ABSTRACT

Theories of human capital investment, which emphasize encouraging and protecting investments in human capital, have become salient in rationalizing the adoption of firm asset-sharing and employee stakeholder arrangements, such as Employee Stock Ownership Plans. Yet, mechanisms such as bargaining power have also been a key part of the literature on employee and firm bargaining outcomes. Part of the puzzle with bargaining power as an explanation is that not all forms of bargaining power significantly explain the adoption of firm asset sharing and employee stakeholder arrangements. In order to provide an improved explanation for the adoption of these arrangements, we utilize distributive conceptions of property rights and economic institutions to highlight how power is allocated, segmented, and distributed by economic institutions and, thus, impacts firm asset sharing and employee stakeholder arrangements.

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0.1 Introduction

Theories of human capital and specific investment have become salient in rationalizing why firms adopt asset sharing and employee stakeholding arrangements, such as broad-based stock ownership plans (Blair, 1995; Robinson and Zhang, 2005; Pendleton and Robinson, 2011). While scholars have documented the impact of these arrangements on employee outcomes, corporate performance, and organizational stability and growth, more recent theories have sought to explain the rationale behind these arrangements from a different perspective (Kaarsemaker, et al. 2009; Freeman et. al, 2010; Carberry, 2011). These recent arguments propose that incentivizing and protecting investments in human capital are key impetuses for the adoption of these arrangements by firms (Blair, 1999; Pendleton and Robinson, 2011; Robinson and Zhang, 2005; Roberts and Van de Steen, 2000; Inderst and Mueller, 2007). These investments may be key to improving individual worker performance, teamwork and product quality (Kochan, Katz, and McKersie, 1986).

Yet, scholars have also argued that other non-efficiency oriented mechanisms, such as bargaining power, determine the interaction between firms and individuals, and thus, shape outcomes related to wages, benefits, and job quality (Osterman, 1999). In fact, in the same human capital investment literature, which relies on theories of incomplete contracts, the dynamic of bargaining power is essential to establishing wages and benefits and amount of firm assets that are shared with employees (Aoki, 1980, 1984; Grout, 1984; Moretto and Rossini, 1995, 1996; Jou and Lee; 2004). In management theory, labor stakeholder theorists have argued, among other things, that bargaining power is a key factor in the adoption of labor stakeholder and firm-asset sharing arrangements (Kochan and Rubenstein, 2000; Coff, 1999). But, while the literature predicts that bargaining power should be a significant factor in the adoption of these
arrangements, an empirical challenge has emerged. The literature on Employee Stock Ownership Plans, or ESOPs, indicates that in the early years, unions did not significantly contribute to the adoption of these arrangements (McElrath and Rowan, 1992; McHugh, Cutcher-Gershenfeld, and Polzin, 1999). The implication is that any explanation of bargaining and firm asset sharing and labor stakeholding must also include an explanation for unions.

The empirical divergence may result from the focus on the interests and conditions of the firm and employees and less attention on the features and mechanisms of property rights and economic institutions. Across disciplinary areas, property rights and economic institutions have become more significant in explaining economic decision-making and include rational-material, distributive, and cultural-cognitive perspectives. Under rational-material conceptions, scholars have posited that property rights and economic institutions determine who has residual control and that these institutions efficiently support investments, such as in human capital (Grossman and Hart, 1986; Hart and Moore, 1988, 1990; Rajan and Zingales, 1998). Yet scholars under distributional conceptions suggest that property rights and economic institutions distribute power and determine outcomes by affecting the availability of authorized property forms, creating market and corporate actors and establishing possible economic relationships (Fligstein and Fernandez, 1988; Fligstein, 1996; Carruthers and Ariovich, 2004; and Campbell and Lindbergh, 1990; Marx, 2011). Moreover, cultural-cognitive approaches to economic institutions may question both of these previous accounts by arguing that social processes involving normative and cultural approaches to shaping rationality may be as decisive in the adoption of property rights and economic institutions. The present research examines these hypotheses and emphasizes the importance of distributive conceptions of economic institutions and property rights on the adoption of firm asset-sharing and employee stakeholder arrangements.

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The present research focuses on the 1985 reversal of Michigan’s enforcement of covenants not to compete. This reversal in enforcement allows us to examine an exogenous change in economic institutions without an actual change in human capital. The firm asset sharing and employee stakeholder arrangements of interest, ESOPs, were created by the U.S. Congress in the 1970s as a savings and retirement supplement due to questions about the coverage and sufficiency of Social Security entitlements (Freeman and Knoll, 2008). Over $928 billion in assets are held through broad-based stock ownership, covering twelve million persons and over 10,800 companies (NCEO, 2011). ESOPs are important property rights and economic institution for sharing firm assets with employees and thus make a good proxy for understanding the distributive impact of changes in property rights and economic institutions.

