

Working paper series

**Just deserts? Earnings inequality and
bargaining power in the U.S. economy**

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Abstract

Harvard economist Gregory Mankiw defends the high earnings of the top one percent in the U.S. with a theory of just deserts, claiming that the rich contribute more to society than others do. This essay disputes the theoretical underpinnings of his argument, which rest on neoclassical economic theories of marginal productivity and human capital. These theories reinforce a psychological bias known as “belief in a just world” and their undue influence extends to recent discussions of rent seeking behavior that lead to distinctly unjust deserts. Emphasis on examples of bad behavior or efforts to game the system can deflect attention from more profound forms of distributional conflict. Differences in bargaining power based on citizenship, class, race/ethnicity and gender exert a significant—and unfair—influence on labor market outcomes.

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Just Deserts? Earnings Inequality and Bargaining Power in the U.S. Economy

Do the wages that workers earn fairly reflect their contributions to the economy? The answer to this question depends on how “fairness” and “contributions” are defined. Economists of different stripes tend to define these terms quite differently. As a result, some insist that high earnings at the top reflect high demand for skill, and that labor market outcomes are equitable as well as efficient. Others argue that high earnings reflect unfair advantages derived either from explicit interference with market forces (often termed rent seeking) or from deeper forms of distributional conflict that affect pre-market and/or post-market outcomes.

While many economists try to avoid normative issues, the claim that wage earners generally get their just deserts is deeply rooted in neoclassical economic theory and often marks political opinions. In defense of individuals in the top one percent, Harvard professor Gregory Mankiw explains the standard framework as follows: “The rich earn higher incomes because they contribute more to society than others do.”¹ Tyler Cowen’s recent book, *Average is Over*, celebrates the claim that market forces increasingly reward excellence and innovation.² New York Times columnist David Brooks pronounces that we live in a capitalist meritocracy, where “you get what you pay for” and “earn what you deserve.”³

This essay directly confronts this argument. It presents a detailed critique of the neoclassical economic theories that buttress confidence in just deserts and argues that many accounts of rent seeking rely too heavily on the very same assumptions. Labor markets are imperfect and incomplete because workers do not choose their initial

endowments of capital or skill and are vulnerable to many outside forces that they cannot possibly anticipate. Even in the absence of explicit interference with market outcomes, many forms of collective bargaining power shape wage determination. As a result, the labor market does not necessarily deliver equitable or efficient outcomes.

The discussion begins with some consideration of the widespread predisposition toward confidence in just deserts, then moves to a critical summary of neoclassical economic theories of marginal productivity and human capital. A review of research emphasizing rent seeking argues that this concept provides valuable but limited insights into wage determination. This critique motivates a more general approach to distributional conflict, supported by examples of the impact of explicit and implicit bargaining power on markets, public policy, and cultural discourse.

A Fair Wage

Liberal political theories of justice focus on the distribution of income or wealth, rather than wages. The philosopher John Rawls notes that if conditions of “background fairness” such as equal opportunity are met and everyone receives a suitable minimum income, it may be perfectly fair to rely on the labor market to determine wages, “assuming that it is moderately efficient and free from monopolistic restrictions and unreasonable externalities.”⁴ But Rawls does not define either equal opportunity or a suitable minimum income.⁵ Nor does he acknowledge that misplaced confidence in fair wages might undermine concerns about equal opportunity and the social safety net.

Economists often focus on efficiency rather than fairness. According to the definition proposed by Vilfredo Pareto more than one hundred years ago, an efficient outcome is one in which no one can be made better off without making someone else

worse off. Inequality is an entirely separate issue—unless it affects efficiency. Rawls argues that inequality is justified if it contributes to improvements in the well-being of the most disadvantaged. Economists make a similar argument when they claim that inequality in earnings can promote economic efficiency and thereby boost economic growth. Causality works the other way as well. Behavioral research in both psychology and economics shows that perceptions of fairness can increase effort and promote cooperation.⁶ It also shows that perceptions of fairness are often inaccurate.

Belief in a Just World

The conviction that high earners always contribute more to society than low earners embodies what psychologists term “belief in a just world,” a predisposition to believe that most people get what they deserve. Research suggests that this belief derives not from norms or preferences, but from a cognitive misperception influenced by self-interest.⁷ “Belief in a just world” resembles what sociologists term “blaming the victim” and what behavioral economists describe as efforts to reduce moral dissonance or, more generally, framing effects.⁸

Persuasive evidence for misperception emerges from experiments where researchers manipulate information concerning both performance and reward, and show that information regarding rewards strongly influences—even dominates—information regarding performance. In general, winners are perceived as significantly more competent than losers even in the presence of information to the contrary. Losers are perceived as less competent than winners even when outcomes are entirely random. For instance, in one experiment, participants incorrectly reported that a student who won a cash lottery worked harder than the loser. In another, individuals who were randomly punished (with

a fake electric shock) were derogated, especially if they appeared to have no way of avoiding punishment.⁹

Several items in an early survey instrument designed by psychologists to measure belief in a just world could be lifted from modern introductory economics textbooks.¹⁰ For instance, the survey items “By and large, people deserve what they get,” and “In almost any business or profession, people who do their job well rise to the top,” basically paraphrase the quote from Gregory Mankiw above.

Belief in a just world can encourage good behavior and hard work by increasing confidence that these will be directly rewarded. Competition creates little ill will if losers perceive themselves as undeserving.¹¹ Unfortunately, belief in a just world can also lead winners to naïvely overestimate their own contributions and blatantly disregard those made by others. The tension between these two effects is beautifully captured in David Brooks’ response to a businessman expressing doubt that he really deserved his earnings: “As an ambitious executive, it’s important that you believe that you will deserve credit for everything you achieve,” Brooks wrote, adding “As a human being, it’s important for you to know that’s nonsense.”¹²

Feelings of power often create an illusion of personal control that can backfire.¹³ When and if disparate outcomes are revealed as genuinely unfair, the ensuing conflicts may be vengefully intense. Feelings of disempowerment can also prove costly. Bad luck, arbitrary punishment, and absence of opportunity can undermine effort, cooperation, and self-control.¹⁴ The challenge, then, is to feel just powerful enough to keep faith in the possibility of a just world without assuming this dream has already been realized.

The Role of Luck

Much depends on the causal link between contributions and rewards. In his *Essay on Population*, first published in 1798, Thomas Robert Malthus described the poor as unhappy persons who simply drew a blank in the great lottery of life. Neoclassical economic theory urges the opposite interpretation—the poor are unproductive persons who don't invest in themselves or work hard. Neither extreme is credible. The labor market is not a game of pure chance. Nonetheless, players in it are subject to powerful forces entirely beyond their control.

