

# **Inequality and Institutions in 20<sup>th</sup> Century America**

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# Inequality and Institutions in 20<sup>th</sup> Century America

## ABSTRACT

We provide a comprehensive view of widening income inequality in the United States contrasting conditions since 1980 with those in earlier postwar years. We argue that the income distribution in each period was strongly shaped by a set of economic institutions. The early postwar years were dominated by unions, a negotiating framework set in the *Treaty of Detroit*, progressive taxes, and a high minimum wage – all parts of a general government effort to broadly distribute the gains from growth. More recent years have been characterized by reversals in all these dimensions in an institutional pattern known as the *Washington Consensus*. Other explanations for income disparities including skill-biased technical change and international trade are seen as factors operating within this broader institutional story.

Key words: Income inequality, Institutions, Treaty of Detroit, Washington Consensus

JEL Codes: J31, J53, N32

## **Inequality and Institutions in 20<sup>th</sup> Century America**

“A rising tide lifts all the boats”

John F. Kennedy,  
October 15, 1960

“Simultaneous and identical actions of United States Steel and other leading steel corporations, increasing steel prices by some 6 dollars a ton, constitute a wholly unjustifiable and irresponsible defiance of the public interest.”

John F. Kennedy  
April 11, 1962

### I. Introduction

A central feature of post-World War II America was mass upward mobility: individuals seeing sharply rising incomes through much of their careers and each generation living better than the last. The engine of that mobility – John Kennedy’s rising tide – was increased labor productivity.

It therefore is problematic that recent productivity gains have not significantly raised incomes for most American workers.<sup>2</sup> In the quarter century between 1980 and 2005, business sector productivity increased by 71 percent. Over the same quarter century, median weekly earnings of full-time workers rose from \$613 to \$705, a gain of only 14 percent (figures in 2000 dollars<sup>3</sup>). Median weekly compensation - earnings plus estimated fringe benefits - rose from \$736 to \$876, a gain of 19 percent.<sup>4</sup>

Since productivity growth expands total income, slow income growth for the average worker implies faster income growth elsewhere in the distribution. In the U.S. case, growth

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<sup>2</sup> See for example, Dew-Becker and Gordon (2005), Krugman (2006), Pearlstein (2006, a, b), and Tritch (2006),

<sup>3</sup> To compare earnings and productivity on a consistent basis, earnings and compensation are adjusted using the GDP deflator.

<sup>4</sup> Detailed analysis of this period shows that college-educated women are the only large labor force group for whom median compensation grew in line with labor productivity (See Figure 3, below).

occurred at the very top.<sup>5</sup> Thomas Piketty and Emmanuel Saez estimate that the share of gross personal income claimed by top 1 percent of tax filing units – about 1.4 million returns – rose from 8.2 percent in 1980 to 17.4 percent in 2005. Among tax returns that report positive wage and salary income, the share of wages and salaries claimed by top 1 percent rose from 6.4 percent in 1980 to 11.6 percent in 2005. These data imply that fully half of the gain in pre-tax, pre-transfer income from 1980 to 2005 went to the top one percent of taxpayers.<sup>6</sup>

Many economists attribute the average worker's declining bargaining power to skill-biased technical change: technology, augmented by globalization, which heavily favors better educated workers. In this explanation, the broad distribution of productivity gains during the Golden Age is often assumed to be a free market outcome that can be restored by creating a more educated workforce. We argue instead that the Golden Age relied on market outcomes strongly moderated by institutional factors. Following the literature on economic growth that emphasizes the role of institutions in economic outcomes, we argue that institutions and norms affect the distribution of economic rewards as well as their aggregate size.

Our argument leads to an explanation of earnings levels and inequality in which skill-biased technical change, globalization and related factors function within an institutional framework. In our interpretation, the recent impacts of technology and trade have been amplified by the collapse of the institutions of the post-war years, a collapse which arose because economic forces led to a shift in the political environment over the 1970s and 1980s. If our interpretation is correct, no rebalancing of the labor force can restore a more equal distribution of productivity gains without government intervention and changes in private sector behavior.

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<sup>5</sup> Slow income growth for the average worker can also mean faster growth of capital income. Labor's share of income was unusually high in 1980, and the share of capital income has grown. The rise in the share of top incomes nevertheless is largely the result of rising wage and entrepreneurial income.

<sup>6</sup> See Piketty and Saez (2003) and the updating of their figures to 2005 on Emmanuel Saez' website <http://elsa.berkeley.edu/~saez/> (URL), particularly Tables A0, A1.

We combine data and history in a way that permits telling a more complete story including the likely origins of institutional shifts. By emphasizing the interplay among productivity, inequality, and the earnings growth of average workers we are also better able to describe the impact of current trends on economic life. We call the post-World War II institutional arrangements the *Treaty of Detroit*, after the most famous labor–management agreement of that period. This agreement was replaced in the 1980s and surrounding years by another set of institutional arrangements we call the *Washington Consensus*.<sup>7</sup> As we will describe, the decisions to strengthen or to abandon these institutions were made by many people in complex economic and political settings.

We develop this argument in the sections that follow. Section II presents the underlying data that show stagnating real wages even for well educated men. Section III describes the institutional arrangements that originated in the Great Depression and helped to distribute productivity gains broadly from 1947 to 1973. Section IV describes the way in which the post-1973 productivity slowdown and associated stagflation ultimately led to the arrangements’ collapse, to be replaced by institutions that made the labor market particularly vulnerable to extreme effects of technical change and trade – a vulnerability that is not as evident in most other industrialized countries. Section V provides evidence that connects our story and the wage data. Section VI concludes by considering the implications of our story for policy.

## II. Evidence of Stagnating Wages

To focus our historical discussion, we construct the following ratio:

$$(1) \quad \frac{\text{Median Annual Compensation for Full-Time Workers}_T}{\text{Annualized Value of Output per Hour in the Business Sector}_T}$$

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<sup>7</sup> This term normally is used for LDCs, but the spirit of this concept applies well to the changing institutions within the United States. We use the term here to refer to the microeconomic policies of deregulation and privatization of the consensus, not the macroeconomic policies of fiscal discipline and stable exchange rates. See Williamson, 1990, pp. 7-24.

The numerator of (1) is the sum of median annual earnings of full-time workers and the value of fringe benefits estimated from the National Income and Product Accounts.<sup>8</sup> The denominator of (1) is Business Sector Productivity expressed as an annual dollar amount. In each year, both figures are in nominal dollars. We can think of (1) as a bargaining power index (BPI), the share of total output per worker that the median full-time worker captures in compensation.<sup>9</sup>

Figure 1 displays this Bargaining Power Index for the last from 1950-2005.<sup>10</sup> For purposes of comparison, Figure (1) also displays the Piketty-Saez estimate of the 99.5th income percentile on federal tax returns<sup>11</sup> – the median income of the top 1 percent of reported incomes. also normalized by Business Sector Productivity.

Figure 1 summarizes fifty-five years of economic history. In the “Golden Age” of 1947-73, labor productivity and median family income each roughly doubled. The Golden Age is illustrated in Figure 1 by the relatively steady BPI. The median compensation of full-time workers (the numerator) and labor productivity (the denominator) grew at the same rate from 1950 to the late 1970s. Simultaneously, income equality increased as very high incomes (illustrated by the 99.5th percentile) grew more slowly than labor productivity.

In the 1970s stagflation, median compensation of full-time workers began to lag behind productivity growth, a trend that accelerated after 1980. In Figure 1, the lag is illustrated by the BPI declining from .6 in 1980 to .53 in 1990 and to .43 in 2005. This declining bargaining power

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<sup>8</sup> More precisely, we inflate the median weekly earnings of all full-time workers (35 or more hours per week) by the ratio of Supplements to Wages and Salaries to Wages and Salaries taken from the National Income and Product Accounts.

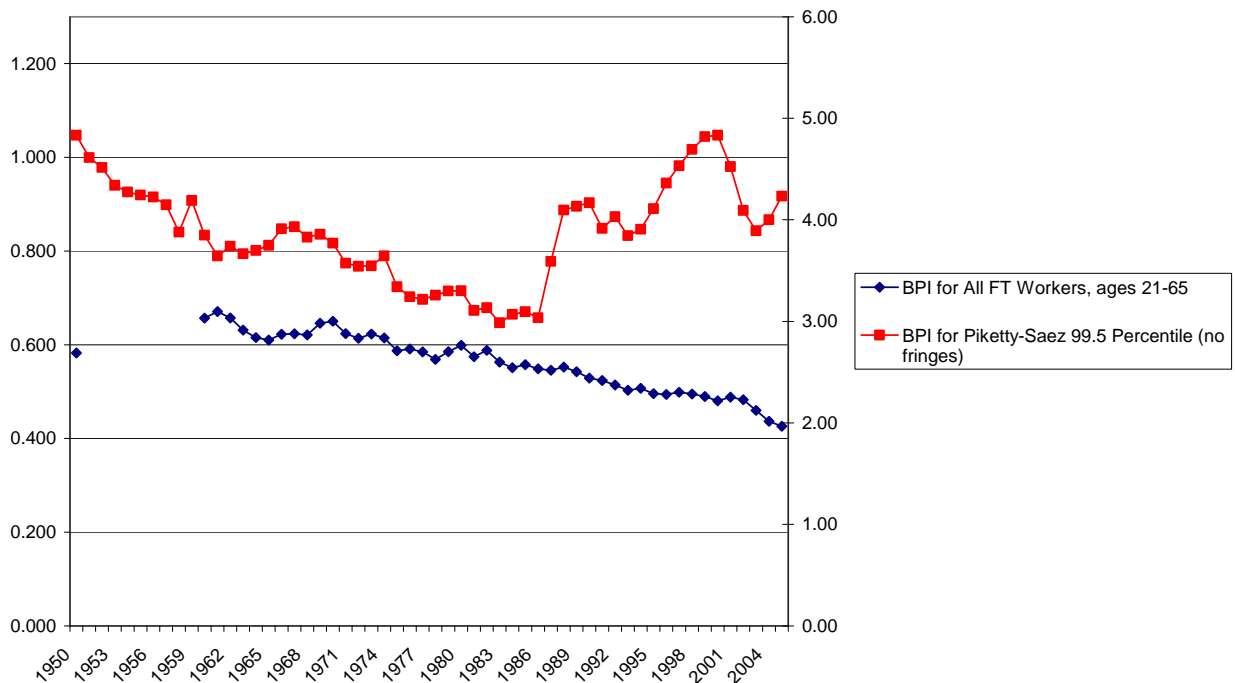
<sup>9</sup> The description is not quite accurate since focusing on output per worker in the Business Sector excludes the value of government output due to difficulties in measuring output.

<sup>10</sup> Data come from authors’ tabulations of the 1950 and 1960 Decennial Census and Current Population Survey micro data sets for 1961 and 1963 onward. Data is missing for 1951-59 because Current Population Survey data do not exist in machine readable form for these years and published summaries of the data do not report full time workers separately.

<sup>11</sup> This income measure excludes capital gains.

of the typical full-time worker is a useful way to describe why significant productivity growth since 1980 has translated into weak growth in earnings and compensation. Very high incomes also lagged productivity growth through the 1970s and early 1980s. But beginning in 1986, very high incomes began to increase rapidly and have outstripped productivity growth through the present.

**Figure 1**  
**Bargaining Power Indices for the Median Full-Time Worker**  
**and for the Piketty-Saez 99.5th Percentile Income (Right Axis)**



Source: See text.

For over a decade, the economist’s primary explanation for income inequality has been skill-biased technical change.<sup>12</sup> While the explanation has been refined over time, its core is

<sup>12</sup> See Levy and Murnane (1992) for a history of how earnings inequality became a prominent issue in labor economics.

unchanged.<sup>13</sup> Technology, perhaps augmented by international trade, is shifting demand toward more skilled workers faster than the supply of skilled workers is increasing. This explanation of earnings inequality has resonated strongly with the public as well as public policy. Educational improvement has been a central policy focus at all levels of government. Equally important, many government officials describe educational differences as the central driver of inequality, as in the August 1, 2006 remarks of Treasury Secretary Henry M. Paulson:

.... we must also recognize that, as our economy grows, market forces work to provide the greatest rewards to those with the needed skills in the growth areas. This means that those workers with less education and fewer skills will realize fewer rewards and have fewer opportunities to advance. In 2004, workers with a bachelor's degree earned almost \$23,000 more per year, on average, than workers with a high school degree only. This gap has grown more than 60 percent since 1975.<sup>14</sup>

This view is echoed in the recent book by Goldin and Katz (2008). They argue that inequality is a race between education and technology, citing evidence from Lemieux (2006a) that the returns to education have increased in recent years, particularly for college education. They define inequality more narrowly than we do, however. Goldin and Katz focus on the divergence of earnings between the tenth and ninetieth percentiles of wages and salaries as reported in the census. We are concerned also about the rising incomes of people at the top of the income distribution, whose incomes are not captured in census data on wages and salaries. This is why we relate median wages, not to other wage income, but to the growth of per capita income.

