

# THE INCOMPLETE NONCOMPETE PICTURE

by

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*Covenants not to compete (“noncompetes” or “CNCs”) are an increasingly controversial element of the U.S. employer–employee relationship. Numerous state legislatures are reconsidering their noncompete policies, however the empirical research remains fractured and ambiguous on several key issues. We begin by discussing the various theoretical perspectives in the relevant legal literature. We then carefully evaluate 24 empirical studies focusing on noncompetes (6 utilizing evidence of workers who signed a noncompete, 3 with data on the intra-firm use of noncompetes, 2 experimentally allocating noncompetes, and 14 focused on ad hoc measures of noncompete enforceability, which examine how policy differences affect workers, firms, and regions). Despite the rapidly expanding empirical literature, we argue that many of the most basic questions regarding the use and consequences of noncompetes remain either entirely unanswered or at least unsettled. We conclude that major gaps remain in the research and then provide recommendations for future research efforts to provide a solid foundation for evaluating the recent calls for banning or reforming longstanding noncompete policies at the state and now the federal level.*

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## INTRODUCTION

At this moment in U.S. legal and business history there is a pronounced increase in the level of discussion surrounding the role of restrictive covenants in employment relationships. The restrictions on employee mobility known as covenants not to compete (“noncompetes” or “CNCs”) are the subject of the majority of the discussion and the target of sometimes harsh criticism along with calls to ban or modify their enforcement. For better or worse, policymakers—oftentimes state legislators—are increasingly re-examining the social and business implications of noncompetes and initiating changes to the underlying legal evaluation of these agreements.

The potential problem is that these major policy changes are being made without the adequate portfolio of reliable research needed to ensure that these reforms are both wise and well-tailored to accomplish the stated policy objectives. In many instances legislators’ take an uninformed, scattershot approach to noncompete reform. The risk of relying on a partial or unreliable body of research is clear: unsupported and poorly reasoned reforms to a state’s current policy on restrictive covenants can have negative as well as the hoped-for positive consequences.

Evidence of the increased interest in noncompetes comes from a variety of quarters of academia<sup>1</sup> and public policy,<sup>2</sup> many of which this Arti-

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<sup>1</sup> A prime example is the September 2015 Lewis & Clark Business Law Fall Forum on “Workplace Secrets, Loyalty and Poaching: Protecting Employer Interests

cle will discuss. The policymakers involved in the current CNC debate include the judiciary and, perhaps more crucially when it comes to potential sea changes in policy, reform-minded legislators in various states. Amid this greater attention focused on noncompetes there are numerous interesting questions, many of which are beyond the scope of this Article, about why noncompetes are receiving so much attention from academic, business, and public-policy circles at this point in time. The long-term, macro influences of the changing nature of work and technology, globalization, and the increased pace of innovation are most likely crucial factors driving a greater interest in the law's role in employee mobility and knowledge diffusion.

More immediately there have been, perhaps as a result of these other trends, media reports and lawsuits exposing high-profile instances of certain employers' seemingly abusive use of noncompete agreements for their workforce.<sup>3</sup> Some reports even claim an increase in noncompete use based on reported litigation.<sup>4</sup> For instance, revelations that sandwich fast-food chain Jimmy John's<sup>5</sup> and the preeminent online retailer Amazon, Inc.<sup>6</sup> have widely used noncompetes with low-wage workers have further put the noncompete issue squarely on the agenda of policymakers

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and Employee Liberty," which was the impetus for this Article. We are grateful to the Forum's organizers, especially Professor Henry Drummonds and the leadership and staff of the *Lewis & Clark Law Review*, for the generous invitation to present and discuss our work. The major employee survey described briefly in this Article is part of a long-term research project with our colleague J.J. Prescott of the University of Michigan Law School. We also thank Ki Hoon Kim for his able research assistance.

<sup>2</sup> See, e.g., Press Release, Office of Sen. Chris Murphy, Murphy, Franken Introduce Bill to Ban Non-Compete Agreements for Low-Wage Workers (June 3, 2015), <http://www.murphy.senate.gov/newsroom/press-releases/murphy-franken-introduce-bill-to-ban-non-compete-agreements-for-low-wage-workers>.

<sup>3</sup> See, e.g., *Brunner v. Jimmy John's, LLC*, Nos. 14 C 5509, 15 C 1681, 2015 WL 5086388, at \*1 (N.D. Ill. Aug. 19, 2015). One current and one former employee of the fast food sandwich chain brought a lawsuit to declare their noncompete agreements void. *Id.*

<sup>4</sup> See, e.g., Steven Greenhouse, *Noncompete Clauses Increasingly Pop Up in Array of Jobs*, N.Y. TIMES (June 8, 2014), <http://nyti.ms/1qdOj4y> (citing practitioner legal database searches and anecdotal reports as evidence of an increase in use and dispersion across industries).

<sup>5</sup> Dave Jamieson, *Jimmy John's Makes Low-Wage Workers Sign 'Oppressive' Noncompete Agreements*, HUFFINGTON POST (Oct. 15, 2014), [http://www.huffingtonpost.com/2014/10/13/jimmy-johns-non-compete\\_n\\_5978180.html](http://www.huffingtonpost.com/2014/10/13/jimmy-johns-non-compete_n_5978180.html).

<sup>6</sup> See Spencer Woodman, *Exclusive: Amazon Makes Even Temporary Warehouse Workers Sign 18-Month Non-Competes*, VERGE (Mar. 26, 2015), <http://www.theverge.com/2015/3/26/8280309/amazon-warehouse-jobs-exclusive-noncompete-contracts>; see also Todd Bishop, *Former Amazon Employee: Disputed Non-Compete Deal 'Excessive' and 'Overbroad'*, GEEKWIRE (July 2, 2014), <http://www.geekwire.com/2014/former-amazon-employee-disputed-non-compete-deal-excessive-overbroad/>.

and businesspeople. Beyond the vigorous discussions in various statehouses underway for the last decade, even members of the U.S. Congress have begun to propose federal regulation of the use of noncompetes.<sup>7</sup> Recent U.S. Treasury Department and White House reports examining noncompetes also raise further issues about the impact on low-wage workers as well as the possible benefits to firms.<sup>8</sup>

However, the existing legal and empirical research on the prevalence and impacts of noncompetes in the U.S. labor market remains piecemeal and unsatisfactory. To date the empirical research is scattered across geographic boundaries, academic disciplines, and focused on various outcomes, including innovation,<sup>9</sup> employee mobility,<sup>10</sup> human capital investment and training,<sup>11</sup> new venture creation such as entrepreneurship<sup>12</sup> or spinoffs,<sup>13</sup> or CNC's role in fostering (or harming) agglomeration economies.<sup>14</sup> We discuss 24 major empirical studies involving noncompetes in the United States. Of those, only 6 studies utilize actual evidence

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<sup>7</sup> In mid-2015 several U.S. senators proposed legislation to limit the applicability of noncompete agreements to low-wage workers and to create other related protections. See *Mobility and Opportunity for Vulnerable Employees Act*, S. 1504, 114th Cong. (2015).

<sup>8</sup> OFFICE OF ECONOMIC POLICY, U.S. DEP'T OF THE TREASURY, *NON-COMPETE CONTRACTS: ECONOMIC EFFECTS AND POLICY IMPLICATIONS 3* (March 2016) [hereinafter *TREASURY REPORT*], <https://www.treasury.gov/resource-center/economic-policy/Documents/UST%20Non-competes%20Report.pdf> ("Employers use these agreements for a variety of reasons: they can protect trade secrets, reduce labor turnover, impose costs on competing firms, and improve employer leverage in future negotiations with workers. However, many of these benefits come at the expense of workers and the broader economy."); THE WHITE HOUSE, *NON-COMPETE AGREEMENTS: ANALYSIS OF THE USAGE, POTENTIAL ISSUES, AND STATE RESPONSES* (May 2016), [https://www.whitehouse.gov/sites/default/files/non-competes\\_report\\_final2.pdf](https://www.whitehouse.gov/sites/default/files/non-competes_report_final2.pdf).

<sup>9</sup> See, e.g., Sampsa Samila & Olav Sorenson, *Noncompete Covenants: Incentives to Innovate or Impediments to Growth*, 57 *MGMT. SCI.* 425 (2011); Toby E. Stuart & Olav Sorenson, *Liquidity Events and the Geographic Distribution of Entrepreneurial Activity*, 48 *ADMIN. SCI. Q.* 175, 184 (2003) (describing methodology).

<sup>10</sup> See, e.g., Matt Marx, Deborah Strumsky & Lee Fleming, *Mobility, Skills, and the Michigan Non-Compete Experiment*, 55 *MGMT. SCI.* 875 (2009).

<sup>11</sup> See Paul H. Rubin & Peter Shedd, *Human Capital and Covenants Not to Compete*, 10 *J. LEGAL STUD.* 93, 93–94 (1981) (applying economist Gary Becker's general and specific human-capital distinction to noncompete legal analysis).

<sup>12</sup> See, e.g., Stuart & Sorenson, *supra* note 9.

<sup>13</sup> See, e.g., Evan Starr, Natarajan Balasubramanian & Mariko Sakakibara, *Screening Spinouts? How Noncompete Enforceability Affects the Creation, Growth, and Survival of New Firms* (U.S. Census Bureau Cent. for Econ. Studies, Working Paper No. 14-27, 2015), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2523418##](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2523418##).

<sup>14</sup> See Bruce Fallick, Charles A. Fleischman & James B. Rebitzer, *Job-Hopping in Silicon Valley: Some Evidence Concerning the Microfoundations of a High-Technology Cluster*, 88 *REV. ECON. & STAT.* 472 (2006).

of workers who have demonstrably signed a restrictive covenant, and these studies are limited to important but discrete professional occupations (executives, physicians, and engineers), which together comprise a mere 0.87% of the U.S. labor force.<sup>15</sup> Of the remaining studies, 3 have data on the use of noncompetes within firms, 2 experimentally allocate noncompetes, and 14 studies rely on ad hoc measures of noncompete enforceability to examine how policy differences (i.e., individual states' general legal approaches to enforcement) affect workers, firms, and regions.

We find the empirical work to be unsatisfactory on several dimensions. In particular, the existing research fails to answer even the most basic questions regarding the use and consequences of noncompetes for employees, firms, and regions. For example, despite this large and growing literature, we do not know the likelihood that a typical labor-force participant has a noncompete. Hence, we know very little about how noncompetes are related to employee level outcomes. We also find that the empirical literature has yet to address the use of noncompetes within firms and how the use of noncompetes is associated with firm investments in Research and Development (R&D) and employee human capital.

We then argue that the empirical studies of the impacts of noncompete enforceability, which make up the bulk of the literature, suffer from numerous shortcomings related to the lack of data on who signs noncompetes. The most prominent of these is that comparisons across high- and low-enforceability states may mask significant effects of noncompetes themselves. For example, if noncompetes chill employee mobility even in low-enforceability states, then comparisons across high and low enforceability states will underestimate the impacts of noncompetes themselves. A second important shortcoming is that most empirical studies consider one-dimensional measures of enforceability, which, in addition to being necessarily mismeasured without data on who signs noncompetes, also provide little guidance to legislators about exactly *how* to increase or decrease enforceability to reach state policy goals.

A third shortcoming of these studies is that they cannot discern the effect of enforceability on those who signed noncompetes. Instead, they

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<sup>15</sup> *May 2015 National Occupational Employment and Wage Estimates: United States*, BUREAU LAB. STAT., [http://www.bls.gov/oes/current/oes\\_nat.htm#17-0000](http://www.bls.gov/oes/current/oes_nat.htm#17-0000). According to the May 2015 data, there are 137,896,660 employed workers. Of those, 238,940 are chief executives (SOC code 111011) representing 0.17% of total employment, 313,970 are electrical and electronics engineers (SOC code 172070) representing 0.22% of total employment, and 642,720 are physicians and surgeons (SOC code 291060) representing 0.46% of the total employment. See also the discussion at Part II, *infra*, concerning the current evidence of which workers have signed noncompete agreements in the United States.

aggregate the effects of enforceability across those who have and have not signed, which has two important implications: First, these studies cannot show that noncompetes are driving any observed effects of noncompete enforceability. Accordingly, there are concerns which, together with worries about properly disentangling the effect of noncompete enforceability from all the other state-level policies, do little to assuage those skeptical that these studies accurately measure the effect of noncompete enforceability. Second, such aggregation cannot identify any *external* effects of noncompetes on those who have not signed, since such employees cannot be separately identified in the data. We argue that incorporating data on who uses noncompetes could significantly strengthen studies of noncompete enforceability.

This Article provides the required background on the existing research and identifies the missing pieces needed to present the full noncompete picture. As such, we recognize that adequate data is a prerequisite to good policy decision-making. Identifying these gaps is a crucial step to fully understand the role and impact of noncompetes on various types of workers and for various sectors of the economy. Ultimately, a more complete body of reliable data on noncompetes is an essential tool for policymakers interested in legal reforms and for business people interested in understanding the competitive impacts that their choice to use noncompetes will have on their firm.

Part I begins with a discussion of the history and current state of noncompete research and the factors that have, to date, influenced the questions being addressed by researchers from various perspectives, including law, management, and economics. Here, we note that noncompetes have been disfavored since their inception as anti-competitive but generally accepted in most jurisdictions when within the bounds of reasonableness. We introduce our literature review with a discussion of the major justifications for allowing noncompetes, such as encouraging investments in human capital through training and information sharing, and the major points of opposition, including arguments on unfairness, inefficiency, and harm to innovation.

The next Part presents a detailed view of the existing legal literature focused on noncompetes. This Part catalogues the various areas of legal inquiry, which are often descriptive studies focused on individual jurisdictions without a full understanding of cross-state issues. We provide a comprehensive literature review of the growing empirical research on noncompetes encompassing many interesting outcomes, including employee mobility, earnings, innovation, entrepreneurship, and firm value. The Part begins by addressing what we know about the use and impacts of noncompetes on employee mobility and earnings. We then proceed to examine 2 experimental studies of noncompetes, and ultimately examine 14 articles that study the effects of noncompete enforceability, which constitute the bulk of the empirical noncompete literature. Throughout

this Part, we review the content, results, and methodology of the existing empirical studies. Our goal in doing so is to provide a comprehensive review of what the empirical scholarship has found and how it has found it, up to this point.

In Part II, we scrutinize the existing empirical noncompete scholarship to identify the current limitations of this work and to guard against policymakers and others reaching unsupported conclusions based on partial evidence limited to discrete contexts. We focus first on the limitations of studies examining the use and impacts of noncompetes. The two existing studies examining how noncompetes affect worker mobility and earnings find contrasting effects: noncompetes may both be associated with larger wage growth and reduced bargaining power, with both career detours and longer, more productive tenures. We suggest that future research develop more data to identify what drives such differential effects. We next argue that the lack of firm-level data on the use of noncompetes is a gross oversight of the current stream of literature and that the paucity of data prevents analyses examining which types of firms use noncompetes and how such use is related to other investment and innovative activities of the firm.

We end Part II by discussing the value added to the numerous studies of noncompete enforceability by data on who signs noncompetes. In particular, we describe how the lack of data on noncompetes themselves results in seven shortcomings of these studies. These shortcomings include the inability to estimate the chilling effect of noncompetes themselves, the inability to distinguish enforceability from the potentially increased use of noncompetes in higher enforceability states, the inability to measure noncompete enforceability properly, the necessity of assuming what firms and workers know about the enforceability of noncompetes, and the inability to identify external effects on non-signers. We conclude that incorporating data on the use of noncompetes would substantially increase the value of studies of noncompete enforceability.

Part III of the Article is forward-looking and proscriptive in its approach to how to collect more crucial data on who signs noncompetes. This Part presents a research agenda for scholars interested in filling in those gaps. We also discuss how this information is essential to policymakers, such as judges and legislators, when considering reforms to the traditional approaches to allowing noncompetes. This will also allow individual practitioners, businesspeople, and scholars to more accurately assess the crescendo of media and other commentators' criticism of noncompetes. A brief conclusion follows and calls for a well-reasoned and factually-supported debate on noncompetes and, if appropriate, balanced reforms that best match the policy goals of each state.

