

# Labor Market Concentration and Worker Contributions to Health Insurance Premiums

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## Abstract

In concentrated labor markets, where workers have fewer employers to choose from, employers may exploit their monopsony power by contributing less to workers' health benefits. This study examined if labor market concentration was associated with higher worker contributions to health plan premiums. We combined publicly available data from the Census to calculate labor market concentration and the Medical Expenditure Panel Survey Insurance/Employer Component to determine premium contributions from 2010 to 2016 for metropolitan areas. After controlling for year fixed-effects and market characteristics, we found that higher labor market concentration was associated with higher worker contributions to health plan premiums, lower take-home income, and no change in employer contributions to premiums, consistent with the hypothesis that greater labor market concentration is associated with less generous health benefits. When evaluating the effects of mergers and acquisitions on labor markets, regulatory agencies should critically assess worker contributions to health insurance premiums.

## Keywords

employer-sponsored insurance, labor market concentration, health insurance premiums, private insurance

## Introduction

Approximately 57% of Americans younger than age 65 receive private health insurance from their employers (Garfield et al., 2019). In the employer-sponsored health insurance market, there are substantial differences in the health plans offered to employees at large and small firms. Large employers often self-fund their plans, meaning that they bear the financial risk of their employees' health costs, while smaller firms more often purchase fully funded plans, where the insurance carrier bears the risk (Kaiser Family Foundation, 2020). Self-funded plans comprise 67% of the employer-sponsored health insurance market in the United States (Kaiser Family Foundation, 2020) and lend large employers considerable discretion over the characteristics of the plans that they offer.

In the employer-sponsored health insurance market, premiums have two components: the employer paid portion and the worker contribution. Worker contributions to premiums for single coverage plans have increased 38% between 2010 and 2020, substantially faster than the growth of wages during this time period (Kaiser Family Foundation, 2020; U.S. Bureau of Labor Statistics, 2019), despite the Affordable Care Act which required the lowest cost options that employers

offer to be under approximately 10% of an employee's household income. Health care prices have been shown to be the largest driver of premium increases (Papanicolas et al., 2018), but additional factors may affect how employers split premium costs between themselves and their workers. Although worker contributions to premiums are an important component of the financial burden of health care on workers, the drivers of worker premiums, specifically, remain an underexplored research area.

## Conceptual Framework

Employers offer wages and health benefits to attract workers, electing the compensation package that minimizes their costs

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without sacrificing a talented workforce (Bundorf, 2002; Goldstein & Pauly, 1976; Summers, 1989). The theoretical framework posed by Goldstein and Pauly (1976) and investigated by Bundorf (2002) shows that employers balance the heterogeneous preferences of their workforce when selecting the generosity of the plans they offer (e.g., employees who are, on average, younger and healthier, may prefer high-deductible health plans with low premiums, while an older workforce may prefer a more comprehensive, higher premium plan). However, these theoretical models assume a perfectly competitive labor market, where employers are subject to the constraint of alternative compensation packages that their workers could receive by switching jobs.

In concentrated labor markets, where there are few employers, large employers may offer lower levels of compensation to their workers, knowing that their employees have fewer alternatives for employment. Many empirical studies have, indeed, found that employers use monopsony power in the labor market to offer less generous wages to workers (Autor et al., 2017, 2020; Azar et al., 2019; Azar et al., 2020; Benmelech et al., 2018). In opposition to employer monopsony power, workers may unionize and use their collective bargaining power to counteract the effect of employer monopsony power (Benmelech et al., 2018). In particular, Castaneda and Marton (2013) derive a theoretical result that collective bargaining by workers with their employers may result in more generous health insurance for higher risk individuals, resulting from lower risk segmentation in health insurance markets (Castaneda & Marton, 2013). In theory, unionization may represent a counterforce to employer monopsony power, moderating its effect on compensation. However, no studies have empirically examined the relationship between employer monopsony power and health benefits or if this relationship is modified by unionization. On one hand, large employers may exercise more monopsony power to contribute less to premiums than they do when limiting wages, since it is more difficult for workers to compare health benefits when shopping around for employment. A smaller share contributed by employers may lead to a greater share contributed by workers, diminishing workers' compensation. On the other hand, health insurance benefits only represent approximately 10% of overall compensation (Baicker & Chandra, 2006; Clemens & Cutler, 2014; Gruber, 1994; Kolstad & Kowalski, 2016), and large employers may focus their monopsony power to reduce wages, as it represents 70% of total compensation. Additionally, nominal wages tend to be sticky and difficult for employers to adjust in the short term (Kahn, 1997; Kahneman et al., 1986). Given this, employers may instead opt to use their monopsony power to adjust premium contributions and extract a larger share of the premiums from workers (Sommers, 2005). This article will examine whether higher labor market concentration is associated with higher or lower worker contributions to health insurance premiums.