Our broader measure calls for a more compressive view than previous papers. We do not challenge the existence of technology's and trade's effects on labor demand (Card and DiNardo, 2002), or the papers finding relationships between inequality and measurable institutional

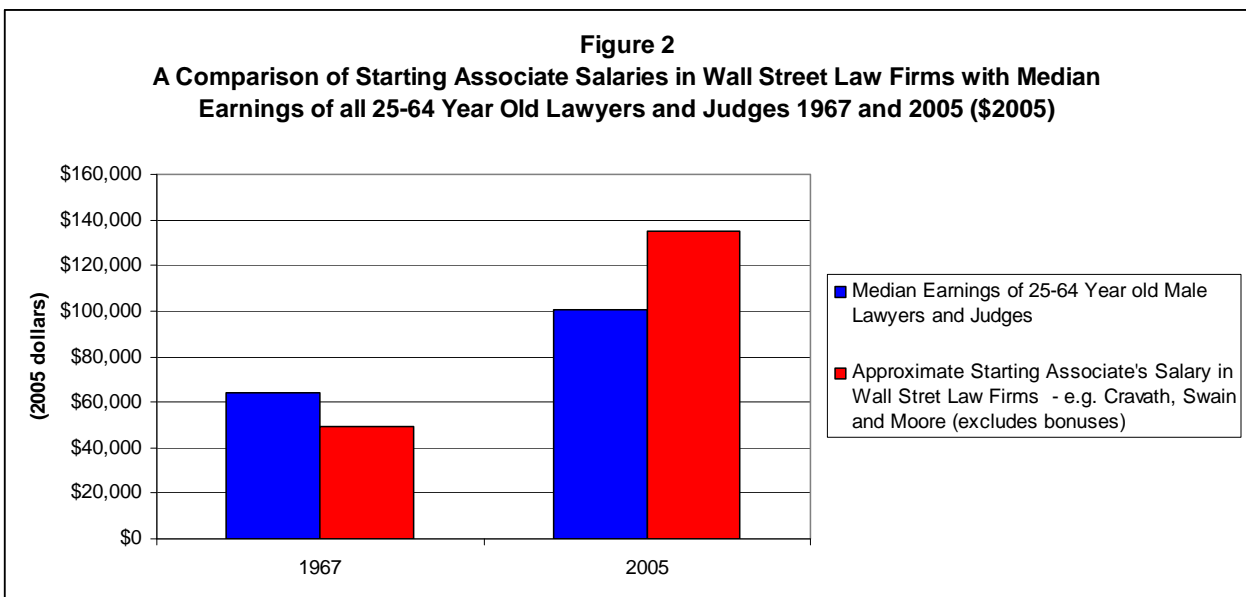
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<sup>13</sup> In one refinement, technology is now assumed to substitute for mid-skilled workers rather than the lowest skilled workers (Autor, Levy and Murnane 2003, Autor Katz and Kearny, 2006). In a second refinement, the steady growth of earnings inequality among observationally similar workers in the Current Population Survey was first described as measuring returns to unobserved dimensions of skill (Juhn, Murphy and Pierce, 1993). It is now identified with increasing year-to-year earnings volatility (Gottschalk and Moffitt, 1994) or as an artifact of particular data sets (Lemieux, 2006b)

<sup>14</sup> <http://www.treasury.gov/press/releases/hp41.htm>. The remarks were delivered at Columbia University.

variables including the rate of unionization, the minimum wage, and tax policy (e.g. Autor, Katz and Kearny, 2005; Bound and Johnson, 1992; DiNardo, Fortin and Lemieux, 1996; Feenberg and Poterba, 1993; Gordon and Slemrod 1998; Lee 1999; Reynolds 2006; Saez 2004).<sup>15</sup> Instead, we argue that all of these specific factors are embedded in a larger institutional story hinted at in the second quote from John Kennedy that began this paper.

We argue that many aspects of inequality are not revealed in a comparison of census data on wages and salaries. A case in point is the rapid increase in salaries associated with the financial sector. Figure 2 displays one such increase based on the salaries of beginning associates in Wall Street law firms. In 1967, a starting associate at Cravath, Swain and Moore earned about \$49,500 in 2005 dollars (Galanter and Palay, 1991, p. 24). This salary, which excludes bonuses, was 24 percent lower than median earnings reported in the CPS for all U.S. male lawyers and judges, ages 25-64, a result one would expect given the associates were beginning their careers. In 2005, a starting associate at Cravath earned about \$135,000, excluding bonuses, a salary 35 percent *more* than U.S. median earnings for all male lawyers and judges.



Sources: Galanter and Palay, 1991, p. 24; Marin Levy personal communication, Current Population Survey.

<sup>15</sup> Other authors have focused on historical narrative (e.g. Katz and Lipsky, 1998; Osterman, 1999).

The salaries of Wall Street lawyers, from associate to partner, often are described as winner-take-all salaries: an extreme form of skill-based demand. In fact, Alfred Marshall used lawyers as an example when he first described winner-take-all markets in 1890s England.<sup>16</sup> The question is why such winner-take-all salaries were far less common in 1950s and 1960s America than they are today.

Given the example of the lawyers, it is reasonable to reconsider the role of education by looking more closely at the demand for the average (median) man or woman whose education stopped with a bachelor's degree – hereafter, BA's. The common understanding of skill-biased technical change suggests demand for such workers should be increasing. But as more people attend college (and more college graduates go to graduate school), it is plausible that today's median BA is “less skilled” than the BA of 10 or 20 years ago. Similarly, as technical change evolves, substitution possibilities may extend beyond high school graduates to some groups of college graduates. Given these opposing forces, it is reasonable to ask whether the compensation of the “median” BA has kept pace with the growth of labor productivity.

Answering this question requires two refinements. First, even if economy-wide productivity is constant, an individual's compensation typically increases with age and experience, and the age of the median BA has increased over time.<sup>17</sup> To avoid the spurious effect of age on compensation, we group BA's by age (and, for similar reasons, by gender). Second, the

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<sup>16</sup> Marshall (1947 [1920], Book VI, Chapter VII, paragraph 43) wrote: “It is the (general growth of wealth), almost alone, that enables some barristers to command very high fees; for a rich client whose reputation, or fortune, or both, are at stake will scarcely count any price too high to secure the services of the best man he can get.” Such markets often arise in the provision of a complex high stakes service that must be done right the first time – a legal defense, a delicate surgery, a financial merger, the performance of a professional athlete – where small differences in skills that cannot be taught can have big consequences. The pay of virtually all partners in Wall Street law firms fall into the top 1 percent of reported incomes on tax returns which began in 2005 at \$310,000 (the figure excludes capital gains).

<sup>17</sup> In an economy without productivity growth, the typical worker still earns more at age 35 than at age 25 but he earns no more than a 35 year-old worker had earned twenty or thirty years earlier. When a worker benefits from experience premiums and economy-wide productivity growth, individual wage gains are larger and each generation earns more than previous generations. See Frank and Cook (1995) for more discussion.

standard measure of Business Sector Productivity also includes potentially spurious age and education effects. Since 1950, the labor force has become more educated and experienced and this changing workforce composition has increased productivity growth above what it otherwise would have been. If “compensation-growing-faster-than-productivity” is to have a consistent meaning over time, it is necessary to remove labor force composition effects from the annual rate of productivity growth.<sup>18</sup>

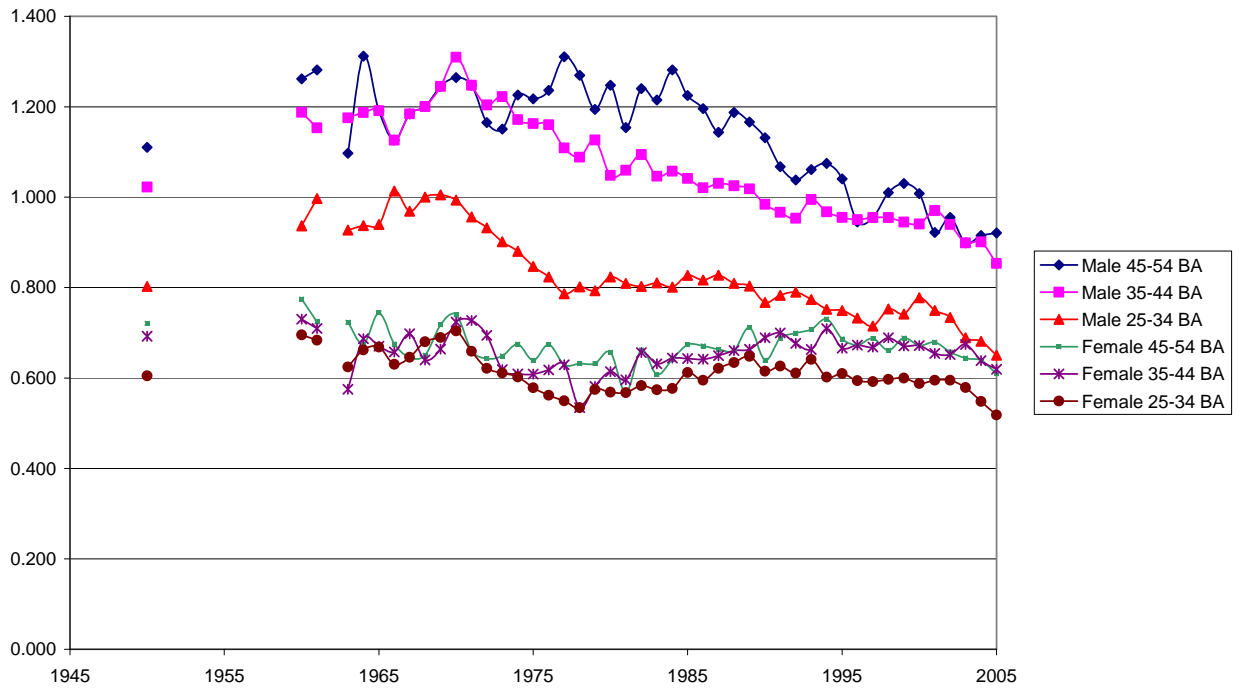
Figure 3 displays the BPI for six groups of workers: male and female BA’s, ages 25-34, 35-44 and 45-54. In each case, calculations are similar to Equation 1 except that the numerator is now based on median compensation of a particular group of full-time workers – e.g. 35-44 year-old female BA’s – and Business Sector Productivity in the denominator has been adjusted for labor force composition effects. Figure 4 displays similar information for men and women whose education stopped at high school.<sup>19</sup>

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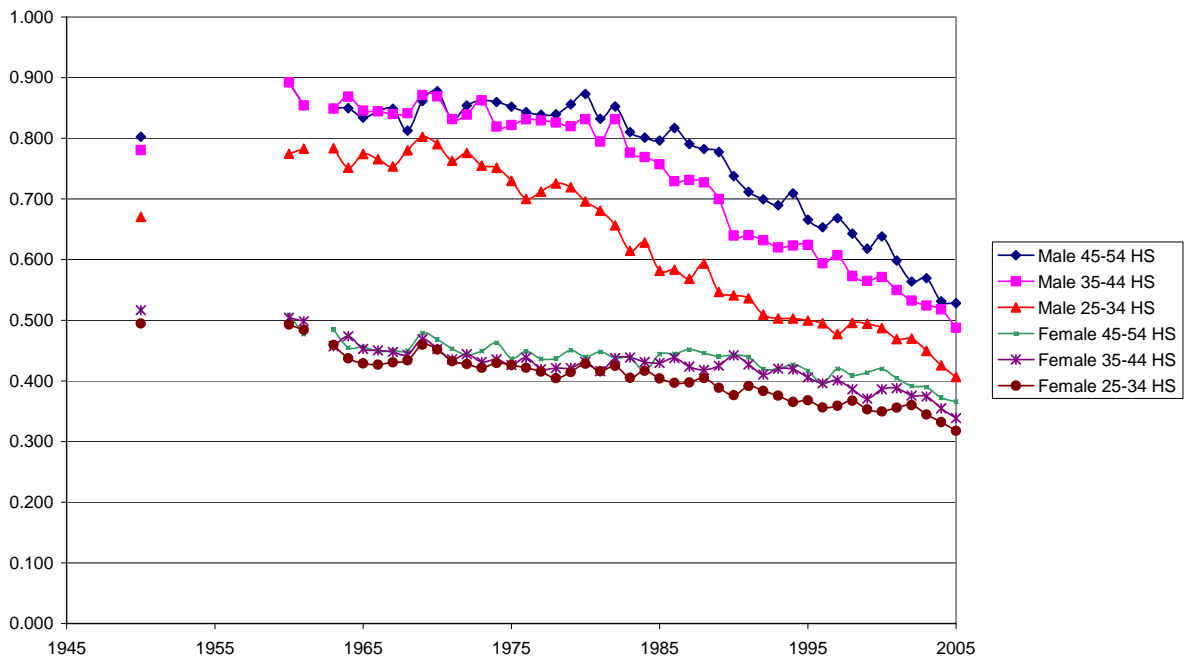
<sup>18</sup> We thank Larry Katz for this point. Labor composition effects on productivity were taken from "Changes in the Composition of Labor for BLS Multifactor Productivity Measures, 2005" Bureau of Labor Statistics, March 23, 2007 <http://www.bls.gov/mfp/mprlabor.pdf>, Table 3. We thank Dan Sichel for guidance on using these data.

<sup>19</sup> CPS data do not allow distinguishing persons with a high school diploma and persons with a General Equivalency Degrees (GED).

**Figure 3**  
**Bargaining Power Indices for Male and Female BA's,**  
**ages 25-34, 35-44 and 45-54**



**Figure 4**  
**Bargaining Power Indices for Male and Female HS Graduates,**  
**ages 25-34, 35-44 and 45-54**



Source See Text.

