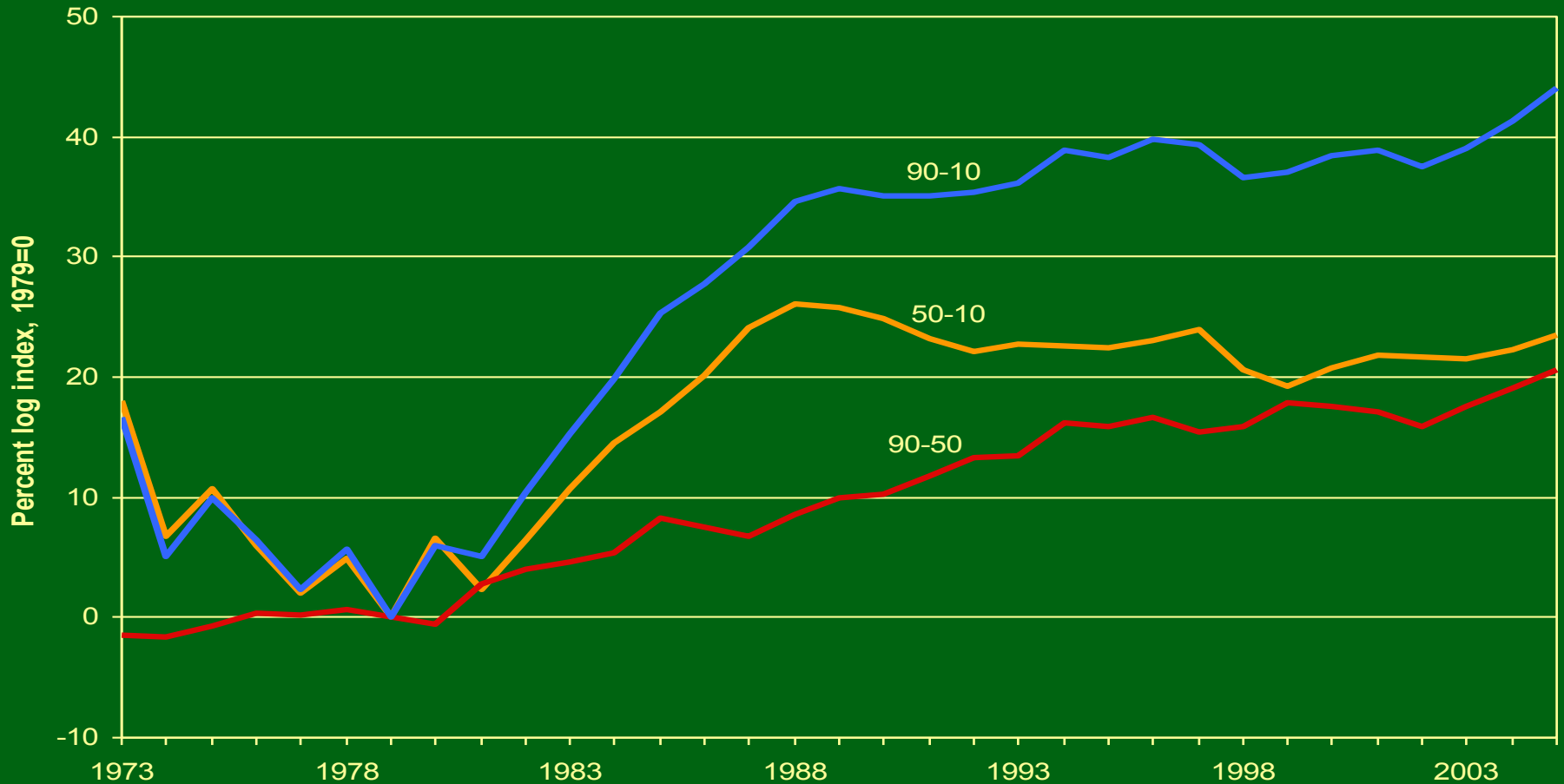
CPS Ratios for Men, 1973-2005

Figure 3. CPS Income Ratios by Percentile for Men Only



CPS Ratios for Women, 1973-2005

Figure 4. CPS Income Ratios by Percentile for Women Only



Summary of Differences

- 90-50 ratio rises steadily, reaches +25 percent for men, +21 percent for women
- 50-10 ratio behaves very differently
 - Both rise 1980-88
 - Men rises 1979-86 to +11, then declines back to 1979 level
 - Women rises 1979-88 to +26, *still at +24 in 2005*