## I. BACKGROUND

The ongoing debate in the legal literature is explored next as a prerequisite to our later discussion on what research is needed to conclusively answer some of the crucial issues about how, when, and why noncompetes are used—and, ultimately, what impact they have, for better or worse. We begin by explaining covenants not to compete in the employment context and their origins.

*A. Covenants Not to Compete Explained in Brief*

Covenants not to compete are a post-employment restrictive covenant between an employer and an employee that prohibits the employee from going to work for a competitor or otherwise competing with the former employer. Restrictive covenants, including employee covenants not to compete, have a long history in the common law with the first known agreements of this kind dating back to the 1400s in England.<sup>16</sup> From that time on, they have been recognized as anticompetitive by design because of the effect of their enforcement on curtailing what would otherwise be unfettered worker mobility.<sup>17</sup> Employee CNCs are often found with other restrictive covenants, such as nondisclosure and confidentiality agreements, nonsolicitation-of-client clauses, and nonsolicitation-of-former-fellow-employee provisions.<sup>18</sup> The typical noncompete will also restrict a worker from leaving to start a competing business.<sup>19</sup>

Noncompetes impede the flow and use of knowledge by restricting an individual worker's otherwise free choice of leaving one employer to join another competing employer.<sup>20</sup> Essentially, allowing an employer to

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<sup>16</sup> See Harlan M. Blake, *Employee Agreements Not to Compete*, 73 HARV. L. REV. 625, 631 (1960) (citing the 1414 *Dyer's Case* and other early cases).

<sup>17</sup> *Id.* at 631–32.

<sup>18</sup> See Norman D. Bishara & Michelle Westermann-Behaylo, *The Law and Ethics of Restrictions on an Employee's Post-Employment Mobility*, 49 AM. BUS. L.J. 1, 13, 16 (2012); see also Norman D. Bishara, Kenneth J. Martin & Randall S. Thomas, *An Empirical Analysis of Noncompetition Clauses and Other Restrictive Postemployment Covenants*, 68 VAND. L. REV. 1, 3–4 (2015) (finding that executive employment contracts often contain noncompete agreements alongside other restrictive covenants).

<sup>19</sup> Érica Gorga & Michael Halberstam, *Knowledge Inputs, Legal Institutions and Firm Structure: Towards a Knowledge-Based Theory of the Firm*, 101 NW. U. L. REV. 1123, 1183–84 (2007).

<sup>20</sup> The restriction of knowledge transfer has implications for issues such as a resource-based view of the firm. See, e.g., Norman D. Bishara & David Orozco, *Using the Resource-Based Theory to Determine Covenant Not to Compete Legitimacy*, 87 IND. L.J. 979, 982–83 (2012) (discussing disputes between employers and employees over knowledge ownership). Moreover the use and control of knowledge is also essential to firm governance. See, e.g., Gorga & Halberstam, *supra* note 19, at 1127 (“The structure of the firm in a competitive environment can be viewed as a result of three



stop an employee from going to work for a competitor or to start a competing business—even for a limited time or within a limited geographic area—provides an advantage to the former employer. That advantage comes at a cost for the individual employee and harms specific business competitors by denying them access to valuable talent, ideas, and skills. There may also be costs for the economy and harm to the creation of positive spillovers, like innovation and new venture creation.<sup>21</sup>

Despite the potential cost of noncompetes for individuals and regions, the use and enforcement of noncompetes may also provide both private and social benefits. For instance, proponents of private contracting argue that individuals who sign noncompetes will effectively negotiate over the terms of the contract, so that when an employee agrees to a noncompete, her expected future utility is no lower than it would be without the noncompete.<sup>22</sup> Other socially positive spillovers of noncompetes include increases in innovation and employee training, which may be derived from the protection noncompetes offer for trade secrets and employer good will.<sup>23</sup>

Notably, we are not focused here on covenants not to compete that are used during the sale of a business to protect the transferred goodwill associated with the enterprise. Those agreements are also a form of a covenant not to compete that restricts an individual seller's ability to compete with the buyer for a reasonable time and geographic scope, and they are far less controversial than the post-employment restrictions we are discussing.<sup>24</sup> Every state allows CNCs related to preserving the goodwill associated with the sale of a business.<sup>25</sup>

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imperatives: (1) a firm must produce knowledge within the firm; (2) a firm must transfer and diffuse knowledge within the firm; and (3) a firm must bind knowledge to the firm, that is, prevent its transfer outside of the firm." (footnote omitted)).

<sup>21</sup> See, e.g., Stuart & Sorenson, *supra* note 9.

<sup>22</sup> See Stewart E. Sterk, *Restraints on Alienation of Human Capital*, 79 VAND. L. REV. 383, 385 (1993); Maureen B. Callahan, Comment, *Post-Employment Restraint Agreements: A Reassessment*, 52 U. CHI. L. REV. 703, 705 (1985).

<sup>23</sup> See TREASURY REPORT, *supra* note 8, at 9–10 (“[N]on-competes can encourage additional economic activity and broader information sharing when trade secrets are significant. The training and screening explanations for noncompete agreements also suggest social benefits. If worker training is sufficiently enhanced by the availability of noncompetes, or if firms with unusually high separation costs are able to match more appropriately with workers, both worker and firm are better off.”).

<sup>24</sup> See Bishara & Westermann-Behaylo, *supra* note 18, at 14–15.

<sup>25</sup> Even the State of California, which is well known for its ban on noncompetes in employment situations, allows for sale-of-a-business noncompetes. See *Edwards v. Arthur Andersen LLP*, 189 P.3d 285, 290–91 (Cal. 2008).

Post-employment covenants not to compete are generally disfavored because they are, by definition, anticompetitive agreements.<sup>26</sup> These contracts function by restricting the otherwise free mobility of the worker to join a competitor or start a competing enterprise after employment has ended.<sup>27</sup> As a result, there are often equity concerns related to the impact on the restricted former employee.<sup>28</sup> Because of the anticompetitive impact of these agreements, courts traditionally use a reasonableness test to evaluate whether the benefits of the agreement to protect a legitimate business interest outweigh the harm to the individual and even to the public interest.<sup>29</sup>

While noncompete policy is in transition—and that is reflected in the literature we discuss in this Part—it is nonetheless the case that most states will still enforce noncompete agreements to some extent.<sup>30</sup> In addition it may be that courts are increasingly focused on the issue of employee mobility related to these agreements.<sup>31</sup> The evaluation is also

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<sup>26</sup> See, e.g., *BDO Seidman v. Hirshberg*, 712 N.E.2d 1220, 1223 (N.Y. 1999) (noting New York’s approach to noncompete enforcement as an exception to the general rule against contractual restraints on trade).

<sup>27</sup> See, e.g., *Thiesing v. Dentsply Int’l, Inc.*, 748 F. Supp. 2d 932, 947 (E.D. Wis. 2010) (“Restrictive covenants limit one’s right to work and to earn a livelihood and are therefore ‘looked upon with disfavor, cautiously considered, and carefully scrutinized.’ Though disfavored by Minnesota courts, non-competition agreements are enforceable to the extent they serve a legitimate employer interest and are no broader than necessary to protect this interest.” (quoting *Bennett v. Storz Broad. Co.*, 134 N.W.2d 892, 898 (Minn. 1965))).

<sup>28</sup> See, e.g., *EarthWeb, Inc. v. Schlack*, 71 F. Supp. 2d 299, 311 (S.D.N.Y. 1999) (asserting that “the effect of these provisions is to indenture the employee”).

<sup>29</sup> See *Bishara & Westermann-Behaylo*, *supra* note 18, at 18.

<sup>30</sup> See generally Norman D. Bishara, *Fifty Ways to Leave Your Employer: Relative Enforcement of Covenants Not to Compete, Trends, and Implications for Employee Mobility Policy*, 13 U. PA. J. BUS. L. 751 (2011) (analyzing the relative enforcement strength of all U.S. jurisdictions); see also *Reliable Fire Equip. Co. v. Arredondo*, 965 N.E.2d 393, 396 (Ill. 2011) (“The modern, prevailing common-law standard of reasonableness for employee agreements not to compete applies a three-pronged test.” (citing *BDO Seidman v. Hirshberg*, 712 N.E.2d 1220, 1223 (N.Y. 1999))).

<sup>31</sup> See Michael J. Garrison & John T. Wendt, *The Evolving Law of Employee Noncompete Agreements: Recent Trends and an Alternative Policy Approach*, 45 AM. BUS. L.J. 107, 164 (2008) (asserting that “recent developments signal a shift to a strict approach to [judicial review of] restrictive covenants founded on a dominant policy concern for protection of employee mobility”). Professors Garrison and Wendt conclude that:

The emerging trend in the law of employee noncompete agreements suggests that courts are generally more inclined to invalidate employee noncompete agreements than under the modern approach and that the law of employee noncompete agreements is becoming more protective of the employee’s interest in mobility. This heightened scrutiny of employee

known as the rule of reason, reflecting the fact that it is an exception to a state's general ban on anticompetitive agreements.<sup>32</sup>

For instance in *Reliable Fire Equipment Co. v. Arredondo*, the Illinois Supreme Court took the opportunity to reiterate that it had “long ago explained that a contract in total and general restraint of trade was ‘undoubtedly’ void because it ‘necessarily’ injures the public at large and the individual promisor.”<sup>33</sup> This is because, as the court explained, “[s]uch a contract deprives the public of the industry of the promisor, and deprives the promisor of the opportunity to pursue an occupation and thereby support his or her family.”<sup>34</sup> Nonetheless, “it is equally established that a restrictive covenant will be upheld if it contains a reasonable restraint and the agreement is supported by consideration.”<sup>35</sup>

The classic three-part reasonableness test for restrictive covenants, such as noncompetes, is as follows:

A restrictive covenant, assuming it is ancillary to a valid employment relationship, is reasonable only if the covenant: (1) is no greater than is required for the protection of a legitimate business interest of the employer–promisee; (2) does not impose undue hardship on the employee–promisor; and (3) is not injurious to the public. Further, the extent of the employer’s legitimate business interest may be limited by type of activity, geographical area, and time.<sup>36</sup>

The case-by-case nature of evaluating noncompetes and the concern that the reasonableness balancing test is subjective and unevenly applied has generated much criticism over the centuries. Yet restrictive covenants, and post-employment noncompetes specifically, have survived and are still very much in use today in the modern business world. Our next Section discusses some of the factors that continue to make noncompetes controversial.

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noncompete agreements reflects some of the fundamental changes taking place in the economy and in the workplace.

*Id.* at 112.

<sup>32</sup> See *Reliable Fire Equip.*, 965 N.E.2d at 397 (referring to Illinois standard approach to evaluating restrictive covenants as a “three-dimensional rule of reason”).

<sup>33</sup> *Id.* at 396.

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

<sup>36</sup> *Id.* at 396–97 (citing RESTATEMENT (SECOND) OF CONTRACTS §§ 187 cmt. b, 188(1) & cmts. a–c (AM. LAW INST. 1981)). “This court long ago established the three-dimensional rule of reason in Illinois and has repeatedly acknowledged the requirement of the promisee’s legitimate business interest down to the present day.” *Id.* at 397.

*B. Relevance: The Ongoing Noncompete Debate*

In the last decade or so there has been a rising chorus of criticism about the use of noncompete agreements across a range of industries, types of workers, and in relation to socially beneficial outcomes, such as new business creation and innovation. A steady stream of media reports has materialized over what appear to be employers' abuses of noncompete contracts. In one example, it was revealed that the fast food chain Jimmy John's requires virtually all of its employees—from executives to counter workers and sandwich makers—to sign noncompete agreements that restrict the signee from working at an establishment that gets 10% of its revenue from sandwich-like items within 3 miles of any Jimmy Johns location for 2 years.<sup>37</sup> It appears that the employer has never brought a lawsuit to enforce the noncompetes of its low-wage workers, which may indicate a belief that the agreements are not enforceable. One such reason the employer might believe the contract to be unenforceable is that there is not an identifiable legitimate business interest at stake.

Other media reports claim that there is a rise in noncompetes from evidence of more reported court opinions cataloging when the agreement is being challenged.<sup>38</sup> Although more reported disputes likely indicates more of these contracts exist between employers and employees, that is not necessarily the case because these are generally private contracts and the methods of electronically reporting court cases has evolved in the last few decades. These accounts highlight perceptions that noncompetes are being used for employees that fit less clearly into a model of critically important knowledge workers. For instance, reports have cataloged and critiqued instances of noncompete use by employers of low-

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<sup>37</sup> See Jamieson, *supra* note 5. The employees' lawsuit against Jimmy John's for a declaratory judgment voiding the noncompete agreements was dismissed, in part, because the court concluded that Jimmy John's had never pursued enforcement against these or other low-wage workers and that one of the plaintiffs had moved to a competitor without triggering a lawsuit. *Brunner v. Liautaud*, No. 14-c-5509, 2015 WL 1598106, at \*10 (N.D. Ill. Apr. 8, 2015) ("In submitting the affidavits attesting to their intention not to enforce any breach of the Confidentiality and Non-Competition Agreements, Jimmy John's and the Franchisee Defendants have satisfied their burden of establishing that the challenged conduct will not 'reappear in the future.'" (citation omitted)).

<sup>38</sup> Ruth Simon & Angus Loten, *Litigation Over Noncompete Clauses Is Rising*, WALL ST. J. (Aug. 14, 2013), <http://on.wsj.com/15GgvAl> (asserting that "[m]ore employers are requiring their new workers to sign 'noncompete' agreements, which they say are needed to prevent insiders from taking trade secrets, business relationships or customer data to competing firms when they leave," without citing evidence for this conclusion).

wage, part-time, or low-skilled workers,<sup>39</sup> as well as younger workers, specifically.<sup>40</sup>

Amid this increased public scrutiny on the potentially abusive use of noncompetes against certain types of workers, policymakers are also taking notice. As a result, the noncompete legal landscape is in flux in several states. On one end of the reform spectrum, there are calls for states to be more like California,<sup>41</sup> which famously has had a strict ban on contracts limiting the freedom of choice and mobility of workers since the 19th century.<sup>42</sup> Some states are still vigorously discussing the need for and potential scope of change, as is the current state of affairs in Massachusetts.<sup>43</sup> In that state, consensus has been hard to achieve with business interests on both sides of the debate pushing for different policies.<sup>44</sup>

Yet several other states have begun experimenting in the last few decades with various models of how to best evaluate or restrict the use of noncompetes for their citizens.<sup>45</sup> For example, Colorado's statute restricts noncompetes to executives and their assistants.<sup>46</sup> Oregon's noncompetition statute, for instance, requires that an employee asked to sign a noncompete must be provided at least two weeks' advance notice of the re-

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<sup>39</sup> See Greenhouse, *supra* note 4 (citing examples of noncompete use for employees such as summer camp counselors, hairstylists, and interns).

<sup>40</sup> Aruna Viswanatha, *Noncompete Agreements Hobble Junior Employees*, WALL ST. J. (Feb 2, 2016), <http://on.wsj.com/1SWes9p>.

<sup>41</sup> See, e.g., ORLY LOBEL, TALENT WANTS TO BE FREE: WHY WE SHOULD LEARN TO LOVE LEAKS, RAIDS, AND FREE RIDING 64 (2013).

<sup>42</sup> For a discussion of the historical roots of California's ban on noncompetes with the adoption of the legislation in the mid-19th century, see Ronald J. Gilson, *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete*, 74 N.Y.U. L. REV. 575, 613–16 (1999).

<sup>43</sup> Despite numerous failed reform efforts in the last few years, legislation to change Massachusetts' noncompete policy has been introduced and, as of March 2016, remains under discussion. See Jon Chesto, *Battle over Banning Noncompete Agreements Brews on Beacon Hill*, BOS. GLOBE (Jan. 21, 2015), <https://www.bostonglobe.com/business/2015/01/21/battle-over-banning-noncompete-agreements-brews-beacon-hill/JPVAM8TLjWGH56Z2AxEeCO/story.html>.

