

It's not just monopoly and monopsony

How market power has affected American wages

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Introduction and key findings

Economists have started to identify concentration in both labor and product markets as a potential threat to living standards and wages of typical American families. Concentration in product markets (a limited number of sellers) is generally labeled *monopoly* power while concentration in labor markets (a limited number of employers—or buyers of labor) is generally labeled as *monopsony* power. This focus on market power in the form of market concentration represents a welcome and overdue shift. For too long, many researchers tried to explain troubling trends in American workers' wages with textbook models of perfectly competitive labor markets. Specifically, this long research effort claimed that rising wage inequality and slow wage growth for typical workers was the result of economic influences (such as new technologies) that “shift” demand and supply curves for labor in a competitive model. This approach has decisively failed.¹ Given this, any new research effort that introduces market power is an important step in the right direction.

This paper highlights some empirical findings from the new literature on the effect of labor and product market concentration on wages. We address three questions about market concentration that have not always been placed front and center in this literature. The first question is, “Does concentration adversely affect wages *at a point in time*?” The second question is, “Has concentration grown over time?” The third question is, “Can growing concentration *by itself* explain a significant portion of the change in wage trends in recent decades?” We find there is evidence to answer “yes” to the first and second questions but not the third. To be clear, the failure to answer affirmatively to the third question is not a criticism of these studies. The studies are not claiming that rising concentration alone can explain wage stagnation or inequality. Yet too many readers have taken these studies' findings to this conclusion.

Finally, this paper makes two broader points about market power. First, market concentration is not the only source of power—particularly employer power—in markets. Second,

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even *unchanged* employer power (like that conferred by market concentration) can play a role in growing wage suppression and inequality if it is accompanied by a collapse of *workers'* market power. The new literature on market concentration tells us a lot about employer power, but further exploration of what has happened to workers' market power remains a key research agenda.

This paper highlights the need to tackle sluggish wage growth and rising inequality with a broad menu of policy interventions that go beyond those provided by competitive models to focus on employer and worker power, and even beyond the antitrust agenda suggested by focusing exclusively on market concentration.

Following are our key conclusions:

Labor market concentration is negatively correlated with wages, but the scope of its downward pressure on wages is limited.

- New research shows that labor market concentration is negatively correlated with wages. However, the effect of labor market concentration is comparatively modest when scaled against what we consider the most significant wage trend in recent decades: the growing gap between typical (median) workers' pay and productivity.
- The new literature on market concentration has not yet provided concrete empirical estimates of a key labor market trend of recent decades—rising compensation inequality. This should be a priority for this research agenda in the future.
- The new concentration literature does allow us to estimate the effect of market concentration on the share of overall income claimed by labor compensation. These estimates suggest that concentration has not risen enough, nor is its effect on labor's share of income strong enough, to account by itself for an economically important share of the divergence between economywide productivity and the typical worker's pay in recent decades.
- The new research on labor market concentration implies that this concentration reduced wage growth by roughly 0.03 percent annually between 1979 and 2014, a decline that would explain about 3.5 percent of the total divergence between the median worker's pay and economywide productivity over the same period.
- One important study shows that the "average" labor market is "highly concentrated." But differences between measures of concentration of the *average labor market* and the *labor market experienced by the average worker* have important implications for how to assess the impact of labor market concentration on long-term wage trends. In other words, many *labor markets* suffer from high degrees of concentration, but most *people* work in labor markets with only low-to-moderate degrees of concentration.
- Nonetheless, labor market concentration is a particular challenge for rural areas and small cities and towns. This is an important finding for those looking to provide economic help to residents of those areas.
- Research on labor market concentration within manufacturing shows a modest increase in labor market concentration between 1979 and 2009.

Product market concentration has increased for some sectors—but at varied rates—and the scope of its downward pressure on wages is also limited.

- Product market concentration rose steadily across six sectors from 1982 to 2012 (manufacturing, retail, wholesale, services, finance, and utilities and transportation), but the magnitude of this rise has varied substantially and it is unclear how much product market concentration has affected labor market trends.
- The new literature on product market concentration indicates that it may have reduced overall wages by roughly 0.08 percent annually from 1979 to 2015, or less than 10 percent of the total divergence between a typical worker’s pay and productivity over that period.

The focus on market power as a key driver behind American wage trends should focus as well on developments that have weakened workers’ power.

- Explaining the expanding pay–productivity gap and increasing inequality in America requires labor market models that allow for employer market power, but the conception of power must go beyond measurable market concentration. Instead, this analysis of power must focus on what has happened to the countervailing power American workers were once able to wield but which now seems radically reduced.
- Correspondingly, a policy response to rising employer power over wages must go well beyond antitrust reform to focus on every possible margin along which policy could strengthen workers’ leverage and bargaining power.

A quick economic background for the new literature on market concentration

Several recent studies have moved analyses of market power front and center in the discussion of American wage trends. This focus on market power is a welcome shift away from analyses claiming that the wage trends we see are simply perfectly competitive labor markets responding smoothly to exogenous “shocks” to labor supply or demand. These textbook models of labor markets have largely failed to explain the most important trends in American wages, such as the long-term stagnation in hourly wages for the typical worker and the closely related divergence between hourly pay for most workers and economywide productivity.

Most of the recent studies focusing on market power look at a relatively narrow slice of potential power: market concentration. Specifically, they look at firm concentration in product markets (or monopoly power) or employer concentration in labor markets (or monopsony power). In highly concentrated product markets, the combination of few sellers and a lack of credible competition from new entrants grants incumbent firms an ability to set prices, rather than simply having to accept the going price (i.e., they have the ability to set prices over marginal product and make economic profits).² Monopoly power

raises the prices paid by consumers and shifts national income away from workers and to corporate profits.

In concentrated labor markets, few buyers of labor and a lack of credible competition from new entrants gives employers the ability to set wages lower than they would be in a competitive market (i.e., lower than their workers' marginal value product).³ As this description suggests, the impact of labor market concentration on the share of overall income claimed by labor is straightforward: growing concentration should reduce labor's share of overall income. However, the impact of labor market concentration on rising wage (or compensation) *inequality* is indeterminate. For inequality to increase, higher-wage workers would need to be getting a greater share of overall *labor* income. If labor market concentration affects all workers equally, it will not increase wage or compensation inequality. But if labor market concentration is more pronounced in economic sectors that disproportionately employ one particular type of worker—say less-credentialed workers—then concentration could, in theory, contribute to rising wage inequality. As an example, assume that concentration occurred only in the retail sector, which employs many relatively low-wage, non-college-educated workers. This rising concentration would push down retail wages, leading to a growing pay gap between college-educated workers and their non-degreed peers.