Explanations in the Literature

- Decline in unionization mainly impacts men, explains no more than 15% of increased inequality
 - Affects 50th percentile more than 10th percentile, timing wrong in early 1980s
- Imports, little research or evidence
- Immigration, contentious literature
 - Minimal effect on native Americans on average
 - Bigger effect on college drop-outs
 - Perhaps biggest effect on previous cohorts of immigrants who cluster in particular occupations

Closest Match of Hypothesis with Data: Real Minimum Wage

- Twice as many women as men are paid the minimum wage
- Sharp increase 50-10 ratio for women in 1980-88 coincides with timing of drop in real minimum wage
- Problem: Real min wage increased from \$5.10 in 1989 to \$6.25 in 1997, then back to \$5.15 in 2005
- But no response of 50-10 ratio for women, which was stable 1988-2005

Increased Inequality vs. Earnings Mobility

- We were properly chastised by LK for using the term “labor mobility” when we should have used “earnings mobility”
- Labor economists like Katz use “labor mobility” to describe people moving from Michigan to Texas in 1982
- If there were constant churning, with people moving from bottom to top and vice versa, rising earnings inequality would not be a concern
- But literature on earnings mobility shows no increase in mobility, if anything a decrease

Stylized Facts on Earnings Mobility

- Over a decade, roughly 3% move from bottom quintile to top or v.v.
- Over a decade, roughly 50% of people stay in bottom quintile or top quintile
- Churning is limited to the middle three quintiles, income percentiles 20 to 80
- Another study over a decade: the top 1% come 35% from the top 1% ten years earlier, 35% from 95-99, and only 10% from 0-80.

Intergenerational Mobility

- Stark Racial Difference
- Born into the bottom 20%, what is your chance of being in the bottom 20% as an adult?
 - For whites, 17%
 - For blacks, 42%
- No change in mobility over time to offset the observed increases of inequality at the bottom and at the top

Skill-biased Technical Change

- Matters at the bottom and the top
- Steady increase of 90-50 ratio for both men and women consistent with SBTC
- Originally developed as a two-dimensional process
 - Skilled vs. Unskilled
 - Increased supply of Skilled, but increased relative wage
 - Therefore must have been a biased increase in the demand for the skilled

Problem with the Two-Dimensional version of SBTC

- It does not match the occupational distribution of wage increases
- Real earnings increases in 1979-97 for engineers and computer programmers were negligible
- Fully half of increase 1979-97 of college wage premium due to one occupational group, “managers”

More Subtle Versions of SBTC Have Emerged

- A-K-K 2005 a five-dimensional division of skills
- A-K-K 2006 a three-dimensional split, which is enough
- We endorse their “polarization hypothesis”
 - Middle routine skills can be outsourced
 - Top and bottom skills are interactive, but big increase in relative demand for top interactive skills
- Augmented by slowdown in growth of relative supply of college graduates

The Top, Here's the Core of the Controversy

- 1966-2001 in our IRS data
 - AAGR real labor income per taxpayer:
 - Median 0.30 %
 - 90th 1.30%
 - 99th 2.26%
 - 99.9th 3.46%
 - 99.99th 5.63%
 - Baseball players (1988-2005) 8.9%

Key Distinction at the Top: Superstars vs. CEOs

- Pay of superstars chosen by the market vs. pay of CEOs chosen by their peers
- Two varieties of superstars
 - Rosen's entertainers and sports stars
 - Sharp skewness of demand (hearing ten mediocre performances does not match hearing one really good performance)
 - Magnification of supply. Same effort can be witnessed by one person or ten million
- Intermediate group: lawyers and investment bankers, paid by the market without audience magnification

Can Superstars and CEOs explain that top income?

- This topic juxtaposes two complementary papers, Kaplan-Rauh vs. our first BPEA effort in 2005
- The question is: how much does superstar and CEO income explain of the top 0.01 percent?
- Think of this as numerator and denominator. How much of the denominator can the numerator explain?

