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Labor Non-Compete Agreements: Tool for Economic Efficiency, or Means to Extract Value from Workers?

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Abstract: A number of theoretical arguments have been offered in favor of non-compete provisions in labor agreements. While there has been considerable empirical research on the effects of those provisions, there has been little direct analysis of the arguments themselves. In this article I lay out and evaluate three commonly-heard arguments, namely: (1) the voluntary nature of labor agreements justifies a strong inference that the terms of those agreements, including non-compete provisions, are beneficial for both workers and firms and that they are economically efficient; (2A) non-competes facilitate efficient knowledge transfer from firms to workers; and (2B) non-competes encourage efficient firm-sponsored investment in worker training. These arguments, though not entirely without merit, mostly do not survive close scrutiny, and in fact such scrutiny reveals strong arguments that point in the opposite direction. This, combined with the large body of empirical evidence which mostly shows the effects of non-competes to be negative, is sufficient to conclude that non-competes are likely harmful on balance, and to conclude more confidently that they are unlikely to be sufficiently beneficial that restricting or banning them would cause major economic damage. In addition, non-competes may cause additional harms that are not measured in conventional economic research, such as making it more difficult for workers to escape exploitative or abusive employers, as well as the denial of the fundamental human freedom to take one's body and one's labor where one chooses.

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I. Introduction:

Non-compete provisions in labor agreements have become widespread in the United States.[2] In recent years, empirical researchers have begun to study to the effects of non-competes on job mobility, entrepreneurship, worker training, innovation, wages, and other economic outcomes. This empirical research agenda is quite new, and determining the true, causative effect of non-competes on those outcomes is very challenging. But recognizing these limitations, the evidence as it exists today, while somewhat mixed, generally shows non-competes to be economically harmful and not beneficial.

This empirical evidence must be interpreted in light of the strength of the theoretical arguments for or against non-competes. If there were strong theoretical arguments in their favor, the empirical evidence accumulated to date may not be sufficiently strong to convincingly demonstrate that non-competes are harmful on balance. But if the theoretical arguments in favor of non-competes are weak, or if there are strong theoretical arguments against them, then the theory and the empirical evidence would both point in the same direction, strongly indicating that they are likely to be harmful and even more strongly indicating that they are unlikely to be highly beneficial.[3]

The purpose of this article is to provide a critical evaluation of those theoretical arguments.[4] There are three major arguments that are commonly offered in favor of non-competes, namely: (1) the voluntary nature of labor agreements justifies a strong inference that the terms of those agreements, including non-compete provisions, are beneficial for both workers and firms and that they are economically efficient; (2A) non-competes facilitate efficient knowledge transfer from firms to workers; and (2B) non-competes encourage efficient firm-sponsored investment in

[2] See Evan Starr, J.J. Prescott, and Norman Bishara, "Noncompetes in the US Labor Force," *forthcoming in Journal of Law and Economics* (2020); and Alexander J.S. Colvin and Heidi Shierholz, "Noncompete Agreements," *Report of the Economic Policy Institute* (2019).

[3] In Bayesian terms, if the theoretical arguments in favor of non-competes are strong, then the priors are strong that non-competes have large economic benefits, and it would take a large amount of contrary evidence to overturn those priors. But if those arguments are weak, and/or if there are strong arguments that non-competes are harmful, then the priors are that non-competes are harmful (or at least not highly beneficial), and it would take a large amount of contrary evidence to overturn *those* priors. This article argues that the theoretical arguments in favor of non-competes are in fact weak, and that close scrutiny of those arguments reveals strong arguments to the contrary. This means that there is a consonance rather than a tension between the empirical evidence and the theory.

[4] Points similar to some of those made in this article can be found in Eric A. Posner, "The Antitrust Challenge to Covenants Not to Compete in Employment Contracts," *Antitrust Law Journal* 83 (2020), pp. 165-200 and in the survey articles referenced in footnote #5. See also U.S. Department of the Treasury, Office of Economic Policy "Non-compete Contracts: Economic Effects and Policy Implications." (2016); and a White House report entitled "Non-Compete Agreements: Analysis of the Usage, Potential Issues, and State Responses." (2016).

worker training. The structure of this article is to enumerate and respond to these arguments one by one.

To summarize my conclusions, these arguments sound plausible and have some limited merit, but all three largely fail upon close scrutiny, and in fact such scrutiny reveals strong arguments to the contrary. This, combined with the empirical evidence discussed above, constitutes strong reason to believe that non-competes are likely harmful on balance, and even stronger reason to believe that they are not highly beneficial such that restricting or banning them would cause major economic damage.

Moreover, non-competes may cause harms that are not generally thought of as being within the purview of economics, and that are not normally studied in economic research. A worker who is bound by a non-compete has a large barrier to leaving a firm (on top of other barriers that likely exist), rendering them less able to avoid or resist mistreatment at their firm, including true exploitation or abuse by a predatory employer or manager. In addition, a person bound by a non-compete is simply less free, and the personal freedom to use one's body and one's labor as one wishes is a value in and of itself. Policy makers should have a high threshold for interfering with this fundamental freedom.

II. Summary of the Empirical Literature:

There is now a substantial empirical research literature on non-competes, dealing with their effects on several important outcomes, including: worker mobility, hiring, and entrepreneurship; investment and innovation; and wages. A brief summary follows.[5]

[5] This summary draws heavily, with permission, from Evan Starr, "The Use, Abuse, and Enforceability of Non-Compete and No-Poach Agreements: A Brief Review of the Theory, Evidence, and Recent Reform Efforts," *Economic Innovation Group February 2019 Issue Brief*; and from Evan Starr, "Are Noncompetes Holding Down Wages?" *forthcoming chapter in Inequality and the Labor Market: The Case for Greater Competition*, Brookings Institution Press. It also relies on John M. McAdams, "Non-Compete Agreements: A Review of the Literature," *mimeo* (2019). To save space, some of the citations are suppressed. They can be found in those articles, along with further commentary.