The need to explain the productivity–pay divergence

Before assessing the role of any particular factor in driving wage trends, one needs to settle on the most important trend to explain. From our perspective, the key trend to explain is the divergence between the growth of wages and compensation for the typical American worker and the growth in economywide productivity for most of the post-1979 period.⁴

One of our goals is to assess how much of this growing productivity–pay gap can be explained by rising concentration in product and labor markets. Assessing the role of market concentration in the growing pay–productivity gap is equivalent to assessing how growing concentration affects increasing *compensation inequality* and the *erosion of labor's share of income*, as these are the two channels through which increased productivity can bypass the pay of typical workers.

In fact, in earlier research (Bivens and Mishel 2015, Table 1), we found that the widening productivity–pay gap is the result of these two developments: the erosion of *labor's share of income* and the growth of *wage or compensation inequality*. **Table 1** presents our 2015 findings. It shows that the gap between net productivity (economywide productivity net of depreciation) and real median hourly compensation grew 0.8 percent per year between 1973 and 2014, and grew a larger 1.1 percent per year when just looking at the 2000 to 2014 period. It further shows that growing compensation inequality is responsible for the large majority (82.5 percent) of the growth of the productivity–pay gap over the entire period, 1973–2014, whereas the erosion of labor share of income explains about one-sixth of the gap (16.3 percent per year). However, the erosion of labor's share became more

Table 1

Trends in net productivity

Median compensation gap and explanatory factors, 1973–2014

	1973– 1979	1979–1995	1995– 2000	2000– 2007	2007– 2014	2000– 2014	1973–2014
A. Net productivity–median compensation gap, no price divergence (annual growth)							
	0.35%	0.84%	0.42%	1.17%	0.98%	1.08%	0.80%
B. Explanatory factors impact (annual growth)							
<i>Inequality of compensation</i>	0.48%	0.69%	1.04%	0.66%	0.49%	0.58%	0.66%
<i>Loss in labor's share of income</i>	-0.13%	0.14%	-0.61%	0.51%	0.48%	0.50%	0.13%
C. Relative contribution to net productivity gap (percent of gap)							
<i>Inequality of compensation</i>	137.1%	82.1%	247.6%	56.4%	50.0%	53.7%	82.5%
<i>Loss in labor's share of income</i>	-37.1%	16.7%	-145.2%	43.6%	49.0%	46.3%	16.3%

Note: The gap excludes the influence of diverging consumer and producer prices.

Source: Analysis of data in Bivens and Mishel 2015 (Table 1)

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important after 2000, explaining 46.3 percent of the gap in the 2000–2014 period and responsible for lowering real median hourly compensation by roughly 0.5 percent each year relative to net productivity.

The data in Table 1 provide context for assessing the role of a factor, such as rising market concentration, in explaining the growing productivity–pay gap or the gap's two components: the loss of labor's share of income and rising compensation inequality. These data also demonstrate that analyses that cannot shed light on rising *compensation inequality* will have limited ability to explain the divergence between typical workers' pay and productivity. The new papers on labor market concentration have used newly developed microdata to assess the scale of labor market concentration and its impact on overall wages. However, these papers do not examine how labor market concentration affects different groups of workers or the inequality of wages or compensation. This seems like an obviously promising vein of future research.

The impact of labor market concentration on wage trends in a particular period (e.g., 1979–2017, or 2000–2017) essentially depends on two key factors: first, how much labor market concentration has risen has over that period, and, second, the effect of a given rise in labor market concentration on wages. The effect of concentration on wage trends over the entire period is essentially just the first factor multiplied by the second. But both factors would need to be economically significant for concentration alone to explain wage or inequality trends.

As we show below, the new literature on market concentration is careful, valuable, and

interesting. But it cannot, by itself, provide a compelling explanation for developments in the American labor market in recent decades, nor can it identify the key policy responses. Identifying market power as a factor in driving American wage trends is a huge advance. However, we think that before too long, conceptions of market power *besides* market concentration will have to be considered if we want to make serious headway in explaining wage trends and enabling broad-based wage growth.

Assessing the empirical findings of the new literature on market concentration

The literature on market concentration is still emerging, but a number of significant new contributions have been published in just the past few years. In this section we review the findings of a number of recent papers identifying market concentration as a force holding back American workers' wage growth. Azar, Marinescu, and Steinbaum (2017); Benmelech, Bergman, and Kim (2018); and Naidu, Posner, and Weyl (2018) assess the effect of labor market concentration on wages, whereas Autor et al. (2017) and Struyven (2018) examine the rise in product market concentration and its potential effect on wages.⁵ Our aim is to translate these papers' findings into estimated effects that can be compared with effects of other factors found to contribute to wage growth and inequality so that we can provide a rough assessment of how much market concentration alone can explain wage inequality trends.

On some level, it is surprising that this exercise is needed. The labor economics literature on wage inequality used to be full of entries examining particular sources of wage suppression (e.g., deunionization, immigration, trade) and presenting their estimated wage impact, including their estimated contribution to the growth of various measures of inequality (e.g., the wage premium that college-educated workers enjoy relative to high school-educated workers, and the various gaps between pay of workers in the 90th, 50th, and 10th percentiles of the wage distribution). We put some of the recent findings on concentration in labor and product markets into this broader context, something that the recent spate of papers has not done.

The effect of concentration in the labor market (monopsony)

Azar, Marinescu, and Steinbaum (2017) and Benmelech, Bergman, and Kim (2018) have greatly elevated our empirical knowledge of labor market concentration and wages, kicking off a likely wave of forthcoming research. Their papers represent a breakthrough in research on labor market concentration because they utilize data that can directly measure the degree of concentration rather than relying on inference, and thus are able to estimate the impact of labor market concentration on wages.