To explore these hypotheses, I utilize both a quasi-experimental model which involves a Difference-in-differences with synthetic controls as well as a count model with panel design. In the quasi-experimental setting involving the random change in Michigan’s covenants not to compete law, I find that the enforcement of covenants not to compete decrease the adoption of ESOP plans. On the other hand in a broader count model with panel design, I find that unionization is not associated with an increase in the adoption of ESOP plans and, thus, contravenes classical theoretical expectations on bargaining power. I argue that the findings related to covenants differ from rational expectations, which would expect a general increase in compensation due to the risk of a significant wage loss from the covenants. I argue that both the covenants and union bargaining scenarios may be more adequately explained by distributive conceptions of economic institutions and property rights which serve to segment, allocate, and distribute powers differently and, thus, result in diverging outcomes. In addition, I also examine cognitive-cultural approaches to property rights and economic institutions, which show that the
change in laws affected the adoption of these arrangements in regions around the state.

The key contribution of the present research is to provide an empirical setting to document the impact of both bargaining power and distributive conceptions of property rights and economic institutions on labor stakeholder arrangements and firm asset-sharing. Second, this research also seeks to deepen theoretical perspectives on the mechanisms related to distributive conceptions; in this case, how the distribution of powers affects distributive outcomes. Following the sociological literature, I argue that how economic agents and property objects are constituted by economic institutions may influence how distributions of bargaining powers align with the interests of institutionally constituted actors and whether they affects bargaining outcomes. These distributive mechanisms of property rights and economic institutions are particularly important because they suggest that bargaining power itself is not a ‘clean’ indicator, but may be shaped by the configuration of property rights and economic institutions.

Generally, the argument proceeds as follows. Section 2 examines the literature on human capital and bargaining power in the adoption of employee stakeholder arrangements. It highlights key theories related to property rights and economic institutions and proposes that rational, distributive, and cultural-cognitive perspectives are important for the present discussion. Section 3 develops my estimation approach based upon the quasi-experimental setting of Michigan’s change in law as well as a broader count and panel model. Sections 4, 5, and 6 detail the findings, conclusions, and limitations of the present research.

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0.2 Theory

Labor Stakeholder Arrangements, Theories of Human Capital Investments and Bargaining Power

Preserving and guarding investments in human capital have emerged as key motivations for firm asset sharing and adopting employee stakeholder arrangements, such as broad-based employee ownership. The argument is that firms and employees need a way to protect both employee and employer investments in unique, firm-specific human capital (Blair, 1999). Theoretically grounded in the economic literature, these arguments rely on the distinction between general versus firm-specific skills (Becker, 1962, 1975). While general skills are those which contribute to a worker’s general human capital, firm-specific skills are those skills which increase a worker’s productivity with only the current employers. Becker (1962, 1975) has previously argued that there would be no firm-sponsored investments in general skills training because the worker could egress with the skills to another firm. Yet, empirical evidence suggests that firms do make general investments in workers such that they may have a real interest in protecting these investments (Autor, 2001; Acemoglu and Pischke, 1997, 1998; Pendleton and Robinson, 2011). The key problem with specific skills is parallel to that of general skills. If the worker makes investments in firm-specific skills, the result is an increase in firm profits. As such, the firm wants the worker to make these investments; however, the worker, knowing that he is not able to gain in the increases in profit, may not commit to make these investments. Therefore, the general issue for human capital investments is how to enable both firms and individuals to make and protect their mutual investments—whether general or specific—in human capital.

Scholars argue that the ownership or property rights in the firm are non-contractual
arrangements that can enable and protect these mutual investments in human capital (Blair, 1995; Robinson and Zhang, 2005). The evidence suggests broadly that employee ownership is associated positively with human capital. Robinson and Zhang (2005) find that workplaces with employee stock ownership report higher levels of human capital than firms without employee stock ownership, noting that “as human capital elements in a firm become more important, employee membership of ESO [employee stock ownership] increases.” They find that employee stock ownership arrangements are more likely to be found in workplaces that depend on employees to make valuable investments in human capital (Robinson and Zhang, 2005). Moreover, Pendleton and Robinson (2011) find that employee share plans are associated with higher levels of training activity and high levels of participation in these plans. Ultimately, these models suggest that a positive relationship should exist between human capital intensiveness and the adoption of broad-based stock ownership.