## **New Contributions**

The assessment of the impact of labor market concentration on workers' compensation has important implications for the U.S. Department of Justice (DOJ) and Federal Trade Commission (FTC), which evaluate mergers and acquisitions based on expected changes to market concentration. While market concentration criteria are most often applied to the concentration of producers (i.e., monopoly power), the antitrust agency guidelines, which specify criteria to "evaluate whether a merger is likely to enhance market power on the buying side of the market," are applicable to concentration in the labor market if it affects compensation (i.e., monopsony power; Azar et al., 2020). In 2018, the FTC (2018) held hearings to discuss the role of employer monopsony power in recent wage stagnation. However, the current approach only examines wages. If labor market concentration diminishes worker compensation beyond wages, then the impact of labor market concentration on workers' total compensation estimated by relying on wage information alone may be underestimated. Wages represent 70% of total compensation, with health benefits comprising 10% and other benefits, such as retirement contributions and paid sick leave, making up the remainder (U.S. Bureau of Labor Statistics, 2020). Such underestimation can lead to suboptimal antitrust decisions.

In this study, we examined the association between labor market concentration and the relative contributions of workers and employers to health insurance premiums. Our goal was to fill the knowledge gap in the literature and provide evidence on whether antitrust agencies should consider the potential labor market effects on worker contributions to health insurance premiums when evaluating mergers and acquisitions.

## **Method**

### **Data**

Our analysis combined two major sources of data: the U.S. Census Bureau (n.d.) County Business Patterns (CBP) data to measure labor market concentration and the Medical Expenditure Panel Survey Insurance/Employer Component (MEPS-IC) data to measure health plan premiums. In order to link these data together, we were required to aggregate the CBP data from its micro (county-industry-year level) up to the metropolitan statistical area (MSA)-year level, the level of the MEPS-IC estimates. We describe these data and aggregation procedures, in turn, below.

We created a measure of labor market concentration at the MSA-industry level for each year between 2010 and 2016 using the U.S. Census Bureau (n.d.) CBP data. These data detail annual statistics for all businesses with paid employees in the United States at a county-industry level. The data are recorded based on the Business Register, which is the most complete database of employers across the United States. At

an industry-county level for each year, the CBP data provide the number of firms that fall within the following ranges of total employees: 1-4, 5-9, 10-19, 20-49, 50-99, 100-249, 250-499, 500-999, 1,000-1,499, 1,500-2,499, 2,500-4,999, and 5,000+. We also used these data to calculate wages.

We defined rates of health insurance offers by employers and average health insurance premiums at the MSA level for each year between 2010 and 2016 using the MEPS-IC MSA level estimates produced by the Agency for Healthcare Research and Quality (2020). These estimates are available for the 20 largest MSAs in the United States and/or the largest MSA in each state, comprising 68 total MSAs. The MEPS-IC is the largest annual survey of employer-sponsored health insurance offerings. Each year, a nationally representative cross-section of private sector establishments is drawn from the Business Register and surveyed regarding the characteristics of their health insurance offerings.