<sup>44</sup> Kyle Gross, *This Is the Year Boston Eradicates Noncompetes*, BOSTINNO (Feb. 5, 2016), <http://bostinno.streetwise.co/2016/02/05/massachusetts-could-abolish-noncompete-agreements-in-2016/> (explaining that previous Massachusetts noncompete reform efforts were opposed by the Greater Boston Chamber of Commerce, the Associated Industries of Massachusetts, and EMC, Corp.).

<sup>45</sup> For a list of recent state-level initiatives, including some bills in the mere proposal stage, see Beck Reed Riden LLP, *Changing Trade Secrets | Noncompete Laws*, FAIR COMPETITION L. (2016), <http://faircompetitionlaw.com/the-changing-landscape-of-trade-secrets-laws-and-noncompete-laws/>.

<sup>46</sup> The Colorado restrictive covenant statute allows covenants not to compete for executive-level employees, but disallows the agreements for other workers. See COLO. REV. STAT. § 8-2-113 (Supp. 2013).

quest before the start of employment.<sup>47</sup> Oregon's statute was also recently changed to shorten the allowable temporal scope of noncompetes from 2 years to 18 months.<sup>48</sup> Similarly, in 2015, Alabama updated its noncompete statute to add restrictions on the presumptively reasonable time limit in various restrictive covenants.<sup>49</sup> Notably, Hawaii also recently changed its law in 2015 to restrict the use of employee noncompetes for high-tech workers in an attempt to match California's success in developing the Silicon Valley agglomeration economy.<sup>50</sup> Still, other states have made smaller revisions, sometimes geared toward special categories of workers, such as broadcasters in New York<sup>51</sup>, physicians in Massachusetts,<sup>52</sup> or used car salesmen in Louisiana.<sup>53</sup> Utah's recent noncompete law changes in early 2016 came after many months of debate and are a compromise solution that resulted in a tightening of noncompete rules, but stopped short of the originally proposed complete ban.<sup>54</sup>

An interesting change in the landscape of noncompete reform attempts is the entry of federal legislation into the mix through the recently proposed Mobility and Opportunity for Vulnerable Employees (MOVE) Act.<sup>55</sup> The legislation was proposed by several U.S. senators in

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<sup>47</sup> OR. REV. STAT. ANN. § 653.295 (West 2015).

<sup>48</sup> *Id.* The 2015 Oregon revisions became effective on January 1, 2016.

<sup>49</sup> Act of Mar. 31, 2015, No. 2015-465 (codified at ALA. CODE §§ 8-1-190 to -197). The statute provides that employee noncompetes of two years or less in duration are presumptively reasonable on the time dimension and that the party opposing enforcement has the burden of showing undue hardship if enforced.

<sup>50</sup> See Claire Zillman, *Hawaii Ban on Noncompetes Leaves out a Huge Chunk of Workers*, FORTUNE (July 8, 2015), <http://fortune.com/2015/07/08/hawaii-noncompete-ban/>. The Hawaii resolution was H.R. 1090, 28th Leg. (July 1, 2015) and is codified at HAW. REV. STAT. ANN. § 480-4 (West 2015).

<sup>51</sup> N.Y. LAB. LAW § 202-k (McKinney 2015). New York's "Broadcast Employees Freedom Act" is a carve-out from a general policy of allowing reasonable employee covenants not to compete.

<sup>52</sup> MASS. GEN. LAWS ch. 149, § 186 (2014). Massachusetts' law exempts several other categories of workers from noncompete enforcement, including physicians. *Id.* at ch. 112, § 12X, nurses, ch. 112, § 74D, and social workers, ch. 112, § 135C.

<sup>53</sup> LA. STAT. ANN. § 23:921(I)(1) (2015).

<sup>54</sup> See Bryan Benard, *Utah Non-Compete Bill Passes in Scaled-Back Form*, NAT'L L. REV. (Mar. 11, 2016), <http://www.natlawreview.com/article/utah-non-compete-bill-passes-scaled-back-form>; see also Dennis Romboy, *Employee Noncompete Bill Stirs Hornet's Nest in Utah Business Community*, DESERET NEWS (Mar. 4, 2016), <http://www.deseretnews.com/article/865649318/Employee-noncompete-bill-stirs-hornets-nest-in-Utah-business-community.html?pg=all> (describing the business opposition to the proposed changes).

<sup>55</sup> See Mobility and Opportunity for Vulnerable Employees Act, S. 1504, 114th Cong. (2015).

June 2015 in an attempt to curtail the use of noncompete agreements.<sup>56</sup> It proposes to require a notice period for when a noncompete is requested and to restrict the use of a noncompete for employees making less than \$15 an hour (about \$31,000 a year) in an attempt to protect lower-wage workers from being asked to sign noncompetes.<sup>57</sup>

The debate over noncompetes and how to reform the law related to these restrictive covenants continues to produce these new and arguably fractious pieces of legislation across the United States. It is within this ongoing policy debate that the state of the scholarly literature is best evaluated. In the next Section, we examine the development of the United States legal literature related to covenants not to compete before moving on to a discussion of the burgeoning area of empirical research related to aspects of noncompete use and impact.

### *C. Introduction to the Literature Review*

In recent years scholarly interest in restrictive covenants, and particularly employee noncompete agreements, has resulted in various research streams. These streams vary in their relation to the discipline of origin, their methodology, and their degree of focus on macro or micro factors, such as jurisdictional geography or industry. As discussed in detail later in the Article, some states have varied policies related to noncompete enforcement, which has also led to scholarly questions about variance across U.S. jurisdictions and beyond. These agreements are also, by their nature, primarily contractual instruments with commercial implications.

The body of published legal research in this area is immense and includes hundreds of law review articles addressing the topic. Our purpose here is not to catalog and categorize each of these articles, but rather to summarize some of the trends showing how the literature has developed and suggest why those developments have occurred. This Section will focus on some of the major contributions to the legal literature in this field and in doing so provide context for the discussion in Part III. This will then help fill in the gaps in the scholarly literature to best assist the evolution of good human-capital policy related to the issue of the proper use, if any, of covenants not to compete in an employment context. It is first important to lay out the legal theoretical arguments and perspectives that have been posed on noncompetes' relationship to employee welfare, business interests, innovation, and economic prosperity. This is a necessary step in order to identify which theories in the legal literature are empirically testable. This information then allows us to critically evaluate

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<sup>56</sup> The bill's sponsors are Democratic Senators Chris Murphy (Connecticut), Al Franken (Minnesota), Elizabeth Warren (Massachusetts), and Richard Blumenthal (Connecticut). See Press Release, Office of Sen. Chris Murphy, *supra* note 2.

<sup>57</sup> *Id.*

the emerging, yet still limited articles making up the empirical studies of noncompetes.

Accordingly, in this Section we initially group the research related to these covenants into two broad categories: the legal literature and the empirical literature. In the next Section, we focus on the legal literature covering noncompete use and policy. First, we discuss the historical development of the academic interest in noncompetes, and then look at newer attempts to describe restrictive covenant law in the United States and further scholarship chronicling normative attempts to understand the scope and purpose of noncompete use. Then in the following Section, we further investigate the development of the relatively nascent empirical investigations augmenting the legal understanding of these restrictive mechanisms.

#### *D. Overview of the Legal Literature*

Scholarly treatment of noncompete agreements is nothing new, and we are unable to catalog all of the vast literature for this Article. However, our intent is to provide an overview of the historical and modern trends in the research debate over these long-used agreements. The extensive body of early restrictive covenant research led one mid-twentieth century judge to refer to the vast “periodical sea” of writing on restrictive covenants going back to the early days of U.S. law reviews.<sup>58</sup> These articles described the history of judicial review related to covenants not to compete and often cataloged the case law.<sup>59</sup> One often-cited historical review is Harlan Blake’s 1960 article *Employee Agreements Not to Compete*.<sup>60</sup> In his assessment of the role and history of noncompetes, Blake discusses the historical roots of covenants against competition and how reasonable partial restrictions on competition by a former apprentice or employee began to gain acceptance as exceptions to the general rule banning such agreements.<sup>61</sup>

Some more recent articles describe the current state of noncompete enforcement and extend the literature in the tradition of the older articles by also focusing on the development of covenants not to compete law and policy. These articles can be as straightforward as describing the

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<sup>58</sup> Arthur Murray Dance Studios of Cleveland, Inc. v. Witter, 105 N.E.2d 685, 687–88 (Ohio Ct. Com. Pl. 1952) (providing an extensive review of the history of noncompete case law and listing dozens of early law review articles covering restrictive covenants).

<sup>59</sup> See, e.g., Charles E. Carpenter, *Validity of Contracts Not to Compete*, 76 U. PA. L. REV. 244 (1928); Winslow Drummond, Note, *Severability of Covenants in Partial Restraint of Trade: A New Rule*, 5 DUKE B.J. 115 (1955).

<sup>60</sup> Blake, *supra* note 16, at 627–28.

<sup>61</sup> *Id.* at 631–34.



implications of specific notable cases in one jurisdiction.<sup>62</sup> Some research covers the status quo of the law of CNCs in a specific state<sup>63</sup> or the effect of the state's policy on specific professions.<sup>64</sup> Still other articles focus on the changes to a state's noncompete policy due to legislative action to reform existing policies for those specific professions.<sup>65</sup>

Certainly many scholarly contributions have been made throughout the long history of commentary related to noncompetes. However, the recent flurry of in-depth treatments of the role and proper use—if any use should be allowed—of covenants not to compete can be in large part traced to Ronald Gilson's influential 1999 article entitled *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete*.<sup>66</sup> Professor Gilson's provocative article built on earlier sociological research from AnnaLee Saxenian comparing the development of two prominent U.S. agglomeration economies: Silicon Valley in northern California and the Route 128 corridor outside Boston, Massachusetts.<sup>67</sup> Saxenian studied the networks and historical origins of these two economies, but Gilson contributed to the understanding of the regions' legal structures by asserting that California's ban on noncom-

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<sup>62</sup> See, e.g., David L. Simson, Note, *Customers, Co-workers and Competition: Employee Covenants in California After Edwards v. Arthur Andersen*, 4 HASTINGS SCI. & TECH. L.J. 239 (2012).

<sup>63</sup> See, e.g., Bradford P. Anderson, *Complete Harmony or Mere Détente? Shielding California Employees from Non-Competition Covenants While Simultaneously Protecting Employer Trade Secrets*, 8 U.C. DAVIS BUS. L.J. 8 (2007); John W. Bowers, Stacey L. Katz & Charles W. Backs, *Covenants Not to Compete: Their Use and Enforcement in Indiana*, 31 VAL. U. L. REV. 65 (1996); Jeffrey T. Rickman, Note, *Noncompete Clauses in Georgia: An Economic Analysis*, 21 GA. ST. U. L. REV. 1107 (2005); Elham Roohani, Note, *Covenants Not to Compete in Nevada: A Proposal*, 10 NEV. L.J. 260 (2009).

<sup>64</sup> See, e.g., Xan Johnson, Comment, *Noncompetition Clauses in Physician Employment Contracts in Oregon*, 76 OR. L. REV. 195, 195, 198–99, 203 (1997) (focusing on doctors' noncompetes under Oregon's statute); Alina Klimkina, Note, *Are Noncompete Contracts Between Physicians Bad Medicine? Advocating in the Affirmative by Drawing a Public Policy Parallel to the Legal Profession*, 98 KY. L.J. 131 (2009).

<sup>65</sup> For a discussion of broadcaster noncompete prohibition in Oregon and other states, see Melissa Ilyse Rassas, Comment, *Explaining the Outlier: Oregon's New Non-Compete Agreement Law & the Broadcasting Industry*, 11 U. PA. J. BUS. L. 447 (2009).

<sup>66</sup> See Gilson, *supra* note 42. Professor Gilson theorizes that California's noncompete ban and a related freedom of employee mobility help form a legal framework for business that, in part, made the state's Silicon Valley innovation economy possible. *Id.* at 578.

<sup>67</sup> ANNALEE SAXENIAN, REGIONAL ADVANTAGE: CULTURE AND COMPETITION IN SILICON VALLEY AND ROUTE 128, at 1–4 (1996) (concluding that the networked culture, in addition to connections to certain leading universities and investors, substantially aided Silicon Valley's rise as the preeminent high-tech region in the United States).

petes was an important factor in Silicon Valley's significant growth.<sup>68</sup> This suggestion has been the impetus for much of the empirical testing described in the following Section, testing which continues to this day, as scholars refine the samples and methods to identify and isolate the impact of noncompetes.

However, before we describe the empirical scholarship progeny of Professor Gilson's thesis about the reason for Silicon Valley's fast-moving employment market and related knowledge spillovers, it is useful to briefly categorize the legal scholarship that developed in the fifteen years since. In particular, there has been a body of useful normative research that has followed in the wake of this resurgence in scholarly interest on noncompetes and an alleged "California effect" identified in Gilson's article.

There is also a wealth of legal scholarship focused on the possible negative impact of noncompete enforcement on individual employees. These include important noncompete-related research touching on employee rights<sup>69</sup> and the potential for the employer's abuse of superior bargaining leverage,<sup>70</sup> the negative implications of noncompetes when employees are facing a difficult labor market,<sup>71</sup> or even the ethical implications of noncompetes and other legal doctrines or contractual tools.<sup>72</sup> In addition, researchers have continued to probe the uses and issues related to noncompetes in the new context of greater cross-state mobility,<sup>73</sup>

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<sup>68</sup> Gilson, *supra* note 42, at 578.

<sup>69</sup> See, e.g., Katherine V.W. Stone, *The New Psychological Contract: Implications of the Changing Workplace for Labor and Employment Law*, 48 UCLA L. REV. 519, 581–82 (2001) (noting that employers who use covenants not to compete may be abusing their bargaining position in relation to an employee's right to control his or her own mobility and career advancement).

<sup>70</sup> Rachel S. Arnow-Richman, *Bargaining for Loyalty in the Information Age: A Reconsideration of the Role of Substantive Fairness in Enforcing Employee Noncompetes*, 80 OR. L. REV. 1163, 1214–15 (2001) (addressing both substantive and procedural concerns with employee CNCs).

<sup>71</sup> Kate O'Neill, 'Should I Stay or Should I Go?'—*Covenants Not to Compete in a Down Economy: A Proposal for Better Advocacy and Better Judicial Opinions*, 6 HASTINGS BUS. L.J. 83, 84 (2010) (arguing that courts should hesitate to enforce noncompetes in situations when the former employee lacks "significant bargaining power").

<sup>72</sup> See Bishara & Westermann-Behaylo, *supra* note 18, at 2–3 (listing the potential negative implications of restricting an employee's post-employment mobility).

<sup>73</sup> See, e.g., Timothy P. Glynn, *Interjurisdictional Competition in Enforcing Noncompetition Agreements: Regulatory Risk Management and the Race to the Bottom*, 65 WASH. & LEE. L. REV. 1381, 1385 (2008) (examining cross-state conflict-of-laws, choice-of-law, and forum issues in the noncompete context). See generally Gillian Lester & Elizabeth Ryan, *Choice of Law and Employee Restrictive Covenants: An American Perspective*, 31 COMP. LAB. L. & POL'Y J. 389 (2010) (discussing the choice of law implications of modern noncompete agreements).

or international implications of CNCs,<sup>74</sup> and other proposals for reform in curtailing noncompete use.<sup>75</sup>

Other researchers have discussed proposals for reforming or refining the traditional reasonableness test with suggestions to apply the doctrine selectively to certain types of knowledge workers,<sup>76</sup> or to add an understanding of knowledge management with the resource-based view of business strategy,<sup>77</sup> such as when an IP-protection justification for noncompetes is invalid.<sup>78</sup>

Still other scholars have concluded that noncompetes are essentially meritless and should be abandoned on various policy grounds.<sup>79</sup> These include Professor Orly Lobel's focus on the easy transfer of knowledge

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<sup>74</sup> See Marisa Anne Pagnattaro, "The Google Challenge": *Enforcement of Noncompete and Trade Secret Agreements for Employees Working in China*, 44 AM. BUS. L.J. 603, 606–13 (2007) (examining the high-profile case of a Microsoft Corporation lawsuit against a former executive who left to become the head of the then new Google China venture).