Competitive markets are often described as meritocratic machines, delivering prizes to the best product, the best firm, or the best worker. But history does not allow for the kinds of controlled experiments that could confirm this cheerful description. Economist Robert Frank illustrates this point with a moving description of the role of serendipity in his own success.¹⁵ Recent research in evolutionary biology also provides evidence that “the survival of the fittest” partly reflects survival of the luckiest. Detailed analysis of genetically-identical mice raised in identical laboratory environments shows surprising variation in their life trajectories, apparently as the result of random events.¹⁶

Perceptions of the relative importance of luck influence perceptions of fairness relevant to social policy. In the U.S. critics of affirmative action policy tend to discount the impact of both luck and discrimination.¹⁷ Responses to the World Values Survey show that Europeans are about twice as likely to believe that luck, rather than effort or education, determines income, and Americans about twice as likely to believe that the

poor are lazy or lack willpower. These differences may help explain lower support in the U.S. for the social safety net.¹⁸

Personal circumstances also shape perceptions. A recent study of county-level differences in the U.S. found high-income residents far more confident of meritocracy than low-income residents; opinions were most polarized in counties with the greatest income inequality.¹⁹ Young people who had the bad luck to enter the job market in the U.S. during a recession tend to be unusually doubtful that the world is just.²⁰

Perceptions of potential social mobility may be self-reinforcing.²¹ Individuals from low-income families, anticipating a low probability of success, may put forth less effort. Their upward mobility may also be hampered by the low expectations of others, including employers.²² Good luck itself seems to make people less sympathetic to losers. A longitudinal study in the United Kingdom revealed that many individuals who won lotteries subsequently shifted their political views to the right. The larger their winnings, the greater the likelihood of such a shift.²³

Most economists do not ignore the ways that people can suffer through no fault of their own. Some argue explicitly, contra Malthus, that public policy could alter the consequences of the lottery ticket labeled “born into poverty.”²⁴ But these concerns are often submerged in a larger theory that emphasizes the payoffs to virtues such as hard work and self-investment. This theory leads easily—though mistakenly—to the principle that high earners deserve every penny they get.

The Textbooks of Just Deserts

Neoclassical economic theory offers two related theories of wage determination, one focusing on relative returns to capital and labor (the theory of marginal productivity)

and one on skill or education differences among workers (the theory of human capital). Both theories explain important influences on earnings but exaggerate the impact of factors under individual control. Because it is difficult to accurately measure individual labor inputs or outputs in a complex economy based on collaborative production, both theories rely heavily on largely untestable assumptions.

Early Theories of Marginal Productivity

When the neoclassical economists of the late nineteenth century sang the praises of perfectly competitive markets, a chorus of critics retorted that ownership of productive endowments such as capital or land --which John Rawls would later describe as “background fairness” --largely predetermined economic success. In the U.S., Henry George espoused the politically subversive view that land ownership, in particular, yielded unproductive and undeserved rents. His early critique of “rent seeking,” which foreshadowed the debates reviewed later in this paper, put neoclassical economists on the defensive. John Bates Clark sought to counter George with the argument that, under perfect competition, each factor of production was rewarded its marginal contribution to output.²⁵

Clark was not the first economist to consider the links between marginal productivity and income, but is generally given credit for the doctrine. He explicitly aimed to demonstrate just deserts. As he put it in *The Distribution of Wealth*, first published in 1899:

It is the purpose of this work to show that the distribution of the income of society is controlled by a natural law, and this law, if worked without friction, would give to every agent of production the amount of wealth which that agent creates.²⁶

Clark's model was abstract, assuming a particular type of production function and treating all units of labor (like all units of capital) as homogeneous.²⁷ He emphasized that returns to labor were determined by the same impersonal forces as returns to capital. Unpleasant outcomes, such as a fall in wages, could be construed as the result of forces outside the control of *all* the players. The game might be brutal, but the playing field was level, raked flat by the graphical forces of supply and demand. Clark's approach struck at the heart of the Marxian theory of exploitation, denying the existence of "surplus" or "rent" along with any notion of bargaining power over its disposition.²⁸

The assumptions underlying the theory of marginal productivity came under attack from many quarters. Perfect competition seldom holds (the approach emphasized by Arthur Pigou and his intellectual successors); factors of production are seldom perfectly substitutable (John Hobson, among others); changes in aggregate income may confound the results (John Maynard Keynes), and different rates of profit imply different marginal products (Joan Robinson).²⁹ Total output cannot be accurately valued by market prices alone because non-market assets and services create enormous hidden value. Yet Clark's claim that distributional outcomes are fair still enjoys considerable allegiance.

Some economists interpret marginal productivity theory in purely empirical terms, as an explanation of income earned by factors of production that has no bearing on issues of fairness.³⁰ But it has also been advanced as a philosophical ideal. As Milton and Rose Friedman put it in *Capitalism and Freedom*, "The ethical principle that would directly justify the distribution of income in a free market society is, "To each according to what he and the instruments he owns produces."³¹

The Friedmans' wording now sounds dated and the theory of marginal productivity scarcely appears in the advanced microeconomics texts used in elite graduate programs.³² Many economists emphasize the impact of institutional factors on wage determination.³³ Yet the theory of marginal productivity remains ensconced in undergraduate textbooks. Standard criticisms of Clark's theory receive no attention in the best-selling *Macroeconomics* textbook authored by Gregory Mankiw, which expansively claims that the "neoclassical theory of distribution is accepted by most economists today as the best place to start in understanding how the economy's income is distributed from firms to households."³⁴

In "Defending the One Percent," Mankiw argues that rewards should be congruent with contributions not only in order to provide efficient incentives but also to generate equitable outcomes. He supports the principle of "just deserts" as an alternative to the utilitarian principles that underlie theories of social welfare.³⁵ He comes close to endorsing the libertarian view that any redistribution by the state is unjust. Other forms of unfair distribution are, in his view, reassuringly rare.

Shocks and Adjustments

Yet a closer look at the nuts and bolts of neoclassical theory clearly reveals the impact of what are politely termed "exogenous shifts." An outward shift in the supply of labor will (all else equal) drive wages down or unemployment up regardless of workers' average skill or effort. A downward shift in the demand for labor (all else equal) will have the same effect. Even when such shifts result from random factors, the results are no more fair than the effects of a hurricane on a large coastal city. The list of factors beyond the control of individual workers that influence wages is virtually infinite. But examples

include the size and composition of birth cohorts that significantly influence lifetime income, the difficulty of finding a job if graduating from college during a major recession, geographic differences in intergenerational mobility, and living in a labor market particularly vulnerable to import competition.³⁶

Neoclassical economists generally reserve the term “externality” for the unintended side effects of a market transaction. But external factors have pre- as well as post-market effects. James Meade made this point in 1973, when he defined them as events that confer “an appreciable benefit (or inflict appreciable damage) on some person or persons who were not fully consenting parties in reaching the decision.”³⁷ From this perspective, any shift in supply or demand that changes the prices at which others trade represents an externality.³⁸

The market is like a boat sailing the ocean. Some crews—and crew members—are certainly more skilled than others. But their success is shaped by prevailing winds, tides, icebergs, and storms not easily foreseen. Workers are tossed and turned by waves of economic expansion and contraction. Like sailors, they can’t always choose the boat they sail on, and once they have signed on, it is difficult for them to switch vessels. This metaphor implies that productivity may influence wages more in some periods than in others.