Developing a Consensus

- What we learned from Kaplan-Rauh
 - There is a lot of income out there that is not entertainment or sports superstars and not CEOs
 - Wall St investment bankers
 - Hedge fund managers
 - lawyers

What They learned from Us

- The denominator makes a big difference; dividing by AGI (as they did) rather than W-2 income (as we did) reduces the share by a factor of 4
- Lawyers are complicated because they earn partnership income, not W-2 income
- Overall, we conclude that the incomes identified by Kaplan-Rauh account for at least 50% of the top 0.01%

Does CEO Pay Respond to Profits or Stock Prices?

- Do Huge Increases in CEO pay reflect a response to profits or market cap?
- Bebchuk-Grinstein say share of top executive earnings in corporate profits doubled 1993-2003.
- P/E ratio 1993-2003 increased only marginally
- Makes sense that increased P/E would spill over to exec comp via stock options
- Time periods matter a lot

The Famous Gabaix-Landier Model

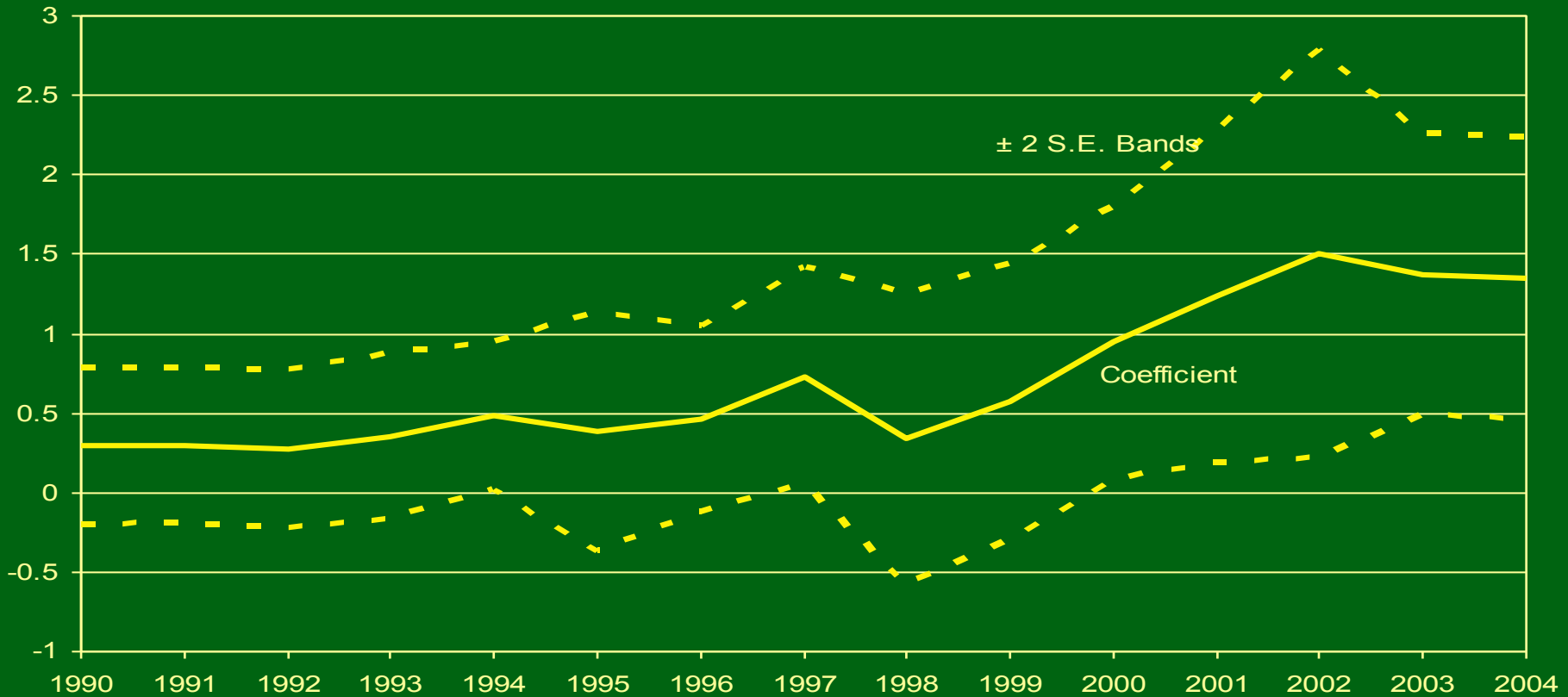
- Basic result: Elasticity of CEO pay to market cap is always and everywhere 1.0. Sixfold increase of both 1980-2003.
 - Their model is not just empirical but theoretical: superstar effect in which a small differential in CEO talent generates huge pay differences