The central feature of Figures 3 and 4 is the difference in trends between men and women. For all groups of men – both BA’s and high school graduates - the median worker’s compensation grows roughly in line with productivity until some date between 1970 and 1980. After that date (which varies by group) the median worker’s compensation lags increasingly behind productivity growth.<sup>20</sup> For all groups of women, the median worker’s compensation tracks productivity growth more closely through the entire 55 years of data. In our terms, the post-1980 partial convergence of men’s and women’s compensation arose because the average woman’s compensation claimed a roughly constant share of output per worker while the average man’s compensation claimed a declining share.<sup>21</sup>

To put these figures in perspective, consider a standard analysis of earnings inequality that focuses on the relative earnings of college and high school graduates:

$$(2) \quad \frac{\text{Median Earnings of 35-44 Yr.-Old Male BA's}}{\text{Median Earnings of 35-44 Yr.-Old Male High School Graduates.}}$$

This ratio (2) is exactly equivalent to the ratio of the corresponding BPI’s in Figures 3 and 4:

$$(3) \quad \frac{\text{BPI for 35-44 Yr.-Old Male BA's}}{\text{BPI for 35-44 Yr.-Old Male HS Graduates}}^{22}$$

This ratio (3) is separately graphed for men and women in Figure 5 where it tells the familiar education/earnings inequality story – the ratio of college-to-high school earnings narrows in the

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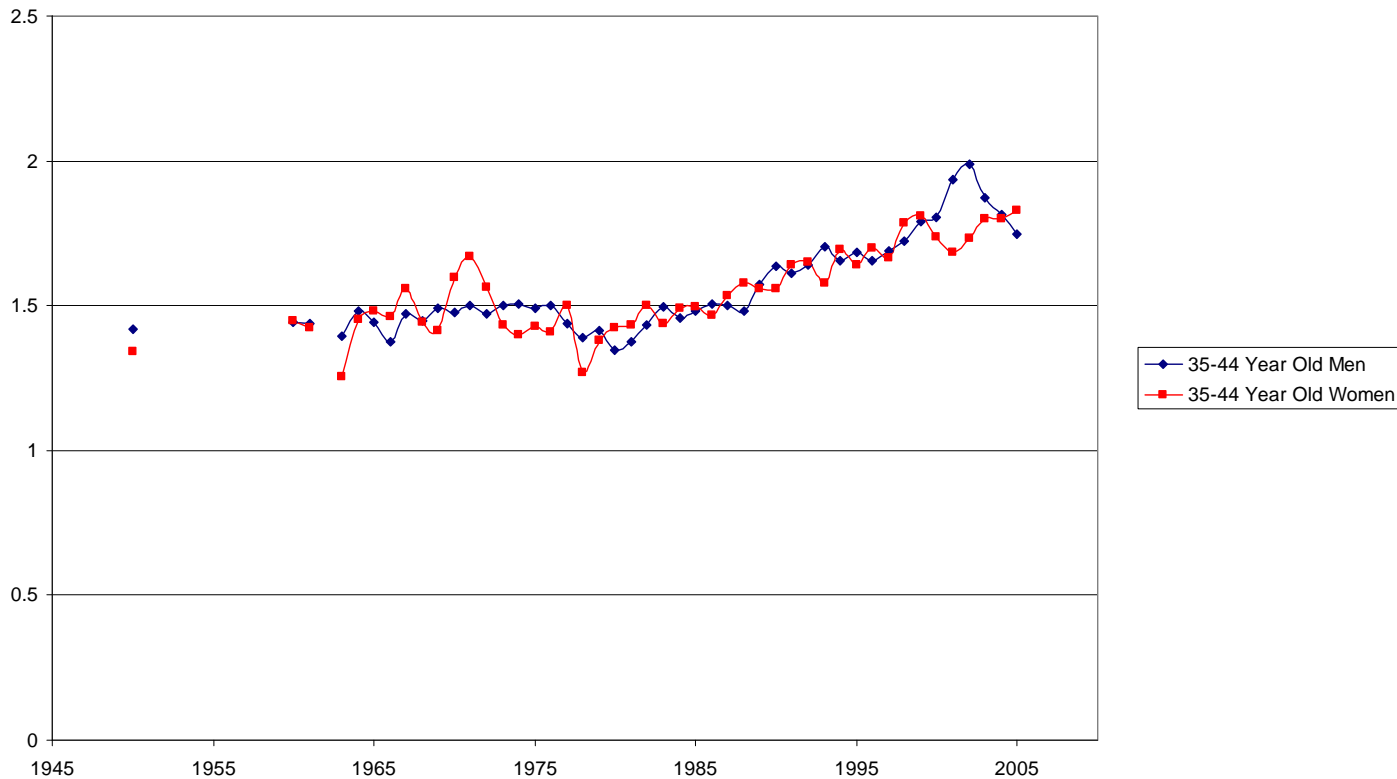
<sup>20</sup> A caveat to this description is the absence of data CPS data on full time workers from 1951-1959. Other data – e.g. the way in which median family income tracked productivity growth over this decade – suggests that individual compensation must have tracked productivity growth as well.

<sup>21</sup> It is beyond this paper’s scope to examine why women’s compensation tracked productivity better than men’s, but possible factors include women’s increased work experience and the decline in occupational segregation.

<sup>22</sup> The ratios (2) and (3) are equivalent because, as noted earlier, we construct BPI’s by multiplying both college and high school incomes by the same fringe benefit adjustment and divide the resulting compensation by the same economy-wide average productivity figure.

1970s and then increases substantially through the late 1990s before closing slightly in recent years.

**Figure 5**  
**BA/High School Earnings Premium for 35-44 Year-Old Male and Female Full-Time Workers**



Source: Authors' Tabulations of Current Population Survey.

When Figures 3-5 are taken together they show that the college-high school premium is only one part of the technology-trade/skill story. The story's second part asks whether technology and trade still permit the compensation of the average college graduate to grow in line with productivity – i.e., is the average bachelor's degree still sufficient to catch the rising tide. In the case of men, the answer is no. Something over three-quarters of the labor force currently face insufficient demand to keep compensation growing in line with economy-wide productivity.

Who received the rest of the gain? The data are not good at the top of the income distribution, but data on Saez's web site enable a rough calculation to be made. We compare the

gain since 1980 in the average income per tax unit and the average income of the top 1 percent of tax filing units. In a random sample of 100 tax filing units, the gain in average income of the top tax filer equals fully half of the total gains of the group. This is in agreement with Saez's Table 1, which reports that the fraction of total growth captured by the top one percent from 1993 to 2006 was almost exactly 50 percent.<sup>23</sup>

We argue that while the relatively weak demand for BA's is fairly recent, it represents an old phenomenon: the periodic inability of the free market to broadly distribute the gains from productivity. In particular, the potential for this problem existed in the Golden Age but the problem was largely overcome by economic institutions and norms. The composition of the labor force was, of course, much different then. In 1940, only five percent of the labor force had a bachelor's degree. Unemployment in the Depression had been concentrated among the less educated and less skilled members of the labor force, and it was largely for these workers that the New Deal erected a new structure of institutions and norms (US Bureau of the Census, 1975, 380; Margo, 1991).

This result was a decline in income inequality that was reinforced by the controls of World War II and produced a broad distribution of productivity gains for at least another quarter century. As Piketty and Saez (2003) write:

The compression of wages during the war can be explained by the wage controls of the war economy, but how can we explain the fact that high wage earners did not recover after the wage controls were removed? This evidence cannot be immediately reconciled with explanations of the reduction of inequality based solely on technical change as in the famous Kuznets process. We think that this pattern or evolution of inequality is additional indirect evidence that nonmarket mechanisms such as labor market institutions and social norms regarding inequality may play a role in setting compensation at the top. (pp. 33-34)

We agree and in the sections that follow, we show how these non-market mechanisms distributed productivity gains broadly while limiting the extent of very high incomes—at least until the mechanisms broke down.

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<sup>23</sup> <http://elsa.berkeley.edu/~saez/TabFig2006prel.xls>.

### III. Norms, Institutions and the Golden Age.

The non-market mechanisms that shaped the postwar Golden Age had roots in the Great Depression and the New Deal. At first glance, it is surprising that norms and institutions – microeconomic policies – grew out of a macroeconomic crisis. But macroeconomic policy as we now understand it did not exist in the Great Depression—Keynes’ *General Theory* was not published until 1936.

In 1933, Roosevelt’s first year in office, unemployment stood at nearly 25% and microeconomic policies were apparently the only tools at hand. Lacking a theory of aggregate demand, Roosevelt’s New Deal policies focused on other goals – in particular trying to stop what the administration saw as ruinous price deflation (Eggertsson, 2006).

This theory was implicit in the first major piece of New Deal legislation, the 1933 National Industrial Recovery Act (NIRA) that gave the government control over employer contracts, and encouraged labor and industry to negotiate industry codes that shortened work hours, increased wages significantly, and raised prices. The NIRA also gave workers the right to organize and bargain collectively with their employers, and this was a bone of contention. Roosevelt supported union organizing, but Johnson, charged with administering the NIRA, was eager to get industry codes with or without collective bargaining. Roosevelt formed the National Labor Board led by Senator Wagner that mediated the resulting conflicts. The confusing implementation of the NIRA made both sides tense and combative (Gross, 1974).

Congress passed the National Labor Relations Act (NLRA)—the “Wagner Act”—in 1935, endorsing the rights of labor and limiting the means employers could use to combat unions and transforming the informal National Labor Board into the legislatively directed National Labor Relations Board (NLRB). The Supreme Court outlawed the NIRA in 1935, citing it as an

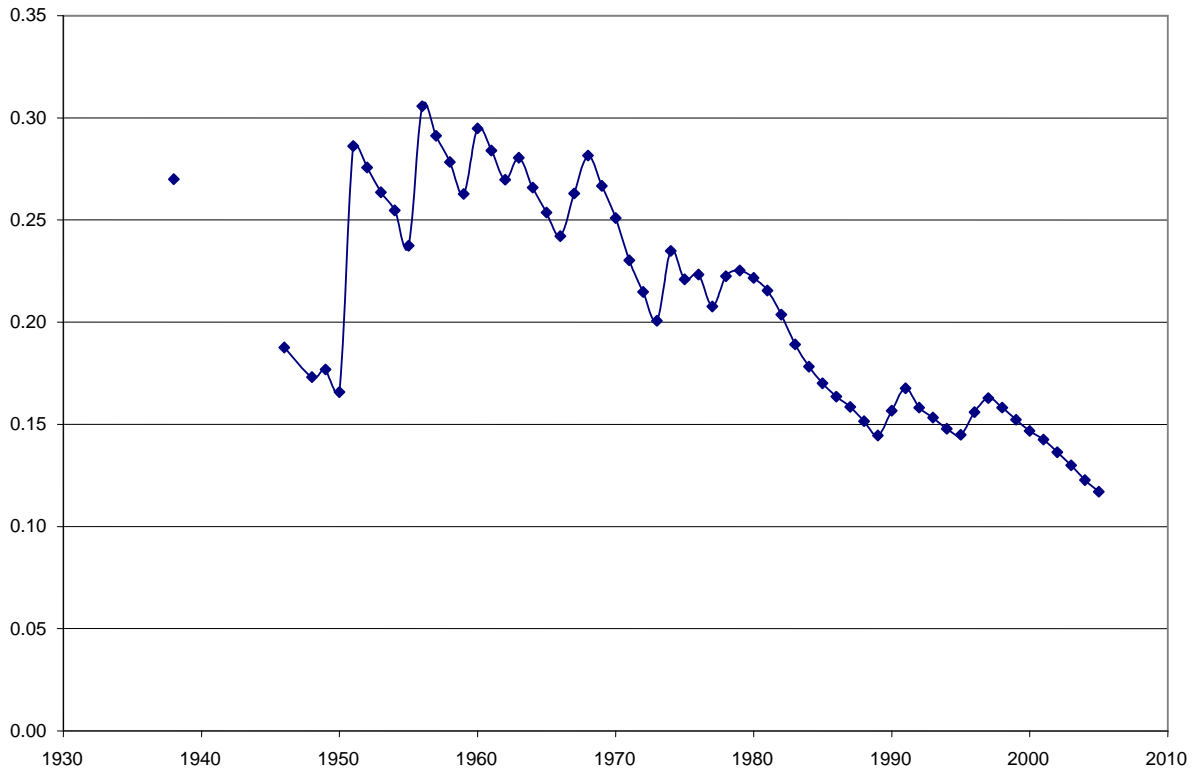
overreach of federal power into state interests and probably easing passage of the Wagner Act. Unions grew dramatically under the NLRA, but the post-war system of collective bargaining had its origins as much in workers' reactions to the unemployment of the Depression as in Congressional actions (Freeman 1998).

The minimum wage was introduced in 1938, and was set to raise wages significantly in concert with other supports of unions and collective bargaining. We put the first minimum wage, \$.25/hour, and subsequent values in perspective by comparing them to average output per worker in the economy (as we did with the median wage earlier):

$$(4) \quad \frac{\text{Annual Earnings at the Minimum Wage}_T}{\text{Annualized Value of Output per Hour in the Business Sector}_T}$$

In 1938, annual earnings at the first minimum wage represented 27 percent of the economy's average output per worker. Between 1947 and 2005, the value of the minimum wage would exceed that percentage in only four other years (Figure 6) and stands at something less than half that percentage today.

**Figure 6**  
**Ratio of Annual Earnings at the Minimum Wage to**  
**Economy-Wide Labor Productivity**



Source: Minimum Wage data from U.S. Department of Labor:  
<http://www.dol.gov/esa/minwage/chart.htm>.

New Deal policy also raised taxes on very high incomes. On the eve of Roosevelt’s election, Hoover raised the top bracket rate sharply from 25% to 63% in an effort to reduce the federal deficit under the impression that the Depression was over. In 1936, after the economy began to recover more robustly, Roosevelt raised the top bracket rate further to 79%. This additional increment was part of a general tax rise that included a tax on undistributed profits, based on the presumption that the economy had progressed into a normal recovery—a presumption speedily abandoned in the recession that followed hard on the heels of the higher taxes (Rosen, 2005). Nonetheless, Roosevelt’s clear goal was to compress the income distribution using unions and the minimum wage to raise low incomes while using tax rates and moral suasion to hold down incomes at the top. While it is dangerous to impute too much intellectual coherence

to the New Deal, the increasing regulation of industry and utilities in the 1930s can be seen as creating oligopoly rents that would provide a basis for union bargaining. Among many other innovative programs, the Federal Housing Authority helped workers buy houses, Social Security added to workers' retirement income, and enhanced anti-trust enforcement sought to protect workers from monopoly pricing.

While New Deal policies were strongly pro-organized labor, the policies could not provide the outcome labor wanted most – an economy growing rapidly enough to bring back full employment. In 1937, five years into the New Deal, the unemployment rate had fallen only to 14.3 percent. Labor-business relations remained contentious and were marked by continued frequent strikes.

When the United States entered World War II, mobilization and production became the focus of the economy. The war induced a labor shortage, ending Great-Depression unemployment, and the principles of efficient manufacturing became ingrained into America's economic philosophy. Stability became the government's goal, and bargaining solidity was critical to achieving uninterrupted production. Even though arbitration and administrative dispute resolution demonstrated the principles of uninterrupted production, workers feared being left out of wartime prosperity, and threats of labor action remained high. AFL-CIO action from 1939 to 1941 and wildcat strikes later in the war briefly interrupted wartime production and impacted munitions production. The military saw unions as detrimental to the war effort, and they took several initiatives to undercut union power (Koistinen, 2004).