In his *Principles of Economics*, Mankiw reports that average wages in the U.S. grew only slightly less than output per labor hour between 1959 and 2009 (1.9% per year compared to 2.1% per year), and concludes that there is a close connection between the two.³⁹ But a closer look at the data show that two trends began to diverge in 1971 (as did the correlation between productivity and compensation per hour, which includes

benefits). In recent years, many employees in the U.S. have experienced declining wages despite increases in their average educational attainment and experience.⁴⁰

Neoclassical theory postulates individuals with considerable power to maximize their utility, endowed with perfect information and intelligence, and far-sighted enough to take the wellbeing of future family members into account.⁴¹ But it also postulates constraints that limit the domain of choice. Belief in a just world is easy to sustain only when confined to this this relatively small domain.

Human Capital and Inequality

The neoclassical theory of human capital focuses on differences in earnings among workers who are, by definition, human capitalists. As Gary Becker puts it, “The economic successes of individuals and of whole economies, depend on how extensively and effectively people invest in themselves.”⁴² Some economists attribute rapid growth of wages at the top of the distribution to technological changes that increased the demand for highly-educated workers beyond the available supply.⁴³ This explanation suggests that less-educated workers would have fared better if they had just stayed in school, and that increased college graduation rates would reduce earnings inequality. One could hardly ask for a formulation of just deserts with stronger appeal for both educators and the highly educated.

Human Capitalists

Among twentieth-century thinkers, Theodore Schultz deserves credit for highlighting the contribution of education to economic development.⁴⁴ Gary Becker, however, systematized a distinctive paradigm explaining individual earnings as a return to investments in education and experience. His initial analysis highlighted the decisions

of adults to enroll in college rather than immediately seek employment, a model of “self-investment.”⁴⁵ Later, he devoted significantly more attention to the role of parents and the state.⁴⁶ His emphasis on individual optimization and efficiency leaves distributional conflict almost entirely out of the picture.

Becker’s theoretical models inspired a new genre of econometric research in the 1970s designed to measure the impact of education and job market experience on earnings.⁴⁷ Ironically, the implicit assumption that most wages were fair encouraged attention to a possible source of unfairness: discrimination on the basis of race/ethnicity or gender. Empirical research revealed significant differences in rates of return on education and experience across demographic groups. White men’s earnings equations became the standard of comparison. By implication, they enjoyed immunity not just from discrimination, but also from injustice.

In retrospect, early efforts to measure discrimination suffered from methodological naiveté. Simple regression models with earnings on the left hand side and education and experience on the right-hand side along with some standard demographic controls accounted for some variation in earnings, but left a large unexplained residual. Despite many omitted variables and problems of measurement, the size of the residual was often considered an indicator of the level of discrimination. Recent research shows that characteristics seemingly unrelated to productivity (such as physical appearance) and personality traits (such as extroversion) influence earnings.⁴⁸ In retrospect, it seems likely that many human capital models were misinterpreted, overstating the magnitude of discrimination.⁴⁹

On the other hand, these models understated discrimination by ignoring reverse causality: while earnings are clearly influenced by education and experience, arrows move in the opposite direction as well. Many women accumulated less experience on the job than men did precisely because they were paid significantly less. Their lower earnings could not, therefore, simply be attributed to their lack of experience. Likewise with education: discrimination lowers the returns to education and therefore reduces incentives to invest in it.

The basic human capital model raised a meritocratic standard by suggesting that earnings *should* be based on an individual worker's productive characteristics. As a result, it complemented efforts to outlaw explicit discrimination, improve access to education among women and minorities, and encourage more continuous labor force participation. Much debate focused on the speed with which discrimination might be eliminated. While Becker, in particular, argued that labor market competition should penalize employers with discriminatory preferences, other economists explained why incomplete information could encourage employers to engage in a self-perpetuating process of statistical discrimination.⁵⁰

At this stage, the debate largely overlooked labor market disadvantages based on class, pre-market factors relevant to what Rawls terms "background fairness." Individuals inherit many of their capabilities—as well as the resources to develop them—from their families and communities.⁵¹ More recent analysis of the effects of childhood poverty explicitly acknowledge that children's inability to choose their parents represents a market failure.⁵² Group allegiances often coordinate efforts to defend or improve differential access to education and opportunity.⁵³ Complex alliances based on class,

race/ethnicity, citizenship, and gender often encourage “divide and conquer” tactics.⁵⁴

The theory of human capital, however, has little to say regarding forms of distributional conflict that influence the supply of labor.

Rates of Return

From a just-deserts perspective, human capital theory relies on marginal productivity reasoning: presumably workers with more education and experience earn more than other workers because they are more productive. Here too, the static picture is rosier than the dynamic picture, in which exogenous shifts in both supply and demand can abruptly influence wages. Individuals who invest in their own skills are particularly vulnerable to external shocks, because human capital is far less fungible than other assets. It takes time to acquire skills, and they cannot easily be exchanged for others in the market. No young person choosing a career trajectory can fully anticipate future shifts in aggregate labor supply (e.g. how many other young people will choose the same trajectory) or demand (e.g. the future path of technical change). Those who guess correctly may enjoy windfall gains; those who don't, windfall losses.

During the last few decades of the twentieth century, technological change almost certainly increased the demand for the capabilities developed by a college education. But many economists now reject the view that technological change is inevitably skill-intensive. Some even argue that the overall demand for skilled labor has declined, and will continue to decline, as a result of information technology.⁵⁵ A more nuanced view suggests that a declining demand for mid-level skills may be reducing rates of return to undergraduate, but not to more advanced degrees.⁵⁶ Most forms of human capital realize their value only in the performance of specific tasks, and the demand for skills may take

more specific forms than it has in the past. Stock-flow dynamics intensify the problem: burgeoning information technologies initially require large inputs of skilled labor but, once put in place, provide a substitute for them.⁵⁷

Empirical trends suggest that college graduates are not enjoying a robust demand for their services. The college premium, defined as the difference between the earnings of those with a bachelor's degree and those with only a high school diploma, has increased over time, and it remains quite high.⁵⁸ But the driving force behind this trend is not increases in the median real earnings of college graduates, but rather declines in the median real earnings of workers without such educational credentials.⁵⁹

Between 1971 and 2011, the gap between the inflation-adjusted median earnings of men ages 25-34 with a bachelor's degree or higher and those with only a high-school degree widened. But the absolute earnings of the more highly-educated group declined (See Figure 1). More highly-educated women fared better, enjoying at least slight gains in real median earnings until 2001-2002 (See Figure 2). Even these numbers paint an overly optimistic picture, because college graduates include all those with a bachelor's degree or higher. Post-graduate degrees were more richly rewarded over much of this time period, pulling the median for all college graduates upward.⁶⁰ Analysis of more disaggregated measures, available after 1995, shows a decline in average annual earnings of full-time workers ages 25-34 with only a bachelor's degree after 2001 that gradually resumed growth but, in 2015, remained significantly below its earlier level (See Figure 3).⁶¹

The standard warning to investors in the stock market—that past returns do not guarantee future returns--also applies to investors in education. Many popular estimates of the college premium emphasize cumulative differences in lifetime earnings.⁶² But such

projections are based on the past relationship between education and future earnings, which may not hold in years to come. If the demand for the college-educated were outstripping the supply, one would expect their wages to rise in absolute, not just relative terms, as employers competed for their skills. While the relative college premium is certainly relevant for young people trying to plan their economic future, it does not signal increasing returns to skill.⁶³