We obtained additional MSA-year level characteristics from the Census Population Survey (CPS), the American Hospital Association (AHA) Annual Survey, and the American Medical Association (AMA) Competition in Health Insurance annual reports. We use county-level demographic data from CPS and weight to the MSA level based on the relative population sizes of counties. Similarly, we calculated hospital concentration at a county level based on AHA data and aggregated to the MSA level based on the relative number of hospital admissions in each county. Insurer concentration data were based on annual AMA reports, calculated at an MSA level. All data were merged based on unique MSA codes. The MSA names in the MEPS-IC data were matched to MSA codes to merge to other data.

## Measures

**Outcome Measures.** MSA-year level rates of health insurance offers by employers and average health plan premium contributions for the employer and worker were reported directly in the MEPS-IC estimates for single plans.<sup>1</sup>

Wages were calculated using the CBP data by dividing the total annual payroll within an MSA-industry-year by the total number of employees. Wages plus employer premium contributions was then calculated by summing wages with the employer contribution to the plan premiums; however, this measure does not include compensation in the form of other benefits such as retirement contributions or paid sick leave. We also calculated a worker's average wages netting out their contributions to premiums by taking the difference between wages and worker contributions ("take-home income").

**Key Independent Variable.** Our labor market concentration measure was derived from the U.S. CBP data and defined at an MSA-industry level for each year. Following the literature in labor economics (Autor et al., 2017, 2020; Azar et al., 2019; Azar et al., 2020; Benmelech et al., 2018), this measure was defined as the sum of the squared market shares in

the labor market of each employer, calculated in a similar fashion to an Herfindahl–Hirschman index (HHI; U.S. Department of Justice, 2015). To later merge these data to the aggregated MEPS-IC premiums data, we constructed the labor market concentration measure at the MSA-industry level. Since labor markets are generally smaller than an MSA (Autor et al., 2017, 2020; Azar et al., 2019; Azar et al., 2020; Benmelech et al., 2018), we first constructed the measure at the county-industry level, then took a weighted average of county-industries based on the relative total number of employees to aggregate to the MSA-industry level. Our process proceeded in three steps.

First, we estimated the total number of employees within a county-industry. We summed the total employees across firms within each county-industry, assuming that each employer within a range of total employees employs the midpoint of that range. If an employer had 5,000 or more employees, we took the difference between the total number of employees in the county-industry, subtracted the estimated number of employees in all of the smaller categories, and divided this number of remaining employees evenly among the 5,000+ employers.

In the second step, we used these estimates to calculate each employer's labor market share within each county-industry and calculate the county-industry level measure of labor market concentration for each year. This measure was constructed as the sum of squared market shares for each employer within a county-industry multiplied by 10,000. This measure provides an estimate of the amount of potential monopsony power that employers have within their labor market. The FTC defines concentrated labor markets as those with values above 2,500.

In the third step, we took a weighted average of the county-industry level measure to aggregate to the MSA-industry level, using the number of employees in each county-industry as weights.

**Covariates.** Finally, we constructed several covariates at the MSA-year level, including population, sex, race/ethnicity, education level, unemployment, insurer HHI, hospital HHI, and union membership. Population was calculated as a sum of Census county population estimates. Sex, race/ethnicity, and education levels were calculated as a proportion of the total MSA population based on Census county population estimates. Unemployment rates were calculated using the American Community Survey. Hospital HHI was calculated from the AHA annual survey based on the market share of total admissions at a county level. Insurer HHI was calculated at the MSA level from the AMA annual surveys based on the market share of the privately insured. Union membership rates were calculated from the CPS as the proportion of privately employed that belonged to unions. For four MSAs with missing unionization data, we simulated the values based on a normal distribution using the mean and standard deviation of the nonmissing values. Union membership rates

were calculated only among private sector employees, as opposed to public sector employees, to align this measure with our key outcome measures which are estimated among private sector establishments.