Azar, Marinescu, and Steinbaum 2017: Measuring labor market concentration across industries and commuting zones

In the conclusion to their paper, Azar, Marinescu, and Steinbaum (2017) summarize their contribution to the conversation about wages and market power:

[W]e contribute to this growing debate by calculating measures of market concentration in local labor markets for the most frequent occupations on the leading employment website CareerBuilder.com. We have shown that concentration is high, and increasing concentration is associated with lower wages. Our results suggest that the anti-competitive effects of concentration on the labor market could be important. The type of analysis we provide could be used to incorporate labor market concentration concerns as a factor in antitrust analysis.

(19)

The strength of this paper is that it uses a unique data source to directly measure the degree of labor market concentration within 26 occupations in 681 commuting zones (local labor markets). An additional feature of the data is that they cover the entire private sector.⁶ Moreover, Azar, Marinescu, and Steinbaum do a careful job of estimating the impact of labor market concentration on wages offered by employers.

However, Azar, Marinescu, and Steinbaum’s 2017 research is motivated in large part by the question of whether antitrust enforcement actions pursued by the federal government should consider labor market concentration when scrutinizing mergers between firms. The authors conclude that it should. The basis for this conclusion is their empirical estimate that greater labor market concentration does indeed appear to lower wages within this relatively recent period. Specifically, they find that moving from a less concentrated to a more concentrated labor market is associated with a decline in wages. The application of this result to antitrust enforcement does seem like a solid policy recommendation stemming from careful research.

Some economic writers have characterized Azar, Marinescu, and Steinbaum’s 2017 paper as providing a new explanation (and perhaps even “the” explanation) for adverse trends in American labor markets in recent decades.⁷ This interpretation, however, is not consistent with the data Azar and his co-authors present, for a number of reasons. First, their measures of labor market concentration span only three years (2010–2013), so the research can’t speak to how labor market concentration has *changed* over any significant period of time. Second, their measure of labor market concentration is for the “*average market*,” in a sample of labor markets dominated by small, nonurban markets. The paper does not present data on how concentration affects the *average worker*, nor does it tell us how many workers face high, moderate, or low labor market concentration.

The paper features a map of labor markets measured on a Herfindahl-Hirschman Index (HHI) showing that concentration is high in rural areas and modest in the larger population centers.⁸ The metrics provided in Table 1 in the paper indicate that the “average” labor market is “highly concentrated,” while an *average person* lives in a population-weighted

labor market characterized by “moderate concentration” (Table 1 and Figure 1 in the paper indicate that the precise measure of concentration faced by the “average person” is actually on the lower end of the moderate concentration range).

This difference between “average labor market” and “average person” is important. Given that the average worker lives in a labor market characterized by the low end of moderate concentration, it could well be the case that workers in urban areas (areas that Azar, Marinescu, and Steinbaum [2017] characterize as having lower rates of concentration) face “low concentration.” In their data, urban areas, in turn, account for more than half of the workforce.

This is directly confirmed by a 2018 paper, using a different data set, specifically, a data set from Burning Glass Technologies. In this paper, the same authors (Azar, Marinescu, and Steinbaum), joined by a fourth (Taska), estimate that 65 percent of commuting zones and labor markets are highly concentrated or moderately concentrated. Together, the highly and moderately concentrated labor markets account for only 23 percent of total employment, with 17 percent of employment in “high” and 6 percent in “moderately concentrated” labor markets (Azar et al. 2018, 13).

Therefore, characterizations of this work as showing “substantial labor market concentration in labor markets throughout the United States” (Naidu, Posner, and Weyl 2018, 20) may confuse some consumers of this research. We would say instead that substantial labor market concentration is a problem faced by a nontrivial share of the American workforce—a problem that is particularly challenging for workers in less densely populated areas.

This regional difference in the effect of labor market concentration is an important finding for policy discussions of ways to improve the economic fortunes of Americans in rural areas and small cities and towns. These regions have lagged the rest of the country in many important economic respects. So far, the policy agenda proposed for the economic challenges of rural areas has been weak tea, consisting generally of a call to speed up the build-out of broadband internet (a worthy cause, but hardly one that seems like a game-changer for these regions). Azar, Marinescu, and Steinbaum (2017) highlight a glaring region-specific challenge being faced by these areas: labor market concentration. Policy efforts to fight labor market concentration would have disproportionate effects on rural areas, and Azar, Marinescu, and Steinbaum’s 2017 study provides one of the most important policy insights on this topic that we have seen.

But what about the main topic of this review: the empirical impact of labor market concentration on wage trends? Azar, Marinescu, and Steinbaum (2017, 9) identify “the effect of concentration on wages” based on the “variation in concentration over time within a labor market” for a set of specific occupations. Hence, one can think of their estimate as, for example, tracing the impact of changes in concentration over a limited period of time (2010 to 2013) on offered wages for “Accountants and Auditors in the commuting zone around Kansas City.” Azar, Marinescu, and Steinbaum (2017, 13) report, “We find that higher labor market concentration is associated with significantly lower real wages.” They find that a one-log-point increase in the HHI is associated with a decline in

wages of about 0.04 log points in the baseline ordinary least squares (OLS) results, or 0.13 log points in the baseline instrumental variables (IV) results. Moreover, they report that “going from the 25th percentile of market concentration to the 75th percentile of market concentration” lowers posted wages by 5 percent using their baseline OLS results and by 17 percent using their baseline IV results.

Another way to evaluate their results is to assess the effect of moving from “moderate” to “high” labor market concentration. Suppose one shifted from the midpoint of their gauge of moderate concentration (characterized by an HHI ranging from 1,500 to 2,500) to the midpoint of high concentration (characterized by an HHI ranging from 2,500 to 5,000), an increase of 1,750. This (sizable) increase would lower wages by 2.4 percent using the OLS results and by 8.0 percent using the IV results.⁹ One obtains a similar wage impact for concentration rising from the mean to one standard deviation above the mean (a common metric for measuring a substantial change in dependent variables).

If there had been a rise in labor market concentration in recent decades as large as this 1,750 increase in the HHI, then the market concentration identified in the Azar, Marinescu, and Steinbaum 2017 results could indeed be a significant driver of overall wage trends. However, their measure of labor market concentration does not span enough time to know if this is true or not (in fact, their report does not indicate whether average labor market concentration rose or fell in the three-year span their data encompass).