The average benefits of educational attainment are also complicated by significant divergence in earnings among those with similar credentials.⁶⁴ The rate of return to a college degree has always varied significantly by institution, choice of major, and personal characteristics. But a robust demand for degree-bearing job candidates once reduced the risk, to individual college students, of choosing the wrong major. Many professions once considered reliable ladders to the middle class, including the practice of law and university-level teaching, offer very poor prospects for younger cohorts.⁶⁵ Today, the variance in rates of return is so high that some prominent economists warn that not everyone should go to college.⁶⁶

A comparison of educational qualifications with job requirements specified by the U.S. Department of Labor suggests that the average worker has long been overqualified for her or his job.⁶⁷ The U.S. Bureau of Labor Statistics regularly projects the growth of specific occupations in the U.S., noting which occupations tend to require a college degree. Its official estimate of the percentage of all jobs requiring a bachelor's degree or above in the U.S. in 2012 was 17.9%. Its projection for ten years down the road, in 2022, is 18.1%.⁶⁸ This is not a pretty picture for a generation between the ages of 25 and 29 in which 30% of men and almost 40% of women have achieved a bachelor's degree.⁶⁹

Educational credentials have never perfectly matched job requirements. But historical trends paint a discouraging picture: In 1970, only 1 in 100 taxi drivers and chauffeurs in the U.S. had a college degree, compared to about 15 out of 100 today; a similar trend is evident in bartending and firefighting.⁷⁰ In 2000, 36% of college graduates ages 22-27 worked in jobs not requiring a college degree. In 2014, 46% fell into this job category.⁷¹ A recent analysis of data from the U.S. Census Bureau's Quarterly Workforce Indicators suggests that "college-educated workers are more likely to "filter down" the job ladder than to climb it."⁷²

A college degree still aids a job search, but not as much as it has in the past. Both unemployment and employment-to-population ratios remain above the levels of the late 1990s. The Great Recession darkened all job seekers' prospects. In 2015, the unemployment rate of young college graduates between the ages of 22 and 27 hovered around 7.2%, compared to 5.5% in 2007; the percentage unable to work as many hours as desired was 14.9% in 2015 compared to 9.6% in 2007.⁷³ Black college graduates—including those with degrees in science, technology, mathematics, and engineering--were even more adversely affected than their white counterparts.⁷⁴

Some policy makers attribute a possible mismatch between the credentials that higher education supplies and those the labor market demands to the deteriorating performance of colleges and universities or to the self-indulgent choices of students majoring in English or Art History. Others suggest that a college degree is simply not as good a measure of skill as it has been in the past.⁷⁵ But evidence suggests that even the demand for science, technology, engineering, and math (STEM) majors is flagging. As a recent article in *The Chronicle of Higher Education* put it:

Yes, some information-technology workers are enjoying raises, and petroleum engineers, in demand because of the boom in fracking, are seeing their salaries explode. But if you're a biologist, chemist, electrical engineer, manufacturing worker, mechanical engineer, or physicist, you've most likely seen your paycheck remain flat at best. If you're a recent grad in those fields looking for a job, good luck. A National Academies report suggests a glut of life scientists, lab workers, and physical scientists, owing in part to over-recruitment of science-Ph.D. candidates by universities.⁷⁶

So much for the “Washington consensus” that an increase in the number of STEM workers could boost economic growth in the U.S.⁷⁷

Oversupply?

The increasing private cost of higher education has led to burgeoning student debt and has almost certainly dampened college completion in the U.S.⁷⁸ However, the supply of college-educated workers is increasing world wide. Concerns have been expressed in many countries, including the United Kingdom, where, by one estimate, more than half of university graduates work in non-university level jobs.⁷⁹ Persistently high unemployment rates for young workers in Southern Europe have led to high out-migration rates for university graduates.⁸⁰ Unemployment rates among college graduates in OECD countries grew significantly between 2008 and 2012.⁸¹ A recent survey of OECD workers shows that the percentage who believe their current job could be performed by someone with fewer qualifications is more than twice as high as the percentage who believe the opposite.⁸²

The supply of college-educated workers is expanding rapidly outside the U.S. and Europe. In 1970, the U.S. accounted for 29 percent of the world’s college students. By 2005-2006 its share had dropped to 12 percent. Almost 75 percent of global tertiary education enrollments today are in developing countries, including China, India, and

Mexico.⁸³ Gross enrollment ratios in higher education more than doubled between 1999 and 2013.⁸⁴

A political crisis erupted in China in 2008, when about 20% of those graduating from universities were unable to find employment within a year. Many ended up in relatively menial, low-paying jobs, dubbed members of the “ant tribe.”⁸⁵ Similar problems of over-supply have recently been identified in Taiwan.⁸⁶ Some warn that the “massification” of higher education in Asia may intensify social inequality.⁸⁷

Whatever its long-run implications, the global supply of educated labor makes U.S. businesses less dependent on U.S. students than they have been in the past. The ranks of highly capable computer scientists from India and other developing countries, for instance, render many home-grown programmers superfluous.⁸⁸ When serving as CEO of Intel Corporation, Craig Barrett famously explained that his company could thrive without ever hiring another American. Ron Rittenmeyer, chief executive of EDS, recently described outsourcing in these terms: “If you can find high-quality talent at a third of the price, it’s not too hard to see why you’d do this.”⁸⁹ The future skilled workforce of the U.S. has good reason to be discouraged.

The hope that increased educational attainment will both raise incomes and reduce inequality in the U.S. is comforting, but unrealistic. College-educated workers in the U.S. will almost certainly fare better than other workers in the years to come. They will probably continue to enjoy higher wages, as well as many non-pecuniary benefits, including intrinsic satisfaction, improved health, and successful family and community life.⁹⁰ But both demand-side and supply-side factors are likely to reduce their earnings and, in the process, change their perception of the global labor market.

Competitive games can be fun for those who have a good chance of winning. They are less fun when that chance dwindles. The labor market can resemble a game of musical chairs, its winners determined by who happens to be in the right place (including the right country) when the music stops.⁹¹ This not a game that necessarily rewards effort and skill; it is one that encourages pushing and shoving, especially when the stakes are high and the rules are not enforced.⁹² Human capital theory promotes the reassuring view that we inhabit a highly competitive, knowledge-driven economy in which learning equals earning.⁹³ But slogans implying that investment in education will guarantee prosperity resemble a secular religion.⁹⁴ They are heavily inflected by belief in a just world.

Earnings versus Rents

The widening distance in the U.S. between earners at the top and those at the bottom has created new space for asking whether workers earn what they deserve. Gregory Mankiw presented his theory of just deserts in an article entitled “Defending the One Percent,” published in a special issue of the *Journal of Economic Perspectives* exploring increased income inequality in the U.S.⁹⁵ The articles in this issue exemplify a larger literature that applies the term “rent” to earnings that are both unfair and inefficient, and the term “rent seeking” to the process by which such rents are obtained.

These terms carry a long history of controversy. The classical political economists used the term “rent” to describe a return to property based solely on ownership, not on any productive contribution: feudal lords who acquired land through military force or family inheritance charged rents to tenant farmers. By contrast, neoclassical economists use the term “rent” to describe gains from interference with the forces of supply and

demand in a competitive market. Minimum wage legislation provides a common textbook example.