### Statistical Analysis

Using our labor market concentration measure, we plotted the distribution of values and identified those that qualify as concentrated markets according to DOJ/FTC guidelines. We then calculated descriptive statistics for the premium measures and our market-level control measures described above, stratified by labor market concentration (above or below labor market concentration of 1,500). Statistics were compared between stratifications using analysis of variance for continuous variables and Pearson's chi-square test for categorical and binary variables.

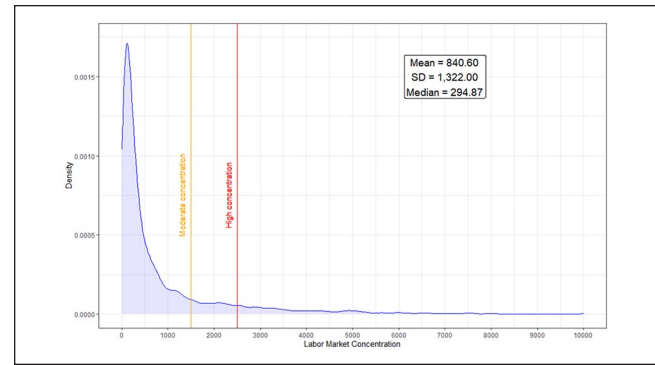
Ordinary least squares (OLS) regression analyses were conducted to model the descriptive relationship between rates of health insurance offers by employers, premium contributions, plan characteristics, and wages with labor market concentration. As our premium contribution measures represent averages across establishments within an MSA-year, we find that they are normally distributed, justifying the use of OLS on these continuous measures (Appendix A1, available in the Online Supplemental material).

Specifically, we modeled the rates of health insurance offers by employers, employer contribution amount, worker contribution amount, the total premium, wages, wages plus employer premium contributions, and wages minus employee premium contributions. Models were adjusted for the market level covariates listed above, as well as industry and year fixed effects. Standard errors (*SEs*) were clustered at the MSA level. As a sensitivity check, we replicated the regression analyzing the relationship between premium contributions, plan characteristics, and wages and labor market concentration excluding union membership rates and interacting low rates of union membership with labor market concentration. These models test the extent to which the relationship between labor market concentration and these outcomes is moderated by unionization among workers.

### Results

In Figure 1, we show that among the 8,930 unique MSA-industry-years in our data, 83% of the labor markets were unconcentrated. Using FTC criterion for measuring concentration levels, 7% of labor markets were considered to be moderately concentrated, with a value between 1,500 and 2,500, and 10% were considered highly concentrated, with a value of 2,500 or higher.

We observed many differences between markets with moderate-to-high (average concentration ratio of 3,284) versus low (average concentration ratio of 348) labor market concentration (Table 1). Moderate-to-highly concentrated



**Figure 1.** Distribution of MSA-industry-year labor market concentration.

*Note.* Labor market concentration is defined at an MSA-industry-year level based on the sum of squared employer market shares. Labor market concentration was calculated using the County Business Patterns data. Based on DOJ/FTC guidelines, moderate concentration markets are defined as markets with a concentration between 1,500 and 2,500 and high concentration markets are defined as markets with a concentration 2,500 and above.

markets tended to have similar levels of employer-based health insurance plan premiums (\$4,355 vs. \$4,354,  $p = .93$ ) but slightly higher worker contributions to plan premiums (\$1,203 vs. \$1,187,  $p = .01$ ). Descriptively, wages, wages plus employer premium contributions, and take-home income are higher in highly concentrated labor markets (\$59,367 vs. \$50,953,  $p < .001$ ; \$63,746 vs. \$55,307,  $p < .001$ ; \$58,150 vs. \$49,765,  $p < .001$ ). These raw differences do not adjust for the differences in the composition industries represented in these markets, however. For example, retail trade and accommodation and food services make up much larger shares of unconcentrated markets compared to more concentrated markets (6.3% vs. 0.0% and 6.3% vs. 0.0%), while the opposite is true for industries like agriculture, forestry, fishing, and hunting (24.1% vs. 1.5%), mining (25.6% vs. 1.2%), and utilities (1.1% vs. 25.9%). Demographically, however, we find that these markets are relatively similar (Appendix A2, available in the Online Supplemental material).

