

Are Noncompetes Holding Down Wages?

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Introduction

Declining economic dynamism and sluggish wage growth over the last few years have gained increasing national attention, as policymakers and researchers seek to understand the causes of these trends and identify policies that could improve the plight of workers. One prominent hypothesis is that employer’s power to limit wages has increased over time. This power – known as “monopsony power” – derives from any source that limits the need for employers to compete for workers, including, among others, a high concentration of employers and costs to moving between employers.¹

One particular source of monopsony power that has received significant policy attention in recent years are employment provisions known as *covenants not to compete* (or simply “*noncompetes*”), which embody both of the aforementioned sources of monopsony power by prohibiting workers from starting or joining competing firms within particular time and geographic boundaries. The noncompete-based monopsony power argument is straightforward: If workers are prohibited from joining or starting firms in their chosen industry, then workers bound by such agreements will not experience the wage growth associated with within-industry competition for their labor, while the reduction in new firm entry will increase employer concentration and thus monopsony power.

Despite the appeal of this narrative, the fact that noncompetes are voluntary encourages us to consider the following questions: Why would workers voluntarily agree to provisions that will make them worse off? Moreover, how should state courts enforce noncompetes if they are voluntarily agreed upon? Should courts privilege the freedom to contract, or the employee’s freedom to move?

In this brief, I synthesize the theoretical arguments and emerging empirical work examining noncompetes and wages.² This research reflects two related but different questions: What is the effect of (1) state noncompete policies, and (2) noncompetes themselves (even in states that don’t enforce them) on wages? The quasi-experimental evidence on the enforceability of noncompetes is consistent: worker mobility and wages are both reduced in states that enforce noncompetes. In contrast, the two studies of actual noncompetes, neither of which claim to fully separate causation from correlation, find that noncompetes themselves are associated with higher wages. One of these studies highlights the importance of *when* then noncompete is offered, finding that there are no observable wage benefits for those who first receive notice of the noncompete *after* accepting the job.

While the results on noncompete use are more tentative than those of enforceability, it is premature to conclude that noncompete status is actually bad for the focal worker, though certain transparency issues appear to be problematic. Nevertheless, the focus on workers who are bound by

¹ See the discussion in the Council of Economic Advisors Issue Brief from October 2016: “Labor Market Monopsony: Trends, Consequences, and Policy Responses.”

² I will keep my focus on the relationship between noncompetes and wages, though it is important note that the impact of covenants not to compete on the movement and earnings of employees extends to important and largely unanswered questions related to innovation (see Samila and Sorenson 2011) and productivity, among others.

noncompetes ignores the under-appreciated channels through which noncompete prevalence and enforceability might generate negative externalities on the market, such as reduced entrepreneurship (leading to greater concentration) or congestion in the hiring process. One recent study examines such externalities, finding that when noncompetes are used *en masse* and they are enforceable, wages and mobility are lower even for those not bound by noncompetes. This idea of negative externalities may also explain in part the contrasting results between the studies of use and enforceability.

Acknowledging the incipency of this literature, I conclude with policy recommendations and a robust agenda for future research.

Historical and Theoretical Background

While noncompetes are only recently capturing national attention, their history is long and storied, with the first known case dating back to 1414. In those days, master craftsmen asked their untrained apprentices not to compete in the local market once they finished receiving years of valuable training. Courts at the time viewed such restraints of trade with disdain, until the seminal case of *Mitchell v. Reynolds* in 1711, in which a noncompete associated with the sale of a bakery was upheld on the basis that *partial restraints* (in the geographic and temporal sense) should be upheld if they are accompanied by “good and adequate consideration” (Blake 1960).