Classical and neoclassical concepts of rent both describe benefits to one person or group counterbalanced by losses to another person or group, with no net gain to society as a whole. But the neoclassical concept of rent confines its attention to within-market distributional conflict—efforts to modify market outcomes. By contrast, the classical tradition has long emphasized pre-market distributional conflict—efforts to gain control over resources or services that can create an advantage in market exchange. These two forms of distributional conflict are closely connected, and both deserve close consideration.

Makers vs. Takers

In everyday language, rents usually represent payments to a landlord for the use of a house or other real estate. Dictionary definitions typically include a more generic meaning: “paying someone for the use of something.” In this context, rent represents the recognition of a specific property right: ownership of land or, in the case of the labor market, ownership of one’s own human capital. One can rent one’s house or one can rent one’s labor. This generic definition does not rouse political or moral concerns.

But much depends on how productive capabilities—whether land, capital, or labor—are acquired. In the early nineteenth century, the classical political economist David Ricardo described rent as the return to a fixed factor of production, land. While rent was, in his view, determined by forces of market supply and demand (in particular, differences in the profitability of farms utilizing land of differential quality) Ricardo also emphasized its unproductive character, arguing that landlords, unlike capitalists,

contributed little to economic growth. By implication, they were doing little to deserve the payments they received. This Ricardian approach provided the inspiration for Henry George's critique of marginal productivity theory and also influenced the Marxian critique of capitalism.

Neoclassical economic theory, with its emphasis on allocative efficiency, rejects this criticism, treating rent as a return to a scarce factor of production. It assigns a different, more specific, and distinctly pejorative meaning to rent seeking: political interference with market dynamics that simply redistributed goods and services rather than producing new ones. The Investopedia website defines rent seeking as "the use of the resources of a company, an organization or an individual to obtain economic gain from others without reciprocating any benefits to society through wealth creation."⁹⁶ The resemblance between this definition and the Marxian concept of surplus extraction or exploitation is noteworthy.⁹⁷

Rent seeking, defined as unproductive redistribution, leads to outcomes that are both unfair (determined by political power rather than economic contribution) and inefficient (entailing unproductive expenditures). In the 1970s, the term was applied to lobbying efforts against free trade.⁹⁸ In the 1980s, it was used more broadly to criticize many different forms of government interference with the market.⁹⁹ Today, many accusations of rent seeking come from the liberal direction, leveled at those with the greatest financial wherewithal to influence political outcomes. For instance, it has been used to label both the bank bailouts of 2007-2008 and skyrocketing paychecks in the financial sector.¹⁰⁰

In this context, rent seeking includes behavior that fits the narrow neoclassical definition of interference with market forces. For instance, relatively well-paid professionals such as doctors and lawyers fight for and enforce licensing requirements that insulate them from global competition.¹⁰¹ But the term is increasingly used to describe institutional arrangements outside the political arena that short-circuit markets. Increased market concentration in many industries gives firms considerable power over prices and output.¹⁰² Chief executive officers of major corporations influence the procedures that determine their own salaries.¹⁰³ The compensation consulting industry operates in ways that amplify this influence.¹⁰⁴ Rent seeking also applies to distributional conflict between groups trying to influence public policy: Thomas Piketty's *Capital in the Twenty-First Century* documents the conspicuous success of wealthy interest groups in lowering marginal income tax rates in the U.S.¹⁰⁵

Gregory Mankiw acknowledges the broader definition of rent seeking when he admits the possibility of bad behavior by all economic actors: “gaming the system or taking advantage of some market failure or the political process.”¹⁰⁶ But he does not explicitly define “gaming the system.” Nor does he explain the difference between taking advantage of some market failure, and trying to minimize or compensate for it. Not all “taking advantage of the political process” can be categorized as rent seeking. Many public policies represent explicit efforts to compensate for market failures or to remedy pre-market inequalities.

Good vs. Bad Rents

As rent seeking has become an increasingly popular accusation, it has become increasingly difficult to pin its meaning down. The classical definition of rent (return to a

fixed factor of production) challenges its productive contribution. The neoclassical definition (political interference with the forces of supply and demand) assumes perfectly competitive markets. A related approach defines rent as any payment in excess of opportunity cost, or more than is needed to put a factor into production.¹⁰⁷ None of these definitions reliably describes forms of distributional conflict that are always unfair and/or inefficient.

The opportunity-cost approach offers some advantages, because it goes beyond the traditional neoclassical emphasis on state interference with the market. But it ignores the existence of surpluses that are built into the standard supply-demand framework: many consumers are willing to pay more than the equilibrium price, and many workers are willing to work for less than the equilibrium wage. How, exactly, do these consumer and producer surpluses differ from a rent?

The opportunity cost definition is also at odds with neoclassical theories of marginal productivity and human capital, which both assert that workers are paid on the basis on what they produce, not their reservation wage (the lowest wage they would be willing to accept). Reservation wages are significantly affected by workers' next best alternative, or their fallback position. Indeed, taking the opportunity cost definition of labor market rents to an extreme, one could argue that anything that improves workers' fallback positions generates rents.

None of the three common definitions acknowledges the possibility that rent seeking can have positive effects. Illegal actions, corrupt behavior, and subtle con games that involve manipulation and deceit are obviously unfair.¹⁰⁸ But the desire to capture rents has often been considered the driving force of technological change. Joseph

Schumpeter, among others, celebrated the long-run benefits of disruptive and sometimes destructive rivalries among large firms.¹⁰⁹ Corporate efforts to increase market share drive a form of competition very different from the form idealized in neoclassical theory.¹¹⁰ The pursuit of rents derived from intellectual property rights and patents often spurs innovation that potentially benefit society as a whole. Most critics of current property rights policies in the U.S. do not seek to eliminate these rents but to bring them to more efficient levels.¹¹¹

Some rents represent returns to unique talents or abilities, as in Mankiw's examples of J.K. Rowling and Steven Spielberg. These two may simply have inherited talents that represent a unique, fixed factor of production. Their earnings are almost certainly higher than necessary to elicit their contributions. But they do not fall in the same category as individuals who have, in Mankiw's words, "gamed the system." One could argue that their earnings represent the prize in a tournament that elicits greater effort from all potential writers and film directors. This prize may well be too high, but it is not attributable to what most people would term rent seeking behavior.¹¹²

Perhaps as a result of these ambiguities, many economists who believe that earnings at the top of the distribution largely reflect unfair rents fall back on the counterfactual of a competitive market. For instance, Josh Bivens and Lawrence Mishel define rent as income that cannot be explained simply as the "outcome of well-functioning competitive markets rewarding skills or productivity based on marginal differences."¹¹³ This definition appears to contradict many of the policies they themselves advocate, including minimum wage legislation.

Recognizing this problem, they go on to define a new term, “rent shifting” in terms of its distributional impact, focusing on activities that subvert the bargaining power of those at the bottom and middle of the income distribution.”¹¹⁴ This definition implies that rents are bad if they benefit the rich, and good if they benefit everybody else. It represents a critique of the distribution of labor market rents, not a critique of these rents themselves.