A. Working Mobility, Hiring, and Entrepreneurship

The evidence shows that workers bound by non-competes stay in their jobs longer (are less mobile). In one study, being bound by a non-compete is associated with an 11% increase in job tenure. According to another study, the 2015 Hawaii ban on non-competes for tech workers increased employee mobility in the sector by 11%. Similar results are found for executives, patent holders, and the universe of individuals with LinkedIn records. An analysis of Oregon's 2008 ban on non-competes for hourly workers finds similar results.

Four studies find evidence consistent with the notion that firms have trouble hiring workers in higher enforceability regimes, with young firms hit particularly hard. Two studies suggest that individuals bound by non-competes are redirected to other industries, including 11% of those who have ever signed one. Other studies find that tech workers and patent holders are more likely to leave states that enforce non-competes.

Seven recent studies examined the relationship between non-compete enforceability and entrepreneurship, finding generally that the enforceability of non-competes dampens new firm creation. One study found that greater enforceability reduced new firm entry by 18%.

B. Investment and Innovation

The evidence regarding investment and innovation is mixed. The enforceability of non-competes is associated with more firm-sponsored training of workers, increases in net capital investment rates, the exploration of new fields, and the creation of riskier patents. However, the mobility-inhibiting effects of non-compete enforceability also dampens knowledge flows and makes venture capital less effective in spurring the creation of new patents and employment.

C. Wages

A number of studies attempt to estimate the effect of non-competes on wages by exploiting variation in state policies on the enforceability of non-competes. Most of these studies use some version of a "difference-in-differences" study design, in which the change in wages (for some category of workers) in a state that changed its enforceability policy is compared to the change in wages in "control" states that did not. These studies consistently show that the enforceability of

non-competes is associated with lower wages.[6] Perhaps the most notable of these studies is Starr & Lipsitz (2020),[7] which finds that banning non-competes for hourly workers increased hourly wages by 2-3% on average. Since only a subset of workers sign non-competes, scaling this estimate by the prevalence of non-compete use in the hourly-paid population suggests that the effect on employees actually bound by non-competes may be as great as 14-21%, though the true effect on bound workers is likely lower than that due to labor market spillovers which may cause part of the wage reduction to be borne by unbound workers.

The above studies attempt to measure the effects of non-competes indirectly by comparing wages across states with different enforceability policies. Three other studies attempt to measure these effects more directly by comparing wages of workers who are bound by non-competes to those of workers who are not. One of these studies finds that workers with non-competes have 9.7% higher wages than similar workers who do not, but only if they were informed of the non-compete before accepting the job; workers who were informed of the non-compete after they accepted the job had no such benefit.[8] The second of these studies finds that non-competes increase wages for CEOs, and the third finds that they increase wages for primary care physicians.[9]

The former group of studies associates non-competes with lower wages, and the latter group associates them with higher wages. There are several possible ways to reconcile this discrepancy. First and perhaps most likely, the study design of the latter group may not be suitable for measuring the *causative* effect of non-competes on wages; the fact that workers bound by non-competes have higher wages does not mean that the non-competes *caused* the higher wages. In contrast, the difference-in-differences study design used in the former group (and commonly used across many areas of empirical economics) exists precisely because it is often a valid way to measure causative effects; if wage trends in states that changed their policy are different from trends in

[6] There are a number of such studies, cited and discussed in Evan Starr, "Are Noncompetes Holding Down Wages?" *forthcoming chapter in Inequality and the Labor Market: The Case for Greater Competition*, Brookings Institution Press.
[7] Evan Starr and Michael Lipsitz, "Low-Wage Workers and the Enforceability of Non-Compete Agreements," *forthcoming in Management Science* (2020).
[8] See Evan Starr, J.J. Prescott, and Norman Bishara, "Noncompetes in the US Labor Force," *forthcoming in Journal of Law and Economics* (2020).
[9] See Omesh Kini, Ryan Williams, and David Yin, "CEO Non-Compete Agreements, Job Risk, and Compensation" *forthcoming in Review of Financial Studies* (2020); and Kurt J. Lavetti, Carol Simon and William D. White, "The Impacts of Restricting Mobility of Skilled Service Workers: Evidence from Physicians," *Journal of Human Resources*, 55 (2020), pp. 1025-1067, respectively.

otherwise similar control states, a reasonable interpretation is that the policy change caused the change in trend. For this reason, the former group of studies may be more reliable.

A second possible reason for the discrepancy is that non-competes may be beneficial for the workers who are bound by them, but harmful overall, because of external effects on workers who are not bound by them. A third possibility has to do with the type of workers being studied. As noted above, one of the studies in the latter group is about corporate CEOs, who represent a tiny slice of workers and for whom the notion that non-competes are beneficial is much more plausible than it is for other workers. Another study in that group is about primary care physicians. Importantly, that study does not disentangle the effect of non-competes from the effect of non-solicitation provisions (where the physician is free to leave but is not free to take their patients with them). Non-solicitation provisions have a much stronger claim to being beneficial than do non-competes, and it is possible that this benefit, rather than a benefit from the non-compete itself, is what is causing the higher wages found in that study.

D. Summary

In sum, though somewhat mixed, the empirical literature is largely negative regarding the effects of non-competes, and it certainly does not support the conclusion that they are highly beneficial. This is expressed clearly by Evan Starr, a leading empirical researcher in the field who, in recent Congressional testimony, summarized the empirical research as follows: "Taken together, these results are hard to square with theories that suggest workers should benefit from non-competes."[10]

III. Three Commonly-Offered Arguments in Favor of Non-Competes:

I now turn to the three major arguments that are commonly offered in favor of non-competes.