We can, however, do a thought experiment combining the Azar, Marinescu, and Steinbaum 2017 estimated coefficients with estimated trends in concentration over time taken from another study. In the next section, we discuss a study that does have some time-series variation to shed light on the question of trends in concentration: Benmelech, Bergman, and Kim (2018) report that labor market concentration in manufacturing grew by one-fifth of a standard deviation from 1977 to 2009. Here, we can undertake a thought experiment using the Benmelech, Bergman, and Kim 2018 measure of rising concentration over time and the Azar, Marinescu, and Steinbaum 2017 coefficient estimates of concentration’s effect on wages to see what the trend in concentration identified by Benmelech, Bergman, and Kim (2018) would imply for wages if the Azar, Marinescu, and Steinbaum 2017 estimated coefficients were correct.

Using Azar, Marinescu, and Steinbaum’s (2017) baseline results, a rise in the mean of labor market concentration of one-fifth of a standard deviation (what Benmelech, Bergman, and Kim [2018] find for rising concentration) would result in wage losses of from 0.5 percent to 1.7 percent.¹⁰ These are nontrivial results, but still leave a lot of the overall divergence between pay and productivity to be explained. For example, take the midpoint of this thought experiment, where rising concentration drives a 1.1 percent wage decline between 1979 and 2014.¹¹ This translates into an average annual decline of 0.03 percent. Over this same period, the gap between typical workers’ pay and productivity grew by roughly 0.9 percent annually, so these estimates indicate that increasing labor market concentration alone could explain only about 3.5 percent of the divergence.

Benmelech, Bergman, and Kim 2018: Looking at increasing labor market concentration in manufacturing

Benmelech, Bergman, and Kim (2018, 23) note that they use direct measures of labor market concentration and wages from manufacturing plant-level data “to provide evidence that wages are significantly lower in local labor markets in which employers are more concentrated.” As they explain, they do so by using

the Longitudinal Business Database (LBD) to construct the Herfindahl-Hirschman Index (HHI) of firm employment at the *county-industry-year* level. These HHI measures of employer concentration are then related to measures of average wages and productivity at the establishment level constructed from the Census of Manufacturers (CMF) and the Annual Survey of Manufacturers (ASM).” (3)

Describing their baseline finding, Benmelech, Bergman, and Kim (2018, 3) note:

[T]here is a negative relation between the local-level HHI measures of employer concentration and wages...[W]e show that these results continue to hold after controlling for a host of observables likely to affect wages, including establishment-level labor productivity and local labor market size, as well as firm-by-year fixed effects. Identification is thus achieved using within-firm-year variation in which (after controlling for such observables as productivity and market size), within a given year, two establishments belonging to the same firm but located in areas with varying levels of labor market concentration are compared.

The Benmelech, Bergman, and Kim 2018 research is notable for directly measuring labor market concentration from 1977 to 2009 and for estimating the wage impact of labor market concentration over this same period. Their results therefore allow us to examine how increases in labor market concentration or changes over time in the impact of concentration on wages (at a given level of concentration) may have affected wage trends over the long term. According to their data, labor market concentration has increased:

During 1977–2009, the standard deviation of local-level employer HHI (defined at the 4-digit SIC-level) was 0.334...the data show that local-level employer concentration has increased considerably over time, with the employment weighted mean four-digit county-level HHI increasing by 5.8%, from 0.698 during 1977–1981 to 0.756 during 2002–2009. (Benmelech, Bergman, and Kim 2018, 3)

They also provide various findings that indicate a statistically significant wage impact of labor market concentration:

- “[A] one standard deviation increase in the HHI measure of local employer concentration reduces wages by between 1% and 2%” (4).
- “[O]ur results indicate that the negative relation between employer concentration and wages doubles in magnitude over the sample period: during 1997–2001, a one standard deviation in local-level concentration is associated

with a 1.37% wage reduction, whereas the equivalent effect in 1977–1981 is only 0.63%” (4).

- “[R]elative to other plants in nonperfectly concentrated local labor markets, plants in perfectly monopsonistic labor markets pay 1.7% lower wages, controlling for plant- and county-industry-level determinants of wages.... In Panel B, we compute employer concentration using four-digit SIC industries and find results that are consistent with those in Panel A—local labor markets with only one firm would pay wages that are 3.1% lower than otherwise similar plants within firms” (18–19).

What can these findings tell us about how much the rise in labor market concentration affected wage growth from 1977 to 2009? Labor market concentration *did* rise, but by a relatively small amount over this period—5.8 percent—a rise of one-fifth of one standard deviation. The wage impacts Benmelech, Bergman, and Kim (2018) report for a full standard deviation rise in labor market concentration are between 1 and 2 percent, indicating a small wage impact (about 0.2 percent to 0.4 percent) due to the actual labor market concentration increase since the 1970s.

Benmelech, Bergman, and Kim (2018) actually provide more detailed results that allow us to further assess the wage impact of rising concentration: they estimate a separate wage elasticity of concentration for each subperiod and provide the concentration levels for each subperiod. This enables one to infer the rise in concentration and its resulting effect on wages in each subperiod.

The relevant data are presented in **Table 2**, with column 1 providing the coefficient on HHI estimated for each subperiod, column 2 providing the HHI for each subperiod, and the last column showing the impact on wages of HHI in each subperiod (the result of multiplying column 1 by column 2). The table shows that labor market concentration reduced wages by 3.1 percent in 1977–1981, by 3.2 percent in 1997–2001, and by 3.6 percent in 2002–2009. The amount that wages were reduced by labor market concentration rose by 0.5 percent over the entire period from 1977–1981 to 2002–2009, but there is no consistent trend in between those years.

Thus, these results do not show that a *rise* in labor market concentration over roughly three decades greatly increased its adverse impact on wages, at least in manufacturing. Hence, rising labor market concentration does not seem to be a major factor that explains wage inequality or the slow growth in pay for the vast majority of American workers. However, it should be noted that the Benmelech, Bergman, and Kim 2018 results only apply to manufacturing. We don’t know how much labor market concentration increased in other sectors. It certainly could be the case that manufacturing has always been highly concentrated relative to other sectors, but that other sectors have seen substantially greater increases in concentration in recent decades.