Dean Baker’s arguments reveal similar tensions. He favors greater reliance on market forces where it would reduce the relative earnings of highly-paid professionals and managers (examples include medical tourism and a loosening of occupational licensing restrictions).¹¹⁵ But Baker does not favor greater reliance on market forces that would hurt workers at the bottom of the earnings distribution and remains a strong supporter of an increased minimum wage. He argues persuasively that the rich are better at capturing rents than everyone else.¹¹⁶ But he would apparently prefer to reverse this asymmetry than to eliminate rents altogether.

Sociologists Kim Weeden and David Grusky also rely on the competitive market as idealized counterfactual. Like Dean Baker, they argue that credentialing and licensing requirements boost average earnings in many specific occupations.¹¹⁷ They, too, highlight the distributional impact, arguing that “competition-suppressing institutions” benefit those near the top of the income distribution.¹¹⁸ But they go on to explicitly argue for public policies that would liberate market forces, without considering the possible adverse effects on low earners.

Defined in narrow terms as “suppression of competition,” rent seeking becomes easy both to explain and to remedy: Discourage policies that reduce labor market

competition and allow the impartial forces of supply and demand to work their magic. Unfortunately, this interpretation relies on the presumption described in the first two sections of the paper: that market outcomes, untainted by government intervention, provide the standard for both fairness and efficiency. As a result, it implies that all forms of interference in the labor market are suspect, potentially undermining many policies aimed to reduce earnings inequality.

Bargaining Power and Earnings

Rent seeking is simply another name for distributional conflict. It can take place both inside and outside labor markets and its results are largely driven by differences in bargaining power. As advertisements for a prominent business training consultant put it, “You don’t get what you deserve. You get what you negotiate.”¹¹⁹ Even this slogan is too narrow. Not all bargaining is based on negotiation, and not all negotiations end with contractual agreements.

Wages in the U.S. economy are influenced by workers’ productivity and human capital. But the link between the value of what workers produce and what they are paid is more tenuous than neoclassical theory implies.¹²⁰ Firms that want to hire workers must pay them at least their reservation wage--enough to draw them into employment. Firms that want to remain profitable cannot pay their workers more than their contribution to total revenue. Many factors other than productivity and skill affect these endpoints, including shifts in the supply of and demand for workers. Within this range, both individual and collective bargaining affect workers’ remuneration.

Over the last twenty-five years a number of institutional and technological trends have weakened the bargaining power of many wage earners in the U.S. Globalization and

concomitant increases in capital mobility have decreased corporate reliance on U.S. workers and reduced the potential for democratic governance of the economy. Immigration has increased the supply of labor, putting downward pressure on wages for less-educated workers in particular.¹²¹ Reduction of trade barriers has contributed to increased import competition, hurting employment and wages in many local labor markets.¹²² New information technologies have rendered many existing skills obsolete.¹²³ Increased economic concentration has given firms greater market power.¹²⁴

Changes in the relative bargaining power of different groups of workers—exacerbated in many cases by these larger trends-- help explain earnings inequality. Declining levels of unionization have played a well-documented role.¹²⁵ Recent sociological and economic research, sometimes referred to as “rent theory,” offers a broader analysis of distributional conflict that includes inequalities based on citizenship, race/ethnicity, and gender.¹²⁶ A variety of empirical studies support this broader explanation of differences in earnings.

Contested Exchange

Neoclassical theory predicts that market forces should lead to similar wages for workers of similar productivity or skill levels. But occupations are often considered an indicator of skill, and wage variation in the U.S. is now greater within occupations than between them.¹²⁷ Earnings often differ substantially from estimates of marginal productivity, and rates of return to measures of human capital vary significantly across industries.¹²⁸ Inter-industry differences are even greater when employee benefits such as contributions to health insurance and pensions are taken into account.¹²⁹

These patterns can be partially explained by microeconomic models of contested exchange that result from the difficulty of clearly specifying and enforcing labor market transactions.¹³⁰ Neither worker performance nor worker effort can always be directly monitored. Firms may pay workers a wage significantly above that available elsewhere, imposed discipline by increasing the cost of job loss.¹³¹ This efficiency wage logic operates powerfully in industries in which worker effort is difficult to measure, but consumers are good judges of the quality of output. Where consumer choices are less discerning and quality is difficult to measure—as, for instance in nursing homes--firms have little to lose from either high turnover or low effort.¹³²

Pay based on performance rather than hours on the job represents another device for increasing work intensity. A majority of firms in the U.S. now offer individual incentives such as performance bonuses to more than 20% of their labor force.¹³³ Bonuses and other add-ons such as stock options represent an increasing share of compensation, particularly in the financial sector. This trend contributes to increasing earnings inequality not only because more productive workers are paid more but also because they often select into jobs in which they will be paid for performance.¹³⁴

At first glance, pay for performance seems like a contractual device that salvages the theory of marginal productivity, but the scale of rewards is not necessarily calibrated with the value of actual contributions. More importantly, pay for performance is feasible only in jobs where individual performance can be easily measured. As a result, it cannot be utilized for a large percentage of employees. One survey reports that the median pay-for-performance bonus as a percentage of total compensation is about 40% for

salespersons but only about 2% for administrative assistants, social workers and nurses.¹³⁵

Nurses provide a telling example of the difficulties of measuring worker productivity. Most hospitals do not bill for nurses' services by the hour but charge a fixed daily rate: on-call availability and skilled response to unpredictable emergencies matter more than performance of specific procedures. Many workers in the care sector of the economy—employed in health, education, or social services, are involved in a form of team production, collaborating with patients, students, and clients themselves to develop human capabilities that don't have an explicit market price.¹³⁶ Increased competition among workers who are judged in relative terms creates temptations to subvert the success of others, discouraging cooperation and even encouraging sabotage.

Many workers in the public and non-profit sectors of the economy—more than a fifth of the total labor force—are engaged in activities that don't directly generate revenue. Most of the organizations they work for produce unpriced public goods—including national defense, education, help for the needy, and support for the arts. Rewards for easily measurable aspects of performance tend to reallocate effort away from less tangible goals.¹³⁷ In this arena, pay for performance can easily backfire.

Cooperative attitudes are also relevant to productivity in the private sector. During much of the post -World War II era, major U.S. corporations offered relatively generous pay and benefits to their low-level workers partly to reinforce loyalty and commitment to the firm.¹³⁸ However, pressure to maximize shareholder value by boosting short-term profits has discouraged such policies.¹³⁹ Many corporations have adopted sub-

contracting, outsourcing and franchising strategies that cut costs by offloading responsibility for supervision and discipline.¹⁴⁰

Efforts to align worker incentives with company goals remain important primarily for high-level employees. Extremely large firms are especially likely to offer their chief executive officers and top managers extremely high pay.¹⁴¹ These workers acquire valuable industry-specific knowledge and skills that increase bargaining power, a factor that almost certainly buffered them from the most adverse effects of the Great Recession.¹⁴² Workers in more competitive sectors characterized by smaller firms were more susceptible to layoffs and downward wage pressure.