The current landscape of noncompete policies in the US reflects the scattered historical development, despite the flurry of legislative activity precipitated by the recent federal interest in noncompetes:³ A few states have adopted outright bans on noncompetes, such as California and North Dakota, others have banned them for specific populations (e.g., tech workers, physicians, low wage workers), and most states have caselaw or statutes that stipulate various conditions under which a noncompete is enforceable. Such conditions include the relevant time and geographic boundaries, whether a noncompete can be enforced if the worker is fired, whether a court can modify and subsequently enforce a noncompete deemed overly broad, as well as whether continued employment is “adequate consideration” for enforcement or whether additional consideration is required.⁴

The persistent heterogeneity in state policies is interesting in itself: Why haven’t states converged on a “best policy”? Aside from the politics of passing legislation, one compelling explanation is that (a) there are very good theoretical arguments for both banning and enforcing noncompetes, depending on one’s assumptions about the labor market, and (b) there is very little empirical work discerning between the competing theoretical arguments. In what follows, I briefly layout these theoretical arguments before describing the recent evidence.

Theoretical Arguments

The pro-noncompete perspective privileges investment protection and private contracting. It holds that enforceable noncompetes are necessary for the investment in valuable information that workers would otherwise appropriate for themselves. With an enforceable noncompete, workers may receive extra investment in their skills and information to make them productive in their job. Moreover, if the benefits of agreeing to a noncompete did not outweigh the costs, then workers will either negotiate or simply turn down the job. In contrast, those against the use or enforcement of noncompetes emphasize that labor markets are fraught with frictions, incomplete information, and

³ See the March 2016 from U.S. Treasury “Non-compete Contracts: Economic Effects and Policy Implications,” as well as the White House 2016 report, “Noncompete Agreements: State Policy Practices and Options for Reform.”

⁴ See <https://www.faircompetitionlaw.com/> for an up-to-date list of state policies and proposed changes.

unscrupulous employers. They suggest that noncompetes can be implemented in ways that limit employee bargaining power, or can be asked of vulnerable workers who have no other choice but to sign. In this view, noncompetes inhibit workers from advancing in their chosen industry without necessarily compensating them in any way for their postemployment concessions.⁵

These theories make opposing predictions with regards to the relationship between noncompetes and wages: wages may rise from increases in investment in the worker's skills or because the worker required extra compensation in exchange for agreeing to a noncompete. Alternatively, workers may not be compensated for agreeing to a noncompete up front and may suffer wage losses because the noncompete prevents the worker from experiencing the wage benefits of labor market competition.⁶

While these two theories emerge from different assumptions about the labor market, it is not ex ante obvious which set of assumptions is most accurate – and both may be correct in different circumstances. Ultimately, we need empirical work to test these assumptions and relationships.

Evidence on the Relationship Between Noncompetes and Wages

The empirical work testing the predictions about the relationship between noncompetes and wages comes in two varieties: studies examining the effects of state policy and studies examining the effects of noncompetes themselves (independent of the state policy). We begin with the evidence on state policies.

Evidence from the Enforceability of Noncompetes

Since data on the use of noncompetes has not typically been available, most work on noncompetes examines how variation in state noncompete policies is related to wages.⁷ The first study to examine this relationship is Garmaise (2009), which finds that both cross-sectional and longitudinal variation (exploiting changes in Texas, Louisiana, and Florida) in noncompete policies between 1992 and 2004 is associated with reduced executive mobility and earnings. His longitudinal estimates suggest compensation growth is 8% lower in states that increased noncompete enforceability. The primary drawback of this study is that the enforceability effects on executives of large, publicly traded firms may say precious little about the effects on the average labor force participant.

Two subsequent studies have extended these estimates to a less selected sample. Starr (2018) examines how cross-sectional variation in state noncompete policies are related to training and wage outcomes using 1996-2008 data from the Census Bureau's Survey of Income and Program Participation. To isolate the effect of noncompete enforceability Starr (2018) divides occupations into those where noncompetes are found frequently and those where noncompetes are found infrequently, and examines how the within-state wage and training differences between high-use and low-use occupations changes as noncompete enforceability increases. The results suggest that while the

⁵ A second thread of this argument holds that noncompetes reduce innovation associated with reduced mobility flows and thus information flows across firm boundaries.