[10] Testimony before the U.S. House of Representatives Committee on the Judiciary, Subcommittee on Antitrust, Commercial, and Administrative Law, in a session entitled "Antitrust and Economic Opportunity: Competition in Labor Markets" on October 29, 2019.

Argument #1: If Both Parties Agreed to the Non-Compete, It Must be Efficient:

Argument #1 begins with the simple and intuitive premise that people can generally be assumed to act in their own best interest, so if both a worker and a firm voluntarily agree to a non-compete then doing so must make them both better off, otherwise one or both would not have agreed. And if the non-compete makes both parties better off, then it follows that banning or restricting non-competes would make them both worse off. By this argument, the mere existence of non-competes is strong evidence that they are beneficial.

Spelled out in more detail, the argument goes as follows. Suppose that a worker and a firm negotiate over employment terms before the job match is formed. In that negotiation, each side exploits their bargaining position as best they can,[11] so the terms that arise from that negotiation will be the very best ones that the worker can get, and also the very best ones that the firm can get. Now suppose that the firm wishes to add a non-compete provision to the previously negotiated terms. All else equal, this restriction on the worker's outside opportunities makes the firm better off; it reduces the chance that the worker will later leave for a better job, and it also weakens the worker's bargaining position relative to the firm with respect to issues that will arise after the job match has been formed.[12] For the same reasons, all else equal the non-compete makes the worker worse off.

Knowing that the non-compete (all else equal) harms the worker and benefits the firm, what should we expect to happen? It might appear that the firm, if it has a sufficiently strong bargaining position, could simply compel the worker to accept the non-compete. But Argument #1 says

[11] The economic theory of bargaining distinguishes between bargaining "leverage" (the side that "needs" a deal less has more leverage and so gets better terms) and bargaining "power" (the side that is better able to capture the surplus arising from a deal has more power and so gets a better deal). Here I informally use the term bargaining "position" to capture both of these (the more favorable the combination of leverage and power that a side has, the better a deal it will be able to negotiate). For a discussion of the distinction between bargaining leverage and bargaining power and its relevance for evaluating non-competes, see David J. Balan, "Labor Practices Can Be An Antitrust Problem Even When Labor Markets Are Competitive," *CPI Antitrust Chronicle* (June 2020).

[12] Once the match is formed, it is costly to dissolve, for both the worker and the firm. These costs can be substantial. Another way of saying that dissolving the match is costly is to say that *preserving* the match generates surplus arising from avoiding those costs. This match-specific surplus must somehow be divided between the worker and the firm. If labor contracts were complete and also fully and costlessly enforceable, then the division of this surplus would be determined ex-ante, before the match was formed. But in reality, this surplus is largely divided via (informal) ex-post bargaining after the match has formed. A non-compete weakens the bargaining position of the worker in this ex-post negotiation, to the worker's detriment and the firm's benefit. See David J. Balan, "Labor Practices Can Be An Antitrust Problem Even When Labor Markets Are Competitive," *CPI Antitrust Chronicle* (June 2020) for a discussion of this issue and its implications for the question of whether non-competes should be treated as an antitrust problem.

that this is incorrect, because all else is not equal. The reasoning is as follows. Recall that in the initial negotiation, each side got the very best terms that they could. But that must mean that each side *fully* exploited their bargaining position; to do otherwise would be to voluntarily leave money on the table. In other words, the negotiated terms reflect the result when each side has shot every arrow in their quiver, which means that neither side has any *remaining* arrows that can be used to extract *additional* concessions from the other, and which specifically means that the firm has no means by which to compel the worker to accept a non-compete.[13]

If the firm cannot compel the worker to accept the non-compete, then its only alternative is to *compensate* the worker by an amount sufficient to induce them to agree.[14] Given this, the firm has a choice: forego the non-compete or pay the necessary compensation.[15] Paying the compensation is worthwhile for the firm if and only if the value that the firm gains from restricting the worker's outside employment options exceeds the amount that the worker must be paid to accept that restriction, which is closely related to how much the worker dislikes the restriction.[16] So if we observe a non-compete, it means that the firm values having it more than the worker values

[13] A number of authors have made versions of this argument. Perhaps the clearest is an online article by David D. Friedman (http://www.daviddfriedman.com/Academic/non-comp/Non-Competition.html) entitled "Non-Competition Agreements: Some Alternative Explanations" (1991). See also Maureen B. Callahan, "Post-Employment Restraint Agreements: A Reassessment," *University of Chicago Law Review* 52 (1985), pp. 703-728.

[14] Assuming that the worker is rational, the required *ex ante* compensation (before the job match is formed) would need to be sufficient to compensate the worker for *all* of the harm that the worker receives from the non-compete, including harm arising from the fact that the non-compete will weaken the worker's bargaining position in the *ex post* bargaining over match-specific surplus as discussed in footnote #12 above

[15] The "necessary" compensation will be no less than the minimum amount that the worker would be willing to accept in exchange for agreeing to the non-compete. It might be more, depending on the relative bargaining positions of the worker and the firm.

[16] In the example in the main text, I assume that the worker and the firm first decide that they are going to form a match, then negotiate the terms that would pertain without a non-compete, and then negotiate over how those terms would change if a non-compete was added. But this highly stylized scenario is not necessary for the argument. The logic would work essentially the same way if the worker and the firm negotiated the terms that would pertain *with* a non-compete, and then negotiated over how those terms would change if the non-compete was *removed*. If the firm values the non-compete by more than the worker dislikes it, then it will remain. But if the reverse is true, then there would be a mutually beneficial arrangement in which the non-compete is removed and other terms of the agreement (likely the wage) are adjusted in favor of the firm (i.e., the *worker* will compensate the *firm* for the *removal* of the non-compete). Put another way, the worker will be willing to make some concession (likely a lower wage) in exchange for removing the non-compete, and the firm will forego that concession if and only if the non-compete benefits the firm by more. This logic is not specific to non-competes; it is true of any negative attribute of a job, such as noisy or dangerous working conditions. It is only worthwhile for the firm to require such conditions if the benefit to the firm exceeds the harm to the worker, otherwise the firm would prefer a mutually beneficial alternative agreement that eliminates the negative attribute and also pays a lower wage. Also note that the above logic would work essentially the same way in other scenarios, including: (i) where the alternative to a non-compete is working for a different firm, rather than working for the original firm without a non-compete; or (ii) where employment terms are unilaterally set by the firm rather than being negotiated (this scenario is discussed further below). In all of these scenarios, the same basic idea holds: a non-compete will only exist if the benefit to the firm exceeds the harm to the worker; otherwise there would exist a mutually beneficial alternative agreement without it.