The government created the National Defense Mediation Board in 1941 to settle labor disputes and replaced it a year later with the National War Labor Board (NWLB). The NWLB replaced the NLRB on the front lines of labor disputes for the duration of the war. NWLB initiatives achieved no-strike and no-lockout pledges from unions and companies and effectively

froze wages for the duration of the war. The agreement created an uneasy peace, with continuing tension between unions, the government, and industry, throughout the war.

The Revenue Act of 1942 taxed significant wartime earnings, but the government did not include workers' pensions and health insurance as profits, providing employers with an incentive to avoid the tax by supplementing labor benefits. The NWLB also decided that employer contributions to benefit plans should not be included as wages, further assisting labor. Industry reluctantly supported these benefits, mostly as an attempt to discourage union membership, and the wartime institutions produced a dramatic fall in the wage dispersion from 1940 to 1950 as the NWLB and other institutions homogenized wages (Goldin and Margo, 1992). The legacies of the NWLB included both the procedures forced on businesses to promote unions, including checking off union dues, and the formative experience of many people involved with the NWLB who went on to become labor-relations experts after the war (Harris, 1982, Chap. 2; Edelstein, 2000).

As the war drew to a close, many feared that the end of wartime strike controls would bring labor market disruption and the potential for a second Great Depression. Hoping to avoid this outcome, President Truman convened a three-week National Labor-Management Conference of 36 business, labor and public officials in November 1945 to discuss post-war labor relations (Harris, 1982, Chap. 4). As Katz and Lipsky (1998, p. 147) write:

Truman's notion that an elite tri-partite group could 'furnish a broad and permanent foundation for industrial peace and progress' apparently was widely shared by the press and general public.

Truman believed the government had to keep business-labor conflict within bounds for the economy to prosper. The meeting implied that business-labor relations would remain a tri-partite process even in peacetime, with government actively involved with government as the third man

in the ring.<sup>24</sup> Truman did not expect business-labor tranquility—strikes were the reaffirmation of unions’ power. Ominously, the conference did not reach agreement on many specific proposals, but Truman’s position received board support. As Eric Johnston, president of the U.S. Chamber of Commerce, affirmed:

Labor unions are woven into our economic pattern of American life, and collective bargaining is a part of the democratic process. I say recognize this fact not only with our lips but with our hearts.<sup>25</sup>

Truman retained a high top bracket income tax rate on labor income in another extension of Depression-era policy. The high top-bracket rate on labor income and an active government presence in the economy were clear signals to limit high salaries. Econometric results in a historical study of executive compensation suggest that if tax rates been at their year 2000 level for the entire sample period, the level of executive compensation would have been 35 percent higher in the 1950s and 1960s (Frydman and Saks, 2005, p. 31).

Despite Truman’s best efforts, however, the postwar transition was difficult. At the war’s end, organized labor erupted with work stoppages involving over three percent of the workforce each year between 1947 and 1949.<sup>26</sup> Business, also free from depression and war, supported the Taft-Hartley Act of 1947 which defined restrictive administrative policies to constrain unions. Although the Taft-Hartley Act clearly rolled back some union gains from the Depression and war, it fell far short of dismantling the Wagner Act and the NLRB.

It was in this context, in late 1948, that Walter Reuther and his advocates assumed control over the United Auto Workers (UAW). The relationship between the UAW and the “Big Three” automakers (Ford, GM, and Chrysler), previously plagued by turmoil, entered a new phase of negotiation. Reuther, an experienced labor leader, hoped to overhaul industrial relations in favor

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<sup>24</sup> The phrase refers to the referee in a boxing match. See, for example, Goldstein 1959.

<sup>25</sup> Erik Johnston, President’s National Labor-Management Conference, 1946, General Committee, 52. quoted in Katz and Lipsky (1988) See also, Harris (1982).

<sup>26</sup> See U.S. Bureau of Labor Statistics: <http://stats.bls.gov/news.release/wkstp.t01.htm>

of labor interests, but the postwar setting created significant obstacles for his social vision.

Workers faced price inflation while wages remained inert, and the government's division between Truman and Congress indicated the situation would not improve. Reuther also had recently survived several assassination attempts, which indicated dramatically labor's internal fissures.

Charles Wilson, the CEO of GM, was aware that inflationary pressures generated by cold-war military spending promised to be a permanent feature of the economic scene. GM had recently begun a \$3.5 billion expansion program that depended on production stability. Stress created by inflation could instigate the unions to interrupt production with a devastating strike, and Wilson thought a long-term wage concession would be a profitable exchange for guaranteed production stability (Lichtenstein, 1995).

GM's two-year proposal to the UAW included an increase in wages and two concepts intended to keep wages up over time. The first, a cost-of-living adjustment (COLA), would allow wages to be influenced by changes in the Consumer Price Index, adjusting for rising inflation. Second, a two-percent annual improvement factor (AIF) was introduced, which would increase wages every year in an attempt to allow workers to benefit from productivity gains. The UAW, in exchange, would allow management control over production and investment decisions, surrendering job assignment seniority and the right to protest reassignments. Reuther and his advisors initially opposed the plan, believing the AIF formula to be too low and the deal to be a profiteer's bribe signaling the end of overall reform. Workers needed assistance, however, and Reuther agreed to the plan and wage formulas, but "only because most of those in control of government and industry show no signs of acting in the public interest. They are enforcing a system of private planning for private profit at public expense (UAW Press Release, quoted in Lichtenstein, 1995, p. 279)." The contract was signed in May, 1948.

Labor saw wage increases and gains from productivity for the next two years. GM enjoyed smooth, increasing production, and it established a net income record for a US corporation in 1949 (Amberg, 1994). When the time period for the contract ended, the UAW and GM readily agreed to a similar plan that included several changes. A pension plan was added, initially through Ford in 1949, which had an older workforce and progressive managers (Lichtenstein, 1987). The resulting plan was presented to GM as a precedent to create industrial conformity in a process known as pattern bargaining. Ford agreed quickly, and the last of the “Big Three,” Chrysler, agreed after an expensive strike. Agreements to the pension plan ultimately spread to other industries, including rubber, Bethlehem Steel, and then U.S. Steel (Amberg, 1994). In addition to the pension plan, GM increased the COLA/AIF formulas and paid for half of a new health insurance program. The final, five-year UAW-GM agreement was named the “Treaty of Detroit” by *Fortune* magazine: “GM may have paid a billion for peace but it got a bargain. General Motors has regained control over one of the crucial management functions... long range scheduling of production, model changes, and tool and plant investment.” Wage adjustments and productivity gains became recognized as necessary and just, union membership increased, and industry reaped the profits from the Treaty of Detroit’s stability (Lichtenstein, 1995).

The Korean War’s outbreak in 1950 immediately threatened the agreement as the UAW and GM had to intervene to prevent the government from freezing wages. Inflationary adjustments during Korea were not fully reflected by the COLA formula, causing disappointment in the UAW. Other issues created by the Treaty of Detroit also caused friction, specifically the emphasis on debating national policy over local factory floor issues. The UAW shifted its focus, fighting for standardized monetary and fringe benefits while workers became frustrated over shop

terms and job assignments. The problem was exacerbated by the bureaucratization of grievance disputes, which created a backlog of complaints about daily working conditions.

Despite these problems, the Treaty of Detroit initiated a stable period of industrial relations. The use of collective bargaining spread throughout industry, and even non-union firms approximated the conditions achieved by unions in an extension of pattern bargaining. Although the strict application of this term refers to the dynamics of union negotiations in large firms, a looser version was pervasive (Chamberlain and Kuhn, 1986). The NLRA provided a regulatory framework for labor to organize a significant part of the industrial labor force.

This framework was administered by the National Labor Relations Board (NLRB). Congress explicitly rejected a partisan board composed of labor and management representatives in the NLRA and opted instead for “impartial government members.” This concept lasted only two decades, however, and President Eisenhower, the first Republican president after Roosevelt, appointed management people to the NLRB. This violation of the original intent of the board was controversial, and the seeds of future controversy were planted, although the neutrality of the board was more or less preserved (Flynn, 2000).

Unions acknowledged the exclusive right of management to determine the direction of production in return for the right to negotiate the impact of managerial decisions. Unions were crafted an elaborate set of local rules that constrained management in its allocation of jobs and bolstered the power of unions over jobs (Kochan, 1980; Weinstein and Kochan, 1995). Managers used the framework of the Treaty of Detroit to tighten their grasp on production decisions. The inclusion of supplementary unemployment benefits in production decisions in 1955 gave managers even more control over job descriptions and workplace decisions, as unions conceded these rights in exchange for direct welfare. Labor complaints had to go through paperwork, and the burden to oppose or modify change was placed on the workers (Brody, 1980).

The impact of this framework is clear in the pattern of relative wages. Eckstein and Wilson found in a study of nominal wages in the 1950s that,

Wages in a group of heavy industries, which we call the key group, move virtually identically because of the economic, political and institutional interdependence among the companies and the unions in these industries.... Wages in some other industries outside this group are largely determined by spillover effects of the key group wages and economic variables applicable to the industry (Eckstein and Wilson, 1962).

Changes in these pattern wages were determined by economic variables, according to Eckstein and Wilson, but the same forces that kept industrial wages in a stable pattern likely affected the extent of overall wage changes as well. Erickson (1996) extended the concept of pattern bargaining to include other contract provisions. He found that they also were remarkably similar at both inter- and intra-industry levels in the 1970s, although not in the 1980s as we will see. Katznelson (2005) however reminds us that this pattern of stable conditions and wages did not extend to all corners of the economy. Black workers and other minority groups were largely ignored in these negotiations.

Steadily rising wages did not eliminate labor-management conflict, but work stoppages eased modestly in the early 1960s as the Kennedy/Johnson administration stimulated the economy through a pair of tax cuts on investment and incomes. Because the tax cuts were a first application of Keynesian policy, government economists were concerned about the potential for inflation. To address this possibility, the Kennedy Council of Economic Advisors announced a set of wage-price guideposts explicitly suggesting how productivity gains should translate into wage and price decisions. Walter Heller, the first chairman of Kennedy's Council of Economic Advisors, described the policy's effect in 1966:

One cannot say exactly how much of the moderation in wages and prices in 1961-65 should be attributed to the guideposts. But one can say that their educational impact has been impressive. They have significantly advanced the rationality of the wage-price dialogue.

In *business*, the guideposts have contributed, first, to a growing recognition that rising wages are not synonymous with rising costs *per unit* of output. As long as the pay for an hour's work does not rise faster than the product of an hour's work, rising wages are consistent with stable or falling unit-labor costs. Second, they are helping lay to rest the old fallacy that "if productivity rises 3 percent and wages rise 3 percent, labor is harvesting all the fruits of productivity" Guideposts thinking makes it clear that a 3-percent rise in labor's total compensation, which is about three fifths of private GNP, still leaves a 3-percent gain on the remaining two fifths – enough to provide ample rewards to capital, as is vividly demonstrated by the double of corporate profits after taxes in the five years between the first quarters of 1961 and 1966. (Heller, 1967, p. 44, italics in the original).

The wage-price guideposts were one of a number of the government's continued interest in promoting economic norms. Another was Kennedy's 1962 public confrontation with U.S. Steel over steel price increases. The price increase came shortly after Kennedy had persuaded the United Steel Workers to accept a moderate wage settlement. Kennedy responded to the perceived betrayal with a blistering press conference – including the second quote that opened this paper – and the threat of sanctions using government procurement policy.<sup>27</sup> Ultimately, the price increases were rescinded.

This history is relevant to current debates over the interpretation of growing income share claimed by the top 1 percent of taxpayers. Feenberg and Poterba (1993) and Gordon and Slemrod (1998) have argued that this income concentration is to some extent, an artifact of tax law changes. Reynolds (2006) recently argued that *all* of the recent growth in high-end inequality is a tax law artifact. Since changes in tax laws frequently reflect changes in societal norms, a focus on tax laws alone potentially misses important parts of the story. In addition, there is little evidence to suggest that the growing concentration of income in the top 1 percent of tax filing units is an artifact of any kind. Tax rates clearly influence the year-to-year timing of increases but the underlying trends are the mirror image of an average worker who is losing ground both to capital and to the best paid members of the economy.

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<sup>27</sup> See the transcript of Kennedy's press conference on April 11, 1962: [http://www.jfklibrary.org/Historical+Resources/Archives/Reference+Desk/Press+Conferences/003POF05Pressconference30\\_04111962.htm](http://www.jfklibrary.org/Historical+Resources/Archives/Reference+Desk/Press+Conferences/003POF05Pressconference30_04111962.htm)

The 1964 tax cut (ultimately passed under Johnson) represents a small natural experiment that bears on this question. The legislation included modest reductions in the top rate for labor income at a time when a CEO receiving a radically increased paycheck risked White House criticism. That risk helps to explain why the reduced top tax rate produced no surge in either executive compensation or high incomes per se (Frydman and Saks, 2005; Saez 2005).<sup>28</sup> A related experiment occurred in 1992 when the Clinton administration's tax legislation significantly increased the top marginal rate at a time when the White House showed no inclination to criticize high incomes. Despite the increased top bracket rate, the share of income claimed by the top 1 percent of tax returns continued to rise rapidly.

While initially successful, the Kennedy-Johnson macroeconomic policies were soon overwhelmed by events. In 1965, the government began deficit-financing the Vietnam War in an economy that was already near full employment. By 1969, unemployment had fallen to 3.5 percent and consumer prices were rising at a then high 5.4 percent. In a tight labor market, debates over automation became increasingly common, as new technology fueled the power struggle between unions and management for control of decision making and the right to adapt to change (Lichtenstein, 2002).