Table 2

Impact of labor market concentration on wages, 1977–2009

Period	Coefficient in HHI*	HHI	Wage impact
1977–1981	0.044	0.698	3.1%
1982–1986	0.038	0.714	2.7%
1992–1996	0.044	0.717	3.2%
1997–2001	0.047	0.719	3.2%
2002–2009	0.033	0.756	3.6%
Change 1977–2009		0.058	0.5%

* Herfindahl-Hirschman index

Source: Benmelech, Bergman, and Kim 2018 (Figure 1 and Table 5, panel B)

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Naidu, Posner, and Weyl 2018: Looking at labor market power, though not necessarily labor market concentration

Naidu, Posner, and Weyl (2018) provide a wide-ranging treatment of how market power—particularly in the labor market—can lead to both inefficiency and inequality. They survey a broad literature assessing the potential strength of labor market power and use the estimated parameters to put bounds on how large the efficiency and distributional effects of labor market power might be. They find it could be quite large: in one calibration they find that labor market power might reduce overall gross domestic product by almost 13 percent and overall wages by almost 25 percent. They use these results to highlight how important it is for regulatory authorities to carefully scrutinize how mergers of firms would affect labor market competition.

There are two important things to note about their extraordinary findings. First, their calibrations do not explicitly factor in the *source* of labor market power, and there is no direct connection between their results and labor market concentration. So, whether their findings are driven by concentration or by some other source of labor market power remains an open question. In short, their findings highlight how potentially important it is to confront employer power *of all kinds*, not just that driven by labor market concentration (we identify other sources of employer power in a later section). Second, they present no direct evidence that any one particular type of labor market power has increased over time. Our prior belief is that *relative* employer power in the labor market has indeed increased substantially in recent decades, but the source of this growth is not predominantly explained by growing labor market concentration—it is instead explained by an intentional policy assault on the market power of American *workers*.¹²

The effect of concentration in the product market (monopoly)

To gauge the impact of product market concentration on wages, this section examines the findings of a recent highly influential paper (Autor et al. 2017) and an analysis by Goldman Sachs (Struyven 2018), both of which examine the determinants of labor's share of income.

Autor et al. 2017: Finding growing market power lowers labor's share of national income

Autor et al. (2017) break new ground by using firm-level data to examine the impact of product market concentration on labor's share of income in six different large sectors. Autor et al. are largely concerned with the question of whether the lower labor share is a widespread phenomenon across all firms, or is driven by a small number of large "superstar" firms (think Facebook, Apple, Amazon, and Google, among others). Use of firm-level data allows the study to test these contrasting theories, as they respectively imply "...heterogeneous vs. homogeneous changes in the labor share across firms in an industry" (2).

Specifically, Autor et al. (2017) analyze data from the Economic Census from 1982 to 2012 for manufacturing, retail trade, wholesale trade, services, finance, and utilities and transportation. They summarize their findings:

We establish the following facts that are broadly consistent with our model's predictions for how the rise of superstar firms can lead to a fall of labor's share: (i) there has been a rise in sales concentration within four-digit industries across the vast bulk of the U.S. private sector; (ii) industries with larger increases in product market concentration have experienced larger declines in the labor share; (iii) the fall in the labor share is largely due to the reallocation of sales between firms rather than a general fall in the labor share within incumbent firms; (iv) the reallocation-driven fall in the labor share is most pronounced in precisely the industries [that] had the largest increase in sales concentration; and (v) these patterns are also present in firm- and industry-level datasets from other OECD countries. (3)

How much did the rise in concentration affect labor's share of income? Because of data limitations, Autor et al. (2017) are only able to examine changes in labor's share of income in manufacturing. In other sectors they examine changes in labor's share of total sales or revenue. They encapsulate their results:¹³

Observed measures of concentration can account for some of the fall of the labor share, but not the majority. In services for example, the labor share of sales fell from 37% to 34.5% (2.5 percentage points). We predict that this fall would counterfactually have been to 35.2% in the absence of the rise in concentration, i.e., a 1.7 percentage point decline, implying that about a third of the reduction in labor share is proximately explained by rising concentration—a non-trivial fraction. Similarly, rising concentration accounts for 10% of the decline in the labor share in

manufacturing, 25% percent in utilities and transportation, and more than 100% in retail trade. While the labor share actually rose in both wholesale trade and finance, our regressions imply that it would have risen by an additional 50% and 150% in these two sectors, respectively, had concentration not increased.

Although the magnitude of the effects is modest when looking over the entire period, it is striking that the importance of concentration has risen over time. For example, if we restrict attention to the second half of the sample (1997–2012), where the relationship between concentration and labor share strengthened and where the rise in concentration was more dramatic, we calculate that rising CR20 concentration in manufacturing accounts for a third of the fall in the labor share [in that sector]. (14–15)

The authors do not translate their results into a specific wage impact. However, a careful look at these results indicate that concentration alone can account for only a minor portion of the changes in labor's share over recent decades. And, earlier in our paper, we established that changes in labor's share of income can explain only a small share of the *overall* divergence of typical workers' pay and economywide productivity since 1979. This means that the Autor et al. 2017 results are necessarily limited because they only address a portion of changes in labor's share of income (with labor's share of income already constituting a minority player in driving the overall divergence between pay and productivity) and do not address changes in the more important issue of changes in overall compensation inequality.

To illustrate, say that that rising monopoly power could explain a third of the fall in labor's share. What is the corresponding impact on wages or compensation? According to the Bureau of Labor Statistics, labor's share of income in the private business sector fell from 68.2 percent in 1979 to 66.2 percent in 1997 and then to 62.8 percent in 2015.¹⁴ The long-term fall was thus 5.4 percentage points, which, if restored, would lift labor compensation by 8.6 percent.¹⁵ That's a sizable compensation loss due to a fall in labor's share. If rising monopoly power could explain a third of the loss in labor's share (a generous assumption), then this is equivalent to causing a 2.9 percent compensation loss.¹⁶

A 2.9 percent loss in compensation since 1979 is not trivial, but the annual loss of 0.08 percent since 1979 would explain less than 10 percent of the annual 0.9 percent divergence between pay and productivity that occurred over this time.