⁶ An alternative argument is that a worker's wages today may be lower because a noncompete from a prior job pushed them to switch to an industry in which they are less productive than their previously chosen industry.

⁷ To aggregate the various dimensions of noncompete policies into an overall enforceability index, researchers have reviewed the treatises by Malsberger (2012), *Covenants Not to Compete: A State-by-State Survey*, which catalogues each state's stance on various dimensions of enforceability, and scored each state on each dimension of enforceability before adding the scores together (potentially weighting some more than others) to get an overall estimate of how vigorously a state enforces noncompetes. See Stuart and Sorenson (2003), Garmaise (2009), Bishara (2011), and Starr (2018) for details.

incidence of training is 14% higher in an average enforcing state relative to a non-enforcing state, wages are approximately 4% lower. The study also finds that enforceability reduces the return to tenure, and that the negative wage effects are strongest among those with less education. The study also provides suggestive evidence that the negative wage effects are driven by states which require no “additional consideration” in exchange for a noncompete.

Lastly, Balasubramanian et al. (2018) use cross-sectional variation in noncompete enforceability as well as Hawaii’s 2015 ban on noncompetes for “tech” workers to examine the relationship between noncompete enforceability, mobility, and earnings. Using employer-employee matched data from 30 states from 1991-2008, their cross-sectional approach uses “tech” workers as the treatment group, given that they are among the most likely to agree to noncompetes, and “non-tech” as a pseudo control group, examining the time path of earnings within and across jobs. They find that relative to non-tech workers, average wages and wage growth for tech workers in higher enforceability states are relatively lower both within and across jobs. Comparing two observationally equivalent workers from the ends of the enforceability spectrum, the worker in the highest enforcing state has 6% lower cumulative earnings after 8 years. The results from the 2015 Hawaii ban for tech workers shows that mobility increases following the ban, while wages of new hires rose by 4.2% relative to the control group.

Despite their different approaches, samples, and time frames, the results across these studies are consistent: The enforceability of noncompetes is associated with the reduced movement of workers and *lower wages*, both within and across jobs. Nevertheless, two important limitations remain. First, most states have not significantly changed their policies (e.g., adopting or reversing a ban) in the last 30 years. As states begin to pass bans or make other big changes, researchers could use this variation to bolster the existing evidence. Second, these studies cannot identify *who* is suffering these wage losses, which could be driven by any of three avenues: (1) Noncompete signers in higher enforceability states could be suffering all of the earnings losses; (2) Noncompetes themselves may cause these earnings losses, independent of their enforceability, and noncompetes may just be more prevalent in higher enforceability states; (3) The enforceability of noncompetes, in conjunction with their use, may cause negative *external effects* on others in the market. Without incorporating data on who actually signs noncompete agreements, we cannot understand which among these three explanations account for the observed wage losses.

The Use of Noncompetes

Until recently, basic information on even the use of noncompetes across the U.S. Labor Force was unavailable. In fact, the only population for which we have actual contracts over time are executives (Schwab and Thomas 2006; Bishara, Martin and Thomas 2015). An analysis of these contracts finds the use of noncompetes in CEO contracts increased from 64.7% in 1993 to 78.8% in 2010 (Bishara et al. 2015). While this evidence is suggestive that noncompete use is pervasive among executives, it is difficult to extrapolate results for CEOs to the average worker.

The only other systematic evidence on the existence of noncompetes at the individual level come from several cross-sectional surveys.⁸ The largest and most nationally representative of these surveys, a 2014 survey of 11,500 labor force participants, finds that 18% of the US labor force was bound by a noncompete in 2014, with 38% reporting that they had agreed to a noncompete at some point

⁸ These include a survey of approximately 1,000 engineers (Marx 2011), one of approximately 2,000 physicians (Lavetti et al. 2018), one of 11,500 U.S. labor force participants (Starr, Prescott, and Bishara 2018a), one of 2,000 residents of Utah (Cicero 2017), and one of nearly 800 U.S. labor force participants (Krueger and Posner 2018).