While the literature on broad-based stock ownership has utilized the literature on human capital investments as a reason for the adoption of these arrangements, related literature has highlighted the mechanism of bargaining power, which is particularly relevant in the contexts of incomplete contracts. Stylistically, in the complete contract setting, wage bargaining in the first stage determines the wage for the whole duration of the relationship, and employers can unilaterally determine investment in human capital (Cahuc and Zylberberg, 2004). Yet, Grout (1984) argues that in incomplete contracts settings, employers make an investment in the first stage, and then negotiate wages and benefits afterwards. Here, bargaining power determines the share of the surplus caused by investments in firm-specific human capital that goes to the worker. Similarly, Aoki (1980, 1984) and others have modeled the firm as a profit-sharing entity between shareholders and employees, departing from neoclassical models of the firm (Moretto
and Rossini, 1995, 1996; Jou and Lee, 2004). Similar to human capital investment theories, these firm-based models suggest that employees "embody skills and knowledge more or less specific to the firm as a result of quasi-permanent association with it" (Aoki, 1980). Aoki (1980) notes that the quasi-permanent associations between employer and employee produce unique economic gains as organizational rent. Employees can exert implicit and explicit bargaining power to split organizational rents and obtain premium earnings above wages (Aoki, 1980, 1984; Moretto and Rossini, 1995, 1996). These premium earnings — which we see as coterminous with firm-asset sharing — are determined through a game between employees and employer, arbitrated by a manager or collective bargaining (Aoki, 1980, 1984). As a classical heuristic, bargaining outcomes thus hinge upon the bargaining power of the stockholders and of the employees.

As extensions of bargaining power theories, strategic management and employee stakeholder theorists provide a parallel account of how bargaining power affect changes in firm governance. Coff (1999) has examined factors that increase the bargaining power of employees including capabilities for unified action, access to information, replacement costs and costs of exiting to stakeholders. Other scholars have noted how the shift to knowledge intensive work increases the balance of power to workers and thus the need for firm asset sharing arrangements (Rousseau and Shperling, 2003; Roberts and Van Steen, 2000). Kochan and Rubenstein (2000) note the insufficiency of previous stakeholder literature that suggests that managerial values and leadership style are key predictors of the emergence of employee stakeholder institutions in firms. They contend that that employee stakeholder arrangements in firms would emerge when potential stakeholders: (1) supply critical resources or assets to enterprise, (2) when value of assets are affected by fate of enterprise, thus, creating property right claims, and (3) when

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potential stakeholder have adequate power to challenge privileged power (Kochan and Rubenstein, 2000). These bargaining power theorists similarly suggest that bargaining power may be as important a mechanism as protecting specific investments in human capital.

Firm Asset-Sharing, Labor Stakeholder Arrangements and the Role of Economic Institutions and Property Rights

Generally, the emphasis of previous theories on employee stakeholder arrangements and firm asset sharing has been on what features of firms and employees are necessary to impel their use. In one case, the interests of firms and employees were important, that is, to protect investments in human capital. In the other case, the role of bargaining leverage in affecting the outcomes between the two was key. Yet, we believe these stories are insufficient because inadequate emphasis has been given to the subtleties of economic institutions and property rights in the adoption of employee ownership arrangements. There is a broad consensus that economic institutions affect economic performance. Yet, economic institutions and property rights come in varying forms across national and subnational contexts (Kennedy, 2011). Even the same economic institution — the corporation, the cooperative, the union, employee institutions — can have different legal and institutional forms (Bagchi, 2007; Kennedy, 2011). Moreover, other relevant laws and economic institutions may curtail or complement the use of particular property rights institutions. From the previous institution-less theories, the assumption would be that the appropriate property rights would always be available, based upon firm-worker interests and conditions that impel these two mechanisms. While previous accounts have explicitly acknowledged the role of ownership, they underplay the forms and mechanisms of how economic institutions and property rights interact with economic decision-making processes.