Finally, while there is no mechanical one-to-one correlation between rising monopoly power and rising monopsony power, the idea that rising product market concentration could lead to rising labor market concentration has been floated by researchers (CEA 2016). It certainly makes intuitive sense—if rising product market concentration leads to fewer firms, this would seem to imply that the labor market (where firms are buyers rather than sellers) may become more concentrated as well.

The Autor et al. 2017 results are hence useful complements to Azar, Marinescu, and Steinbaum 2017 and Benmelech, Bergman, and Kim 2018 in that Autor et al. show concentration (albeit, product market concentration rather than labor market concentration) over time for a large range of industries. While Benmelech, Bergman, and

Kim (2018) show rising labor market concentration within manufacturing, the Autor et al. 2017 results show that manufacturing is no outlier when it comes to rising product market concentration. Specifically, Autor et al. (2017) show that concentration in manufacturing, measured by the share of the market claimed by the 20 largest firms, rose by just under a fifth of a standard deviation between 1982 and 2012. This increase is larger than the increase for retail trade but smaller than the increases for wholesale trade, services, finance, and utilities and transportation (which saw increases ranging from a quarter to 40 percent of a standard deviation).

Struyven 2018: Finding increases in industry concentration are associated with falling labor shares of income

The Goldman Sachs economics research team analyzed the impact of product market concentration on wage growth as part of an overall analysis of wage growth. Their findings are described below:

We first assess the impact of product market concentration on labor shares in an industry panel dataset using revenue concentration, payrolls, and revenues data from the Economic Census. We find evidence shown in Exhibit 6 that increases in industry concentration are associated with falling labor shares. Combining the average increase in the share of industry revenue of the top-20 firms in 2002–2012 and our coefficient estimates, we estimate that the rise in product market concentration accounts for a 1.5% hit to the level of wages since 2002, or a 0.15 pp drag to annual wage growth. (Struyven 2018, 6)

This wage loss is due to a rise in the top-20-firm concentration ratio across 14 industries from 20.9 percent to 22.6 percent from 2002 to 2012, a seemingly small rise that led to a still-low concentration of sales.¹⁷ We would have more confidence in this result if there were accompanying results showing that this modest rise in concentration also produced higher profit margins consistent with these wage effects.

Struyven's finding that increased monopoly power lowered wages by 1.5 percent over a 10-year period (or 0.15 percent per year) indicates a nontrivial impact. However, this would represent a small share of the 5.5 percentage-point decline in labor's share of business-sector income over that period, a decline that would require a roughly 9 percent wage boost to reverse.¹⁸ This implies that rising monopoly power explained about 17 percent of the fall in labor's share of income (1.5 percent wage decline divided by the 9 percent wage boost needed to reverse the fall in labor share in the business sector). Alternatively, the 0.15 percent annual wage decline caused by increased concentration explains 14 percent of the 1.1 percent annual divergence between pay and productivity from 2000 to 2014 period.

The still-missing link: How changes in market power unrelated to concentration might explain wage trends

The new papers on market concentration are useful and creative, and provide important new lenses for various forms of policy evaluation. For example, Naidu, Posner, and Weyl (2018) note that the potential wage-suppressing effect of corporate mergers should be a criterion considered by the regulators who approve these mergers. Yet, as we note above, the findings from these empirical analyses of market concentration also make clear that growing concentration *alone* is unlikely to emerge as a plausible primary driver of the adverse labor market trends affecting the vast majority of American workers in recent decades. But these new papers, combined with other insights on how power affects markets (particularly labor markets), can indeed provide valuable pieces of the puzzle of why wage growth for most American workers has been so sluggish since the late 1970s.

For example, another strand of economic models that invokes employer power as a determinant of wages is “dynamic monopsony.” Despite the presence of the word “monopsony,” these models do not necessarily have anything to do with labor market concentration.¹⁹ Instead, these models posit that labor market “frictions” can make markets behave *as if* there were concentration in the labor market and restricted options for workers seeking better pay than what their current employer provides. The clearest sign of this sort of monopsony power is that firms face an upward-sloping supply curve for labor.

The source of some of the frictions that drive dynamic monopsony is just the normal functioning of markets in the real world as opposed to the perfectly competitive models described in textbooks. For example, workers may have incomplete information about potentially better jobs available at other employers. Or transportation costs might make it difficult to seek higher wages at employers further from workers’ homes and hence might constrain searches for better jobs. Care responsibilities could limit workers to certain schedules and likewise reduce their potential pool of alternative employers. Policy responses to reduce the damage these frictions can do to workers’ earning power could include investments in public transit and in high-quality, affordable child care, both of which could expand the range of jobs workers could consider.

What if relative employer power has grown only because workers' power has been hamstrung by policy?

Given that frictions can reduce workers' ability to find alternative employment, it is no surprise that some employers strive to *create* such frictions. For example, many firms require that new employees sign noncompete agreements as a condition of employment. If workers believe that these noncompete agreements are enforceable, then their ability to search for better jobs can be restricted, giving firms some degree of monopsony power. Or employers may collude to refrain from poaching one another's employees. The baldest real-world example of this type of employer collusion surfacing in recent years was the cartel of Silicon Valley employers that agreed to not hire one another's employees.²⁰

A common assumption uniting analyses of labor market concentration and studies documenting frictions that generate dynamic monopsony power is that growing *employer* power might lie behind American wage trends. It seems clear to us that employers do wield more *relative* power vis-à-vis their workers and that this plays a large role in driving wage trends. But this rise in the relative market power of employers might owe less to growing market concentration or labor market frictions and more to the *collapse* of policies and institutions that buttressed the relative market power of *workers*.

It may have always been the case that American labor markets are concentrated, and that this concentration—all else equal—puts downward pressure on wages. It may also have always been the case that labor markets (particularly low-wage labor markets) are riven with frictions that—all else equal—give employers the power to set wages. But in previous decades, these always-and-everywhere sources of employer market power were likely neutralized by institutions and policies that provided countervailing power to workers. In more recent decades, several of these institutions and policies have been eroded or rolled back, with nothing to replace them as sources of countervailing power.