(Prescott, Bishara, and Starr 2016).⁹ Descriptive evidence on who signs noncompetes suggests that noncompetes are indeed found where one would expect – workers in high-skill, high-paying jobs that involve trade secrets are more likely to sign noncompetes. However, noncompetes are still systematically found in low-skill, low-paying jobs that do not involve trade secrets (Starr, Prescott, and Bishara 2018a). Surprisingly, the incidence of noncompetes is just as high in states that do not enforce them at all when compared to states that enforce them vigorously.

Starr, Prescott, and Bishara (2018a) also examine facts about the noncompete contracting process, revealing that only 10% of workers report negotiating over their noncompete or for other benefits in exchange for signing. Moreover, 82% of workers report simply reading and signing their noncompete when they were asked, with only 18% consulting friends, family, or a lawyer. Lastly, Starr, Prescott, and Bishara (2018a) find that 33% of noncompetes are first presented *after* workers have accepted the job offer (but not with a promotion or raise).¹⁰

These statistics suggest that the use of noncompetes is indeed widespread, but that the typical contracting process does not appear to reflect much bargaining or transparency. Moreover, the fact that noncompetes are still prevalent in non-enforcing states suggests that studies which examine only the enforceability of noncompetes might miss an important part of the picture.

The Relationship Between Noncompetes Themselves and Wages

Motivated by the arguments in the legal literature that late notification of the noncompete strips workers of their bargaining power (Arnow-Richman 2006), Starr et al. (2018a) examine the relationship between noncompetes, timing, and wages. They find that when workers are presented with noncompetes *after* accepting the job, they experience no wage or training benefits relative to an unconstrained individual, are less satisfied in their job, and have almost a year longer tenure (Starr, Prescott, and Bishara 2018b). In contrast, workers presented with a noncompete *before* accepting the job appear to be better off: Relative to an unbound worker, they have 9.7% higher wages (which occur in the first few years of tenure), receive 11% more training, and are 6.6% more satisfied in their job than those not bound by noncompetes.¹¹

These timing differentials are useful because they reflect in part whether labor markets are competitive. That is, if workers presented with an unexpected noncompete could leave for an equally good job, then we would not expect to see these differences associated with timing. However, the fact that we observe such delay differentials suggests that noncompetes can be both part of efficient contracting, as well as intertemporal conduits of monopsony power. That is, noncompetes can be associated with positive wage and investment effects, but they also translate short term monopsony power (e.g., the temporary lack of an offer) into long term monopsony power (the right to prohibit of worker from joining a competitor).¹²

⁹ In a survey of 800 labor force participants, Krueger and Posner (2018) estimate that 15.5% in the U.S. are bound by noncompetes, while Cicero (2017) finds that 18% of 2,000 Utah labor force participants were bound in 2017.

¹⁰ Marx (2011) presented the first evidence of this delay, with 46% of the 445 noncompete-signing engineers in his sample reporting that they agreed to a noncompete after the offer but not after starting the job.

¹¹ Within-model tests confirm that those receiving early notification are statistically significantly better off than those with late notification.

¹² Starr et al. (2018a) suggest two interpretations of the delay differentials. The first is that early notification allows workers to negotiate over the noncompete, or to better consider the job offer relative to their alternatives. The second is that the timing of noncompetes in part distinguishes between reasons that firms use noncompetes: Since judges are less likely to enforce a noncompete that unexpectedly thrust upon a worker, firms that might actually need fight a noncompete in court,

With regards to the limitations of enforceability studies described earlier, Starr et al. (2018a) find that compared to those who signed noncompetes in non-enforcing states, those bound by noncompetes in states that more vigorously enforce noncompetes experience relatively lower wages (regardless of when they were notified about it).