<sup>75</sup> See Garrison & Wendt, *supra* note 31, at 185.

<sup>76</sup> See, e.g., Norman D. Bishara, *Covenants Not to Complete in a Knowledge Economy: Balancing Innovation from Employee Mobility Against Legal Protection for Human Capital Investment*, 27 BERKELEY J. EMP. & LAB. L. 287, 319–22 (2006).

<sup>77</sup> See generally Bishara & Orozco, *supra* note 20, at 982–83.

<sup>78</sup> Viva R. Moffat, *The Wrong Tool for the Job: The IP Problem with Noncompetition Agreements*, 52 WM. & MARY L. REV. 873, 878 (2010) ("Even to the extent that trade secret law is *unintentionally* weak, the IP justification for noncompetes is not compelling because noncompetes are not a good tool for achieving the purposes of IP protection.").

<sup>79</sup> Viva R. Moffat, *Making Non-Competes Unenforceable*, 54 ARIZ. L. REV. 939 (2012). Professor Moffat argues that in enforcing a noncompete "a court faces some difficult decisions, such as determining the content and intent of the contract, determining the content of various states' laws, and resolving both the conflict-of-laws issues and the substantive question of the enforceability of the agreement (which can often be a close call)." *Id.* at 942. Moreover, she adds:

The result is unpredictability on every level—for employees, employers, and courts. This uncertainty has only increased as more entities operate on a nationwide basis and employees are increasingly mobile and willing to move across state boundaries.

This unpredictability, and its accompanying costs, has become enough of a problem that a uniform approach ought to be adopted. Additionally, the benefits of uniformity in the law are much more likely to accrue with a straightforward rule of unenforceability. This rule could be adopted through the Uniform Act process, by reference to a model act, or simply as a result of the dissemination of information about the advantages of uniformity and the benefits of a rule of unenforceability. Regardless of how it is achieved, a rule of unenforceability would virtually eliminate the myriad disadvantages of diversity in state law in this context.

*Id.* (footnote omitted).

skills between employers and entrepreneurial activity<sup>80</sup> and earlier work by Professor Alan Hyde on the importance of “high-velocity” labor markets.<sup>81</sup> This research—in addition to Gilson’s thesis about California’s ban on covenants not to compete for employees—has developed alongside empirical research emanating from other academic disciplines, such as management, economics, and strategy. Thus far, the theoretical legal literature has discussed many of the positive and negative spillovers from noncompetes. However greater empirical work is needed to test these theories and determine which ones should form the basis of policy reform.

The next Section discusses the limited, but growing, body of empirical research that has started to create a more complete picture of noncompetes and their impact on employees, firms, and the public interest.

### *E. Overview of the Empirical Literature*

Despite the 600-year history of covenants not to compete,<sup>82</sup> social scientists have only recently begun empirically examining the impacts of noncompetes and noncompete enforcement policies. The interest in studying the uses and impacts of noncompetes and noncompete enforceability was likely spurred by attempts to understand the growth of Silicon Valley and in particular how it outpaced Route 128 to become the much-admired technological hub of the United States.<sup>83</sup> As a result, the earliest studies examined the role of noncompete enforceability on startup behavior and the mobility of executives and engineers.

The empirical literature on noncompetes is burgeoning.<sup>84</sup> In this section we examine 24 empirical studies of noncompetes: 6 use individual level data on the use of noncompetes (4 on CEOs, 1 on physicians, 1 on

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<sup>80</sup> See generally LOBEL, *supra* note 41 (advocating for the reduction of legal barriers to knowledge transfer in the pursuit of greater innovation).

<sup>81</sup> See ALAN HYDE, *WORKING IN SILICON VALLEY: ECONOMIC AND LEGAL ANALYSIS OF A HIGH-VELOCITY LABOR MARKET* (2003).

<sup>82</sup> The earliest known challenges to a covenant not to compete date back to the 15th century. See Blake, *supra* note 16, at 631.

<sup>83</sup> See generally the discussions of SAXENIAN, *supra* note 67, and Gilson, *supra* note 42.

<sup>84</sup> We are aware of a number of papers at the early stages of work, which we will not comment on due to their still preliminary nature. Included in this work is a paper on the impacts of noncompete enforceability on the career and within-job employment dynamics of technical employees. Natarajan Balasubramanian, Jin Woo Chang, Mariko Sakakibara & Evan Starr, *Locked In? Noncompete Enforceability and the Mobility and Earnings of High Tech Employees* (manuscript on file with the authors). A second recent working paper is Michael Ewens & Matt Marx, *Founder Replacement and Startup Performance* (Jan. 17, 2016), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2717124](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2717124).

engineers); 3 have data on the use of noncompetes across firms; 2 experimentally allocate noncompetes; and 14 study the effect of noncompete enforceability (without data on who signs).

1. *Articles Studying the Use and Consequences of Noncompetes*

a. *The Use of Noncompetes Among Employees*

As far as we are aware, the only systematic evidence on the use of noncompetes among workers comes from three occupations: executives, physicians, and engineers.<sup>85</sup>

Marx's 2011 article describes survey data from 1,029 technological professionals (a 20.6% response rate of the 5,000 people surveyed) within the Institute of Electrical and Electronics Engineers, a nonprofit technical professional association. The article shows that 43.3% of survey respondents sign noncompetes.<sup>86</sup> Bishara, Martin, and Thomas,<sup>87</sup> Garmaise,<sup>88</sup> Schwab and Thomas,<sup>89</sup> and Heen<sup>90</sup> examine executive contracts and show respectively that 80%, 70%, 67%, and 50% of S&P 1500 executives sign noncompetes. Lavetti, Simon, and White's study focuses on a sample of primary-care physicians from five states and finds that 45% of physicians have signed an employee CNC.<sup>91</sup> Thus, among some very high-skill occupations, the incidence of noncompetes appears to be very high.

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<sup>85</sup> For executives, see the study of U.S. public-firm CEOs in Bishara et al., *supra* note 18; and the studies of executives in Mark J. Garmaise, *Ties that Truly Bind: Noncompetition Agreements, Executive Compensation, and Firm Investment*, 27 J.L. ECON. & ORG. 376 (2011); and in Stewart J. Schwab & Randall S. Thomas, *An Empirical Analysis of CEO Employment Contracts: What Do Top Executives Bargain For?*, 63 WASH. & LEE L. REV. 231 (2006); and CEO separation pay and noncompetes in Knut Heen, Working Paper, *Non-Compete Agreements: The Real Cause of Separation Pay?* (Jan. 2008), [www.sifr.org/PDFs/KnutHeenJobMarketPaper.pdf](http://www.sifr.org/PDFs/KnutHeenJobMarketPaper.pdf). For physicians, see Kurt Lavetti, Carol Simon & William D. White, *Buying Loyalty: Theory and Evidence from Physicians* (Feb. 16, 2015) (unpublished manuscript), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2439068](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2439068). For engineers, see the interview-based study in Matt Marx, *The Firm Strikes Back: Non-Compete Agreements and the Mobility of Technical Professionals*, 76 AM. SOC. REV. 695 (2011).

<sup>86</sup> Marx, *supra* note 85, at 702 tbl.1.

<sup>87</sup> Bishara et al., *supra* note 18, at 3. The authors examined 874 CEO employment contracts initiated between 1996 and 2010 from a random sample of 500 S&P 1500 companies.

<sup>88</sup> Garmaise, *supra* note 85, at 396. Garmaise selected a random sample of 500 firms from the Execucomp database and found evidence from SEC filings that 351 of the firms use noncompetes with their top executives.

<sup>89</sup> Schwab & Thomas, *supra* note 85, at 255 tbl.9. The authors' dataset is similar to that of Bishara, Martin, and Thomas. See Bishara et al., *supra* note 18, at 24-27.

<sup>90</sup> Heen, *supra* note 85, at 18. The author's dataset, while also from S&P 500 companies, uses only the first 250 CEOs chosen alphabetically by firm name.

<sup>91</sup> Lavetti et al., *supra* note 85, at 5 (studying the mobility of physicians in relation to noncompete agreements).

We can certainly learn something about how noncompetes are used in these occupations, but these occupations together account for only 0.87% of the U.S. labor force.<sup>92</sup>

Of these six studies, three consider how noncompetes affect worker-level outcomes.<sup>93</sup> Marx's article includes both a survey of electrical and electronic engineers, and data from interviews with 52 inventors with at least 2 patents in the automatic-speech-recognition (ASR) industry.<sup>94</sup> Marx's first main finding is that noncompetes are associated with individuals leaving the industry, which he refers to as career detours.<sup>95</sup> His interview data shows that 87.5% of moves governed by a noncompete were out of the ASR industry (21 out of 24), while only 27.5% of moves not governed by a noncompete were out of the ASR industry (11 of 40).<sup>96</sup> Marx's survey data corroborates the interview results: he finds that of the 276 respondents who signed noncompetes and changed jobs, 32.6% reported taking a job in a different industry.<sup>97</sup>

The other contribution of Marx's paper is to show that many firms manage the process of noncompete signing to reduce employee bargaining power. Among the 455 respondents who signed a noncompete, 47% report that the firm asked them to sign the noncompete on or after the first day.<sup>98</sup> That firms manage the noncompete process strategically is not only an interesting result, but it also brings up important questions about whether noncompetes are more or less likely to affect individuals who did not have the bargaining power to properly negotiate over them. For example, are the individuals who took career detours due to their noncompete the ones who were aware of the noncompete before accepting the job, or were they the ones who were asked on or after their first day of work? Despite having this data, Marx does not examine this question.

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<sup>92</sup> See *May 2015 National Occupational Employment and Wage Estimates: United States*, BUREAU LAB. STAT., [http://www.bls.gov/oes/current/oes\\_nat.htm](http://www.bls.gov/oes/current/oes_nat.htm). Based on the May 2015 data, there are 137,896,660 employed workers. Of those, 238,940 are chief executives (SOC code 111011) representing 0.17% of total employment, 313,970 are electrical and electronics engineers (SOC code 172070) representing 0.22% of total employment, and 642,720 are physicians and surgeons (SOC code 291060) representing 0.46% of the total employment.

<sup>93</sup> See Marx, *supra* note 85; Lavetti et al., *supra* note 85.

<sup>94</sup> See Marx, *supra* note 85, at 700 (interview and survey and methodology).

<sup>95</sup> *Id.* at 702–03.

<sup>96</sup> *Id.* at 703 (discussing the results of interviews with engineers).

<sup>97</sup> *Id.* at 705. Marx described the conclusions from this data: The fact that similar proportions of in-depth interviewees (one-quarter) and survey respondents (nearly one-third) reported taking career detours in response to a non-compete indicates that the threat of a non-compete lawsuit may have deterred technical professionals from continuing to work in their chosen industry. *Id.*

<sup>98</sup> *Id.* at 706 tbl.4.

While Marx suggests that firms use noncompetes to “strike back” at employees, Lavetti, Simon, and White find that physicians who sign noncompetes are much better off than those who do not sign. Noncompetesigning physicians earn 14% higher incomes, earn 27% more revenue per hour, have 21 percentage point higher within-job wage growth (23% for noncompetesigners relative to 2% for nonsigners), see 12% more patients per week (and more privately insured patients), and have 29% longer tenures.<sup>99</sup> The authors note that these differential results for noncompetesigners are explained in part by the fact that physicians who sign noncompetes have different incentives in their contracts: the share of total earnings that comes from individual productivity is more than twice as high for physicians who sign noncompetes (27.1% to 13%), while the proportion from a guaranteed fixed salary is significantly lower (59% to 74%).<sup>100</sup>

The authors argue that the combination of contracts that encourage physicians to work with many patients and the noncompetes is important: contracts that encourage more interactions with patients create competition risk for the firm if the physician wants to leave.<sup>101</sup> Thus, the noncompetes functions to buy the loyalty of the physician, providing the right contractual incentives for the physician to exert effort and the right incentives for the firm to invest in attracting patients.<sup>102</sup> Lavetti, Simon, and White conclude that “share-based compensation contracts can overcome the effects of [noncompetes] on bargaining power, allowing for an incentive-compatible equilibrium with [noncompetes] in which workers with [noncompetes] are more productive, have higher earnings, larger returns to tenure, and longer job spells.”<sup>103</sup>

Heen’s unpublished article explores the role of noncompetes in determining CEO separation pay. He argues that differences in the timing

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<sup>99</sup> See Lavetti et al., *supra* note 85, at 27. The authors’ main results show that physicians who sign noncompetes earn 14% more than non-signers, *id.* at 34 tbl.6, show 21 percentage point higher within-job earnings growth, *id.* at 38 tbl.9, see 12% more patients per week and make 27% more revenue, *id.* at 39 tbl.10, and have 29% longer tenures. *Id.* at 40 tbl.12.

<sup>100</sup> *Id.* at 33 tbl.4 (discussing contract-type results).

<sup>101</sup> *Id.* at 5 (noting the risk of losing patients to departing physicians).

<sup>102</sup> *Id.* at 1–3. The authors conclude that to achieve the proper incentives for attracting and retaining doctors, there must be a situation such that:

when turnover is relatively costly and long-term contracts are not credible, commitments to productivity-based piece-rate linear compensation contracts can overcome the effects of dynamic changes in bargaining power without front-loading compensation. . . . We show that sharing contracts are more strongly tied to output when accompanied by NCAs, and necessarily increase the expected returns to tenure.

*Id.* at 3.

<sup>103</sup> *Id.* at 27.

of when the noncompete is signed predict the extent of either contractually obligated separation pay or discretionary separation pay. In a sample of 250 CEOs, chosen alphabetically by firm name, he finds that, “firms promise separation pay contractually to executives who sign noncompete agreements years before they leave the firm while firms pay executives discretionarily at separation if they first sign noncompete agreements at this point.”<sup>104</sup>

*b. The Use of Noncompetes Among Firms*

There are three studies of the use of noncompetes within firms. Kaplan and Stromberg show that 70% of 119 portfolio companies receiving venture capital funding were required by their financiers to sign noncompetes, although the 119 companies were funded by a total of just 14 venture capitalists.<sup>105</sup> Galle and Koen surveyed 1,000 human-resources managers and received 123 responses, 55% of which indicated that their firms used noncompetes, though they do not specify in which occupations.<sup>106</sup> A 2007 Society of Human Resource Management survey reports that of the 354 out of 2,886 surveys returned, 56% of firms use noncompetes, which is up from 51% from a similar survey in 2005.<sup>107</sup>

Response rates and sample selection concerns aside, it is unclear whether any of these studies tell us anything new about the use of noncompetes since we already know that the executives within a company are likely to sign them.<sup>108</sup> Furthermore, none of these studies examine which types of employees within the firm are likely to sign, which types of firms are more likely to use noncompetes, and how the use of noncompetes affects firm-level outcomes such as investment in R&D, training, or productivity. Thus we have no empirical understanding of how the use of noncompetes and similar contractual restrictions are related to the firm-level outcomes.

*2. Articles Describing Noncompete Experiments*

Given that data on the use of noncompetes is sparse and that the nonrandom use of noncompetes may make causal inference difficult, two

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<sup>104</sup> Heen, *supra* note 85, at 24.

<sup>105</sup> See Steven N. Kaplan & Per Strömberg, *Financial Contracting Theory Meets the Real World: An Empirical Analysis of Venture Capital Contracts*, 70 *REV. ECON. STUD.* 281, 289 & tbl.2 (2003).

<sup>106</sup> William P. Galle, Jr. & Clifford M. Koen, *Reducing Post-Termination Disputes: A National Survey of Contract Clauses Used in Employment Contracts*, 9 *J. INDIVIDUAL EMP. RTS.* 227, 234–35 (2001) (including a summary of related noncompete data).