avoiding it, which in turn means that its social benefit exceeds its social cost, and therefore that it is not only privately beneficial but also economically efficient in the sense of increasing total economic welfare.[17]

Responses to Argument #1:

The logic behind Argument #1 is sound; given the premises, the argument is correct.[18] The problem is that the premises are faulty. To see why, begin by supposing that, contrary to Argument #1, the firm does have some way to *impose* a non-compete on the worker (i.e., to induce the worker to accept it *without* compensation).[19] If the firm could do that, it would be in its interest to do so; as noted above, the firm benefits from restricting the worker's outside opportunities. In that case, the non-compete would not be mutually beneficial, but would instead be a means by which the firm can extract value from the worker. Moreover, the harm to the worker from the non-compete can be greater than the benefit to the firm, making it no longer economically efficient in the sense of increasing total economic surplus.

For this reason, Argument #1 depends crucially on the premise that imposing a non-compete on a worker without compensation is impossible. That is, the argument requires that the worker's formal agreement to the non-compete provision can never be obtained unless the provision truly makes the worker better off. This premise is rather obviously incorrect. The remainder of this

[17] A striking feature of this argument is that it does not depend at all on the relative bargaining positions of the worker vs. the firm. The idea is as follows. If the worker's relative bargaining position is strong, they will command favorable terms. If it is weak, they will command unfavorable terms. But even then, it remains true that those unfavorable terms are the result of both sides fully exploiting their bargaining position. Even if the worker starts with few arrows in their quiver and the firm starts with many, at the end of the negotiation *both* quivers are empty, and so the firm has no way to compel the worker to accept any *additional* unfavorable terms, including a non-compete. So once again, the only way for the firm to induce the worker to accept a non-compete is in exchange for sufficient compensation, which will only be offered if the firm values having it more than the worker values avoiding it.

[18] Even given its premises, Argument #1 can fail if the non-compete has harmful effects on third parties, as then the fact that it is mutually beneficial to the parties that agreed to it does not mean that it is economically efficient overall. (This is closely related to the economics of exclusive dealing contracts, where exclusives that are beneficial to all of the parties that agreed to them can be harmful to parties that did not, and therefore economically inefficient). Possible harmed third parties include owners, workers, and customers of firms that would have been started or made more productive by the unimpeded flow of workers. This possibility is sometimes acknowledged even by supporters of non-competes, though it is often skipped over lightly. While this is an important issue, in this article I focus on other, less widely-discussed problems with Argument #1.

[19] The discussion in the main text assumes that the firm can impose a non-compete on the worker without any compensation at all. The same points would apply, in an attenuated form, if the firm needed to pay some compensation, but less than the amount required to fully compensate the worker.

section describes ways in which firms can obtain formal agreement to a non-compete even when it is harmful to the worker. These include:

- The firm can mislead the worker about the very existence of the non-compete. If the non-compete is buried in the fine print of a complicated employment contract, the worker may "agree" to it without ever knowing that it was there. Similarly, the worker could see the non-compete language but not understand what it means, either in the literal sense of not having a factually accurate understanding of what they are agreeing to or in the psychological sense of not regarding as salient an abstract restraint that might be relevant only in the distant future.[20]

- In some cases the worker is not told that the non-compete is part of the employment contract until they have already started the job. But by that time it is more difficult to refuse. The worker is likely eager to start the new job, and would not want to quit. In addition, the worker may have already turned down other job offers, so that quitting would mean starting a new job search with the attendant costs, delays, distress, and lost income. Therefore the worker might agree to a non-compete ex-post that they would not have agreed to ex-ante on the day that they accepted the job.[21]

- If there is any ambiguity in the terms of the non-compete, the firm can exploit that ambiguity, along with its large advantage in the ability to bear the costs, financial and otherwise, of fighting in court, to bind the worker to an interpretation of the non-compete that is more restrictive than what the worker agreed to and was (possibly) compensated for.[22]

- Suppose the worker agrees to a non-compete in exchange for compensation in the form of a promise of better employment terms (such as a higher wage) in the future. Now suppose

[20] Note that even if the non-compete is not understood by or salient to the worker, that is not true for the *firm*. The firm fully understands what it has to gain from the non-compete. This asymmetry in sophistication between the worker and the firm is one reason why both sides might "agree" to a non-compete that is not mutually beneficial.

[21] The possibility that a firm might exploit the reluctance of the worker to quit once they have accepted the job is not limited to non-competes. The firm might be able to do this with any employment term, including wages. However, the comprehension/salience point described above likely applies here as well. A worker who is told on Day 1 that they will not receive the promised wage may be more likely to quit than a worker who is told of the existence of a non-compete, and even if they do not quit they are more likely to be a disgruntled employee. The asymmetry in sophistication between the worker and the firm gives the firm the incentive to extract value from workers ex-post by modifying opaque terms instead of salient ones.