The only other study to examine the relationship between noncompete agreements themselves and wages is Lavetti, Simon, and White (2018), who study a sample of nearly 2,000 physicians across five states. They find that 45% of the physicians are bound by a noncompete, and that physicians bound by noncompetes experience greater earnings growth by an average of 8 percentage points in each of the first 4 years of a job, with a cumulative effect of 35 percentage points after 10 years. Lavetti et al. (2018) attribute these earnings differences to the fact that physicians who sign noncompetes are allocated more patients and have higher-powered incentives, leading to greater productivity and wages.

Though these results are not experimental in that they carefully separate causation from correlation, they do suggest that noncompetes themselves can be associated with greater wages. These results contrast sharply with the enforceability results described earlier: How can it be that the enforceability of noncompetes is associated with lower wages, but that individuals who sign noncompetes receive higher wages (in some cases) relative to those aren't bound by them? This puzzle is largely unanswered, but one potential theory suggests that noncompetes and their enforceability might impose negative externalities on the market.

The Externality Perspective

The focus of the existing literature on those who are bound by noncompetes, while merited, has caused an under-appreciation for the variety of other channels by which noncompetes and their enforceability can influence market dynamics, potentially causing negative externalities. One recent study seeks to make this distinction clear: Starr, Frake, and Agarwal (2018) argue that because enforceable noncompetes (a) deter new firm entry (e.g., increase employer concentration) and (b) increase congestion in the hiring process, enforceable noncompetes can impose negative externalities.¹³ Using the 2014 Noncompete Survey Project data, they analyze how the incidence of noncompetes in a state-industry combination and the state's enforceability are associated with the movement and wages of the average labor market participant, as well as the average "unbound" labor market participant. The results suggest that relative to a state where noncompetes are not enforceable, a 10% rise in the incidence of noncompetes in an average enforcing state is associated with 4% lower wages among the unconstrained, 13% longer tenures, and a 16%-24% decrease in the relative rate of job offers.¹⁴ The results of this study echo the initial hypothesis set forth by Gilson (1999), that while

presumably because they have made valuable investments in the worker, are incentivized to provide the noncompete upfront. Starr et al. (2018a) present some evidence that both interpretations are operative: the propensity for noncompete negotiation is doubled when noncompetes are requested early as opposed to late, and the training benefits accruing to the early notification group accrue primarily in states that enforce noncompetes.

¹³ In support of the first point, mounting evidence suggests that the enforceability of noncompetes is associated with reduced new firm entry (Starr, Balasubramanian, and Sakakibara 2017, Jeffers 2018) and increased concentration (Lavetti and Hausman 2018). In turn, existing evidence suggests that wages are lower when markets are more concentrated (Benmelech et al. 2018). Related externalities may occur because workers are pushed to other states, as found in Marx et al. 2015, Balasubramanian et al. 2018, and Starr et al. 2018b.

Theoretically, it is also possible for the unconstrained to experience positive externalities from the increased incidence of enforceable noncompetes. That is, if firms redirect their labor demand towards those who are free to move, then the unconstrained may experience greater wages in such areas. Existing evidence from Starr, Prescott, and Bishara (2018b) does not suggest that this sort of redirection in firm attention is occurring.

¹⁴ Replications with the Current Population Survey estimate similar wage and mobility effects.

firms may have private incentives to use noncompetes, if all firms utilize them then it may actually make them all worse off. In such a scenario, choosing not to enforce noncompetes can indeed be welfare enhancing, as Gilson (1999) suggests in the case of Silicon Valley.

Policy Recommendations

The emerging nature of this literature and the contrasting results described above make it difficult to answer the second question posed in this brief, “How should state courts enforce noncompetes?” Nevertheless, below I provide a few policy recommendations based on this research, with the goal of increasing wages for workers.¹⁵

1. Early Notification: If firms wish to use noncompetes with their new hires, state law should require notification of such provisions with the job offer or at least sufficiently long enough before the commencement of employment for the potential employee to properly consider the terms of the relationship.

This early notification provision might have the adverse effect of causing firms to use noncompetes upfront with workers who might otherwise not be asked to sign one until later. Thus the law should also allow firms to ask workers to enter into noncompetes later in the employment relationship, but in that case they should be associated with some form of valuable consideration:

2. Consideration for noncompetes entered into after the commencement of employment: For workers who might be asked to sign a noncompete after joining, the noncompete should be associated with a raise, promotion, or other valuable consideration.