<sup>107</sup> Interview with Tanya Mulvey, Researcher, Society for Human Resource Management. The 2005 survey had a final sample of 392 respondents.

<sup>108</sup> For a discussion of the evidence of employers' use of noncompetes in executive contracts, see Bishara et al., *supra* note 18, at 3; Garmaise, *supra* note 85, at 396; and Schwab & Thomas, *supra* note 85, at 262.



experimental papers randomly assign noncompetes to examine whether and how noncompetes affect employee effort. The experiment in Amir and Lobel's study has two phases. In phase 1, individuals are randomly assigned to one of two types of pay-for-performance tasks: either (i) a "Matrix Search" task, in which individuals were paid by finding two numbers (with two decimals) in the matrix that sum to 10; or (ii) a "Remote Associates" task, in which individuals were instructed to find a fourth word that is most closely associated with the trios of words presented.<sup>109</sup> The authors classify the former task as "pure effort," and the latter task as "creative."<sup>110</sup> In phase 2, the individuals were invited to do another of these tasks. All individuals were informed that there would be a second phase upfront.<sup>111</sup>

To simulate noncompetes, the authors randomly assigned individuals to two treatments. In the first treatment, the "absolute noncompetition condition," individuals were told that they would be prohibited from performing the same task in the second phase.<sup>112</sup> In the second treatment, "partial noncompete condition," individuals were informed that their earnings in the second phase, regardless of which task they performed, would be reduced by 20%.<sup>113</sup> A third of the respondents were randomly assigned to the control group. The authors consider three outcomes: (1) task completion; (2) performance (number of questions skipped and solved correctly) of the tasks; and (3) enjoyment of the tasks.<sup>114</sup>

The authors find that 57.9% of participants who dropped out of the study were in one of the noncompete conditions, while 51.6% dropped out in the control group. For those in the creative task, the absolute noncompete condition group had a 35% completion rate, the partial noncompete condition group had a 38% completion rate, and the control group had a completion rate of 48%.<sup>115</sup> For those who did not drop out of the study, the authors find that in the Remote Associates task there were no statistically significant differences in the number of skipped questions, the error rate, the time spent, or the reported enjoyment be-

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<sup>109</sup> See On Amir & Orly Lobel, *Driving Performance: A Growth Theory of Noncompete Law*, 16 STAN. TECH. L. REV. 833, 852 (2013). The authors' experiment was designed to "examine the effects of postemployment restrictions on motivation and performance, taking into account task characteristics, and in particular, controlling for the level of difficulty and creativity inherent in the tasks." *Id.* at 850–51.

<sup>110</sup> *Id.* at 852.

<sup>111</sup> *Id.* at 852–53.

<sup>112</sup> *Id.*

<sup>113</sup> *Id.*

<sup>114</sup> *Id.*

<sup>115</sup> *Id.* at 854–55.

tween either of the noncompete conditions or the control group.<sup>116</sup> For those in the Matrix Search task, however, the error rate of those in both the absolute noncompete group and the partial noncompete group was more than two times that of those in the control group, though they were no more likely to skip answers, no more likely to spend less time on the questions, and report no difference in enjoyment.<sup>117</sup> The authors conclude that “certain postemployment contractual restrictions may negatively impact motivation and performance, as evidenced by the greater rates at which individuals abandon tasks. . . . [N]oncompetes, under certain conditions, discourage employees to invest in their work performance.”<sup>118</sup>

A shortcoming of the Amir and Lobel study is that the use of the noncompete is forcibly applied, resulting in little scope for remuneration or negotiation, which may subsequently affect effort. To assess these agency issues, Bünstorf, Engel, Fischer, and Güth design an experiment in which a principal and an agent are matched together and the principal is free to set the wage of the agent, anticipating how much effort the agent will exert.<sup>119</sup> Agents exert effort to create an innovation, and with a certain probability innovation occurs.<sup>120</sup> The authors find that individuals in the noncompete group exert no differential effort toward the innovation due to the fact that individuals who sign noncompetes receive increased wages.<sup>121</sup> The authors conclude: “Our experiment yields a clear message: introducing a noncompete clause does not affect effort and therefore leaves success unaffected.”<sup>122</sup>

The key contribution of these experiments is the development of a better understanding of how noncompetes affect employee effort. Noncompetes may reduce effort by restricting the return at competing firms, but, as shown in Lavetti, Simon, and White’s study of physicians, noncompetes may also be associated with fundamentally different contractual incentives.<sup>123</sup> In the real world, many more such determinants are likely correlated with noncompete use, including deferred compensation, con-

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<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

<sup>118</sup> *Id.* at 863.

<sup>119</sup> Guido Bünstorf et al., *Win Shift Lose Stay—An Experimental Test of Non-Compete Clauses 3–4* (Sept. 19, 2013) (unpublished manuscript) [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2330262](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2330262).

<sup>120</sup> *See id.* at 6–7 (describing the design of the experiment).

<sup>121</sup> *Id.* at 18–19. The noncompete manipulation, specific to the German context—in which noncompetes must be limited to two years and are valid only if the principal pays half of the yearly salary—randomly imposes a pre-determined compulsory level of payment in the case where negotiation fails. *Id.* at 2.

<sup>122</sup> *Id.* at 4.

<sup>123</sup> *See supra* notes 99–103 and accompanying text.

tracts or bonuses based on goal achievement, and long internal labor markets. Such mechanisms may induce workers to exert substantial effort in spite of their noncompete.

Additionally, by experimentally manipulating the noncompete condition, these studies do not take into account the fact that firms *choose* to use noncompetes for certain occupations and that employees may or may not agree to them.<sup>124</sup> If individuals who are willing to sign noncompetes feel appropriately motivated by other features of the job, then it is unclear whether they will exert lower effort than those who do not sign.

### 3. *Articles Studying Noncompete Enforceability*

#### a. *Entrepreneurship*

As discussed by Samila and Sorenson, and by Starr, Balasubramanian, and Sakakibara, the impact of noncompete enforceability on entrepreneurship is theoretically ambiguous. On the one hand, aspiring entrepreneurs might be inclined to start their firm in high-enforceability areas to take advantage of the protection offered by the enforceability regime. On the other hand, if the potential entrepreneur wishes to start a competitor with her current employer, then her own noncompete may be an entry barrier that makes it more costly for him to create a new business. Relatedly, if the potential entrepreneur manages to start her company, it may be risky to hire employees who may be bound by noncompetes. As a result of these competing forces, it is unclear how noncompete enforceability will impact entrepreneurial behavior.<sup>125</sup>

The only published studies of noncompete enforceability and entrepreneurship and innovation are analyses examining how noncompete enforceability moderates the relationship between two other variables. Stuart and Sorenson focus on entrepreneurship rates in the biotech industry following a liquidity event such as an initial public offering (IPO) or an acquisition.<sup>126</sup> They argue that such liquidity events free up employees to follow their latent entrepreneurial preferences.<sup>127</sup> They find that entrepreneurship in the biotech industry spikes following liquidity

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<sup>124</sup> Experimentally assigning a noncompete does not give the individual the option of choosing whether or not to sign, and ignores the alternative options that the individual may have such as negotiating to modify the terms, refusing to sign, or taking another job without the restriction.

<sup>125</sup> See the discussion in Starr et al., *supra* note 13, at 8; *see also* Samila & Sorenson, *supra* note 9, at 426–28 (discussing the tension between investment and impediments to growth).

<sup>126</sup> Stuart & Sorenson, *supra* note 9, at 175.

<sup>127</sup> *Id.* at 175–76.

events, but that the effect of such liquidity events on firm founding rates is muted in states that enforce noncompetes.<sup>128</sup>

Aside from the results, a primary contribution of Stuart and Sorenson is the development of the first cross-state measure of noncompete enforceability. Using the Malsberger treatises designed for practitioners, *Covenants Not to Compete: A State by State Survey*, Stuart and Sorenson create a variable equal to one if a state does not enforce noncompetes and equal to zero if the state does enforce noncompetes.<sup>129</sup> Overall, they find that 10 states do not enforce noncompetes.<sup>130</sup> Their categorization of state noncompete policies is used regularly to define control states in subsequent studies that examine the 1985 change in Michigan's noncompete laws identified by Marx, Strumsky, and Fleming.<sup>131</sup> Subsequent studies create more nuanced measures of noncompete enforceability by taking into account various dimensions of enforceability.<sup>132</sup> It bears noting that a recent article by Barnett and Sichelman casts significant doubt on the validity of the initial categorization by Stuart and Sorenson, arguing that at most two states are non-enforcing, while all others enforce to some extent.<sup>133</sup>

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<sup>128</sup> *Id.* at 193 tbl.4 (showing that noncompete enforceability reduces startups post acquisition and post IPO).

<sup>129</sup> *Id.* at 190 tbl.1.

<sup>130</sup> *Id.*

<sup>131</sup> Multiple studies use the non-enforcing states as identified by Professors Stuart and Sorenson. See Sharon Belenzon & Mark Schankerman, *Spreading the Word: Geography, Policy, and Knowledge Spillovers*, 95 REV. ECON. & STAT. 884, 885 (2013); Marx et al., *supra* note 10, at 876; Matt Marx, Jasjit Singh & Lee Fleming, *Regional Disadvantage? Employee Non-Compete Agreements and Brain Drain*, 44 RES. POL'Y 394, 394–404 (2015); Kenneth A. Younge, Tony W. Tong & Lee Fleming, *How Anticipated Employee Mobility Affects Acquisition Likelihood: Evidence from a Natural Experiment*, 36 STRATEGIC MGMT. J. 686, 687 (2015); Kenneth A. Younge & Matt Marx, *The Value of Employee Retention: Evidence from a Natural Experiment*, J. ECON. & MGMT. STRATEGY (forthcoming 2016). These empirical studies are described in detail throughout the following Subsection.

<sup>132</sup> See, e.g., Bishara, *supra* note 30; Garmaise, *supra* note 85; Evan Starr, Consider This: Firm-Sponsored Training and the Enforceability of Covenants Not to Compete (Nov. 5, 2015) (unpublished manuscript), <http://ssrn.com/abstract=2556669>.

<sup>133</sup> Jonathan M. Barnett & Ted Sichelman, *Revisiting Labor Mobility in Innovation Markets* (Univ. of S. Cal. Legal Studies Paper No. 16–15, 2016), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2758854](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2758854). The authors conclude that the underlying enforceability assumptions by Stuart and Sorenson are incorrect, for:

Even if one were to draw an arbitrary line between states, it would result during this time period in at most two “non-enforcing” states. Consistent with both Bishara’s (2011) comprehensive state-by-state review and our own independent review, we find that during the relevant time periods, other than California and North Dakota, none of the purported “non-enforcing” states in Stuart and Sorenson (2003)—namely, Alaska, Connecticut, Michi-

In a study similar to Stuart and Sorenson, Samila and Sorenson examine the effect of venture capital on regional outcomes including firm foundings, patent counts, regional employment and payroll.<sup>134</sup> They are interested in whether noncompete enforceability moderates the impact of venture capital on these regional outcomes.<sup>135</sup> They find that while more venture capital is associated with more entrepreneurship and employment, in states that enforce noncompetes the effect of venture capital is mitigated.<sup>136</sup> The authors ambitiously conclude that noncompete enforceability “significantly impedes entrepreneurship and employment growth.”<sup>137</sup> Such a conclusion may be too strong, however. As this study examines the moderating effect of noncompete enforceability on the impact of venture capital on entrepreneurship and employment—only “a piece of the puzzle” as Samila and Sorenson themselves say<sup>138</sup>—it could be that the causal effect of noncompete enforceability on entrepreneurship is positive, but that it is diminished in high venture-capital areas.

In a recent working paper, Starr, Balasubramanian, and Sakakibara take a firm-level approach to measure the impact of noncompete enforceability on the formation and subsequent performance of firms.<sup>139</sup> They argue that prior studies suffer from two shortcomings. First, they examine the moderating effect of noncompete enforceability, not the direct effect. Second, studies at the aggregate level necessarily treat formation of all firms the same, regardless of whether noncompetes were relevant for the actual formation of a given firm.<sup>140</sup>

Using employer–employee matched data, they identify firms that were founded as spinouts in the same industry of a parent employer and argue that these firms may face additional noncompete barriers in order to enter the market relative to other new entrants.<sup>141</sup> Using law firms as a control group (since law firms make up the only industry across all the states in which noncompetes are not enforceable) to identify the impact

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gan, Minnesota, Montana, Nevada, Oklahoma, Washington, and West Virginia—can plausibly be classified in this manner.

*Id.* at 13–14.

<sup>134</sup> See Samila & Sorenson, *supra* note 9, at 425.

<sup>135</sup> *Id.* at 426 (“We address this issue by focusing on a piece of the puzzle. Rather than examining the average differences across regions, we estimate how regions respond to shocks in the supply of one form of financial capital—venture capital (VC)—and examine whether the effects of these shocks depend on the enforcement regime.”).

<sup>136</sup> *Id.* at 433–435 tbls.4–5.

<sup>137</sup> *Id.* at 425.

<sup>138</sup> *Id.* at 426.

<sup>139</sup> Starr et al., *supra* note 13, at 9–11.

<sup>140</sup> For a full description of this issue, see generally Stuart & Sorenson, *supra* note 9.

<sup>141</sup> Starr et al., *supra* note 13, at 12–14 (discussing the phenomenon of within-industry spinouts).

of noncompete enforceability, they find that in higher enforceability states there are fewer within-industry spinouts, but that those that are created tend to start larger, stay larger, and survive longer than other new ventures.<sup>142</sup> They provide evidence that these results are consistent with noncompete enforceability screening low human-capital founders from starting within-industry spinouts, concluding that noncompetes are unlikely to deter the best employees from starting up within-industry spinouts.<sup>143</sup> They further find that in higher enforceability states new firms that are not within-industry spinouts are slightly more likely to enter, but those that do enter start smaller, stay smaller, and are less likely to survive.<sup>144</sup> These results are consistent with a model in which noncompete enforceability induces firms to enter to take advantage of the protection of their future assets, but that unanticipated hiring challenges due to noncompete enforceability deter their success.<sup>145</sup>

To summarize, the literature has found that noncompete enforceability has somewhat negative, though nuanced, effects on entrepreneurial behavior. In particular, the results suggest that enforceability deters firm entry post-IPO and post-acquisition in the bio-tech industry, and reduces firm start-ups relatively more in areas that have high venture capital. However, as Starr, Balasubramanian, and Sakakibara show, the reduced entry is driven by reduced entry of low quality within-industry spinouts.

*b. Employee Mobility, Wages, and Training*

Fallick, Fleischman, and Rebitzer conducted the first study examining whether or not employee mobility is higher in California, consistent with Gilson's argument that California's ban on noncompetes encouraged high levels of employee mobility.<sup>146</sup> Using employee mobility data from the U.S. Census's Current Population Survey, Fallick and his coauthors find that there is increased mobility in Silicon Valley relative to

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<sup>142</sup> See *id.* at tbls.2 (entry results), 3 (initial size results), 6 (later-life firm-size results), 7 (survival results).

<sup>143</sup> *Id.* at tbl.5 (characteristics of founders). In a recent working paper, Salome Baslandze finds similar results, using patent data to identify spinouts of parent companies. See Salome Baslandze, Spinout Entry, Innovation, and Growth (Einaudi Institute for Economics and Finance, Working Paper), <https://sites.google.com/site/sabaslandze/research>. She shows that noncompete enforceability is negatively correlated with spinout entry. These results are purely cross-sectional however, and no attempt is made at identifying the causal effect of enforceability on spinout formation.

<sup>144</sup> Starr et al., *supra* note 13, at tbls.2 (entry results), 3 (initial size results), 6 (later-life firm-size results), 7 (survival results).

<sup>144</sup> *Id.* at tbl.5 (characteristics of founders).

<sup>145</sup> *Id.* at 28–29 (explaining non-within-industry spinout results).