In Table 2, we present the relationship between rates of health insurance offers by employers, total premiums, and contributions to plan premiums with labor market concentration over the study period from 2010 to 2016. Controlling for market level factors, we find that labor market concentration is associated with increases in a worker's contribution to premiums. Specifically, a 100-point increase in labor market concentration is associated with a \$0.95 increase in worker contributions ( $SE = 0.414$ ,  $p = .025$ ). We find that labor market concentration is not significantly associated with rates of health insurance offers by employers, total premiums, or employer contributions to health plan premiums. These estimates are not sensitive to the exclusion of union membership rates as a covariate in the model (Appendix A4, available in the Online Supplemental material) or the interaction between low rates of union membership and labor

**Table 1.** Outcome Measures and Control Variables, by LMC.

	MSA-industries below LMC 1,500 ( <i>n</i> = 7,432)	MSA-industries above LMC 1,500 ( <i>n</i> = 1,498)	<i>p</i>
Labor market concentration, <i>M</i> ( <i>SD</i> )	348.09 (343.87)	3284.09 (1,630.45)	<.001
Outcome measures, <i>M</i> ( <i>SD</i> )			
Percentage of employers offering insurance (%)	52.57 (8.17)	52.64 (7.88)	.77
Employer contribution (\$)	4354.07 (513.05)	4355.37 (515.82)	.93
Worker contribution (\$)	1186.85 (236.09)	1203.98 (229.96)	.010
Total premium (\$)	5540.92 (599.68)	5559.35 (596.99)	.28
Wages (\$)	50952.53 (26,542.91)	59367.32 (30,323.95)	<.001
Wages plus employer premium contribution (\$)	55307.11 (26,636.58)	63745.90 (30,439.73)	<.001
Take-home income (\$)	49764.85 (26,527.12)	58150.09 (30,317.48)	<.001
NAICS industry, <i>n</i> (%)			
11 = Agriculture, Forestry, Fishing and Hunting	109 (1.5)	361 (24.1)	<.001
21 = Mining	87 (1.2)	383 (25.6)	
22 = Utilities	82 (1.1)	388 (25.9)	
23 = Construction	470 (6.3)	0 (0.0)	
31 = Manufacturing	437 (5.9)	33 (2.2)	
42 = Wholesale Trade	468 (6.3)	2 (0.1)	
44 = Retail Trade	470 (6.3)	0 (0.0)	
48 = Transportation and Warehousing	461 (6.2)	9 (0.6)	
51 = Information	457 (6.1)	13 (0.9)	
52 = Finance and Insurance	469 (6.3)	1 (0.1)	
53 = Real Estate Rental and Leasing	470 (6.3)	0 (0.0)	
54 = Professional, Scientific, and Technical Services	468 (6.3)	2 (0.1)	
55 = Management of Companies and Enterprises	387 (5.2)	83 (5.5)	
56 = Admin. and Support, Waste Management, Remediation Services	469 (6.3)	1 (0.1)	
61 = Educational Services	298 (4.0)	172 (11.5)	
62 = Health Care and Social Assistance	470 (6.3)	0 (0.0)	
71 = Arts, Entertainment, and Recreation	424 (5.7)	46 (3.1)	
72 = Accommodation and Food Services	470 (6.3)	0 (0.0)	
81 = Other Services	109 (1.5)	361 (24.1)	
Insurer concentration (HHI), <i>M</i> ( <i>SD</i> )	3414.80 (1142.58)	3593.37 (1136.50)	<.001
Hospital concentration (HHI), <i>M</i> ( <i>SD</i> )	4331.02 (1897.08)	5643.59 (2139.62)	<.001
Percentage of privately employed in union, <i>M</i> ( <i>SD</i> )	6.08 (3.53)	5.67 (3.35)	<.001