Generally, scholars across disciplinary perspectives have been keen to the role of
economic institutions and property rights in shaping economic processes and decisions. Traditionally, scholars examined economic institutions as having a regulatory effect on markets that were in some sense naturally occurring; these expositions saw economic institutions as attending to market failures in the spirit of Breyer (1982) where justification for regulations were addressing monopoly power, excess profits, spillovers, inadequate information, or excess competition. Moreover, many of these approaches emphasize how these regulatory regimes arise, either through interest-driven action, efficiency, regulatory capture, or other mechanisms. Later expositions of economic institutions and property rights have moved beyond an emphasis on economic institutions as regulative of market interactions to seeing economic institutions as constituting markets themselves often because of the political, social, and institutional processes involved in creating the economy (Edelman and Suchman, 1997; Dobbin and Dowd, 1997). Constitutive approaches extend beyond regulative approaches, by seeing economic institutions as “taken-for-granted labels, categories, and ‘default rules’...[which] determine what types of organizations come into existence and what type of organizational activity gain formal recognition” and “establishes which organizations can act as corporate ‘persons’ and which can act only as collections of separable interests.” (Edelman and Suchman, 1997) With this focus on how economic institutions and property rights constitute markets, three perspectives have emerged in how economic institutions and property rights shape the economy. One perspective, parallel to the incomplete contracts perspectives presented above, views economic institutions from rational-material perspectives where transaction costs and markets are key. The cultural-cognitive perspectives emphasize economic institutions and property rights as social processes emphasizing normative, cultural, and isomorphic concerns. A third perspective, paralleling bargaining power perspectives, emphasizes economic institutions and property rights as
distributive institutions. These understandings about the institutional environment—particularly about economic institutions and property rights as constitutive and encompassing the three perspectives—have not been fully utilized in understanding the adoption of firm asset sharing and stakeholder arrangements (Kaarsemaker et al., 2009). We argue that an improved explanation for the adoption of employee stakeholder arrangements and firm asset sharing should understand the role of economic institutions and property rights in affecting these economic processes and decision-making.

**Rational-Material Perspectives**

Rational-material perspectives on economic institutions and property rights focus on their role in responding to the operation of markets and its related costs. Edelman and Suchman (1997) argue that the transaction cost literature anchors a rational-material perspective to the constitutive dimension of economic institutions by addressing “the role of legal categories, capacities, and ‘default rules’ in organizational life.”

In transaction cost theories, extensive costs arise in the market from learning and haggling over terms of trade, which can be significant if the transaction is long term (Hart, 1989). Moreover, the complexities of specifying the contracts in detail will result in contractual incompleteness and thus leave room for ex-post bargaining. Williamson (1971) argues that transaction costs are particularly important where actors make relationship specific investments. These investments as “the fundamental transformation” are important because after the investments are made, parties are locked in with each other and, thus, markets may not provide adequate information about opportunity costs.

One general way to deal with contractual incompleteness and reduce costs is by allowing one party to have authority and suppressing the price mechanism (Hart, 1989). Grossman and
Hart (1986) argue that ownership is the key to firm integration because a firm is composed of assets, and ownership entails the residual rights of control of an asset. Importantly, these ownership rights influence ex-post distribution and thus affect ex-ante investments (Grossman and Hart, 1986). The general idea is that she who holds ownership will know ex-post distributions and thus be able to make the appropriate ex-ante investments.

Ownership and its incentives maximize investment in human capital (Zingales, 1998; Rajan and Zingales, 1998). Effectively, the property rights approach to the firm parallels arguments previously presented about protecting investments in human capital. The underlying assumption is one of incomplete contracts where ownership serves to resolve ex-post difficulties and encourage ex-ante investments. The broad hypothesis from this literature is that economic institutions and property rights would continue to operate to protect investments in human capital.

**Cultural-Cognitive Perspectives**

A second set of approaches to property rights and economic institutions, broadly embraced as sociological institutionalism, view institutions as cultural-cognitive manifestations (Fligstein and Choo, 2005). The core of institutional theory in sociology is that structures are symbolic phenomena where rationality is socially constructed and, therefore, less focused on the efficiency aspects of property rights and economic institutions (Dobbin, Sutton, Meyer, and Scott, 1993). These neo-institutional approaches envision open systems where cultural and

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1 Hart and Moore (1990) examine the effects of ownership rights on employees, rather than management. They argue that workers’ efforts are often asset-specific such that actions taken today toward productivity only pay off if they have access to the asset tomorrow. Contract incompleteness results in the worker’s current action being dependent on marketability.
normative elements from the institutional environment influence the internal structuring of organizations (Sutton et. al, 1994).

Early accounts of neo-institutional theory emphasize how organizations conform to legitimate models of highly institutionalized environments (Meyer and Rowan, 1977; DiMaggio and Powell, 1983; Sutton and Dobbin, 1996). Under the constitutive view of neo-institutionalism, Edelman and Suchman (1997) argue that at least three views have emerged: normative, cognitive, and coercive accounts of institutions. Guided by early neoinstitutional accounts, normative perspectives see institutions as providing normative values and ethics which guide individual actions (Selznick, 1996; Edelman and Suchman, 1997). Cognitive accounts see institutions as effecting action because they are more natural, legitimate and appropriate. Finally, coercive involve pressures through politics and law; however, these pressures are hard to distinguish from more rational or material perspectives (Edelman and Suchman, 1997).