[22] Perhaps a rational worker would anticipate this possibility and so would require compensation for the stronger non-compete that the firm might try to impose ex-post, rather than the weaker one that was agreed to ex-ante. But this requires a level of foresight and "meta rationality" that is unrealistic even for relatively sophisticated workers.

that the firm does not deliver on that promise. What recourse does the worker have? One natural recourse is to quit, *but that is the very thing that the non-compete deters the worker from doing.*[23] That is, the firm may be able to renege on delivering the compensation promised to the worker in exchange for agreeing to the non-compete precisely because the non-compete itself decreases the cost of doing so. This is a key point: the compensation is what makes the non-compete mutually beneficial, but then the non-compete can cause the worker not to receive the compensation.[24]

- The discussion of Argument #1 above was about negotiating over the inclusion of a non-compete provision in a labor agreement. But in many cases, no such negotiation is possible; the non-compete is unilateral firm policy, required of all workers without exception. It might appear obvious that if firms can literally impose non-competes, then there need be no compensation and non-competes can be used as a means to extract value from workers. However, according to Argument #1, this does not follow from standard economic theory. Many standard economic models have firms that post non-negotiable terms (e.g., the price of cereal at the supermarket). This does not mean that firms can impose whatever terms they want. They are still constrained by competition, which requires them to offer terms favorable enough to make workers want to work for the firm. Moreover, competition tends to work to eliminate terms that are inefficient (i.e., that harm workers by more than they benefit the firm), for reasons similar to those discussed in footnote #16 above; if the term is inefficient then there would exist a mutually beneficial agreement to eliminate it in exchange for lowering the wage. And if most firms persisted in requiring an inefficient non-compete, one or a few firms could out-compete those firms by not requiring it, either displacing them or forcing them to follow suit.

  The above argument is correct as far as it goes. But if the assumptions are made a bit more realistic, it becomes clear that requiring non-competes as a non-negotiable provision of the job can be an effective means of imposing them on workers without compensation. Specifically, if non-negotiable (and uncompensated) non-competes are widespread

[23] There are other factors that give firms an incentive to deliver on their promises, including formal contracts and reputation effects. But the ability of the worker to quit is a very important one.

[24] Perhaps a rational worker would anticipate this policy and refuse to sign the non-compete in the first place. But as in footnote #22 above, this requires a level of foresight and "meta rationality" that is unrealistic even for relatively sophisticated workers.

in an industry it is unlikely that competition will dislodge them.[25] The reason is as follows. In order for competition to dislodge harmful non-competes, firms that do not require a non-compete, and that hope to attract workers on that basis, would have to make that fact a large and salient part of their worker recruitment message, otherwise prospective workers will not even know about it. But firms can capture only a limited amount of the attention of prospective employees, and it is likely that other recruiting messages would be a better use of that limited attention, particularly if the non-compete is not highly salient for workers. In addition, if one or a few firms did recruit based on a "no non-competes" message, the workers that they would attract would not be a random sample of workers. Rather, they would be the workers who care the most about avoiding non-competes, and those workers may be undesirable in other ways, such as being more likely to quit.[26] In sum, once harmful non-competes have become widespread in an industry, they are likely to persist because the competitive pressure to eliminate them, while present, may not be sufficiently strong.

In the above arguments, no distinction was made between low- and high-wage workers. It is sometimes suggested that non-competes are a problem for the former but not for the latter, who are more sophisticated and for whom the efficiency justifications (discussed below) are more likely to apply. There may be some truth to this; to cite a recent well-known case, requiring sandwich makers at Jimmy Johns to sign a broad non-compete provision likely exploits some disadvantages that are specific to low-wage workers, and it certainly lacks any plausible efficiency justification.[27] However, the reasons to doubt Argument #1 are not confined to low-wage workers. All five of the points discussed above apply at least to some extent to higher-wage workers, particularly the last two.

[25] This point is different from the others in that it depends on the assumption that non-competes are already widespread in the industry (though a weaker version of the point applies even if they are not widespread). The other points do not depend on this assumption.
[26] For a similar mechanism in a different context, see David J. Balan and Dan Hanner, "Job Insecurity Isn't Always Efficient" *mimeo* (2014).
[27] https://illinoisattorneygeneral.gov/pressroom/2016_12/20161207.html

Argument #2: Non-Competes Facilitate Efficient Economic Activity:

Non-competes are commonly claimed to have significant positive economic effects. The purpose of this section is to critically evaluate those claims. But it important to note at the outset that the nature of this evaluation depends on whether or not Argument #1 is correct. If it is correct, then the *mere existence* of a non-compete means that those positive effects must exist, and must be sufficiently large to render the non-compete mutually beneficial and economically efficient; otherwise one party or the other would not have agreed to it. One could still inquire into the specific *nature* of those effects, but the conclusion regarding their existence and magnitude would not depend on any such inquiry.[28]

But as discussed above, Argument #1 is not correct, which means that non-competes can be imposed on workers by firms without compensation as a means of extracting value from them. In principle, non-competes can exist even if they have no positive effects at all. However, this does not necessarily mean that the positive effects do not exist; it is possible that non-competes can be *both* a means of extracting value from workers *and* a source of meaningful positive effects, either simultaneously for a single worker or differentially for different workers.[29] So an inquiry into the claimed positive effects is still important, but if the claims are found to be weak, the correct conclusion is that those positive effects simply don't exist (or are small), and not (as would be the case if Argument #1 was correct) that they *must* exist whether they can be detected or not.[30]

Below I discuss the two most commonly argued claims of positive effects from non-competes, namely: (A) that they facilitate efficient knowledge transfer from firms to workers; and (B) that they encourage efficient firm-sponsored investment in worker training. While these justifications are not completely without merit, I argue that they are both weak, and in fact that scrutiny of

[28] Even strong supporters of non-competes probably do not believe in a strictly literal version of Argument #1. But even in a non-literal version of the argument, the mere existence of non-competes, and their voluntary nature, are taken to be strong evidence that they are likely to be mutually beneficial and economically efficient. This in turn means that important positive effects are very likely to exist (in Bayesian terms, there are strong priors), whether they are easy to identify or not.