#### IV – 1970- 2005 –Institutional Change at the End of the Golden Age

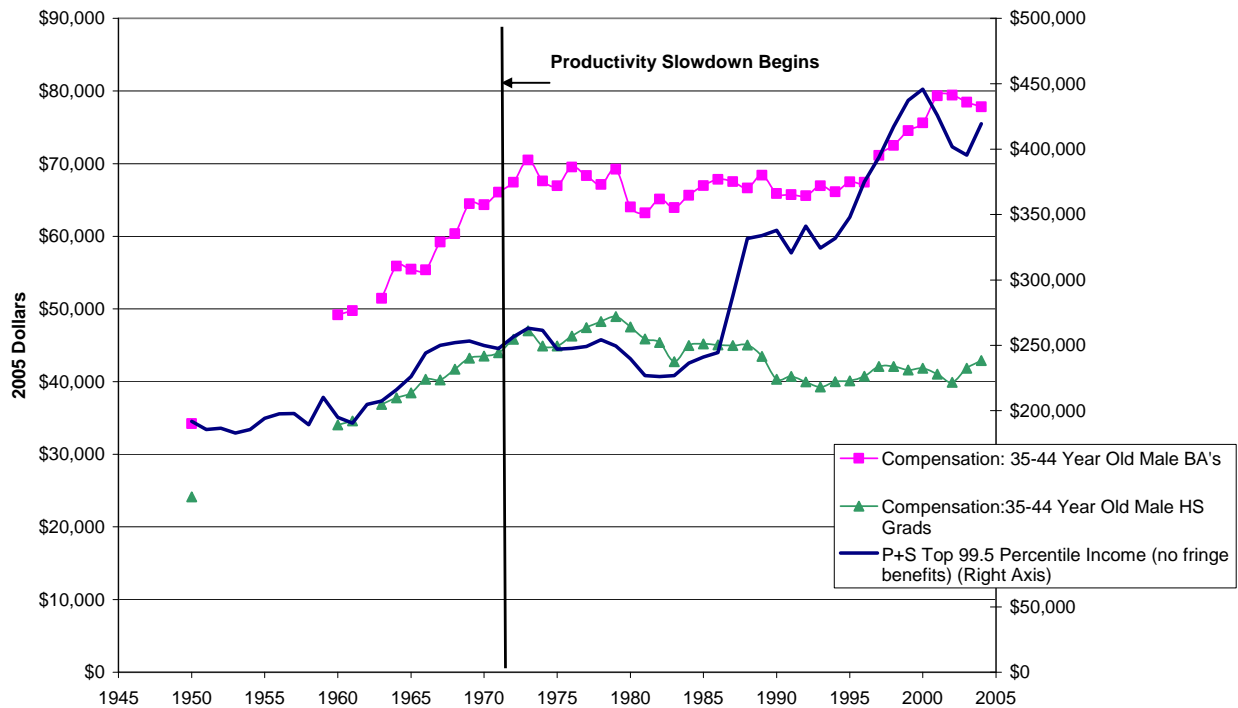
Before examining the outcome of this struggle, we review the effects of the Depression-era institutions and norms that compressed income differences. We show in Figure 7 three measures of the economy's performance measured in 2005 dollars (rather than normalized by productivity): the median compensation of 35-44 year old male high school graduates and of 35-

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<sup>28</sup> The relevant Kennedy-Johnson rate reductions were quite modest. As estimated by Piketty and Saez, the 99<sup>th</sup> percentile reported income fell at about \$24,000 dollars (in 1962 dollars). The marginal tax rate in that range dropped from 56 percent to 53 percent, a rate that was still quite high by

44 year-old male BA's<sup>29</sup>, and the Piketty-Saez estimate of the 99.5<sup>th</sup> percentile of personal income reported on tax returns, adjusted for fringe benefits and excluding capital gains. Note the uniformly rising series before the productivity slowdown of the 1970s. The median compensation of male high school graduates – the group most affected by unions and the minimum wage – increased from \$24,145 in 1950 to \$46,994 in 1973 (+94%). Consistent with our discussion of high top tax rates and norms, the 99.5<sup>th</sup> percentile income (no fringe benefit adjustment) was the slowest growing of the three measures increasing from \$191,870 to \$262.875 (+ 37%). The median compensation of the male college graduates—the group least affected by institutions—rose from \$34,235 to \$70,512 (+105%).

**Figure 7**  
**Median Compensation for 35-44 Male BA's and HS Graduates**  
**and P+S 99.5'th Percentile Income (right axis)**



Source: See Text

This broad-based income growth benefited daily economic life in three main dimensions:

<sup>29</sup> As before, compensation here includes both median earnings estimated from the *Current Population Survey* and adjustments for fringe benefits taken from the *National Income and Product Accounts*.

- *An Expanding the Middle Class.* By 1964, 44 percent of the population reported itself as middle class, up from 37 percent in 1952. The expanding middle class did not reflect significantly more equal incomes,<sup>30</sup> but rather rapid income growth in which more families could afford a single family home, one or more cars, and the other elements of a middle class lifestyle.
- *Mass Upward Mobility.* A number of studies have shown that intergenerational mobility *within* the U.S. income distribution is relatively limited (e.g. Solon 2002). But rapidly rising incomes created a mass upward mobility such that a blue collar machine operator in the early 1970s earned more in real terms than most managers had earned in 1950. Much of a generation could live better than its parents had lived even though their relative positions in the income distribution were similar.<sup>31</sup>
- *A Safety Net for Industrial Change.* In any period, losing a job and finding another can result in an immediate pay cut reflecting the lost value of firm-specific human capital. When wages were rising rapidly, a person could take a pay cut and “grow back” into their old pay level in a reasonably short time. When wages are “stagnant” recovery can take much longer strengthening perceptions of a lack of good jobs, (Uchitelle, 2006).

In periods of stagnant wages, these virtues are much harder to come by.<sup>32</sup> And by 1970-71, the economy’s declining ability to produce such benefits was becoming clear. The excessive stimulation of late 1960s – the Vietnam War deficits – led to inflationary expectations that were impervious to normal recessions and would become known as stagflation. Additional problems followed in quick succession: an inflationary supply shock in food (1972-3), another supply shock in oil (1973-4) and, most important, the collapse of productivity growth after 1973. By 1975, the unemployment rate had reached 8.5 percent, and inflation was increasing at 8.2 percent. Most real incomes had stopped rising, as shown in Figure 7. Economic problems topped the Gallup Poll’s list of the nation’s biggest problem for the first time since 1946.<sup>33</sup>

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<sup>30</sup> While the 99 ½th percentile income had grown slowly, the 95th and 90th percentile incomes grew in line with incomes of the middle of the distribution. See Piketty and Saez, op. cit.

<sup>31</sup> In the golden age, perceptions of upward mobility were enhanced because the expectations of many people had been formed in the Great Depression. See Levy (1998) for more details.

<sup>32</sup> Immigrants clearly find their jobs improved in these ways by entering the U.S. labor force. But this is an example of cross-section variation of wages and working conditions, while this paper is about time-series variation.

<sup>33</sup> See, for example, Roper Center Accession Number 0026306, May 16, 1976.

As with the Great Depression, policy makers faced stagflation with little relevant history to serve as a guide. Economic theory had followed Keynes in focusing on demand shifts, and there was no theory of the supply side that related to economic policy. Only in the mid-1970s was the concept of aggregate integrated with the standard IS-LM model. And as with the Great Depression, the resulting policy agenda was heavily microeconomic. To combat slow productivity growth, some economists began to argue for economic restructuring including removing what they saw as the rigidities of New Deal institutions: unions imposing work rules; a regulatory regime covering most of the nation's utilities, telecommunications and interstate transportation; and high marginal tax rates that they assumed reduced work effort.

Jimmy Carter argued in 1978 that, "The two most important measures the Congress can pass to prevent inflation ... (are) the airline deregulation bill ... (and) hospital cost containment legislation." He appointed Alfred E. Kahn, chairman of the Civil Aeronautics Board, to head the administration's anti-inflation program. Kahn's field was government regulation, and his plans were to reduce regulations that supported monopoly pricing (Carter, 1978; Cowan, 1978). We do not want to equate Carter and Roosevelt or even economic theory in the 1970s and 1930s. Instead, we note that unusual macroeconomic events sometimes transcend existing macroeconomic theory. Before macroeconomics could be expanded to include the aggregate supply curve in the 1970s, public policy appears to have focused on perceived microeconomic problems.

In what is now known as the Washington Consensus on economic policy, deregulation plays a prominent role. The impact of deregulation on wages was not much discussed in the 1970s because blue collar wages, in particular, continued to do fairly well. On the labor market's supply side, male high school graduates remained heavily unionized (42 percent – authors' tabulations) with unionization among female high school graduates at 17 percent. On the labor

market's demand side, the food and oil supply shocks had stimulated the energy and agricultural industries while a declining international value of the dollar was expanding global demand for U.S. manufacturing goods.<sup>34</sup> Strong manufacturing, energy and agricultural sectors created what economic geographers were calling a "Rural Renaissance" (Long and DeAre, 1988) in which the nation's heartland was doing well, with resulting demand for blue collar workers, while the east and west coasts were stagnant.<sup>35</sup>

In reality the Rural Renaissance was a blue-collar bubble. High demands for agriculture and domestic energy were temporary while the falling dollar was masking manufacturing's competitive weakness. Unions, perhaps lulled by this temporary prosperity, largely ignored the need to organize a changing labor market. As labor force composition shifted toward women and college graduates, many in the service sector, union membership fell to about 27 percent of all wage and salary workers (private and public), down from 35 percent at the peak of their post-war strength (Osterman, 1999; Hirsch and Macpherson, 2004).

While the bubble existed, however, wage setting norms interacted with inflation to markedly increase labor's share of national income. The ideas embodied in the Treaty of Detroit were developed in the time of low inflation and high productivity that followed World War II. From the end of the war through the mid-1960s, real wages rose dramatically and labor's share of national income cycled narrowly around 67 percent (Dew-Becker and Gordon, 2005). In subsequent years, inflation accelerated, productivity growth declined, and wage setting norms – for example, money wages rising roughly in line with the Consumer Price Index – helped labor's

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<sup>34</sup> In 1971, Richard Nixon had abandoned fixed exchange rates as part of his program to deal with inflation, a recognition of the fact that continuing trade deficits were diminishing the country's exchange reserves.

<sup>35</sup> Even at the time it was clear that some of this success was unsustainable. In the early 1970s' both the auto workers and steel workers unions had signed new contracts in which full cost-of-living adjustments were exchanged for promises of labor peace. At that time, no one anticipated consumer prices doubling over the next ten years. As a result, auto makers and big steel firms became an island in the economy with real wages far higher than even most other unionized occupations. Had exchange rates fallen far enough to bring overall trade flows into balance, auto and big steel would still have been overpriced on world markets.

share to rise to .74 in 1973 and .76 in 1980. Capital's weak prospects were summarized in the performance of the Dow-Jones Industrial Average: 903 in January 1965 falling to 876 in January 1980 while the general price level had more than doubled. The effectiveness of COLA contracts in this inflationary environment put pressure on the Treaty of Detroit system.

While Carter advanced deregulation and increased competition as solutions to the stagnant economy, others attacked unions directly. An example was the 1978 failure of a bill reforming labor law. The bill proposed a set of small, technical changes in labor law that would have preserved the legal framework in which the Treaty of Detroit labor system had operated. Despite the small scale of the bill, business mounted a large, inflammatory public campaign against it. The bill passed the House by a vote of 257 to 163, and it would have passed the Senate as well, but employers took a hard line against the bill and arranged to have it stopped by a filibuster. After a 19-day filibuster, the bill's supporters failed in their sixth try to muster 60 votes to stop it and sent the bill back to committee to die (Mills, 1979).

The economy continued to limp along for the remainder of the 1970s. Unemployment fell slowly, and weak productivity growth translated economic expansion into additional inflation. By 1979, consumer prices were increasing at 12 percent annually. Shaken financial markets forced Carter to appoint Paul Volcker, an inflation hawk, as Chairman of the Federal Reserve. Volcker quickly instituted a strong tight money policy to break inflation quickly. When, in 1980, Carter was defeated by Ronald Reagan, Volcker's and Reagan's policies combined to help dismantle much of what remained of New Deal institutions and norms.

Reagan made three decisions that proved central to the wage setting process in his first year in office. He gave Volcker's tight-money anti-inflation policy his full backing. He introduced a set of supply-side tax cuts including lowering the top income tax on non-labor income from 70 to 50 percent to align it with the top rate on labor income. And when the air

traffic controllers union, one of the few unions to support Reagan, went out on strike, he gave them 48 hours to return to work or be fired. His stance ultimately led to the union's decertification.

The 1978 defeat of labor law reform, the lowering of tax rates and the firing of the air traffic controllers were signals that the third man—government—was leaving the ring. From that point on, business and labor would fight over rewards in less regulated markets with many workers in an increasingly weak position. Then, in an unanticipated development, Volcker's tight money policy further weakened the position of blue collar workers.

Volcker's policy reduced inflation far more rapidly than most economists had predicted—from 12.5 percent in 1980 to 3.8 percent in 1982. Reagan's tax cuts led to projections of large future deficits, and the fear that deficits would be monetized kept interest rates high even as inflation fell.<sup>36</sup> High real interest rates increased global demand for U.S. securities and the dollars required to buy them. Between 1979 and 1984, the trade-weighted value of the dollar rose by 55 percent. The result was perhaps fifteen years of normal change compressed into five years. U.S. durable manufacturing firms were hit first by the deep recession and then by the high dollar that crippled export sales. The loss of old-line manufacturing jobs together with new employer boldness put unions under siege. The fraction of all private sector wage and salary workers in unions fell from 23 percent in 1979 to 16 percent in 1985 (Hirsch and Macpherson, 2004). The Rural Renaissance of the 1970s became the Rust Belt of the 1980s

The rise of the financial sector and accompanying high salaries represented a mirror image of these events. Financial innovations had emerged in the 1970s, but the financial sector first attained its current prominence in the macroeconomic events of the 1980s.<sup>37</sup> Blair (1989) argues

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<sup>36</sup> By 1982, the *real* interest on three year government securities exceeded 6 percent – three times its normal postwar value.