Note. Labor market concentration (LMC) is defined at an MSA-industry-year level based on the sum of squared employer market shares. LMC was calculated using the County Business Patterns data. MSA-industry-year level observations were stratified above and below the LMC value of 1,500. Premium measures are from the MEPS-IC MSA level estimates provided by Agency for Healthcare Research and Quality. Wages are calculated as the total payroll divided by the total number of employees. Wages plus employer premium contributions is the sum of average wages and employer premium contributions. Real wages is the difference of wages and worker contributions to premiums. This measure, as well as the two-digit industry codes, were derived from the County Business Patterns data. Insurer and hospital concentration are derived from the American Medical Association and American Hospital Association annual surveys, respectively. Unionization membership rates are calculated using the Census Population Survey. MSA = metropolitan statistical area; MEPS-IC = Medical Expenditure Panel Survey Insurance/Employer Component; HHI = Herfindahl-Hirschman index.

market concentration (Appendix A5, available in the Online Supplemental material).

In Table 3, we investigate the relationship between measures of compensation and labor market concentration. As has been shown in previous studies (Autor et al., 2017, 2020; Azar et al., 2019; Azar et al., 2020; Benmelech et al., 2018), we find that labor market concentration is associated with lower wages. We find that a 100-point increase in labor market concentration is associated with a \$130.29 decrease in average annual wages ( $SE = 65.030, p = .049$ ). We also find that labor market concentration is associated with lower

wages plus employer premium contributions and take-home income (i.e., wages net of worker contribution to premium). A 100-point increase in labor market concentration is associated with \$130.18 ( $SE = 65.262, p = .050$ ) and \$131.28 decreases in wages plus employer premium contributions and take-home income ( $SE = 65.10, p = .048$ ), respectively. These estimates are not sensitive to the exclusion of union membership rates as a covariate in the model (Appendix A6, available in the Online Supplemental material) or the interaction between low rates of union membership and labor market concentration (Appendix A7, available in the Online

**Table 2.** Regression Results of Premium Contributions Versus LMC.

	Rate of employers offering insurance (%)	Total premium (\$)	Employer contribution (\$)	Worker contribution (\$)
LMC * 100	-0.004 (0.013)	1.255 (1.040)	0.305 (0.920)	0.950** (0.414)
Dependent variable mean	52.59	5544.01	4354.29	1189.73
Observations	6,403	6,403	6,403	6,403
R <sup>2</sup>	.474	.510	.458	.356

Note. Labor market concentration (LMC) is defined at an MSA-industry-year level based on the sum of squared employer market shares. LMC was calculated using the County Business Patterns data. The rate of employers offering insurance and premium measures are from the MEPS-IC MSA level estimates provided by Agency for Healthcare Research and Quality. Coefficient estimates are presented from ordinary least squares of these measures at an MSA-industry-year level on LMC adjusted for year and industry fixed-effects, population, sex, race/ethnicity, education level, unemployment, insurer HHI, hospital HHI, and union membership. Standard errors are clustered at the MSA level and are in parentheses. MSA = metropolitan statistical area; MEPS-IC = Medical Expenditure Panel Survey Insurance/Employer Component; HHI = Herfindahl-Hirschman index.

\* $p < .1$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

**Table 3.** Regression Results of Compensation Versus LMC.

	Wages (\$)	Wages plus employer premium contribution (\$)	Take-home income (\$)
LMC * 100	-130.286** (65.030)	-130.180* (65.262)	-131.280** (65.103)
Dependent variable mean	52187.69	56545.78	50995.67
Observations	6,192	6,192	6,192
R <sup>2</sup>	.752	.752	.752