For example, since 1979, macroeconomic policy (particularly monetary policy) has prioritized steady and very low inflation over low unemployment. Even by too-conservative standards set by official estimates of the natural rate of unemployment, macroeconomic policy has failed to secure full employment for the large majority of these years. This has led to labor markets with too much slack to allow low- and moderate-wage workers to demand and achieve consistent wage gains. The evidence is quite clear that low- and moderate-wage workers need lower rates of unemployment to post wage gains than do their higher-wage peers. It is no coincidence, in our view, that the only period of strong, across-the-board wage growth since 1979 was during the late 1990s and early 2000s, when unemployment was allowed to fall far below levels that had previously been thought to lead to accelerating inflation. In those years, while wages grew across the board, inflation did not accelerate.

Besides labor markets tight enough to allow robust wage growth for most workers, other

bulwarks of market power for typical workers (labor standards, broadly defined) have also eroded in recent decades. The most prominent example is the federal minimum wage, which in inflation-adjusted terms is now roughly 25 percent lower than it was at its height in 1968, even though productivity has nearly doubled and low-wage workers have become far more educated in the intervening years (Cooper 2017). Policymakers have failed to enact sufficient increases in the federal minimum wage despite growing economic evidence that most minimum wage increases since 1990 (at the federal or state level) have not caused measurable employment loss, contrary to predictions of competitive labor market models (Cooper, Mishel, and Zipperer 2018). This finding is consistent with low-wage labor markets that are characterized by dynamic monopsony power held by employers. In models of dynamic monopsony, legislated wage increases can lead to higher wages and greater, not lessened, employment.

For middle-wage workers, the key labor standard that has eroded is collective bargaining. Research demonstrates that this erosion has had a substantial impact on middle-wage workers, both union and nonunion (Rosenfeld, Denice, and Laird 2016). The view that labor market concentration and other specific sources of employer power have always been present but were tamed in previous decades by countervailing worker power is consistent with the empirical findings by Benmelech, Bergman, and Kim (2018), which, as noted earlier, seem to indicate that the growth of labor market concentration *in and of itself* cannot explain a dominant portion of rising wage inequality or the divergence between typical workers' pay and economywide productivity. Though not mentioned earlier, Benmelech, Bergman, and Kim (2018) also provide empirical results clearly showing that the wage-suppressing effect of labor market concentration is lessened when union coverage is strong. So, if labor market concentration has been relatively constant, but the countervailing force imposed by unionization has eroded, this combination could well have led to significant wage losses. If this is the case, then concentration is clearly an important ingredient in the story, even if eroding employee power is the real lever.

Benmelech, Bergman, and Kim (2018) also show that the wage-suppressing effect of labor market concentration is increased when imports (particularly from lower-wage nations) are high as a share of the local economy. This finding, which is consistent with well-publicized findings by Autor, Dorn, and Hanson (2013), also highlights that trade flows can place downward pressure on wages through channels besides their effect on relative demand for various types of labor. The shorthand description for the effects of globalization on wages running through labor market power is that trade flows impose a threat effect that can dampen wages. Again, if labor market concentration has been an ongoing fact of life that was "trying" to suppress wages for decades, but growing trade flows from lower-wage nations led to a collapse of worker-side market power and the combination led to wage losses, then concentration is a key ingredient in this story.

While economists have been slow to wrestle with the labor market fallout of policy efforts to shift relative market power from workers to employers (at least until the recent spate of literature), employers and their representatives in the policy world certainly seem to think these policies are important. Besides the policy changes listed above, employers have pursued an aggressive host of practices meant to limit workers' bargaining position, and policymakers, particularly through the blessing of case law in the courts, have often ratified

these practices. Examples of these employer practices include mandatory forced arbitration agreements, noncompete agreements, and nonpoaching agreements.²¹

Further, because of the thin policy framework surrounding mandatory benefits and labor standards, the provision of nonwage compensation—such as health insurance coverage, retirement contributions, paid sick and family leave, vacation time, and the availability of consistent and predictable scheduling—can differ radically across employers. This makes it harder for employees to seamlessly compare jobs with full information and makes it hard for them to unambiguously identify better outside options for employment. All of these factors have systematically undercut workers’ individual and collective leverage relative to employers and led to slower wage growth, especially for low- and middle-wage workers.

The underappreciated history of research into bargaining power

A focus on the changing power of workers in the labor market has a rich pedigree in theoretical work. Manning (2003) explicitly notes that models of dynamic monopsony give a lot of scope for labor market policies and institutions such as minimum wages and unions to redistribute income from employers to workers without adversely affecting economywide efficiency or employment. Further, dynamic monopsony models combine the existence of frictions in the labor market with an assumption that wage determination is set *entirely* by employers. Broader (but messier) models of labor markets sometimes assume that wages are set through a bargaining process in which both employers and employees have some degree of power and operate in a context where standard labor supply curves are not well defined.

For example, there is a long history of modeling “efficiency wages” in which wage levels do not just allocate workers to jobs but also provide motivation and a way for employers to elicit effort.²² Often wage levels and processes for monitoring workers’ performance (with the threat of dismissal if they are caught shirking) are two substitute strategies for eliciting desired effort in efficiency wage models. This implies that if, for example, the cost of monitoring declines, then employers will be able to elicit the same amount of effort with lower wages. Other models of wage determination invoke workers’ concern with “fairness” with regard to either relative wages or their wage level (or growth) relative to economywide productivity (or growth).²³ In these models, workers frustrated by perceived lack of fairness can cut back on effort, damaging the firm’s output. While models containing market power without assigning it all to employers are less determinate (and hence messier) than models of dynamic monopsony, this doesn’t mean that they are inchoate. A large body of literature describes labor market models in which wages are set by bargaining between employers and

employees, with the outcome of this bargaining dependent upon each side's relative bargaining strength.

This analysis of factors such as economic leverage and workers' bargaining power and how they have changed over time is, to us, the great yet-to-be-accomplished task faced by economists seeking to make a substantial contribution to explaining American wage trends. In our view, the new literature on market concentration is invaluable in demonstrating empirically that power can matter for labor market outcomes. But a full accounting of why American wage growth for most workers has been so disappointing for so long requires demonstrating both that American employers wield power (and have done so consistently for years) *and* that this *relative* power has grown. To us, the most convincing story for the growth of this rise in relative power is the collapse of policies and institutions that have buttressed workers' leverage and market power.

Conclusion

Exciting new economic research—particularly studies published over the past year—highlights the role of market power in determining wages. This is a welcome new vein to mine for those wanting to convincingly explain wage trends for American workers over the past generation of economic life. Explaining these trends with the toolbox of competitive labor market models has been a failed effort.