<sup>146</sup> Fallick et al., *supra* note 14, at 472 (“*Noncompete agreements*, according to Gilson, are the most important legal mechanism for reducing interfirm mobility.”).

other metropolitan areas with large IT sectors.<sup>147</sup> Furthermore, they find that there is a California effect, such that employee mobility is actually higher in the computer industry in all metropolitan areas in California relative to elsewhere. Outside of the computer industry, however, these California-specific mobility differentials disappear.<sup>148</sup> While not directly examining noncompete enforceability, this study provides suggestive evidence that a state's noncompete policy may indeed lead to differences in mobility patterns.

Three papers argue that noncompete enforceability affects executive and engineer mobility. First, Marx, Strumsky, and Fleming examine the Michigan Antitrust Reform Act (MARA) of 1985, which unintentionally removed a legislative prohibition on noncompetes, leading Michigan to enforce noncompetes starting in 1987.<sup>149</sup> Using patent data, they identify moves among inventors with at least two patents, comparing the likelihood of movement before and after 1985 in Michigan to a group of 10 control states initially identified in Stuart and Sorenson, which supposedly do not enforce noncompetes.<sup>150</sup> The authors find that after MARA, the mobility of inventors fell by 8% relative to the control states, and fell more for inventors who had developed more firm-specific capital (as measured by citations) and more for inventors whose inventions were concentrated in a specific patent category.<sup>151</sup>

It is important to note that the Marx, Strumsky, and Fleming paper makes a fundamental contribution to the empirical literature on noncompetes, which is to identify a random change in noncompete enforceability in Michigan in 1985.<sup>152</sup> While cross-state differences in noncompete policies are large, in the time since Michigan's reversal no state has had entire shifts in enforceability, either from enforceability to non-enforceability or vice versa.<sup>153</sup> Thus, in the years following the publication of Marx, Strumsky, and Fleming, researchers interested in the effects of noncompete enforceability began to use the Michigan natural experiment to study the causal effect of noncompetes.<sup>154</sup>

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<sup>147</sup> *Id.* at 477 tbl.1.

<sup>148</sup> *Id.* at 480 tbl.3.

<sup>149</sup> Marx et al., *supra* note 10, at 876–79 (discussing the development of MARA).

<sup>150</sup> *Id.* at 879–82 (citing Stuart & Sorenson, *supra* note 9).

<sup>151</sup> *Id.* at 883–86 tbls. 2–4.

<sup>152</sup> *Id.* at 876–79.

<sup>153</sup> For further detail on state laws related to noncompete enforcement, *see generally* BRIAN M. MALSBERGER, COVENANTS NOT TO COMPETE: A STATE-BY-STATE SURVEY (10th ed. 2015); Bishara, *supra* note 30.

<sup>154</sup> *See, e.g.*, Belenzon & Schankerman, *supra* note 131, at 885; Marx et al., *supra* note 131, at 394; Young et al., *supra* note 131, at 687; Young & Marx, *supra* note 131.

Given the extensive work that now relies on the Michigan noncompete experiment, it is important to note that recent work by Barnett and Sichelman calls into question the validity of the initial work studying the effect of this change in Michigan law. Among other issues, such as the validity of the comparison group developed in Stuart and Sorenson,<sup>155</sup> Barnett and Sichelman report that the Michigan noncompete reversal was not applied retroactively, such that only new noncompetes signed after the change in the law were enforceable. They conclude,

[i]f the true regime change (that is, taking into account both nominal and effective changes) took considerable time, a sizable portion of the results in these studies are unlikely to be causally linked to changes in noncompete law. Indeed, Marx et al. (2009) find the exact opposite of the effects one would expect from a gradual noncompete adoption post-MARA, stating that “the effect of the policy reversal remained strong for several years and then weakened, both in terms of the magnitude and statistical significance of the coefficient on the interaction variable.”<sup>156</sup>

Marx, Singh, and Fleming examine out-of-state mobility as a result of the Michigan noncompete experiment.<sup>157</sup> Employing the same methodology as Marx, Strumsky, and Fleming, they show that after Michigan’s noncompete reversal, the relative risk of post-MARA emigration from Michigan was twice as high among inventors with two patents as in states that continued to not enforce noncompetes (1.35 in Michigan versus 0.68 in non-enforcing states).<sup>158</sup> They further show that those with greater than median citations per patent prior to the policy reversal had a 186.8% higher risk of post-MARA emigration to non-enforcing states relative to the control states.<sup>159</sup> They also show that those inventors with more than the median number of patent co-inventors prior to the policy reversal were 236.3% more at risk for emigration out of state than their counterparts in non-enforcing states.<sup>160</sup> These results highlight that noncompete enforceability may contribute to a brain drain effect in which the most talented inventors leave the state for a lower enforceability state.<sup>161</sup>

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<sup>155</sup> See Barnett & Sichelman, *supra* note 133, at 15 (criticizing the Stuart & Sorenson and Garmaise enforcement scales are producing “spurious results”).

<sup>156</sup> *Id.* at 22.

<sup>157</sup> Marx et al, *supra* note 131, at 394–95.

<sup>158</sup> *Id.* at 397.

<sup>159</sup> *Id.* at 402.

<sup>160</sup> *Id.*

<sup>161</sup> *Id.* at 403.



Garmaise examines how executive mobility, earnings, and firm investment in capital vary between high- and low-enforceability areas.<sup>162</sup> We focus first on his mobility and wage results and return later to his findings on firm investment in capital. He uses two empirical strategies to identify the impact of noncompete enforceability. First, he identifies changes in state laws in Florida (1996), Texas (1994), and Louisiana (2001) and examines how variation in outcomes changes before and after the laws relative to states without changes.<sup>163</sup> Second, Garmaise develops a new enforceability index to compare mobility and earnings patterns across states. In particular, he improves upon the index developed by Stuart and Sorenson by scoring 12 dimensions of noncompete enforceability for each state on a binary scale using Malsberger's treatises, adding up the 12 scores for each state.<sup>164</sup> Using this new index, he compares how the within-state mobility difference in high- versus low-concentration industries varies with the enforceability of the state. In order to attribute a causal interpretation to the cross-sectional estimates it must be that industries with low levels of in-state competition reflect the mobility that would have occurred in the high concentration industries in the absence of enforcement.

Both approaches yield relatively consistent results. In the longitudinal specification, Garmaise finds that a shift to an increased enforceability regime reduces within-industry transfers by 47% and reduces executive compensation growth by 8.2%.<sup>165</sup> The results from the cross-sectional specification are similar: a one-standard-deviation increase in the enforcement index reduces the arrival of within-industry transfers by 20.8% in higher versus lower concentration industries, and reduces the log of compensation by 1.2% of the mean.<sup>166</sup> Garmaise shows that there are no effects of noncompete enforceability on out-of-industry transfers.<sup>167</sup> These results are consistent, Garmaise argues, with a model in which noncompete enforceability deters executive effort.<sup>168</sup>

Starr focuses on how noncompete enforceability and how consideration-specific policies affect the provision of firm-sponsored training, wag-

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<sup>162</sup> See Garmaise, *supra* note 85.

<sup>163</sup> *Id.* at 390–91 (Section 4.2).

<sup>164</sup> *Id.* at 388–89 (Section 4.1).

<sup>165</sup> *Id.* at 397, 402.

<sup>166</sup> *Id.* at 399, 402.

<sup>167</sup> *Id.* at 398.

<sup>168</sup> *Id.* at 415 (examining A.2 Optimal Linear Production Contracts). (“These findings are consistent with a model that has the following three features: noncompetition agreements encourage firm investments in managerial human capital, the agreements discourage managerial investments in their own human capital, and managerial investments have a greater impact than firm investments.”) *Id.* at 413–14.

es, and tenure.<sup>169</sup> He argues that the impact of noncompete enforceability on firm-sponsored training and tenure is likely to be positive, but the wage effects are ambiguous. If noncompete enforceability makes employees more likely to stay in the job and less likely to leave for competitors, then the returns to training are larger for the firm.<sup>170</sup> However, he notes that enforceability can constrain individuals from reaching firms in which their training is more productive, which decreases their willingness to seek out training opportunities.<sup>171</sup> To identify the impact of noncompete enforceability on training, wages, and tenure, Starr uses data from the U.S. Census's Survey of Income and Program Participation and categorizes occupations not found in noncompete litigation as a control group for those that are found in litigation.<sup>172</sup> He also develops a novel index of noncompete enforceability by performing factor analysis based on Bishara's quantification of seven dimensions of noncompete enforceability.<sup>173</sup> He finds that a complete transition from non-enforceability to maximal enforceability increases training by at least 13% for high litigation occupations, increases tenure by 10%, and reduces wages by 2.5%.<sup>174</sup>

Starr argues that not all noncompete policies that lead toward a higher likelihood of enforceability also lead to more training or lower wages. He notes that particular state laws that make noncompete enforcement contingent on the provision of additional consideration may increase training and wages.<sup>175</sup> By separately measuring consideration-specific laws apart from other noncompete policies, Starr shows that indeed firms provide more training and pay higher wages to employees in states that enforce noncompetes only when the employee receives additional consideration beyond continued employment.<sup>176</sup> Starr argues that this finding is consistent with a theoretical model in which consideration policies substitute for individual negotiation over noncompetes.<sup>177</sup>

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<sup>169</sup> Starr, *supra* note 132.

<sup>170</sup> *Id.* at 10 (focusing on the unilateral-firm-choice training model and the contractible training model).

<sup>171</sup> *Id.*

<sup>172</sup> *Id.* at 23 tbl. 3 ("Mapping SOC codes to Occupations in Noncompete Litigation"). The categorization of high- and low-litigation occupations comes from Peter J. Whitmore, Empirical Study, *A Statistical Analysis of Noncompetition Clauses in Employment Contracts*, 15 J. CORP. L. 483, 519–23 (1990), and Helen LaVan, *A Logit Model to Predict the Enforceability of Noncompete Agreements*, 12 EMP. RESP. & RTS. J. 219, 226–28 (2000).

<sup>173</sup> Bishara, *supra* note at 30.

<sup>174</sup> Starr, *supra* note 132, at 30 tbl.5 ("Baseline Training Results").

<sup>175</sup> *Id.* at 34 tbl. 7 ("Policy Options").

<sup>176</sup> *Id.* at 35.

<sup>177</sup> *Id.* ("To explain the differential effect of consideration laws, I argue that these laws substitute for the lack of negotiation over training and noncompetes . . . . In

A recent working paper by Starr, Ganco, and Campbell takes an employment lifecycle approach to how noncompete enforceability affects the management of business and technical employees.<sup>178</sup> By recognizing that mobility barriers are also hiring barriers, they theorize that noncompete enforceability changes both who is hired and subsequently how they are managed. In particular, they argue that it is very difficult to hire technical employees because they tend to come with both noncompetes and have skills that are highly specific to an industry. By contrast, it is easier to hire general business employees because they can be hired from noncompetitors without much loss of value. Hence, in higher enforceability states, employers will have to turn to new labor force entrants to hire technical employees, but this need not be the case for those business occupations whose skills are valuable across industries.

Once the employee is hired, however, the same noncompete-related barriers that made it difficult to hire can be used to the firm's advantage. Specifically, noncompete enforceability allows the firm to comfortably train the employee more while paying them less, and ultimately retain the employee for longer. The authors further predict that the effect will be stronger for technical employees relative to business employees because they have fewer opportunities outside their focal industry.

Using the same data and difference-in-difference design as the Starr paper discussed above, the authors find that increases in noncompete enforceability cause firms to hire less experienced technical workers, but more experienced business professionals. Once hired, however, increased enforceability results in lower wages and more training for both technical workers and general business workers (the effects are stronger for technical workers). Technical workers are retained for longer in higher enforceability states, while the effect of enforceability on retention for general business occupations is positive but not statistically significantly different from zero.<sup>179</sup>

*c. Firm Capital Investment and Innovation*

The impact of noncompete enforceability on innovation is theoretically ambiguous in the existing studies. On the one hand, noncompete enforceability provides incentives for firms to innovate because they can protect their innovation by preventing leakages to competitors. On the other hand, if noncompete enforceability reduces the flow of knowledge across firms by reducing employee mobility, or if noncompete enforcea-

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negotiating on behalf of the worker, these laws result in training outcomes that more closely resemble outcomes under the contractible training model.”).

<sup>178</sup> See Evan Starr, Martin Ganco & Benjamin Campbell, *Redirect and Retain: Why and How Firms Capitalize on Noncompete Enforceability in Technical and Business Occupations* (Feb. 13, 2016), <http://ssrn.com/abstract=2753720>.

<sup>179</sup> *Id.* at 38 tbl. 2.

bility discourages individual employee effort, then firms may be less innovative in higher enforceability states.<sup>180</sup>

Using the cross-sectional and longitudinal variation in noncompete enforceability described above, Garmaise shows that increased enforceability reduces the log of capital expenditures per employee.<sup>181</sup> He contends that, combined with the negative effect on executive mobility and earnings, his results are consistent with enforceability reducing executive effort.<sup>182</sup> Samila and Sorenson, using the cross-sectional measure of enforceability from Garmaise and the measure from Stuart and Sorenson, find that high enforceability reduces the effectiveness of venture capital in creating patents.<sup>183</sup> Together these findings suggest that noncompete enforceability reduces firm investment and innovation.

Conti takes a slightly different approach from Garmaise and also Samila and Sorenson. He considers not whether noncompete enforceability affects the overall level of innovation, but the type of innovation.<sup>184</sup> In particular, he argues that the additional protection provided by noncompete enforceability allows firms to better appropriate any successful innovation and thus allows them to take risks that they would not otherwise take in lower enforceability states.<sup>185</sup> Using the same longitudinal variation in noncompete enforceability identified by Garmaise, he finds indeed that increased noncompete enforceability in Florida is associated with both increases in extreme successes (top 1% of forward patent citations) and extreme failures (zero forward citations). He finds the reverse in Texas, where noncompete enforceability declined in 1994.<sup>186</sup>

Belenzon and Schankerman examine how knowledge diffuses geographically from American universities.<sup>187</sup> They argue that knowledge generated by universities is less likely to be cited in states where individu-

<sup>180</sup> See, for example, the discussion in Samila & Sorenson, *supra* note 9, at 425–28, and Garmaise, *supra* note 85, at 408.

<sup>181</sup> See Garmaise, *supra* note 85, at 409 tbl.7.

<sup>182</sup> *Id.* at 412 (“Firm Investment versus Managerial Investment”).

<sup>183</sup> See Samila & Sorenson, *supra* note 9, at 432 tbl.3, 435 tbl.5.

<sup>184</sup> See Raffaele Conti, *Do Non-Competition Agreements Lead Firms to Pursue Risky R&D Projects?*, 35 STRATEGIC MGMT. J. 1230, 1231 (2014).

<sup>185</sup> *Id.* Professor Conti argues that:

[M]obility-induced knowledge leakages imply that the firm shares its profits, but not its losses, from R&D with rivals. Therefore, a stronger enforcement of non-competes should make high-risk R&D projects relatively more valuable than low-risk ones, such that in regions in which non-competes are enforced more strictly, firms likely undertake R&D paths whose outcomes have a higher probability of being both extremely valuable (i.e., breakthroughs) and extremely poor (i.e., failures).

*Id.*

<sup>186</sup> *Id.* at 1239–40.

<sup>187</sup> See Belenzon & Schankerman, *supra* note 131, at 884.

als are less mobile.<sup>188</sup> Using the Michigan noncompete experiment as a mobility shock, they find that inventors in the same state as a particular university are substantially more likely to cite one of the university's patents than an inventor from outside the state, but that in states that enforce noncompetes this effect is dampened.<sup>189</sup>

Taken together, the literature on noncompete enforceability and innovation suggests that noncompete enforceability tends to reduce innovation, but it increases the riskiness of the innovations that firms pursue. Belenzon and Schankerman show that reduced employee mobility could be a mechanism driving these results, while Garmaise proposed that reduced executive effort is the culprit.