[29] It should be noted, however, that the fact that firms impose non-competes on low-skill workers such as sandwich makers when there are clearly no positive effects from doing so is grounds for additional skepticism regarding other claims that are more facially plausible.

[30] It is also possible that non-competes can be efficient in the sense that the total economic benefit exceeds the total harm, but that they still make workers worse off because firms are able to impose them without paying compensation. In that case, whether the non-compete should be treated as beneficial or harmful would depend on a normative judgment regarding the relative importance of worker welfare vs. firm welfare. Or more precisely, on their relative importance when the worker's welfare has decreased, and the firm's welfare has increased, as a result of harmful provision that the firm has imposed on the worker.

them reveals strong arguments in the opposite direction. These arguments, combined with the empirical evidence discussed above, supports the conclusion that non-competes are likely to be harmful on balance, and that they are very unlikely to have effects so positive that restricting or banning them would cause major economic harm.

Argument #2(A): Non-Competes Facilitate Efficient Knowledge Transfer:

Suppose a firm has some knowledge (e.g., a trade secret or a manufacturing process or a customer list) that, if shared with a worker, would make that worker more productive and more valuable to the firm. In that case, sharing the knowledge will be economically efficient. But if that knowledge is also valuable to competitors, then competitors will be willing to offer a worker in possession of that knowledge a wage that reflects its value. This means that the original firm will either lose the worker (and have the knowledge fall into the hands of the competitor) or it will have to match the higher wage. This may make the firm worse off than if it had never shared the knowledge in the first place. If so, the firm might design the job so that the knowledge sharing will not occur, even though sharing is efficient. The inability to protect the knowledge might even cause the firm not to develop it in the first place, or in the extreme case, it might cause the firm to eliminate the job altogether. But with a non-compete agreement in place to protect the knowledge, the firm would have the appropriate incentive to develop and share it.[31]

Responses to Argument #2(A):

This is the stronger of the two arguments. It is not difficult to imagine situations where a firm has knowledge that workers must also have in order to be fully productive, that competitors would pay a lot for, and that firms cannot otherwise protect. However, there are a number of factors that limit the strength of this argument:

- In order for the argument to hold, it must be true that the firm really will forbear from sharing the knowledge if it cannot use a non-compete. That is, there must be a more effi-

[31] A number of authors have made versions of this argument. See Jonathan M. Barnett and Ted Sichelman, "The Case for Noncompetes," *University of Chicago Law Review*, 87 (2020), pp. 953-1049; and Brandon S. Long, "Protecting Employer Investment in Training: Noncompetes vs. Repayment Agreements," *Duke Law Journal* (2005) 54, pp. 1295-1320.

cient way to run the business (with sharing), and another, less efficient way to run it (without sharing), and the more efficient way must be more profitable than the less efficient way if and only if the worker is bound by a non-compete.[32] If this is not true, then the sharing will occur with or without a non-compete, and so banning non-competes, while harmful to the firm's profits, will not hurt economic efficiency (as long as it does not cause the firm to go out of business).

- Argument #2(A) is correct in that the possibility that knowledge might escape the firm is harmful to efficiency, because it can cause the firm not to share the knowledge within the firm, or even not to develop it in the first place. But it ignores the fact that when knowledge *does* escape a firm, and flows to other firms, that is often a *good* thing, because the receiving firms can do valuable things with the knowledge as well, including using it as an input in the creation of additional knowledge. So there is a tradeoff. Non-competes provide an incentive to efficiently develop and share knowledge within the firm, but the absence of non-competes causes more sharing of information across firms.

  This tradeoff is very similar to the one that lies at the heart of the debate regarding whether intellectual property (IP) protections should be stronger or weaker: stronger IP means stronger incentives to innovate, and weaker IP means more sharing and cross-pollination of knowledge, which among other benefits reduces the cost of subsequent innovation. It is worth noting that there is a widely held view among economists and IP experts (though not a consensus) that IP protection in the United States is too strong, not too weak.[33] That is, it probably should be *easier* to spread ideas than it currently is, even at the cost of some reduction in the incentive to innovate. And if this is true of IP, it may be true of non-competes as well; if non-competes were weaker or did not exist, the benefit from spreading knowledge across firms may exceed the harm from less efficient development and sharing of information sharing within the firm.[34]

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[32] In the text I assume that there are two discrete ways of organizing the job. In reality there may be a continuum of ways, but the basic point still applies.

[33] See Bronwyn H. Hall and Dietmar Harhoff, "Recent Research on the Economics of Patents," *Annual Review of Economics*, 4 (2012), pp. 541-565; and Bronwyn H. Hall, "Patents, Innovation, and Development," *forthcoming in International Review of Applied Economics*.

[34] This is an example of a situation, discussed in footnote #18 above, where a non-compete can be inefficient not because the firm imposed it on the worker without compensation as a means of extracting value, but because it harms third parties that did not agree to it.

The experience of California is a key piece of evidence on this point. In CA, non-competes are legally unenforceable. And yet CA is a worldwide center of innovation. While it is possible that CA is innovative despite non-competes and not because of them, at a minimum the experience of CA shows that a policy of banning or limiting non-competes is not severely damaging to innovation. It is also possible that the absence of non-competes might be one of the *causes* of California's success. It may cause beneficial knowledge sharing across firms similar to what might be achieved through weaker IP, and this advantage may outweigh the disadvantage of reduced incentive to develop and share knowledge within the firm.[35,36]

- While a non-compete may increase the *firm's* incentive to create new knowledge, it decreases the *worker's* incentive to do so. A worker who develops new knowledge absent a non-compete benefits by being more attractive to outside firms, which allows them to either switch jobs or to bargain with their current firm from a stronger position.[37] The existence of a non-compete reduces this benefit, and so reduces the incentive to create.[38]

- Aside from their effects on the creation and dissemination of information within and across firms, non-competes impede the efficient flow of *people* across firms. Not every worker/firm match is the right one. Sometimes it was a mistake from the beginning, and other times it was the right one once but is no longer. The normal way to improve upon a sub-optimal match is for the worker to switch jobs. Non-competes impede this switching, as it is more difficult for the worker to quit because they are barred by the non-compete from the best available alternative jobs.[39] So workers are either stuck in sub-optimal

[35] For versions of this argument, see Orly Lobel, "Noncompetes, Human Capital Policy & Regional Competition," *Journal of Corporation Law* 45 (2020), pp. 931-951; and Orly Lobel, "Exit, Voice & Innovation: How Human Capital Policy Impacts Equality (& How Inequality Hurts Growth)," *Houston Law Review* 57 (2020).