The goal of these two policies is ensure that workers either (a) know what they are getting into or (b) are at least compensated when they are asked to sign a noncompete. There is a similar way to achieve this goal without this legislation, which is to make public which types of workers at which companies agree to noncompetes. A cursory search reveals that this information is strikingly hard to come by. Thus a website or private firm, such as Glassdoor.com or Indeed.com, which job seekers flock to for basic job information, could provide information on the use of noncompetes by company and job title, allowing workers to incorporate such information into their job search. While firms may be loath to provide this information, firms also stand to benefit from better information: Firms learning which other firms use noncompetes can facilitate better recruitment strategies and ultimately help in hiring the workers that are a best fit, which includes finding workers that are satisfied with the firm’s noncompete policies.

3. Ban noncompetes for certain populations: Noncompetes should be banned for workers that are vulnerable to coercion or are otherwise likely to bear the cost of noncompetes without the benefits, such as low wage workers, students, or interns. Noncompetes should similarly be banned for workers in occupations or industries in which noncompetes curtail the formation of high growth business, such as high-tech.

¹⁵ These policy suggestions are designed to increase wages, and not necessarily promote innovation or increase productivity, which have not been covered in this brief.

The evidence suggests that banning noncompetes will likely spur wage growth – one study suggests that those with less education are harder hit, while another suggests that banning noncompetes for tech workers is associated with higher wages. Other research suggest these bans may help raise wages even for those not bound by noncompetes, by preventing negative externalities from occurring.

Directions for Future Research

Since data on the use of noncompetes over time is not available for any population except executives, it is impossible to identify the extent to which rising noncompete use is responsible for the wage stagnation trends highlighted in the beginning of this brief. As such, future research needs to collect data on the use of noncompetes over time, preferably tracking the same set of workers throughout their careers. Combining such data with exogenous changes in the enforceability of noncompetes provides a promising opportunity to better understand how noncompetes and their enforceability affect a wide range of economic dynamics, including the careers of workers.

A related challenge is better identifying who has signed noncompetes. Asking workers who may have little idea about what a noncompete is or whether they have actually agreed to them can cause important measurement problems, especially in low skill jobs. Evidence using either firm-level surveys or preferably actual contracts can help to overcome these important limitations.

More work needs to be done to understand the discrepancy between the use and enforceability results. One potential direction is to examine knowledge asymmetry in state laws – perhaps firms have an informational advantage that they exploit at the expense of workers, who may be less well informed.

The singular focus on wages in this brief only made casual mention of some of the existing results related to mobility and investment. Identifying the extent to which noncompetes and their enforceability are associated with other outcomes relevant for wellbeing, such as economic growth, innovation, and productivity are important and largely unaddressed directions for future work. Moreover, to the extent that these effects reflect negative externalities, they bolster the case for reform.

While this brief and the existing literature is focused on covenants not to compete, they are only one among many provisions used to similar effect, including nondisclosure agreements, nonsolicitation agreements, nonpoaching agreements, intellectual property assignment agreements, and arbitration agreements. To my knowledge, almost no work has considered the effects of such provisions.¹⁶ Identifying the extent and effects of these provisions, both on their own and in conjunction with other similar provisions, is a very important avenue for future research.

Lastly, the empirical challenges in identifying the causal effects of noncompetes or similar provisions are substantial. Much of the work on noncompetes themselves compares observationally equivalent workers, but does not claim to identify the causal effect. Future research that identifies exogenous variation in the use of noncompetes, whether through some natural or within-firm experiment, would make substantial progress in identifying the treatment effect of such provisions.

Research in each of these areas would make important inroads towards understanding how noncompetes and similar provisions are impacting the welfare of workers and our economy.

¹⁶ See Krueger and Ashenfelter (2017) for a recent analysis of nonpoaching agreements.

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