Note. Labor market concentration is defined at an MSA-industry-year level based on the sum of squared employer market shares. Labor market concentration was calculated using the County Business Patterns data. Premium measures are from the MEPS-IC MSA level estimates provided by Agency for Healthcare Research and Quality. Wages are calculated as the total payroll divided by the total number of employees. Wages plus employer premium contributions is the sum of average wages and employer premium contributions. Take-home income is the average wages minus the worker contribution to health plan premiums. Coefficient estimates are presented from ordinary least squares of these measures at an MSA-industry-year level on labor market concentration adjusted for year and industry fixed-effects, population, sex, race/ethnicity, education level, unemployment, insurer HHI, hospital HHI, and union membership. Standard errors are clustered at the MSA level and are in parentheses. MSA = metropolitan statistical area; MEPS-IC = Medical Expenditure Panel Survey Insurance/Employer Component; HHI = Herfindahl-Hirschman index.

\* $p < .1$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

Supplemental material). While the coefficients on the interaction between labor market concentration and union membership are not statistically significant from zero, they are directionally consistent with our hypothesis that unionization may moderate the relationship between labor market concentration and measures of compensation (Appendices A5 and A7, available in the Online Supplemental material). Using these estimates, we show the predicted change in employer contributions, worker contributions, and compensation associated with a 1st to 3rd quartile and one standard deviation change in labor market concentration in Appendix A8 (available in the Online Supplemental material).

## Discussion

This study examined the relationship between labor market concentration and health plan premiums, a gap in the health and labor economics literature. We found that higher labor market concentration was associated with slightly higher worker contributions to health plan premiums, as well as lower take-home income and wages plus employer premium contributions. Our results suggest that employers may leverage their

monopsony power in concentrated labor markets to force workers to pay a larger share of health plan premiums. While the relationship between labor market concentration and health plan premiums was previously uninvestigated, our findings are consistent with a large body of labor economics literature suggesting that higher labor market concentration leads to lower wages (Autor et al., 2017, 2020; Azar et al., 2019; Azar et al., 2020; Benmelech et al., 2018).

We found that an increase from the first to third quartile of labor market concentration was associated with a 3.4% decrease in take-home income, which is 3% higher than if only wages were considered. While this represents a relatively small change in compensation, the question of whether there is any relationship between labor market concentration and health plan premium contributions has not previously been investigated. Additionally, even a small effect on compensation may warrant consideration by the DOJ/FTC, however, who typically use a small but significant and nontransitory increase in price threshold of 5% but may use a threshold that is lower depending on the nature of the industry (U.S. Department of Justice & Federal Trade Commission, 2010). The sample used to generate our estimates was also

limited to MSAs which are generally unconcentrated. In our sample, we found that concentrated MSAs were substantially smaller than unconcentrated markets in terms of population size. The current literature, by not taking health benefits into account, may understate the impact of labor market concentration on U.S. workers' total compensation.

Besides the concentration of producers (i.e., monopoly power), the DOJ/FTC has the ability to review mergers and acquisitions with regard to the concentration of the labor market (monopsony power; Azar et al., 2020). Our results suggest that the DOJ/FTC should consider to what extent employers leverage their market power in concentrated labor markets to reduce worker contributions to premiums (in addition to wages). This approach has the potential to produce more comprehensive evaluations of the impacts of labor market concentration caused by mergers and acquisitions on workers' total compensation (Autor et al., 2017, 2020; Azar et al., 2019; Azar et al., 2020; Benmelech et al., 2018).

Our results are consistent with the body of health economics literature that finds that wages and health care benefits are substitutes (Baicker & Chandra, 2006; Clemens & Cutler, 2014; Gruber, 1994; Kolstad & Kowalski, 2016). Employers may leverage their monopsony power to reduce compensation in the form of higher worker contributions to health insurance premiums, as they do for wages. Further research is warranted to investigate whether the results of this study can be generalized to rural and micropolitan areas and to examine the potential causal effect of labor market concentration on worker contributions to premiums.