[36] It is important to note, however, that many labor contracts in California contain non-compete provisions, even though they are unenforceable according to state law. It is therefore possible that some workers *believe* that they are constrained by a non-compete even though in fact they are not, and this perceived constraint may have an effect similar to that of an actual constraint due to an *in terrorem* effect. For this reason, the policy regime in California is not (as a practical matter) a complete ban on non-competes, which complicates the interpretation of California's innovation success. See Evan Starr, J.J. Prescott, and Norman Bishara, "The Behavioral Effects of (Unenforceable) Contracts," *forthcoming in the Journal of Law, Economics, and Organization* (2020).

[37] The reference here is not to knowledge that would be owned by the firm if it were created, such as a patent. Rather it is to knowledge that the worker can create, the creation of which would be economically efficient, but will only actually be created if the worker can use it to become more valuable to outside firms.

[38] See Mark J. Garmaise, "Ties that Truly Bind: Non-competition Agreements, Executive Compensation and Firm Investment. *Journal of Law, Economics, and Organization* 27 (2011), pp. 376-425.

[39] If the match is sufficiently bad, the firm may fire the worker. But there are many bad matches that persist.

matches, or they are forced to take a (likely inferior) job that is not prohibited by the non-compete or even to leave the workforce entirely. Non-competes interfering with better matches between workers and firms may be a significant source of inefficiency.[40]

- Even when non-competes do enhance efficiency, they are only justified if they are the least restrictive way to achieve those efficiency benefits. If the knowledge can be protected by patents, or by a non-disclosure agreement, or by retention bonuses, or by any other less-restrictive means, then the justification goes away. If the "knowledge" takes the form of access to customer lists, it can be protected by non-solicitation agreements.

  That said, it should be acknowledged that some knowledge is valuable and secret but cannot be protected by a patent. Also, non-disclosure agreements (as well as non-solicitation agreements) have the disadvantage that it is difficult to prove that they were violated, whereas it's easy to prove that a non-compete agreement was violated.

Given the above points, the claim that non-competes lead to a net increase in efficient information sharing is not entirely without merit. But close scrutiny reveals the argument to be weak, and also suggests some strong arguments to the contrary.

Argument #2(B): Non-Competes Facilitate Efficient Investment in Worker Training:

Firms sometimes engage in costly investment in worker training and skills. But they may be less likely to do so if those workers can use that training to attract better outside job offers. If training the worker means either losing that worker or having to pay a higher wage to retain that worker, the firm may not provide the training in the first place, even if doing so is economically efficient. But if there was a non-compete agreement in place, then the firm would have the appropriate incentives to provide the training.[41]

[40] If the worker is more efficient with another firm, it is theoretically possible that there could be a mutually beneficial exchange in which the worker pays the firm to release them from the non-compete. But there are many practical barriers to this happening, and so it is rare.

[41] A number of authors have made versions of this argument. See Paul H. Rubin and Peter Shedd, "Human Capital and Covenants Not to Compete," *Journal of Legal Studies* 10 (1981), pp. 93-110; and Brandon S. Long, "Protecting Employer Investment in Training: Noncompetes vs. Repayment Agreements," *Duke Law Journal* 54 (2005), pp. 1295-1320.

Responses to Argument #2(B):

- A similar point to one made about Argument #2(A) above applies here as well. The argument does not work if the training is inherent in the job. For example, if hospital nurses gain skills that make them more attractive to outside employers, and if those skills arise simply from the experience of being a hospital nurse, then the firm has no choice but to provide that "training," and will do so with or without a non-compete. And even if the training is formal training and not on-the-job training, it may be so necessary for the job that the firm has no choice but to provide it even if it will make the worker more attractive to outside employers. In order for a non-compete to lead to more training, there must be a version of the job where training is provided, another version where it is not provided, and the firm must prefer the version where it is provided if and only if the worker is bound by a non-compete.

- Labor economists distinguish between industry-specific human capital (HC) and firm-specific HC. (There is also a concept of "general" HC that is useful across industries, but for our purposes this can be folded into the concept of industry-specific HC.) Firm-specific HC is defined as HC that makes the worker more valuable at the current firm but not at other firms. Clearly non-competes do not cause firms to increase training that imparts firm-specific HC, because by definition firm-specific HC is not useful to any competitor; providing it to the worker does not raise the worker's outside wage, and so will not put the firm in a position where providing the HC means either losing the worker or matching a higher outside wage offer. To the contrary, firm-specific HC tends to bind workers more tightly to their firms, because it makes the existing match more valuable relative to alternative matches.