<sup>37</sup> For example, Michael Milken issued his first junk bonds in the late 1970s (Stein, 1992). The development of the first mortgage-backed bonds occurred at the same time (Lewis, 1989).

that the high real interest of the early 1980s restricted profitable investment opportunities for mature firms in many industries, resulting in free cash flows that made these firms takeover targets (Jensen, 1997; Blair and Shary, 1993) More generally, the period represented a reallocation of capital across firms and industries (Holmstrom and Kaplan, 2001; Philippon, 2008). In earlier post-war years, investment came from mature corporations utilizing their own cash flows. Now, new corporations were financing investment through financial intermediaries. The result was increased demand for financial professionals – the financial sector – to create and sell the new debt involved in the capital reallocation. The financial sector’s importance was further increased by the rapidly growing U.S. Treasuries market, a result of the Reagan budget deficits. Between 1975 and 1984, total credit market debt grew from \$2.5 trillion to \$7.2 trillion dollars (nominal dollars).<sup>38</sup>

Mortgage backed bonds are a microcosm of these developments. As interest rates rose during the 1970s and early 1980s, savings and loan institutions were under pressure to sell low-interest mortgages in the hope of reinvesting the proceeds at higher returns. There was little investor interest in buying individual mortgages but mortgage-backed bonds created a market in which these mortgages could be sold. By the early 1980s, the mortgage backed bond market had taken off and, as a byproduct, helped to redefine income norms. Lewis (1989, p.126) tells the story of Howie Rubin, a late 20’s graduate of Salomon Brothers’ training program who was assigned to trade mortgage-backed bonds. In 1983, Rubin’s first year, he had generated \$25 million of revenue:

...Rubin, like all trainees, was placed in a compensation bracket. In his first year, he was paid \$90,000, the most permitted a first-year trader. In 1984, his second year, Rubin made \$30 million trading. He was then paid \$175,000. He recalls, “The rule of thumb at Harvard [Business School] had been that if you are really good, you’ll make a hundred thousand

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<sup>38</sup> Board of Governors of the Federal Reserve System, *Flow of Funds Accounts of the United States*, various issues.

dollars three years out.” The rule of thumb no longer mattered. In the beginning of 1985 he quit Salomon Brothers and moved to Merrill Lynch for a three year guarantee: a minimum of \$1 million a year plus a percentage of his trading profits.

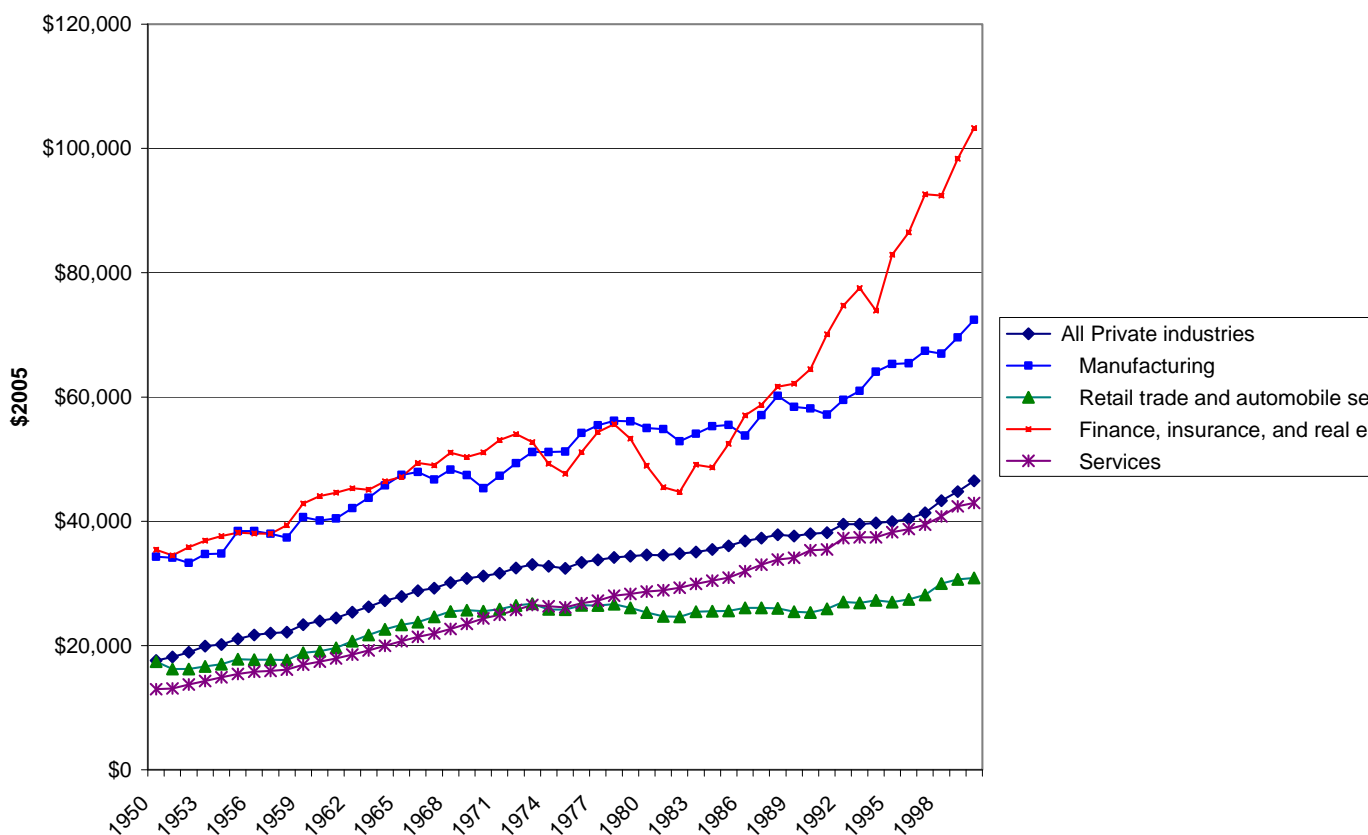
Many of Salomon’s other successful mortgage bond traders soon left the firm for similar offers.

Similarly, junk bonds had been developed in the late 1970s to finance corporate takeovers, attempts to wrest control of the corporation’s assets away from its current managers (Jensen, 1997). Here, too, a byproduct was very high salaries for both the junk bond salesmen and the investment bankers and lawyers who advised in the transactions. This history is summarized in Figure 8 which shows for selected industries the sum of compensation and corporate profits - a surrogate for economic rents – per full-time equivalent employee (FTE). From 1950 through the end of the 1970s, economic rent per FTE in the Finance, Insurance and Real Estate Industry (FIRE) grew at a rate similar to rates in other industries. Beginning in the mid-1980s, economic rent per FTE in FIRE grew at an accelerating pace in line with the expanding bond market and a revived stock market.<sup>39</sup>

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<sup>39</sup> Between 1980 and 1990, the Dow Jones Industrial Index rose from 875 to 2,785.

**Figure 8**  
**(Compensation + Corporate Profits) per FTE in Selected Private Industries**



Source: U.S. Department of Commerce, National Income and Product Accounts, 6.2, 6.8, and 6.16.

Kaplan and Rauh (2006) estimate that in the period 1994-2005, financial professionals and partners at national law firms are more numerous than CEO's in the top income ranges reported by Piketty and Saez. Figure 2 suggests this was not always the case (at least with respect to lawyers) while Figure 8 suggests the growing importance of financial and finance-related professions into top income ranges occurred in the 1980s. As one former partner in a Wall Street banking house – “Robert” – wrote in private correspondence:

In 1974 as a successful young investment banker with 8 years experience, I was paid less than my peers in the large industrial companies or utilities and had no benefits of

significance. Everyone left the office at 5:00 o'clock and it was resented if you tried to come into the office on weekends (doors locked, no staff, no lights, a/c almost off). By 1985 I was a mid-level partner earning \$4 million a year, working 12-14 hour days and frequent weekends, and the busiest parts of the firm had second shifts of support staff every day and all weekend.

Howie Rubin and "Robert" were participating in winner-take-all or "superstar" markets (Rosen, 1981) made more extreme by reduced tax rates and the knowledge that no compensation, however high, would attract government attention. As financial salaries changed income norms, superstar markets were often invoked to justify large compensation in occupations where high pay arose from non-market sources of power, such as CEO's who benefited from compliant compensation committees. In 1984 – the year Howie Rubin moved to Merrill Lynch for \$1 million per year plus incentive pay – median CEO compensation in the sample analyzed by Hall and Liebman (1998) was \$568,000 (both figures in 1984 dollars). Over the next decade, real median compensation in the Hall and Liebman sample increased by 87 percent. Much of this increase came from the rapidly expanding inclusion of stock options in compensation, a practice relatively unknown before the mid-1980s. While the options' stated purpose was to align managerial and shareholder interests, accounting regulations did not require the value of options to be treated as an expense and boards were reluctant to grant bonuses of comparable value (Hall and Liebman, 1998).

Arguing in favor of the CEO as superstar, Gabaix and Landier (2008) show that the growth in CEO compensation since 1980 reflects the rising equity of the firm so that increasing amounts of money ride on each decision. Frydman and Saks (2005), analyzing a longer historical period, show that rising equity values translated into higher CEO compensation at a much lower rate prior to 1980, a time of more restrained norms.

Many of Reagan's supporters acknowledged his policies would lead to inequality, but they argued that inequality was the price of revived productivity growth. Most people would see rising

incomes while the incomes of the rich would rise faster. The result of the booming financial sector, rapidly rising CEO compensation and tax reforms in 1986 was that the 99½th percentile of reported taxpayer income increased from \$175,000 (2005 dollars) in 1980 to \$220,000 in 1988 (Figure 7). At the same time, labor productivity continued its weak growth while the compensation of male high school graduates, in particular, declined sharply – the sharp 1980 break in trend for male high school graduates illustrated in Figure 4.

Because a rising tide was supposed to lift all boats, there was no thought given to ex-post redistribution. To the contrary, Reagan’s administration allowed the minimum wage to reach an historical low relative to output per worker (Figure 6). In a similar way, the NLRB became more polarized, moving away from the impartial model that characterized the board’s early years. The seeds planted under Eisenhower flowered under Reagan. Reagan broke with tradition and appointed a management consultant who specialized in defeating unions to be the chairman of the NLRB. The result is that the NLRB increasingly reflected current political trends (Flynn, 2000).

The sharp decline in male high school graduate earnings caused economists to focus their attention on the declining demand for less educated workers and the relationship between growing inequality and educational differences (Levy, 1988, 1989; Katz and Murphy 1992; Juhn, Murphy and Pierce, 1993). These analyses ignored the point that began this paper: Since in the mid-1970s, a growing fraction of male BA’s also now faced demand that was too weak to keep compensation growing in line with productivity (Figure 3).

The outlines of this story have persisted through the present. Clinton, the only Democratic president since 1980, encouraged the Washington Consensus in his centrist positions extending deregulation in the United States and—to the extent possible—in the world as a whole. He took important measures of ex-post redistribution by expanding the Earned Income Tax Credit,

increasing the minimum wage, and increasing the top income-tax rate, but George W. Bush reversed the trend of these last two elements.

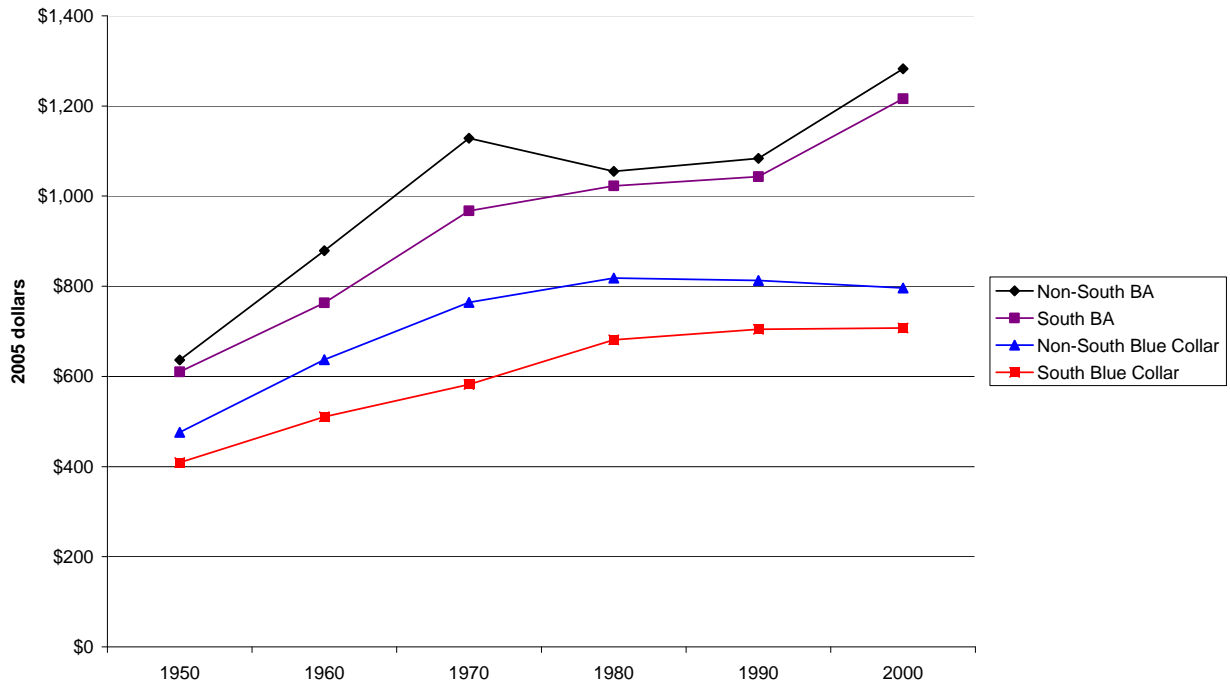
#### V. Connecting the Dots; Evidence of the Effects of Institutional Change

Two kinds of evidence connect our story and our evidence. The first type concerns the nature of the labor market in the United States, showing that aspects have changed that are unconnected with skill biased technical change. The second type of evidence is international, demonstrating that the choice of institutional change was in fact a choice; it was not dictated by changes in technology, globalization, and the reduction in the rate of productivity growth.