The financial services industry provides a case in point. Partly as a result of deregulation, weak anti-trust policies, and government subsidies, a small number of financial institutions now command a large share of total profits in the U.S.¹⁴³ High earnings among top-level employees in this industry have contributed significantly to increased earnings inequality in the economy as a whole.¹⁴⁴

Monopoly power enables firms to maximize profits while restricting output and raising prices. Monopsony power enables firms to influence labor demand and wages. Standard neoclassical theory shows that firms with monopsony power do not pay workers their marginal product.¹⁴⁵ The resulting rents (defined narrowly in this literature as departures from the stylized equilibria of competitive markets) are not necessarily the result of explicit rent seeking behavior, but nonetheless enrich shareholders, employers, and some employees.

Contested Regulation

If competitive market outcomes are considered the standard for efficiency and fairness then market failure becomes the only excuse for government intervention in the economy. Neoclassical theory concedes the existence of market failure, but treats it as exception or anomaly. Terms such as “externality” and “spillover” imply that the market economy is large, and problems emerge only on its outside, at the edge of a very full cup sitting on a tidy saucer. But the global market economy is situated in an ecosystem in which the imputed market value of unpriced services is at least as high of that of the total value of goods and services sold.¹⁴⁶ Unmitigated climate change could, in the long run, drastically reduce global living standards.

The level of interference with market forces is seldom as important as the direction that interference takes. The public sector is a major site of distributional conflict. Elected officials and government employees clearly have interests of their own, but their actions are significantly constrained, if not dictated, by the relative bargaining power of employers, workers, and voters with complex and often conflicting allegiances based on citizenship, class, race/ethnicity, gender and other dimensions of social identity. The difficulty of agreeing upon, much less pursuing social welfare and the public interest helps explain why markets are not the only institutions subject to failure. In a putatively democratic system with virtually no restrictions on political spending, money doesn't just talk. It shouts. Corporate interests in the U.S. have often garnered a rich rate on return on their political investments in electoral campaigns.¹⁴⁷

Distributional conflict between employers and workers shapes public policies.

Unemployment is costly, wasteful, and painful. Yet fiscal and monetary policies often aim to prevent full employment, which would give workers more bargaining power to raise wages.¹⁴⁸ Minimum wage legislation affects market dynamics, but also non-market outcomes—workers’ ability to give their children a decent standard of living. This legislation grew out of concerns that competition from individuals without any family responsibilities could undermine the wages of those caring for dependents. Advocates argued that employers should help pay for the costs of creating and sustaining the workforce, not just for the costs of their daily subsistence.¹⁴⁹ Modern living-wage campaigns echo this concern.

Political failure to index the U.S. minimum wage to inflation (much less to productivity or to the median wage) has consistently eroded its real value. In 1968 the federal minimum wage amounted to \$8.54 per hour in inflation-adjusted dollars, significantly higher than its 2015 value of \$7.25.¹⁵⁰ High levels of earning inequality put this low level in perspective. In 2014, Wall Street financial firms handed out bonuses to about 168,000 employees that added up to about twice the combined earnings of the more than one million Americans working full-time at the federal minimum wage.¹⁵¹

Comparative international research shows that policies such as centralized collective bargaining, minimum wages and antidiscrimination policies tend to raise the relative wages of low-paid workers.¹⁵² In recent years increased capital mobility and outsourcing have increased employers’ ability to circumvent such policies and reduced the power of organized labor in the U.S.¹⁵³

Explicit discrimination on the basis of race, gender, and sexual orientation often reflects the relative bargaining power of employers and groups of relatively powerful

workers. Public regulation can discourage it. Between 1965 and 1980, federal affirmative action efforts significantly improved the integration of African-Americans into the U.S. labor force.¹⁵⁴ During much of this period both minorities and women gained a larger share of high-paying jobs in firms covered by affirmative action requirements than those who were not.¹⁵⁵ After such efforts were largely discontinued in 1980, such improvements slowed.

State-level occupational licensing rules, described earlier, have become increasingly pervasive. By creating barriers to entry and impeding inter-state labor migration, licensing rules have likely raised the wages of licensed workers relative to others. But the effects should be put in perspective by consideration of the benefits (such as improvements in the reliability and quality of services provided) and comparison with other, less visible rents. Many workers who receive modest rents as a result of public policies are also paying implicit rents to others, either as a result of market failures or other public policies. A full analysis of distributional dynamics requires more than comparison to some theoretical counterfactual based on idealized market forces.

Contested Norms

Cultural norms, including belief in a just world, are colored by implicit bargaining and negotiation. Strong groups favor norms that reinforce their advantages, while weaker groups favor those that advance their own interests. Cooperative norms appear stronger in societies that are more ethnically and economically homogenous, and therefore more likely to invest in public goods.¹⁵⁶ Paradoxically, countries with relatively egalitarian earnings—and arguably less need for redistribution—have been more likely to develop

generous social safety nets.¹⁵⁷ Income inequality may intensify over time partly because it creates greater resistance to cooperation and redistribution.

Racist and anti-immigrant norms have a long history in the U.S., as well as many other countries. But these norms find more heated expression in periods of economic stress and uncertainty.¹⁵⁸ Increased competition for jobs, in particular, creates incentives for discrimination and exclusion.¹⁵⁹ These incentives are reinforced when cultural stereotypes and disrespectful remarks go unchallenged.

Cultural constructions of gender in the U.S. still promote self-interest for men and altruism for women, encouraging a moral as well as physical division of labor. Women shoulder a significantly larger burden of family commitments than men and are more likely to be employed in care occupations and industries where they experience a significant pay disadvantage.¹⁶⁰ Such gender differences, combined with persistent forms of implicit and explicit discrimination, increase earnings inequality.

The cultural influence of the economics discipline in the U.S. is stamped on political discourse and popular opinion. The argument that employers had nothing to gain—and much to lose—from discrimination against racial/ethnic minorities and women undermined support for affirmative action. The claim that rapidly increasing earnings at the top of the income distribution are the inevitable result of skill-biased technological change has diverted attention from public policy responses.¹⁶¹ Many authorities in both the private and the public sector have benefited from the false promise that workers always get their just deserts.

Conclusion

In the world we live in, few markets conform to the textbook ideal. Large firms routinely bolster their bargaining power and market share in ways that do not necessarily benefit workers, consumers, or taxpayers. Democratic governance also falls far short. Well-organized groups with command over economic resources often turn public policy to their advantage. Minimizing the role of public policy will not solve these problems. Instead, we need to improve resistance to opportunistic manipulation of both markets and government.