*d. Anticipated Employee Mobility, Firm Acquisitions and Value*

A recent stream of research examines how noncompete enforceability affects the value of firms and the acquisition of firms. These papers argue that limits on employee mobility, especially limits on employee mobility to competitors, increase the value of the company due to the reduced probability of sensitive information leaking to competitors.<sup>190</sup>

Younge and Marx examine how the Michigan noncompete experiment affected the valuation of firms, which they measured with *Tobin's q*—the physical value of the firm divided by the replacement value.<sup>191</sup> The study uses annual, firm-level data from Compustat for 1997 through 2006 for U.S.-listed manufacturing firms that were headquartered in Michigan or in the set of control states defined in Stuart and Sorenson.<sup>192</sup> The authors find that the ability to block employee mobility to competitors was associated with a 9.75% rise in *Tobin's q*.<sup>193</sup> This effect is larger in areas with greater competition, but is somewhat attenuated by the use of patent protection.<sup>194</sup>

Younge, Tong, and Fleming use the Michigan noncompete experiment to examine how anticipated employee mobility affects the likelihood that a firm will be acquired.<sup>195</sup> They show that after Michigan started enforcing noncompetes in 1985, firms were more likely to be a target for an acquisition, and even more so if they contained a higher proportion of knowledge workers.<sup>196</sup> Furthermore, firms in areas with high degrees of competition were also more likely to be the target of an acquisi-

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<sup>188</sup> *Id.* at 885.

<sup>189</sup> *Id.* at 900.

<sup>190</sup> See generally Younge & Marx, *supra* note 131; Younge et al., *supra* note 131.

<sup>191</sup> See Younge & Marx, *supra* note 131, at 13.

<sup>192</sup> *Id.* at 13.

<sup>193</sup> *Id.* at 31.

<sup>194</sup> *Id.* at 24.

<sup>195</sup> See Younge et al., *supra* note 131.

<sup>196</sup> *Id.* at 698–700.

tion, while firms protected by stronger IP-toughness regimes were less likely to be targeted.<sup>197</sup>

*e. Articles Studying Regional Outcomes*

Evidence on the aggregate effects of noncompete enforceability comes from Stuart and Sorenson, as well as Samila and Sorenson. As noted above, these studies find that noncompete enforceability mitigates the effect of venture capital and liquidity events on new firm foundations.<sup>198</sup> Samila and Sorenson further find that high enforceability reduces the effect of venture capital on aggregate employment and payroll.<sup>199</sup> Their results “imply that not only does the enforcement of noncompete agreements limit entrepreneurship, . . . but it also appears to *impede* innovation. We further find that regions as a whole benefit from an employee-friendly legal regime through greater employment.”<sup>200</sup> The only other study focusing on regional outcomes is a working paper that examines the impact of noncompete enforceability on employment in the Temporary Help Services (THS) industry.<sup>201</sup>

## II. WHAT IS MISSING? DISCUSSION OF THE GAPS IN THE EMPIRICAL RESEARCH FOR GOOD LEGAL POLICY

As the prior review exhaustively shows, there is a robust and growing literature studying the use and impacts of noncompetes. Most papers theorize ambiguous outcomes regarding the impacts of noncompetes or their enforceability, which are at the heart of the tension underlying noncompetes: that these agreements disadvantage employees to protect the firm. This ambiguity is what has contributed to the rich theoretical legal literature, and is why empirical work to disentangle such theories is so important. The literature review makes clear that studies with the actual use of noncompetes are limited by both their sample and the mechanisms that they can identify. Studies of noncompete enforceability, by contrast, are far more numerous and varied. From this work we learn that noncompetes tend to have negative impacts on entrepreneurship, mobil-

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<sup>197</sup> *Id.* at 702.

<sup>198</sup> *See supra* Part I.E.3.a.

<sup>199</sup> *See* Samila & Sorenson, *supra* note 9, at 435–36.

<sup>200</sup> *Id.* at 436 (footnote omitted).

<sup>201</sup> *See* William Cosmo Komiss, *Empirical Analysis of Restrictive Covenants and the Temporary Help Industry* (Oct. 18, 2008) (unpublished manuscript) (on file with authors). Komiss uses the Malsberger treatise to develop a catalogue of noncompete enforceability among the THS industry from the late 1970s until the mid-2000s. *Id.* at 4–6 (cataloging noncompete cases in the temporary help industry cited in Malsberger). Using longitudinal variation to measure state enforcement of noncompetes against THS workers, he finds that enforceability is associated with a 10% decrease in THS employment. *Id.* at 11.

ity, wages, and innovation. Simultaneously, however, noncompete enforceability is also related to increases in firm-sponsored training, riskier R&D investments, and increases in firm value and the likelihood of acquisition. Though it is tempting to think that the rapidly expanding empirical noncompete literature has sufficiently answered the interesting and relevant questions for firms, workers, and policymakers, we argue in this section that there remain severe limitations to our understanding of noncompetes.

We organize this Part in parallel to the prior review of literature. We first discuss what is missing from our understanding of the use and consequences of noncompetes. We argue that the most fundamental questions about noncompetes remain unanswered. Who signs noncompetes? How do they affect the mobility and earnings of workers? How do they affect entrepreneurship? How does the use of noncompetes impact firm investment in R&D and employee skills? We next scrutinize the empirical work examining the impact of noncompete enforceability. We argue that without data on who actually signs noncompetes, it is not only difficult to identify the effect of enforceability but the scope of the studies are also seriously limited. Perhaps most importantly, we argue that relying on studies of noncompete enforceability to identify the impact of noncompetes is risky: even in the absence of enforceability, noncompetes may themselves chill employee mobility or have other consequences. As a result, studies of noncompete enforceability are likely to mask the true impact of noncompetes.

*A. What Is Missing in Our Understanding of the Use and Consequences of Noncompetes for Workers and Firms?*

Given the lack of empirical work using actual data on noncompete usage, it is safe to say that we know relatively little about the uses and consequences of noncompetes. From the 9 studies that have employee or firm-level data on the use of noncompetes, we learn that 3 out of 4 executives, and almost one in two physicians and engineers sign noncompetes.<sup>202</sup> We also learn that one in two firms use noncompetes. However, since these studies do not describe which employees sign noncompetes, it is unclear whether these numbers provide any additional information, given the proportion of executives that sign. While we might be able to extrapolate that noncompetes are similarly common in similarly high skilled occupations, it is difficult to extrapolate to the other 99.1% of the U.S. labor force. This lack of data on the use of noncompetes itself suggests, at the most basic level, that what is missing from the literature is an

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<sup>202</sup> See *supra* Part I.E.1; see also Garmaise, *supra* note 85, at 396; Lavetti et al., *supra* note 85, at 31; Marx, *supra* note 85, at 702; and Schwab & Thomas, *supra* note 85, at 234.

understanding of what types of firms use noncompetes, what types of workers sign noncompetes, what the conditions of the noncompete are, and why and when such noncompetes are used.

Understanding who signs, however, is only the first rung in the ladder of what is missing in the literature. It is necessary to know who signs noncompetes in order to understand how noncompetes affect the mobility and earnings of workers. Without such data, speculation about the possible effects of noncompetes is endless. The two articles attempting to understand how noncompetes affect earnings and mobility of workers provide some clarity, but contrast in striking ways. The combined evidence suggests that firms sometimes manage the noncompete-signing process to reduce worker bargaining power, but conversely that noncompetes may come with stronger incentives and may increase wages and revenues.<sup>203</sup> Furthermore, noncompetes are associated with both career detours and extended tenures.<sup>204</sup> What is missing from this strand of research is an understanding of exactly why and how noncompetes have such differential effects, and whether these effects are likely to hold in less skilled occupations or less narrowly defined occupations. For example, to what extent are individuals who sign noncompetes staying longer in their jobs because they feel locked in, and to what extent do they choose to stay at the firm voluntarily, perhaps because of higher wages or internal promotion? Do individuals who negotiate or are given a chance to consider the noncompete before signing exhibit different mobility and earnings outcomes?

Aside from questions related to mobility, there is no literature examining the use of noncompetes and entrepreneurial outcomes. Entrepreneurship is far riskier than moves to employers, and often involves collaborations among founding team members with complementary skills. Hence noncompetes may pose an even greater threat to future of entrepreneurship than they do to employee mobility.

Similarly, empirical work on noncompetes within the firm is entirely nonexistent. This omission from the literature is particularly glaring given that the sole reason courts begrudgingly enforce noncompetes is that CNCs protect legitimate business interests. Hence, what is missing from the literature is an understanding of how noncompetes affect the innovative activity, such as R&D investment, investment in employee skill development, and profitability of the firm. Relatedly, for states considering whether they should make the use of noncompetes illegal, it is important to know if firms need the protection of noncompetes to invest in innovative activities or if they simply substitute other protection methods (pa-

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<sup>203</sup> See Marx, *supra* note 85, at 702–06 (discussing career detours and firms delaying the offering of noncompetes); see Lavetti et al., *supra* note 85 at 27.

<sup>204</sup> See Marx, *supra* note 85, at 702–05; see also Lavetti et al., *supra* note 85 at 27.



tents, nondisclosure agreements)—or are firms adaptable to high-velocity labor markets in the absence of CNCs like in the Silicon Valley Model?

Lastly, without data on who signs noncompetes the literature currently cannot identify the mechanisms linking noncompetes to behavioral outcomes. For example, if an employee receives an outside offer from a competitor, does the employer typically threaten the employee with his noncompete? Does the employer raise the employee's wage, despite the noncompete, or promote the employee? When an employee violates the noncompete, under what circumstances does the employer threaten the employee with a lawsuit? Answers to these questions may help researchers understand some of the mechanisms underlying any effects of noncompetes on worker and firm outcomes.

### *B. What Is Missing in Our Understanding of the Impacts of Noncompete Enforceability?*

The papers examining the impacts of state noncompete policies on workers, firms, and regions make up the bulk of the empirical noncompete literature. Broadly, these studies come in three varieties: (1) Cross-sectional approaches, in which high-enforceability states are compared to low enforceability states; (2) Longitudinal approaches, comparing the within state change (relative to a group of control states) before and after a noncompete policy change; and (3) Moderation approaches, whereby noncompete enforceability is shown to moderate the relationship between two other variables. Each approach has its own unique limitations and assumptions in order to identify the causal effect of noncompete enforceability. Instead of focusing on any particular shortcoming of any individual study, we argue that the primary limitation of all of these studies is that they do not have data on who actually signs noncompetes. As a result, they must take a necessarily aggregated perspective, averaging the effect of noncompete policies across those who sign and those who do not sign noncompetes. This aggregation raises a number of concerns related to the validity and scope of these studies.

First, as the recent Barnett and Sichelman study has pointed out, it is important to note that identifying the causal effects of noncompete enforceability is a challenging task. Cross-sectional studies must somehow disentangle the effect of noncompete policies across states from the myriad of other potential state policies or state differences that are correlated with noncompete policies. Similarly, studies that examine the before and after effects of a noncompete policy change within a state must separately identify the impact of the noncompete laws from other trends or state-level changes that might be occurring simultaneously. These are challenging identification issues to overcome, especially given that very few states have significantly changed their noncompete policies in the last 30 years. If research could show that those who sign noncompetes are driv-

ing any effects found from increases in noncompete enforceability, this would help to allay serious identification concerns.

Second, since not all policy changes equally affect the noncompete-signing population, the measurement of noncompete enforceability is necessarily error-ridden without data on who signs noncompetes. For example, if a state changes the law to allow firms to enforce noncompetes even when workers are fired from their jobs—but no workers who sign noncompetes are actually fired both before and after the change—then such a policy change will be picked up by the enforceability indexes of Garmaise, Bishara, and Starr, but it will not change the *effective* probability of noncompete enforcement. In order to properly calculate noncompete enforceability—that is, the probability that a randomly selected individual's noncompete would be enforced in court if the randomly selected individual were to violate the noncompete and his firm were to sue him—one needs two key pieces of information:

- i) The identification of situations in which a state court will and will not enforce a noncompete; and
- ii) The probability that a randomly chosen employee has the characteristics defined in i) for enforcement in that state.

Without any information on ii), the existing measures of noncompete enforceability use only i) when creating their measure of enforceability.<sup>205</sup> As a result, when estimating the effects of noncompete enforceability on worker or firm outcomes, the best possible outcome is that the effects of enforceability are attenuated. At worst, the measurement error is correlated with enforceability (e.g., higher enforceability states are more likely to be mismeasured) and causes us to reach biased estimates.

Third, because enforceability is the key variable, not noncompete-signing status, assumptions about knowledge of noncompete policies among the various actors must be made. While it might be reasonable to believe that firms have a good grasp of noncompete policies within and across states, it may be less reasonable to expect employees to have perfect information. Whether and to what extent these assumptions are reasonable is impossible to test without individual-level data on what workers believe. Furthermore, if workers are uninformed about their state's policy, then noncompetes may chill employee mobility and entrepreneurship, regardless of their actual enforceability. As a result, studies relying on states' variation in noncompete enforceability may seriously underestimate the impact of noncompetes. Also noncompetes' impact could also be benign if workers are unconcerned about their enforceability or even forget that they signed a restriction.

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<sup>205</sup> The measure of noncompete enforceability in Stuart & Sorenson, *supra* note 9, is binary and thus only captures changes from enforceable to non-enforceable.

Fourth, analyses comparing outcomes in high-enforceability versus low-enforceability states cannot disentangle the impact of the potentially increased use of noncompetes in higher-enforceability states from the impact of the noncompete policy on those who do and do not sign noncompetes. For example, if it is found that there is more mobility in California relative to a high-enforceability state like Florida, it could be that individuals who sign noncompetes in Florida are less mobile within their own state at least than those who sign noncompetes in California. But it might well be the case that firms in Florida use noncompetes more frequently, and that noncompetes themselves, regardless of their enforceability, reduce employee mobility. To put it another way, any observed effects of enforceability could be explained by a greater use of noncompetes in high-enforceability states, not necessarily the impact of enforceability on those who sign.

Relatedly, and perhaps most importantly, noncompetes themselves may deter individuals from leaving their jobs or starting a competing enterprise—known as the *in terrorem* or chilling effect. The fact that the contract itself may deter employees from moving, regardless of the enforceability level, suggests that the effect of noncompete enforceability likely masks the true impact of noncompetes. For example, if we were to observe that noncompete enforceability was associated with a small difference in employee mobility, this result does not necessarily imply that noncompetes have a small effect on mobility. Noncompetes may reduce mobility similarly in high- and low-enforceability states, which would cause us to observe little difference in mobility across high- and low-enforceability states. Thus, while enforceability studies may show no, small, or large impacts, it could be that noncompetes themselves have enormous effects which are being masked at the aggregate level. This critique is particularly relevant for state courts that may want to discourage or encourage the use of noncompetes, as opposed to tweaking the circumstances under which they are enforced.

Fifth, the aggregate perspective cannot directly identify the potential micro-mechanisms at work, and thus limits the potential policy options. For example, how exactly might noncompete enforceability reduce mobility? Is it that individuals who sign noncompetes search less frequently for jobs in high-enforceability states? Is it that firms are less willing or less able to hire them in high-enforceability states? Is it that the worker's employer is more likely to threaten him or her in high-enforceability states? Is it that employees are uninformed and are thus more susceptible to threats even in states that do not enforce noncompetes? Depending on which mechanisms are operative, policies can be constructed to target these mechanisms to reach the desired result. For example, information-based policies meant to inform individuals when their noncompete is and is not enforceable may reduce the chilling effect of unenforceable noncompetes.

Sixth, without data on who signs noncompetes, it is impossible to determine if there are external effects of noncompete policies on those who do not sign. Such effects could arise through the cycle of hiring generated by an initial move from one employer to another, a phenomenon known as a “vacancy chain.”<sup>206</sup> For example, in the papers on employee mobility and training, increased noncompete enforceability may reduce employee mobility for those who sign noncompetes, which may in turn reduce the mobility of those who have not signed since fewer jobs are becoming available. As a result of such decreased mobility among signers and nonsigners, firms in high-enforceability states may have increased incentives to train both employees who sign and those who do not.