We highlight employer monopsony power as one potential downside to the employer-sponsored provision of insurance to health insurance in the United States. However, there are also advantages to this market structure. By offering health insurance to their entire workforce, independent of health status, employers act as a risk-pooling mechanism and limit adverse selection into health insurance (Bhattacharya & Vogt, 2006; Crocker & Moran, 2003; Ellis & Albert Ma, 2011). Additionally, there are economies of scale to purchasing group rather than individual health insurance (Swartz, 2006). Others point to the deficiencies of employer-sponsored insurance, noting that tying work to health insurance has negative spillovers on worker mobility in the labor market ("job lock"; Gruber & Madrian, 1994; Madrian, 1994; Monheit & Cooper, 1994). Additionally, costs in employer-sponsored health insurance markets have recently outpaced costs in public health insurance markets (Selden et al., 2015). This article contributes employer monopsony power as one additional consideration when contemplating the merits or drawbacks to the current design of health insurance markets.

This study has the following primary limitations. First, this analysis is descriptive in nature and estimates should not be interpreted as causal. Ideally, our data of health plan premium contributions would be measured at the employer level, which would allow us to conduct a more plausibly

causal analysis. For example, prior work investigating the impact of labor market concentration on wages have often used instrumental variable analyses (Azar et al., 2019; Benmelech et al., 2018) or mergers in the hospital industry (Prager & Schmitt, 2021) using employer level data. We are unable to conduct these analyses due to the level of aggregation in publicly available data on premium contributions. Second, large MSAs are the smallest geographic level at which premium estimates are available publicly from MEPS-IC. We therefore are not able estimate the relationship between labor market concentration and premiums in smaller markets, where labor market concentration tends to be highest. Third, labor market concentration is often calculated at a commuting zone level in the labor economics literature (Autor et al., 2017, 2020; Azar et al., 2019; Azar et al., 2020; Benmelech et al., 2018), as opposed to an MSA level. Calculating the measure at this level, however, allows us to link our data with the finest level of geography that is publicly available from the MEPS-IC data. Additionally, previous work has noted that the construction of labor market concentration over counties (e.g., Benmelech et al., 2018), which are the components of MSAs, as opposed to commuting zones (e.g., Azar et al., 2019) does not affect the key findings that employer monopsony power lowers compensation (Azar et al., 2019; Benmelech et al., 2018). Fourth, we do not observe retiree contributions, workers compensation, and other forms of compensation so we are likely underestimating the full association between labor market concentration and total worker compensation. Fifth, our measure of labor market concentration is local to an MSA and does not account for individuals who may relocate to different MSAs for work. Constructing the measure in this way allows us to link this measure with our measures of health insurance premium contributions. Additionally, many recent studies have found that labor markets are often local due to significant frictions associated with moving for work which limit worker mobility across markets (Bartik & Rinz, 2018; Moretti, 2013; Molloy et al., 2014; Manning & Petrongolo, 2017). With this justification, much of the recent labor economics literature regarding employer monopsony power has calculated local measures of labor market concentration as we do in this study (Autor et al., 2017, 2020; Azar et al., 2019; Azar et al., 2020; Benmelech et al., 2018). These frictions in the labor market may be even stronger in the context of health benefits, given that health plan premium contributions tend to be less transparent than wages, further justifying local measures of labor market concentration in the context of our study.

## Conclusion

We investigated the relationship between labor market concentration and employer and worker contributions to health insurance premiums. We found that higher labor market concentration was associated with higher worker contributions to health plan premiums and lower take-home income. The

DOJ/FTC should critically assess all potential labor market effects when evaluating mergers and acquisitions.

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### Supplemental Material

Supplemental material for this article is available online.

### Note

1. We assess single plan premiums, as opposed to family plans, because they can be summed with wages to construct measures of wages plus employer contributions and take-home income. This would not be feasible with family plan estimates because a family may only enroll in one plan at a time. An aggregated measure of family income cannot be combined with aggregated measures of family plan premium contributions, since the latter does not include the \$0 contributions for the plans the family chooses not to enroll in.

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