Flaws in the Gabaix Evidence

- 1970-2000, exec compensation increased by a factor of 22 while market cap increased by a factor of about 8.
 - This is consistent with Bebchuk-Grinstein
- Frydman-Saks go back to 1936 and overturn all of G-L's results
 - Cross-section elasticity of about 0.3
 - Time-series elasticity varies wildly from 0.16 in 1946-75 vs. 2.65 in 1976-2005
- We conclude that something else is pushing up CEO pay relative to market cap

Replicating the G-L Result with Rolling 20-yr Regressions, 1970-2005

Figure 5. 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.

Summary: G-L Unitary Elasticity is not supported for any time period

- Two Possible Conclusions from Lack of Stability of CEO to Market Cap Relationship over Time
 - (1) There may be no connection
 - (2) There is a connection, but their model is wrong and yields the wrong elasticity

What's Wrong with the G-L Model

- Particular model structure of G-L implies that as firms grow in size, they will be able to afford a more talented CEO
- Increasing returns in model implying that all firms will merge into a single firm under a single CEO.
- Stock option literature – firms want to reward performance, so why do they reward *nominal* stock price appreciation compared to *relative* appreciation vs. peer firms
- Why do firms choose option grants which are less visible and “hide” CEO pay?

Firm-Level Models of CEO Pay

- Classic principal-agent model in which shareholders control directors and hence firms was overturned by Berle-Means (1932) and RA Gordon (1945)
- Instead, managers control boards and stockholders
- Bebchuk-Fried alternative hypothesis that CEOs have control over their own pay subject only to an “outrage” constraint

Bebchuk-Fried Evidence

- CEOs often sell their options as soon as they are vested, eliminating any incentive effects
- Option incentives reward execs for aggregate market and macro events, not just their own performance in their firm
- Firms work hard to disguise incentive pay
 - Public statements ignore deferred compensation
 - Ignore perks, retirement medical care and others

Overall, the CEO Debate Raises Many Issues

- Was Increased Use of Stock Options in 1990s due to Pay-Performance Incentives or Desire to Disguise Compensation?
- How Does Managerial Control over Stockholders Square with the Efficient Markets Hypothesis?
- Where do Accounting Irregularities and Stock Option Back-dating Fit in?

Conclusion on Inequality at the Top

- SBTC is relevant not only to steady rise of 90-50 ratio but also to skewness at the very top
- Electronic media have increased rewards to sports and entertainment superstars
- Technology has clearly increased trade volumes on Wall St by an order of magnitude and made possible very high incomes there

Why Distinguish Sources of High Incomes?