Our first labor market test involves regional differences. The institutions we have described were stronger in the North and West of the United States than in the South and should have had greater impact on the earnings of Blue Collar workers than the earnings of college graduates. Together, these ideas suggest that South/Non-South earnings differences for blue collar workers should have been large before the collapse of the Treaty of Detroit institutions—larger than corresponding earnings differences for college graduates, and larger than blue collar earnings differences after 1985.

In fact, this is the case. From 1950 through 1970, the South/Non-South earnings ratio for blue collar workers averaged .81 compared to .89 for men with a bachelor's degree. In 1990 and 2000, after the institutional collapse, the South/Non-South earnings ratio for blue collar workers converged from the previous .81 to .88 as shown in Figure 9. (The earnings ratio for college graduates converged from the previous .89 to .96.)

**Figure 9**  
**South and Non-South Median Weekly Earnings for Male College Graduates and Blue Collar Full-Time Workers, Ages 35-44 (2005 dollars).**

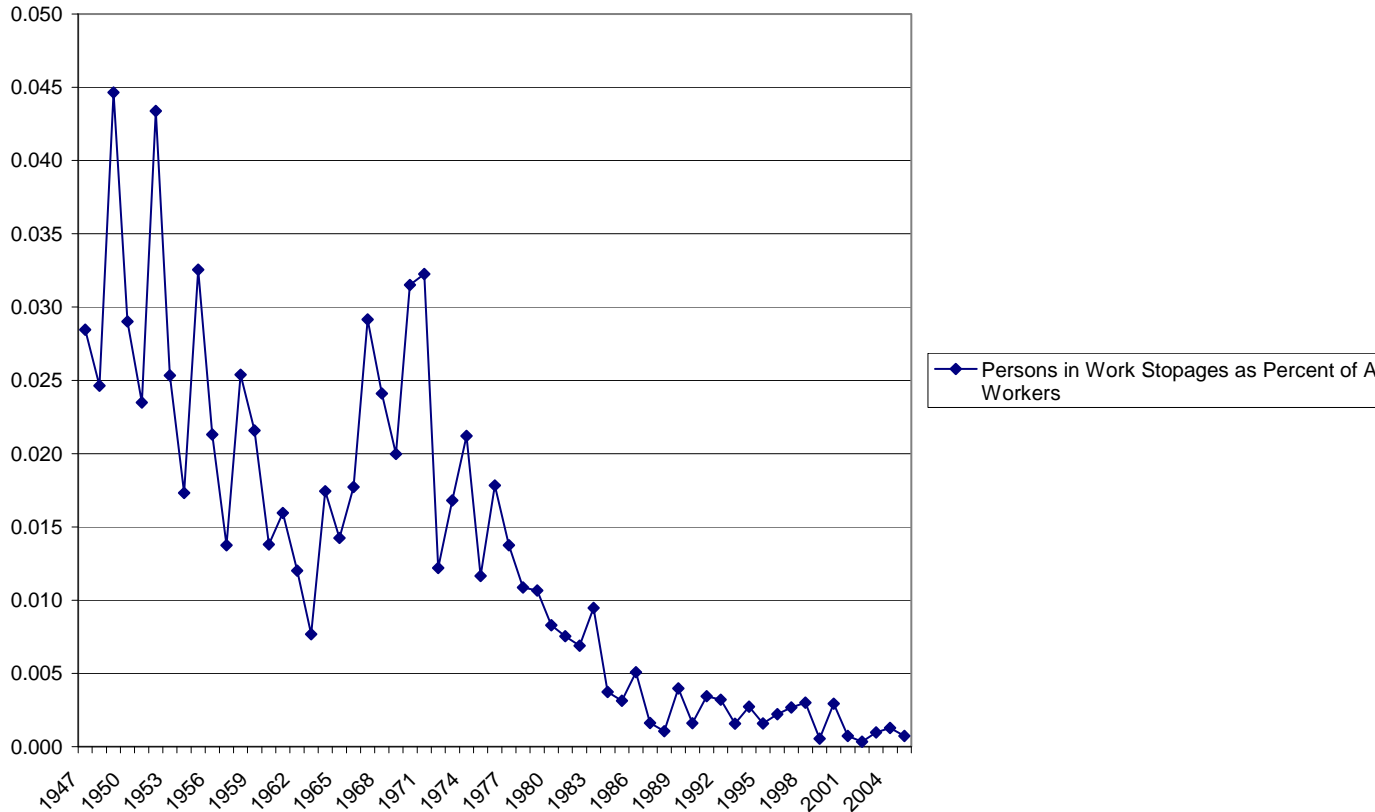


Source: Authors' tabulations of Decennial Census IPUMs.

Our second labor market test involves the nature of the wage bargaining process. While skill-biased technical change affects the outcome of this process, it says little about the nature of the process itself.<sup>40</sup> The hypothesis that skill biased technical change has affected the path of wages is confined to the outcome of the wage bargaining process; it does not have any implications for the bargaining itself. Our story by contrast argues that the nature of wage bargaining has been altered drastically by changing institutions. In particular, strikes have almost disappeared as a tool of wage bargaining. As result, work stoppages have almost vanished, as shown in Figure 10.

<sup>40</sup> Though see Acemoglu et al., 2001

**Figure 10**  
**Persons Engaged in Work Stoppages as Proportion of All Workers**



Source: Data on work stoppages from U.S. Bureau of Labor Statistics:  
<http://stats.bls.gov/news.release/wkstp.t01.htm>

Lee (1999) among others has argued that the falling value of minimum wage was a significant determinant of inequality during this period. We take the broader position advanced by Autor, Katz and Kearny (2005) that increased inequality reflected a change in regime of which the falling minimum wage was part. An indicator of this changed regime was the dramatic fall-off strike activity.<sup>41</sup> In the 1970s, an average 1.7 percent of the labor force was involved annually in work stoppages (Figure 10). In the 1980s, this rate fell to two-thirds to .5 percent. Even as the number of union complaints of unfair labor practices was rising, the politicization of the NLRB had sharply reduced the economic return to work stoppages and discouraged workers from

<sup>41</sup> Osterman (1999) chapter 2 makes a similar point.

attempting them (Flynn, 2000; Roomkin, 1981). The rapid fall in work stoppages underestimates the decline in expressions of union power as strikes increasingly became expressions of union despair – e.g. the strike against the Greyhound Corporation—rather than efforts to improve working conditions (Kochan, Katz and McKersie, 1994).

Another result driven in part by this changed process appears in international comparisons of wage flexibility. A large project has compared the year-to-year flexibility in both nominal and real wages. The United States now is near the bottom of the list in real wage stability. In other words, American workers have lost the ability to preserve their real wages in response to economic shocks. They have ample stability of nominal wages, but at the cost of losing the ability to preserve the purchasing power of their labor (Dickens, et al., 2007). Further evidence in process indicates that the stability of American real wages has been falling over time to reach this position. The loss of COLA contracts has eroded the ability of workers to preserve real wages. Fewer workers are in unions, have a realistic opportunity to strike, and have the power to engage in meaningful collective bargaining. The process of wage determination began to change in the 1980s, as we have described, and it has changed the outcome of wage determination.

These changes in the way wages are determined were not inevitable. Labor-market institutions appear to have many national idiosyncrasies. Lindert (2004) shows that different labor-market institutions in Western Europe and America are compatible with similar rates of economic growth. Nickell (1997) demonstrated that different labor-market institutions within Western Europe are compatible with similar rates of unemployment. Saez (2004) shows that rapidly rising incomes among the very rich appear in the U.S., England and Canada (largely in response to U.S. competition) but do not appear in most continental European countries or Japan. Globalization has affected all countries, yet the variety of institutions surveyed by Lindert and Nickell shows no sign of disappearing. Their work suggests that it may not even be costly to

preserve a preferred set of labor-market institutions, in contrast to the assertions of globalization enthusiasts.

Finally, economic shocks do not determine institutions. The Vietnam War and the oil shocks deranged the international economy. Yet countries responded to these shocks in idiosyncratic ways. The contrast between the economic performance of the US and Japan in the 1970s is only one example of the great diversity. Economic shocks can affect policy, and the shocks of the 1970s may have accelerated institutional change, but there is no indication that it forced countries to adopt homogenous labor-market institutions. It did, however, create opportunities for political choices to change institutions, and we analyze the results in the US.

Other countries made other choices. Atkinson and Piketty (2007) chronicle the history of top incomes in a variety of countries, finding a peculiar pattern. Of the countries for which they could amass data, the English-speaking countries had U-shaped behavior of the share of income going to the top earners. That is, they look like the United States in recent years as shown in Figure 1. Other countries—Germany, France, Netherlands, Switzerland—did not have this U-shaped behavior of the top income share. There was no trend toward income inequality in these countries in the past few decades. Japan, not covered in their book, also exhibits this European pattern and does not show the rising inequality so apparent in the US (Moriguchi and Saez, forthcoming).

There could not be a clearer demonstration that external and exogenous events like globalization and technological change do not fully determine the path of income inequality. Instead, people make different choices through their choices of governments and institutions. As we have described here, the government of the United States played an important role in the determination of income inequality over the last half century.

## VI. Conclusions

We have argued in this paper that the current trend toward greater inequality in America is primarily the result of a change in economic policy that took place in the late 1970s and early 1980s. The stability in income equality where wages rose with national productivity for a generation after the Second World War was the result of policies that began in the Great Depression with the New Deal and were amplified by both public and private actions after the war. This stability was not the result of a natural economy alone: it was also the result of policies designed to promote it. We have termed this set of policies the *Treaty of Detroit*.

The new policies, which we have grouped under the title of the *Washington Consensus*, also originated in a time of economic distress, albeit nowhere near the distress of the 1930s. In a process similar to the experience of the Great Depression, policy makers—unable to comprehend the macroeconomic causes of distress—instituted microeconomic changes in an attempt to ameliorate the macroeconomic problems. In both cases, the measures taken were only partially successful, and recovery came from diverse influences. The microeconomic changes, however, had durable impacts on the distribution of economic production.

Deregulation, floating exchange rates, international capital mobility, low minimum wages and taxes, and the destruction of labor unions, were not unique responses to the oil crisis or the productivity collapse. The effects of these policies have been amplified by skill-biased technical change and, in the extreme, winner-take-all markets.. But the technology did not fully determine who received the rents produced any more than technology fully determined who got the rents from the great postwar expansion. As we noted, African-Americans were largely excluded from the GI Bill and other public policies by a series of political and bureaucratic actions (Katznelson, 2005).

We noted earlier how a rising income made fluctuations in the income of wage earners easier. The inability of workers to maintain this rising average standard of living now makes the uncertainty of working life harder to bear. This side effect of the trends in Figure 1 has been accentuated in two ways. The uncertainty of working may well have increased under the new institutions. It is harder to measure second moments than first ones, and conclusions are not firm. They do however suggest strongly greater uncertainty (Gottschalk and Moffitt, 1994). The American dream of income mobility—the rags to riches story that made the United States an exceptional place to live and work—has become less likely as intergeneration income mobility has decreased. There now is no more mobility in the US than in Europe (Solon, 2002; Ferrie, 2005).

The elements of the *Washington Consensus* were adopted in the name of improving economic efficiency. But there is growing recognition that the current free-market income distribution – the combination of large inequalities and stagnant wages for many workers – creates its own “soft” inefficiencies as people become disenchanted with existing economic arrangements. As Stephen Pearlstein (2006b) writes:

Up to now, Americans have put up with more income inequality than Europeans, Canadians or Japanese. But their tolerance is wearing thin as they see Wall Street sharpies and corporate executives getting fabulously rich by undercutting the economic security of the working poor and middle class. Not only are job security, private pensions and employer-provided health care coverage being cut back, but there is also a noticeable erosion in the public services that serve as a backstop—schools and colleges, transportation, health, recreation, job training, and food stamps. Many citizens feel they are now walking an economic tightrope, without a net, and it is this—more than mansion-envy—that animates their anxiety.

The Washington Consensus thus has come under fire recently as people suffering from stagnant incomes —both here and in some similar countries—have begun to protest. Our analysis suggests that the trends in the distribution derive in part from the shift from one complex of policies to another—from the *Treaty of Detroit* to the *Washington Consensus*. There is no single

determinant, whether education, minimum wage, capital or labor mobility, that determines the path of income distribution. Any specific measure therefore can alleviate the distress of some people, but it cannot change the overall distributional trends shown in our graphs.

Only a reorientation of government policy can restore the general prosperity of the postwar boom and recreate a more equitable distribution of productivity gains where a rising tide lifts all boats. The precise form of this reorientation is not yet clear. The preferred solution of the Washington Consensus is to let markets function and to redistribute *ex post*—the winners compensating the losers. Missing in this technical description is a discussion of the politics and leadership necessary for passage of *ex post* redistribution.