Much of the emerging research so far has examined the effect of market concentration in either labor markets or product markets. There is good reason for this focus. Concentration clearly seems prevalent and by many measures seems to be increasing over time. Concentration is also—importantly—measurable, thanks primarily to data only recently available from public and private sources. The findings of the research on market concentration are compelling and are important grist for a range of policy debates. However, based on the data and estimates available so far, we do not think trends in market concentration have been a dominant driver of the most significant trends in American wages in recent years. Key among these significant trends are the rise in wage inequality and the divergence between economywide productivity growth and hourly pay growth of typical American workers. Instead, we think other models and concepts of power in labor markets will need to be analyzed and assessed to explain these larger trends and to propose effective policy solutions.

That said, because it is relevant to ongoing policy debates, and because it offers warnings about what could further threaten potential wage growth in the future, the new research on market concentration is welcome and important.

About the authors

Josh Bivens joined the Economic Policy Institute in 2002 and is currently EPI's director of research. His primary areas of research include macroeconomics, social insurance, and globalization. He has authored or co-authored three books (including *The State of Working America, 12th Edition*) while working at EPI, edited another, and has written numerous research papers, including for academic journals. He appears often in media outlets to offer economic commentary and has testified several times before the U.S. Congress. He earned his Ph.D. from The New School for Social Research.

Lawrence Mishel is a distinguished fellow at the Economic Policy Institute after serving as president from 2002–2017. Mishel first joined EPI in 1987 as research director. He is the co-author of all 12 editions of *The State of Working America*. He holds a Ph.D. in economics from the University of Wisconsin at Madison, and his articles have appeared in a variety of academic and nonacademic journals. His areas of research are labor economics, wage and income distribution, industrial relations, productivity growth, and the economics of education.

John Schmitt became EPI's vice president on January 1, 2018, returning to where he started his career as an economist from 1995 to 2001. Following his earlier tenure at EPI, he spent 10 years as a senior economist at the Center for Economic and Policy Research (CEPR) and, most recently, was the research director at the Washington Center for Equitable Growth. Schmitt has a Ph.D. and M.Sc. in economics from the London School of Economics.

Endnotes

1. Key studies highlighting the weakness of perfectly competitive labor market models in explaining key labor market trends include Card and DiNardo 2002 and Schmitt, Shierholz, and Mishel 2013.
2. In competitive models, economic profits are driven to zero by the threat of new entrants into product markets. Economic profits are profits earned over and above the opportunity cost of employers deploying their capital in some other endeavor.
3. The studies we discuss here are primarily interested in labor market outcomes. Some measure concentration using labor market concentration measures; others measure concentration using analogous product market measures.
4. Bivens and Mishel (2015) highlight the divergence between typical workers' pay and economywide productivity. Mishel and various co-authors have also explored this growing gap in successive editions of EPI's *The State of Working America*, including the 2012 edition (Mishel et al. 2012).
5. Other significant contributions not discussed in this paper include Barkai 2017; De Loecker and Eeckhout 2017; and Traina 2018.
6. The sample is made up of firms that chose to advertise openings using an online service and then specifically chose to use the CareerBuilder.com site. Furthermore, even for firms that used CareerBuilder.com, the firms likely did not use the site for all types of job openings.
7. Key examples include Weissmann 2018 and Covert 2018.
8. Page 7 in the report describes their measure this way: "Market power in a labor market is the Herfindahl-Hirschman Index (HHI) calculated based on the share of vacancies of all the firms that post vacancies in that market."
9. This is calculated by first taking the difference in the log of 3,750 and 2,000 and then multiplying by the coefficient on HHI in the OLS baseline, 0.04, or the IV baseline, 0.13.
10. Movement from the HHI mean, 3,157, to one standard deviation above the mean, 6,081, is a log change of 0.656. Evaluated at the "baseline" coefficients of 0.0387 and 0.127, this change of HHI yields a wage impact of 2.5 percent and 8.7 percent, so one-fifth of a standard deviation impact is 0.5 percent and 1.7 percent.
11. The Benmelech, Bergman, and Kim 2018 findings on concentration span 1977–2009, not 1979–2014. But if we assume this latter period was characterized by the same change in concentration as the former period, it lets us undertake a straightforward thought experiment to scale concentration's effect against wage and productivity trends between business cycle peaks.
12. See Bivens et al. 2014 for the fuller argument.
13. Autor et al. (2017) describe their methodology in footnote 25: "The fraction of the overall decline in the labor share that is explained by rising concentration comes from a simple back of the envelope calculation. From 1997–2012, the CR20 in manufacturing went up by around 6 percentage points and the labor share fell by around 6 percentage points. From Figure 7, the average coefficient relating the change in concentration to the change in labor share in manufacturing over this period was 0.345, implying that concentration explained $(-.345 \times 6) / 6 \times 100$

= 34.5% of the fall in the labor share in manufacturing over this period.”

14. Data from the BLS Multifactor Productivity series are obtained at <https://www.bls.gov/mfp/mprdload.htm#Historical>.
15. This is calculated as follows: $68.2/62.8 = 1.086 = 8.6$ percent higher.
16. This is simply one-third of the 8.6 percent loss due to the fall in labor’s share.
17. Based on private email communication from Daan Struyven.
18. In the business sector, a 5.5 percentage-point decline from 67.6 percent in 2002 to 62.1 percent in 2012 requires an 8.9 percent increase ($5.5/62.1$) to restore labor’s share.
19. Manning 2003 is the definitive statement on the “dynamic monopsony” approach.
20. Ames 2014 is the definitive overview of the employer cartel in Silicon Valley.
21. Krueger and Posner (2018) point to such agreements as a key reason why low-wage workers in particular have had reduced bargaining power in recent decades.
22. The canonical models of this are Bowles 1985 and Shapiro and Stiglitz 1984. Dube, Giuliano, and Leonard (2015) empirically document the importance of fairness considerations in spurring behavioral responses from workers (specifically, “quits”).
23. The canonical fairness model is Akerlof 1982; see also Akerlof and Yellen 1985. This model also informs the findings in Ball and Moffitt 2001 regarding wage “aspirations.” See Krueger’s (2013) examination of fairness in wage determination.

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