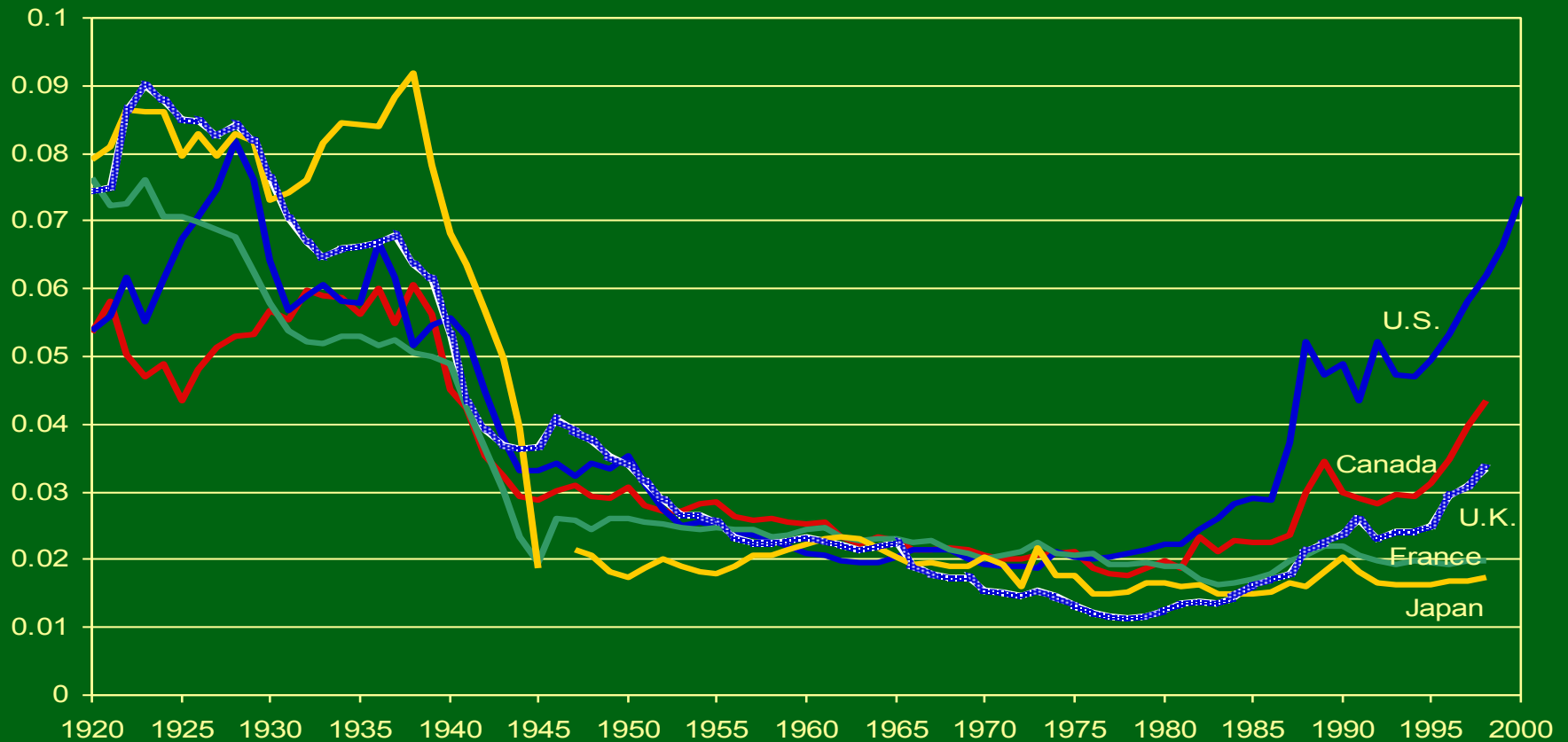
- Back to basics: superstars are paid by the market, CEOs paid by each other through interlocking compensation committees
- Arbitrary component, amply documented by backdating of stock options
- The new vocabulary, e.g., “repricing” and “spring loading” and “exercise backdating”

Consumption Inequality

- Studies Based on CEX, with two sources of data, interview and diary
- CEX numbers are inconsistent, interview vs. diary vs. NIPA data on consumption
- We conclude that the literature on consumption inequality is not interesting because the data are so poor

International Comparison: the top 1%

Figure 6. Share of top 1 percent in Total Income (Labor, Business, and Capital Income, excluding Capital Gains), for U. S., U. K., Canada, France, and Japan, 1920-2000



Why the International Differences?

- Institutional: America Has a Different Economic System?
 - This ignores vast differences in the evolution of inequality across OECD outside the US
- Institutional Elements: Privatization in UK, “consensus” model in NL, IR, GE
- GE union reps on boards of directors restrained management excesses

Our Blend of Explanations

- Institutions, including the above plus much earlier US adoption of stock options
 - Institutions and regulations matter, stock options were illegal in Japan until 1997
- But the market also matters:
 - Given US early adoption of stock options, rising P/E ratios in 1990s spilled over to exec comp