Seventh, most studies of noncompete enforceability create aggregate measures of enforceability and do not consider subtle differences in the law. The exception is Starr, who breaks out consideration aspects of noncompete laws apart from other dimensions of enforceability.<sup>207</sup> As a result, in most empirical studies, we learn only that more enforceability is good or bad, but there is no guidance on exactly which enforceability policies might be well-suited to achieve various goals. Using data on who signs noncompetes, and tying behavior of noncompete signers to specific noncompete policies, such as additional consideration requirements and negotiation, has the potential to better help courts and state legislatures identify the ways in which they might consider changing their enforceability policies.

While the analyses studying noncompete enforceability have improved our understanding of the impact of noncompete policies, without data on who signs noncompetes the extent of the analyses are necessarily limited, the policy options cannot target specific mechanisms, and there are a number of reasons to be wary of the validity of the results.

We have identified here how data on the use of noncompetes could be utilized to significantly strengthen and broaden our understanding of the impacts of noncompetes and enforcement policies. Next in Part III we use this understanding to identify what additional research would be useful to help complete the still unclear noncompete picture.

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<sup>206</sup> When an employee leaves a job, she likely creates a vacancy at her former employer. That vacancy can be filled by an employee at another firm or by either an unemployed individual or a new entrant to the labor market. If the job vacancy is filled by an employee from another firm, then it creates another vacancy at the other firm. The vacancy chain continues until eventually an unemployed or new labor-force participant is hired.

<sup>207</sup> See *supra* notes 169–177 and accompanying text for a discussion of Starr.

### III. MOVING FORWARD: A RESEARCH PLAN FOR COMPLETING THE NONCOMPETE PICTURE

The growing body of empirical research described in the previous Part is essential to better understanding the role of noncompetes in the United States. Yet without the full picture of noncompete use within and across firms, better measures of enforceability, worker perceptions, and employer motivations, policymakers are still largely in the dark about what reforms, if any, are needed. In this Part we not only call for more empirical research on the subject of noncompetes and other restrictive covenants, we also point out specific examples of studies and methods that may help answer a range of lingering questions about this area of human-capital law and policy.

This suggested research agenda is not merely for academic purposes, but rather it can potentially help business interests, employees, and public advocates make better assessments of the ways to maximize the positive impacts of noncompetes while curtailing some potential negative outcomes that have begun to be discussed in the empirical literature. These include outcomes related to entrepreneurship, employee mobility, wages, training investment, capital investments, innovation, firm value, and the much-discussed topic of regional competitiveness. To begin, we will outline some possible data-collection opportunities for researchers. Then, we end with a section explaining why these new opportunities for research are crucial for the evaluation of many of the proposed policy changes.

#### *A. Opportunities for Gathering More Empirical Evidence*

As the discussion in Part II indicates, there is a wealth of information that has been learned about covenants not to compete in recent years. However, there are also many questions left unanswered by the existing empirical literature on CNCs. The most glaring shortcoming is the inability of the empirical literature to answer even the most basic questions about the use and impacts of noncompetes across workers and firms. The evidence from state laws is riddled with measurement error, which make it difficult to be confident in what we learn. Evidence on the use of noncompetes, coupled with careful empirical analysis, is the most promising way to provide more convincing evidence on the use and impacts of noncompetes.

There are numerous outlets to collect such data. The ideal dataset would track workers and firms over time. For workers, a few such datasets are the Survey of Income and Program Participation, the Current Population Survey, the Panel Study of Income Dynamics, and the National Longitudinal Survey of Youth. These studies already involve significant panel dimensions and adding questions about noncompete signing would provide significant value, even if the questions were only on the

surveys for a short time. Alternatively, cross-sectional surveys of workers may be able to provide some answers to these questions, but can only provide retrospective and prospective answers to mobility and entrepreneurship questions. It is far more convincing to observe actual moves between employers.

Given that these outlets are unlikely to add many survey questions due to time constraints of respondents, researchers might consider using other surveying outlets. With the rise and improvement in online surveying technology, such as that used by Qualtrics, ClearVoice, SSI, USamp, Survey Monkey, and many others, the possibility of collecting detailed worker level data is widely and cheaply available.<sup>208</sup> One caution about using online surveys is to be very careful about the sample selection process. This is because individuals who sign up to take online surveys are not a random sample of the U.S. population. Thus, careful cleaning and reweighting should be employed to ensure that the results are as representative as possible.<sup>209</sup>

Another similar possibility is partnering with industry and trade group associations, which may be willing to provide access to their membership. The benefit for those organizations is that they may be able to better assess the use of restrictive covenants among their members or in their industry, and use that information for policy decisions, including how they support or oppose new attempts to reform the existing law of noncompetes.<sup>210</sup> However, their membership may also not be fully representative of individuals in the industry or job categories of interest to researchers.

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<sup>208</sup> For instance, research conducted by the authors has included some of these data-gathering partners with some success, including the over 11,500 respondents to a recent survey. See Evan Starr, Norman Bishara & J.J. Prescott, *Noncompetes in the U.S. Labor Force* 11 (June 25, 2015) (unpublished manuscript), <http://ssrn.com/abstract=2625714>; see also, Evan Starr, J.J. Prescott & Norman Bishara, *Noncompetes and Employee Mobility* (unpublished manuscript), <http://ssrn.com/abstract=2743844>.

<sup>209</sup> *Id.* at 12–14 (applying this methodology of sampling and analysis); see also J.J. Prescott, Norman D. Bishara & Evan Starr, *Understanding Noncompetition Agreements: The 2004 Noncompete Survey Project*, 2016 MICH. ST. L. REV. (forthcoming, 2016).

<sup>210</sup> Interestingly, to date there is only limited evidence of industry mobilization around the issue of noncompete enforcement. For instance, some medical associations have positions opposing noncompetes. See, e.g., Larry D. Weiss, *AAEM White Paper on Restrictive Covenants: A Policy Paper of the American Academy of Emergency Medicine*, 30 J. EMERGENCY MED. 473 (2006), <http://www.aaem.org/em-resources/position-statements/practice-rights/restrictive-covenants>. Some states have disallowed noncompetes for doctors; however, there has seemingly not been widespread lobbying against noncompetes by medical associations. One explanation may be that one's perspective on noncompetes changes depending on status and standing in the industry, such that new doctors will resist noncompetes, but established doctors embedded in a practice they intend to stay with or manage are more likely to see some benefit from these agreements.

Beyond conducting research to enhance our understanding of the use and perception of restrictive covenants by individual employees and former employees, it is also important to understand the firm's perspective, as well. However, gathering data on the use of noncompetes among firms is a more challenging endeavor than reaching individual respondents, because it necessarily entails asking questions about which workers at the firm sign noncompetes. This implicates sometimes sensitive issues of identifying workers or raises concerns about proprietary information about the firm's private contracts and policies.

There are also possible options to encourage firms to collect useful data on noncompete use in the United States. One such option is the Occupational Employment Survey at the Bureau of Labor Statistics.<sup>211</sup> This is a survey of non-farm establishments in which significant data on the occupation and industry are already collected. By noting the Employer Identification Number and which occupations within the firm are asked to sign noncompetes, it is possible to link the firm to other data on firm level outcomes (employment, payroll, etc.). Another option is to add questions about the use of noncompetes to the Census of Manufacturers or to the Business R&D and Innovation Survey (BRDIS) run by the NSF and the Census Bureau.<sup>212</sup> Still another option is to outsource the collection of data to Glassdoor.com and other websites committed to providing potential employees with transparent information on the salaries and other job characteristics. This approach in particular would allow researchers to connect the use of noncompetes and other restrictive covenants with the firm's name, industry location, and other publicly available data.

### *B. Harnessing the Additional Evidence for Better Legal and Policy Outcomes*

A better understanding about the prevalence, use, and impact of restrictive covenants in the United States is not an end in itself. The need for better technical data on noncompetes for researchers is clear, but what are some of the implications of this for the public debate over noncompetes?

The lack of research producing data about a wider array of workers than high-tech workers and engineers, doctors, and executives is a signif-

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<sup>211</sup> For an overview of the Occupational Employment Statistics (OES) program, see *Occupational Employment Statistics Overview*, BUREAU LAB. STAT., [http://www.bls.gov/oes/oes\\_emp.htm](http://www.bls.gov/oes/oes_emp.htm).

<sup>212</sup> For an overview of the Annual Survey of Manufacturers (ASM), see *Annual Survey of Manufacturers About the Surveys*, U.S. CENSUS BUREAU, [https://www.census.gov/manufacturing/asm/about\\_the\\_surveys/index.html](https://www.census.gov/manufacturing/asm/about_the_surveys/index.html). For an overview of the Business R&D and Innovation Survey (BRDIS), see *Business R&D and Innovation Survey*, NAT'L SCI. FOUND., <http://www.nsf.gov/statistics/srvyindustry/about/brdis/>.

icant problem. In particular, more research on a range of employees from a range of important industries—and particularly low-wage workers—is key to addressing concerns that arise related to noncompetes. Much of the public debate centers on two issues: incentivizing innovation and the fairness issues involved with enforcing noncompete agreements against workers, especially younger, low-wage, and low-status workers without many other opportunities if they are unable to compete in the same industry after leaving a job.

On the innovation front, policymakers are interested in whether and how noncompete enforceability affects the development of high-tech clusters like Silicon Valley. The Gilson hypothesis and subsequent empirical work suggest that noncompete enforceability reduces the mobility of inventors, drives them away from the state, and both reduces innovation overall and increases the riskiness of the innovation pursued. As a result of this work, there has been political movement towards banning noncompetes to encourage innovation. As discussed previously, Hawaii, for example, recently passed legislation to ban noncompetes for technical workers.

As we highlight in the prior section, we are concerned that such policy changes are being made without the proper empirical foundation. Indeed, there is not one study examining the relationship between the use of noncompetes and firm-level or regional-innovation outcomes. Furthermore, the recent work by Barnett and Sichelman paper casts significant doubt on the validity of the studies using the Michigan noncompete reversal and studies that use the Stuart and Sorenson index. We propose that collecting data on the use of noncompetes and related restrictive covenants as well as other firm-level innovation outcomes is a first step towards building this foundation. A second step would then be to examine how firms that use noncompetes differ from firms that do not use noncompetes in both high- and low-enforcing states. Future studies could then aggregate this data to the regional level to help policymakers assess the ways in which noncompetes and noncompete enforceability help or hurt the creation of technical clusters.

Regarding the fairness issues, the concern has been that there is a regressive impact of noncompete agreements that harms the mobility, and thus career advancement, of low-wage workers, especially if there is an in terrorem effect that discourages them from leaving because of a fear of facing a lawsuit over their noncompete. While these concerns have some intuitive merit, especially on fairness if not efficiency grounds, there is not any empirical research that addresses this segment of the American workforce.<sup>213</sup> Yet, protecting these types of workers from the oppressive terms of overreaching employers has been the rallying cry for

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<sup>213</sup> See Prescott, Bishara & Starr, *supra* note 209.



some of the high-profile lawsuits and media reports described above in Part I. For instance, the newly proposed federal legislation, the MOVE Act, is expressly aimed at protecting low-wage workers.<sup>214</sup> In addition, a recent Treasury Department report on noncompetes acknowledged the concerns of low-wage workers, but also discusses the positive role of noncompetes in some instances, especially for firms and investments in workers.<sup>215</sup>

Certainly fairness concerns and worker protections matter greatly. However, if a main justification for the new batch of noncompete reform statutes is low-wage worker protection, then it would be useful to have more data on what impact noncompetes have on these workers. It would also be useful to simply know how many noncompetes are actually signed by this population and how they are enforced, if at all. This gap in the research is particularly pronounced when it comes to the evidence of an in terrorem effect that chills worker mobility and advancement. There is also a lack of data on how restrictions impact younger workers, workers in all jurisdictions, or workers across a range of demographics, including by gender, race, age, education, skills, and experience.

A related policy issue that arises out of the research gaps identified in our Article is that we know surprisingly little about how firms use noncompetes. Many foundational issues remain unaddressed, including questions of how many firms use noncompetes, and if they use them for certain workers or for many types of workers. Also, we have only anecdotal and mostly secondary evidence from judicial opinions and a limited set of employee interviews about what motivates employers to use noncompetes. We also do not know much about who at the firm determines when to deploy noncompetes—and what restrictions are used and why—and importantly how a firm decides to take action to enforce an agreement against a departing employee. Embedded in that decision will likely be clues to issues related to how firms view their protectable interests in employee knowledge, trade secrets, and client relationships that will also provide a deeper understanding of the issues for judges faced with resolving disputes over knowledge assets ownership.

The answers to these questions are important to understanding the business value of noncompetes to firms and to potentially rebalance the public debate from one of fairness to one viewing the overall mix of costs and benefits involved. Like the dearth of research on noncompetes' impact on low-wage or early tenure workers, a lack of data on the firms' perspective means that researchers and policymakers do not have the full noncompete picture before them.

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<sup>214</sup> See Press Release, Office of Sen. Chris Murphy, *supra* note 2.

<sup>215</sup> See TREASURY REPORT, *supra* note 8, at 8.

Finally, because these missing pieces of information about employees and firms leave many open questions about noncompetes, there are numerous implications for policymakers. State legislators in many jurisdictions are being lobbied to change or preserve the status quo with non-compete enforcement and are on the front lines of the non-compete debate.<sup>216</sup> Moreover, in light of all of the research gaps, we have identified some of the most sweeping policy changes being proposed or actually being enacted at the states are based on somewhat incomplete information. Many intuitions about the regressive nature of noncompetes or the implications for innovation may be correct—for example that their enforcement or even their mere presence in contracts of low-wage workers may chill mobility. However, it is currently unclear if those intuitions are accurate because they have yet to be tested empirically. While it is impossible to have complete information about how noncompetes are used, the data we have currently is woefully inadequate and more research is needed to reach meaningful conclusions about reforms. Unless we have a fuller picture of the impact of firms' use of noncompetes—as well as the impact of new policy solutions such as notice periods, professional carve outs, or wage thresholds—there remains a risk that policy proscriptions may have unintended negative consequences or be aimed at problems that are not significant enough to garner actual policy solutions.

### CONCLUSION

Despite the very long history of restrictive covenants and the contentious, long-term debate over the propriety of post-employment covenants not to compete, the controversy over these legal mechanisms has grown recently. This is due, in part, to scholars' research in this area and an increase in media and public attention focused on recent revelations of some high-profile potential abuses of these long-tolerated legal tools. At the same time this new level of academic attention and debate has helped precipitate further discussion, and, in some jurisdictions, action from policymakers. The most obvious outcome in this regard has been that numerous jurisdictions have adopted restrictions on the use and enforcement of noncompetes, or, at a minimum, have modified the reasonableness test and removed discretion from the courts on issues such as the *per se* reasonableness of the length of the agreements.

However, the recent focus on non-compete agreements has also pressured legislators into making hasty reforms, thus risking poor public-policy decisions even more acutely than in the past. Such reforms may be necessary, but they should not be made lightly or without a full under-

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<sup>216</sup> See, e.g., Benard, *supra* note 54 (discussing the Utah compromise between pro-worker and innovation interests and various business interests); Romboy, *supra* note 54 (same).

standing of the costs and benefits of allowing, banning, or modifying a state's noncompete policy. In fact, these decisions should be well supported by both an understanding of the actual legal enforcement picture, as well as nuanced, sophisticated, methodologically sound, and impartial legal and empirical research.

Our Article has discussed the legal background of modern-day enforcement, as well as all of the empirical research that examines noncompetes. In doing so we have provided a complete picture of the questions that have been addressed and answered, although much of the research is subject to criticism. Beyond just pointing out some of the virtues and limitations of the existing body of empirical research touching on noncompetes, we have gone further and proposed a cohesive roadmap for future scholarship that will support reasoned and appropriate policymaking. Seeing this extensive and holistic view of the subject is key to understanding how a more substantial body of research is essential to addressing the debate underlying calls for policy reactions and various reforms to noncompete policies around the United States.