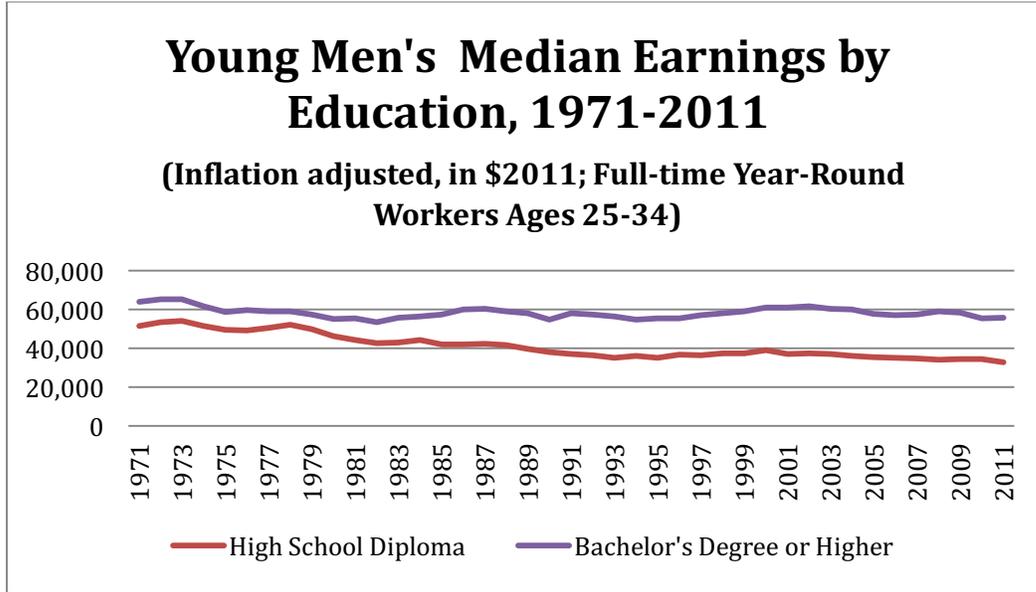
Belief in a just world is a powerful ideology. Because it is comforting to believe that markets accurately reward productive contributions, the burden of proof is typically laid on those who argue otherwise. But the research reviewed above provides weighty evidence to the contrary. Employers' strategies, public policies, and technological change lead to shifts in the supply of and demand for labor. These shifts alter wage levels and trends in ways that workers cannot possibly anticipate, and for which they deserve neither credit nor blame. Public policy offers the only means for responding to the negative consequences of exogenous shocks, abuse of power, and disregard for unpriced resources and services.

Examples of “gaming the system” and “ill-gotten gains” within the current institutional framework strengthen the case for policy interventions.¹⁶² But efforts to punish conspicuously bad behavior should be complemented by more attention to the ways collective bargaining power determines winners and losers in a high-stakes game that goes far beyond any market. Distributional conflict is costly not only because it

wastes resources, but also because it undermines forms of cooperation necessary to solve a variety of problems that markets cannot solve.

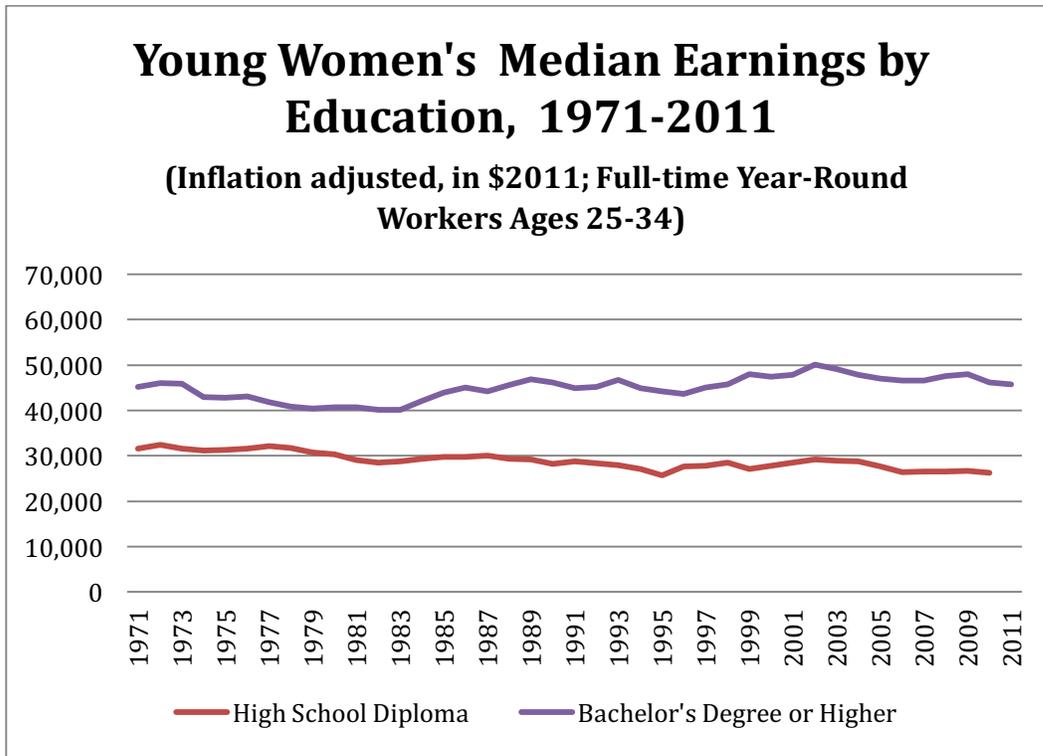
Moral ideals help foster trust and cooperation. If they lacked economic significance, it would be difficult to explain why confidence in equitable as well as efficient outcomes is so deeply embedded in neoclassical theory. The long history of disagreement over economic justice yields no simple recommendations. Psychological research cannot explain how far our perceptions depart from reality or possibility. Yet ideals of fairness will always influence economic policy. Economists need to develop a better theory of just deserts.

Figure 1.



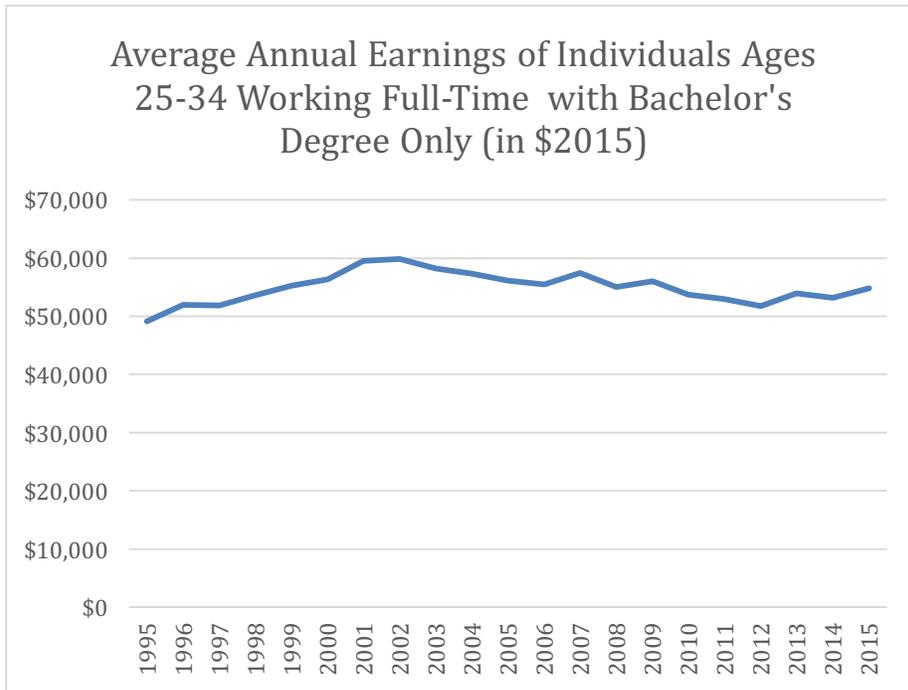
Source: College Board, *Education Pays*, 2013.

Figure 2.



Source: College Board, *Education Pays*, 2013

Figure 3.



Source: Author's calculations, March CPS (ASEC).

Notes

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