  Industry-specific HC, in contrast, is valuable to other firms in the industry as well as to the original firm.[42] In the simplest labor economics models, training that imparts this type of HC is not paid for by the firm at all. Precisely because the HC increases the worker's value to outside firms, the benefit of that HC accrues to the worker and not to the firm,

[42] The distinction between the types of human capital is not always so clear. For example, going to Hamburger University presumably increases the trainee's value as a manager at any fast food restaurant (industry-specific), but probably increases their value at McDonald's the most because the practices being taught are the exact ones used at McDonald's (firm-specific). Despite this, the basic point still applies.

and so only the worker is willing to pay for it, either directly in the form of education or indirectly in the form of a lower wage for a period of time (or in the case of many internships, a zero wage) in exchange for on-the-job training.[43]

Given this, it might appear that firms would be willing to pay for training that imparts industry-specific HC if it could be protected by a non-compete, as then the firm would capture the benefit. But this does not follow. According to the simplest model, if the training imparts a benefit (increased industry-specific HC) that exceeds its cost, then it will occur regardless; with a non-compete the firm will pay the cost and receive the benefit, and without a non-compete the worker will do the same. That is, in the simplest model a non-compete removes a barrier to the firm paying for industry-specific HC training, but it will not cause training to happen that would not have happened anyway.[44]

If we complicate slightly the model of labor market competition, there can be circumstances in which firms *do* impart industry-specific HC at their own expense and to the benefit of the worker. Minimum wage laws can limit the extent to which workers can be made to pay for their own HC in the form of lower wages. Credit constraints or behavioral factors may limit workers' willingness or ability to self-fund training by accepting a job with lower wages today in order to be able to command higher wages in the future. In these situations, it is possible that this training will be facilitated by non-competes. And it is even possible that without the non-competes, some jobs will be eliminated altogether.

Given the above points, the claim that non-competes lead to a net increase in efficient worker training is not entirely without merit. But close scrutiny reveals the argument to be weak (even weaker than Argument #2(A)), and also suggests some strong arguments to the contrary.

IV. Discussion:

Sections II and III above combine to show that non-competes are likely to be harmful on balance, and are very unlikely to be so beneficial that restricting or banning them would cause major economic damage.

[43] See Gary S. Becker, "Investment in Human Capital: A Theoretical Analysis," *Journal of Political Economy* 70 (1962), pp. 9-49.
[44] See Mark J. Garmaise, "Ties that Truly Bind: Non-competition Agreements, Executive Compensation and Firm Investment. *Journal of Law, Economics, and Organization* 27 (2011) pp. 376-425.

The material in those sections is based on standard economic analysis, attempting to understand the effect of non-competes on such conventional outcomes as job mobility, entrepreneurship, worker training, innovation, and wages. It does not capture other, potentially more serious worker harms that are not typically studied by economists. A worker who is stuck in a bad job match might merely be less productive or less well-compensated than they otherwise would be. But they might also be less happy, and worse, they might be a target for genuine exploitation, degradation, or abuse. A worker who is known by a predatory employer or manager to be stuck is likely to be mistreated, because they have no choice but to accept it. There are many reasons why a worker might be stuck, but a non-compete adds an additional one: a worker trying to muster the courage to quit might be reminded of the non-compete that they signed and threatened with legal action if they violate it. It is not altogether an exaggeration to call this a human rights issue.

Even aside from these concrete harms, non-competes represent a limitation on human freedom. The ability of a person to leave a bad situation has value in and of itself. Policy makers can choose to make a normative judgment that assigns weight to this value, for which they may be willing to sacrifice some economic efficiency. However, it would only be a sacrifice if non-competes were economically efficient, which as discussed above is likely not the case.

Even if non-competes are harmful, the question remains of what should be done about them.[45] One possible approach would be treat them as an antitrust problem. It is not obvious that this is the correct approach; non-competes could be harmful without necessarily belonging within the purview of antitrust (though the very term "non-compete" should be a red flag). Or perhaps non-competes are an antitrust problem, but only in situations where they are imposed on workers as a consequence of monopsony power in the labor market. In a companion article, I argue that non-competes can be reasonably regarded as an antitrust problem even absent conventional monopsony power (i.e., even if the labor market was highly competitive in the sense that the worker had many job offers similar to the one that they accepted).[46]

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[45] A common argument against any policy action limiting non-competes is that it would constitute a paternalistic violation of freedom of contract between two willing parties. But whatever one's general view on the appropriateness of paternalistic government interventions, it is important to note that of the five points listed in response to Argument #1 above, only the first one, and to a lesser extent the second, depends on a lack of rationality or capability on the part of the worker that might be ameliorated by government paternalism. The others are ways that firms can extract value by imposing non-competes on workers who are highly (though not infinitely) rational and capable.

[46] See David J. Balan, "Labor Practices Can Be An Antitrust Problem Even When Labor Markets Are Competitive," *CPI Antitrust Chronicle* (June 2020). See also Rohit Chopra and Lina M. Khan, "The Case for 'Unfair Methods of

V. Conclusion:

Defenders of labor non-competes often claim that they were voluntarily agreed to, and so they must be both mutually beneficial and economically efficient. This claim rests on faulty premises: firms have both motive and means to induce workers to accept non-competes that are not to their benefit, but rather are a means by which the firm extracts value from them. This is true even though the non-competes are nominally voluntary. In addition, the most commonly-made claims of positive effects from non-competes (that they facilitate efficient knowledge transfer within firms and that they facilitate efficient worker training), while not completely without merit, do not stand up to critical scrutiny, and in fact that scrutiny reveals strong arguments to the contrary.

The weakness of the arguments in favor of non-competes, combined with the substantial body of empirical literature that mostly finds them to be harmful, as well as the experience of California which has flourished as a center of innovation despite (or perhaps because of) not enforcing them, is sufficient to conclude that non-competes are likely to be harmful on balance. And even if they are beneficial on balance, they are unlikely to be so beneficial that restricting them would cause major economic harm.

In addition, non-competes may cause harms that are not commonly measured by economists, such as increasing worker vulnerability to exploitation and abuse. Finally, the ability of a human being to take their body and their labor where they choose is a human right. Perhaps some extremely strong economic efficiency benefits would suffice to outweigh these harms, but as discussed above, such benefits do not exist.

Competition' Rulemaking," *University of Chicago Law Review* 87 (2020) pp. 357-379 for an argument for combatting non-competes using the Federal Trade Commission's antitrust rulemaking authority.