## References

- Acemoglu, Daron, Philippe Aghion and Ginluca Violante, “Deunionization, Technical Change and Inequality”, *Carnegie-Rochester Conference Series on Public Policy*, 2001.
- Amberg, Stephen. 1994. *The Union Inspiration in American Politics*. Philadelphia: Temple University Press.
- Atkinson, Anthony B., and Thomas Piketty. 2007. *Top Incomes over the Twentieth Century: A Contrast Between Continental European and English-Speaking Countries*. Oxford: Oxford University Press.
- Autor, David H., Lawrence F. Katz and Melissa S. Kearny, 2005, “Trends in U.S. Wage Inequality: Re-Assessing the Revisionists”, National Bureau of Economic Research Working Paper 11627, September.
- Autor, David H., Lawrence F. Katz and Melissa S. Kearny. 2006, “The Polarization of the U.S. Labor Market”, *American Economic Review*, 96, no. 2 (May) pp. 189-194.
- Autor, David, H., Frank Levy and Richard J. Murnane. 2003. “The Skill Content of Recent Technical Change: An Empirical Investigation” *Quarterly Journal of Economics*, 118, 4 (November) pp. 1279-1334.
- Blair, Margaret, 1989, “Theory and Evidence on the Causes of Merger Waves”, unpublished PhD Dissertation, Yale University.
- Blair, Margaret M., and Martha A. Shary. 1993. “Industry-Level Pressures to Restructure” in Margaret M. Blair (ed), *The Deal Decade*, Washington, D.C., The Brookings Institution.
- Board of Governors of the Federal Reserve System, *Flow of Funds Accounts of the United States*, various issues.
- Bound, John, and Johnson, George 1992. “Changes in the Structure of Wages in the 1980s: An Evaluation of Alternative Explanations, *American Economic Review*, 92, no. 3 (June), 371-392.
- Brody, David. 1980. *Workers in Industrial America*. Oxford: Oxford University Press.
- Card, David, and John E. DiNardo 2002. “Skill-Biased Technical Change and Rising Wage Inequality: Some Problems and Puzzles.” *Journal of Labor Economics*, 20 no 4 (October), pp. 733-783.
- Carter, President Jimmy. 1978. “Transcript of the President’s Address on Inflation,” *New York Times*, April 12, 1978.
- Chamberlain, Neil W., and James W. Kuhn. 1986. *Collective Bargaining*, third edition New York: McGraw-Hill.

- Cowan, Edward. 1978. "Can Kahn Contain Wage-Price Spiral?" *New York Times*, November 12, 1978.
- Dew-Becker, Ian and Gordon, Robert J. 2005. "Where Did the Productivity Growth Go? Inflation Dynamics and the Distribution of Income." *Brookings Papers in Economic Activity*, 2005, no. 2, pp. 67-150.
- Dickens, William T., et al. 2007. "How Wages Change: Micro Evidence from the International Wage Flexibility Project," *Journal of Economic Perspectives*, 21, no. 2, (Spring), 195-214.
- DiNardo, John, Nicole Fortin and Thomas Lemieux. 1996. "Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach." *Econometrica* 64, no. 3 (September) 1001-1044.
- Eckstein, Otto and Wilson, Thomas A. 1962. "The Determination of Money Wages in American History," *Quarterly Journal of Economics* 76 (August), 379-414.
- Edelstein, Michael. 2000. "War and the American Economy," in Engerman, Stanley L., and Robert E. Gallman (eds.) *The Cambridge Economic History of the United States*. Cambridge, UK: Cambridge University Press.
- Eggertsson, Gauti B., "Was the New Deal Contractionary?," Federal Reserve Bank of New York Staff Report, no 264, October 2006.
- Erickson, Christopher L. 1996. "A Re-Interpretation of Pattern Bargaining," *Industrial and Labor Relations Review*, 49, pp. 615-34.
- Feenberg, Daniel and James Poterba. 1993. "Income Inequality and the Incomes of High-Income Taxpayers: Evidence from Tax Returns", in James Poterba (ed.), *Tax Policy and the Economy* #7, Cambridge, MA., MIT Press, pp. 145-173.
- Ferrie, Joseph. 2005. "The End of American Exceptionalism? Mobility in the United States Since 1850," *Journal of Economic Perspectives*, 19, pp. 199-215.
- Flynn, Joan. 2000. "A Quiet Revolution at the Labor Board: The Transformation of the NLRB, 1935-2000," *Ohio State Law Journal*, 61, pp. 1-53.
- Frank, Robert H and Philip J. Cook, *The Winner-Take-All Society*, New York, Free Press, 1995.
- Freeman, Richard B, 1998. "Spurts in Union Growth: Defining Moments and Social Processes," in Michael D. Bordo, Claudia Goldin, and Eugene N. White (eds.), *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century*. Chicago, University of Chicago Press.
- Frydman, Carola and Raven E. Saks. 2005. "Historical Trends in Executive Compensation: 1936-2003," Sloan School of Management, MIT, working paper.

Gabaix, Xavier and Augustin Landier, 2008. "Why has CEO Pay Increased So Much?" *Quarterly Journal of Economics*, Volume 123, No. 1 (February), pp. 1-48.

Goldin, Claudia, and Robert A. Margo. 1992. "The Great Compression: The Wage Structure in the United States at Mid-Century," *Quarterly Journal of Economics*, 107 (February), 1-34.

Goldstein, Ruby 1959. "*Third Man in the Ring: Ruby Goldstein*" (as told to Frank Graham), New York, Funk and Wagnalls.

Galanter Marc and Thomas Palay. 1991. *Tournament of Lawyers: The Transformation of the Big Law Firm*. Chicago: University of Chicago Press.

Goldin, Claudia, and Lawrence F. Katz. 2008. *The Race between Education and Technology*. Cambridge, MA: Harvard University Press.

Gordon Roger H. and Joel Slemrod. 1998. "Are "Real" Responses to Taxes Simply Income Shifting Between Corporate and Personal Tax Bases?" National Bureau of Economic Research Working Paper 6576.

Gottschalk, Peter and Robert Moffit. 1994. "The Growth of Earnings Instability in the U.S. Labor Market," *Brookings Papers in Economic Activity*, 1994, no. 2, pp. 217-272.

Gross, James A., *The Making of the National Labor Relations Board*. Albany: State University of New York Press, 1974.

Hall, Brian J and Jeffrey B. Liebman (1998) "Are CEO's Really Paid like Bureaucrats?" *Quarterly Journal of Economics*, vol. 113, No. 3 (August), pp. 653-691.

Harris, Howell John. 1982. *The Right to Manage: Industrial Relations Policies of American Business in the 1940s*. Madison, WI: University of Wisconsin Press.

Heller, Walter W. 1967. *New Dimensions of Political Economy*., New York, W.W. Norton.

Hirsch, Barry T. and David. A. Macpherson. 2004. *Union Membership and Earnings Data Book: Compilations from the Current Population Survey: 2004 edition*. Washington, D.C., Bureau of National Affairs.

Holmstrom, Bengt and Steven N. Kaplan, 2001. "Corporate Governance and Merger Activity in the United States: Making Sense of the 1980s and 1990s." *Journal of Economic Perspectives*, 15, no. 2 (spring) pp. 121-144.

Jensen, Michael C.. 1997. "Eclipse of the Public Corporation" (revised version). available at <http://papers.ssrn.com/abstract=146149> (paper originally published in the Harvard Business Review, September-October 1989)

Juhn, Chinhui, Kevin M. Murphy and Brooks Pierce. 1993. "Wage Inequality and the Rise in Returns to Skill," *Journal of Political Economy*, 101, no. 3 (June), pp. 410-442.

Kaplan, Stephen N. and Joshua Rauh, 2006. "Wall Street and Main Street: What Contributes to the Rise in Highest Incomes?" Working paper, University of Chicago School of Business, version of September 13.

Katz, Harry C. and David B. Lipsky, 1998, "The Collective Bargaining System in the United States: The Legacy and the Lessons," in M. Neufeld and J. McKelvey eds. *Industrial Relations at the Dawn of a New Millennium*, Ithaca: New York State School of Industrial and Labor Relations. pp. 145-162.

Katz, Lawrence F. and Kevin M. Murphy. 1992. "Changes in Relative Wages, 1963-1987: Supply and Demand Factors," *The Quarterly Journal of Economics*. 107. no. 2. (February) pp. 35-78.

Katznelson, Ira, 2005. *When Affirmative Action was White: An Untold Story of Racial Inequality in Twentieth-Century America*. New York, Norton.

Kochan, Thomas A. 1980. *Collective Bargaining and Industrial Relation*. Homewood, IL: Irwin.

Kochan, Thomas A., Harry C. Katz, and Robert B. McKersie. 1994. *The Transformation of American Industrial Relations*. Ithaca, NY: ILR Press.

Koistinen, Paul A. C. 2004. *Arsenal of World War II: The Political Economy of American Warfare, 1940-1945*. Lawrence: University Press of Kansas.

Krugman, Paul 2006. "Whining over Discontent," *The New York Times*, September 8.

Lee, David S. 1999. "Wage Inequality in the United States During the 1980s: Rising Dispersion or Falling Minimum Wage?" *The Quarterly Journal of Economics*. 114. no 3. pp. 977-1023.

Lemieux, Thomas. 2006a. "Postsecondary Education and Increasing Wage Inequality," *American Economic Review, Papers and Proceedings*, 96, no. 2 (May), pp. 195-99.

Lemieux, Thomas. 2006b. "Increasing Residual Wage Inequality: Composition Effects, Noisy Data, or Rising Demand for Skill?" *American Economic Review*, 96, no. 3 (June), pp. 461-498.

Levy, Frank (1988) "Incomes, Families and Living Standards," in Robert E. Litan, Robert Z. Lawrence and Charles Schultze, (eds), *American Living Standards: Challenges and Threats*, Washington, DC., The Brookings Institution. Chapter 4.

Levy, Frank. 1989. "Recent Trends in U.S. Earnings and Family Incomes," *National Bureau of Economic Research Macroeconomics Annual, 1989*, Cambridge, MA. MIT Press, pp. 73-114.

Levy, Frank. 1998. *The New Dollars and Dreams: American Incomes and Economic Change*. New York: Russell Sage Foundation.

Levy, Frank, and Richard J. Murnane. 1992. "U.S. Earnings Levels and Earnings Inequality: A Review of Recent Trends and Proposed Explanations," *Journal of Economic Literature*, 30, pp. 1333-1381.

- Levy, Frank, and Peter Temin. 2007a. "Inequality and Institutions in 20<sup>th</sup> Century America," NBER Working Paper 13106, May.
- Levy, Frank, and Peter Temin. 2007b. "Institutions and Wages in Post-War II America," paper presented at a symposium to honor Lloyd Ulman, University of California, Berkeley, October 27.
- Lewis, Michael, 1989, *Liar's Poker*, New York, W.W. Norton.
- Lichtenstein, Nelson. 1987. "Reutherism on the Shop Floor: Union Strategy and Shop-Floor Conflict in the USA 1946-1970," in Steven Tolliday, Steven and Jonathan Zeitlin (eds). *The Automobile Industry and Its Workers: Between Fordism and Flexibility*. New York: St. Martin's Press.
- Lichtenstein, Nelson. 1995. *Walter Reuther: The Most Dangerous Man in Detroit*. Urbana and Chicago: University of Illinois Press.
- Lichtenstein, Nelson. 2002. *State of the Union*. Princeton: Princeton University Press.
- Lindert, Peter H. 2004. *Growing Public: Social Spending and Economic Growth since the Eighteenth Century*. New York: Cambridge University Press.
- Long, Larry and DeAre, Diana. 1998. "U.S. Population Redistribution: a Perspective on the Nonmetropolitan Turnaround," *Population and Development Review*. 14, no 3, pp. 433-50.
- Margo, Robert A. 1991. "The Microeconomics of Depression Unemployment," *Journal of Economic History*, 51 (June), 333-41.
- Marshall, Alfred, *Principles of Economics*, Eighth Edition, 1947. New York, Macmillan.
- Mills, D. Quinn. 1979. "Flawed Victory in Labor Law Reform," *Harvard Business Review*, 57, no. 3 (May-June), pp. 92-102.
- Moriguchi, Chiaki, and Emmanuel Saez. forthcoming. "The Evolution of Income Concentration in Japan," *Review of Economics and Statistics*.
- Nickell, Stephen. 1997. "Unemployment and Labor Market Rigidities: Europe versus North America," *Journal of Economic Perspectives*, 11, pp. 55-74.
- Osterman, Paul. 1999. *Securing Prosperity – The American Labor Market: How It Has Changed and What to Do About It*. Princeton, Princeton University Press.
- Pearlstein, Steven, 2006a. "New Economy Hurting People in the Middle Most," *The Washington Post*, March 8, 2006.
- Pearlstein, Steven 2006b. "Solving Inequality Problem Won't Take Class Warfare", *The Washington Post*, March 15, 2006.

- Philippon, Thomas (2008): “Why Has the Financial Sector Grown So Much? The Role of Corporate Finance.”, working paper, New York University Stern School of Business, January 2008.
- Piketty Thomas and Emmanuel Saez. 2003. “Income Inequality in the United States.” *The Quarterly Journal of Economics*. 118. no. 1 (February), pp. 1-39.
- Reynolds, Alan. 2006. “The Top 1 % ..... of What?” *Wall Street Journal*, December 14, p/ A20.
- Roomkin, Myron. 1981. “A Quantitative Study of Unfair Labor Practice Cases,” *Industrial and Labor Relations Review*, 34, no. 2 (January), pp. 245-256.
- Rosen, Elliot A., 2005. *Roosevelt, the Great Depression and the Economics of Recovery*. Charlottesville, VA. University of Virginia Press.
- Rosen, Sherwin, 1981. “The Economics of Superstars,” *American Economic Review*, 71 no. 5 (December) pp. 845-58.
- Saez, Emmanuel, 2004. “Reported Incomes and Marginal Tax Rates, 1960-2000: Evidence and Policy Implications” in J. Poterba (ed.) *Tax Policy and the Economy* 18, Cambridge. MIT Press.
- Solon , Gary. 2002. “Cross Country Differences in Intergenerational Earnings Mobility,” *Journal of Economic Perspectives*. 16, no.3. pp. 59-66.
- Tritch, Teresa, 2006, “Editorial Observer; A Letter to Treasury Secretary Henry M. Paulson Jr.,” *New York Times*, August 5.
- Uchitelle, Louis. 2006. *The Disposable American: Layoffs and their Consequences*. New York, Knopf.
- U.S. Bureau of the Census. 1975 *Historical Statistics of the United States, Colonial Times to 1970*. (Washington, DC: GPO).
- Weinstein, Marc and Kochan, Thomas, 1995. “The Limits of Diffusion: Recent Developments in Industrial Relations and Human Resource Practices in the United States,” in Richard Locke, Thomas Kochan, and Michael Piore (eds.), *Employment Relations in a Changing World Economy* (Cambridge, MA. MIT Press).
- Williamson, John, “What Washington Means by Policy Reform,” in John Williamson (ed.), *Latin American Adjustment: How Much has Happened?* (Washington: Institute for International Economics, 1990).