A number of neo-institutional scholars have empirically examined the role of economic institutions in structuring the employment relationship and the firm. Some scholars have examined how law and public policy interacts with organizations and employment relations focused on contexts where there was some type of legal threat or uncertainty that needed resolution. Edelman (1990) argues that threats posed by the legal environment, through direct and indirect effects, caused organizations to implement due process procedures that looked like legal models of governance. Dobbin, Sutton, Meyer, and Scott (1993) examine how public policy affects the construction of internal labor markets. They argue that equal employment opportunity law, personnel managers, and courts jointly shaped internal labor markets as legitimate ways to prevent discrimination and enable effective allocation of human capital (Dobbin et. al, 1993). They propose that while policy and law seldom dictate individual
behaviors, they can lead to modes of organizational compliance (Dobbin et al, 1993). Other scholars argue that a shift in normative environment can shift how law is enacted. Edelman and Suchman (1997) examine how the civil rights movement and mandates of the 1960s expanded due process protections as organizations sought to conform to the changed normative environment. Others demonstrate how institutionalization can not only improve individual rights in the economy, but also reduce individual rights in the economy. For example, Sutton and Dobbin (1996) demonstrate the role of institutional processes in the diffusion of grievance procedures and employment at will laws, respectively rights-enhancing and rights-negating systems.

The general hypothesis from sociological institutionalism is that economic institutions and property rights operate through more cultural-cognitive mechanisms and social processes to affect economic outcomes. Particularly, a shift toward a rights enhancing or constraining law may encourage the adoption if the law, regardless of their effects. Empirically, these effects would be increasing over time. Moreover, we may see these effects in places where the law does not coercively reach, but may normatively influence.

Distributive Conceptions

If previous claims that bargaining power affects bargaining outcomes are true, it may suggest a conception of economic institutions and property rights as more distributive. Scholars across disciplines have argued for the importance of distributive conflict, noting that it should be the centerpiece of institutional analysis (Knight, 1997). They argue that property rights and the organization of economic production are largely distributional because they are a product of social conflict (Knight, 1997). In some approaches, the distributional effects of institutions are seen as a key mechanism to support feedback effects, which facilitate the organization and
empowerment of certain groups at the expense of other groups (Thelen, 1999). While distributive conceptions of property rights and economic institutions originate from different disciplinary locations and have different explanatory purposes, they contain a few core assumptions about the nature of property rights and economic institutions as central to distributive outcomes. These common assumptions have important implications for theories of the firm as well as stakeholder and firm asset sharing theories. These common assumptions of distributive conceptions of property rights and economic institutions include: (1) property rights are unequally distributed, (2) property rights are pre-configured with state legitimization, and (3) property rights allocate power.

Most distributive conceptions of property rights and economic institutions assume that property and economic institutions are pre-distributed. This is reflected in an extensive literature related to the role of unequal ownership in societal inequality. Early classical scholars saw the ownership of property and the means of production as key distinguishing and grouping mechanisms between individuals (Webber, 1978; Marx, n.d). A broad set of studies see wealth inequality, through property ownership, as having important micro-level effects and broader macro-level effects. Sociologist and political scientists examine the inequality of property ownership on political power, mobility, life conditions, and conflict (Spilerman, 2000; Sorenson, 2005; Lupu and Pontusson, 2011; Kentworthy and Pontusson; 2005). Scholars have also noted how previous wealth, often linked with other group characteristic, affect future wealth and inequality through inheritances, return on assets, and savings patterns (Spilerman, 2000; Gittleman and Wolff, 2004; Shapiro and Oliver; 2006). Similarly, classical economic theory views individual behavior as affected by the individual’s level of starting wealth, with many studies analyzing wealth limitations under the concepts of credit and liquidity constraints.
Liquidity constraints assume that there are imperfections in capital markets which limit the activities of those with low wealth. A number of studies agree that liquidity constraints bind the behavior of those with low wealth, upset intertemporal consumption, and affect entrepreneurialism and entrepreneurial survival (Evans and Jovanovic, 1989; Evans and Leighton, 1989; Hotlz-Eakin, Joulfaian, Rosen, 1993).

A general conclusion of the literature on the pre-distribution of property rights suggests that various structural limitations are imposed on economic processes and decision-making. First, pre-distributed wealth means that individuals may lack the means to enter into efficient bargaining relationships, have fewer options for creating productive and entrepreneurial relationships, and may deter employees from exiting troublesome employment relationships because of the role of wealth in enabling consumption during non-working periods. These assumptions contrast with assumptions of perfect credit markets where previous property right distributions would be unimportant in economic decision-making. They also contrast with assumptions of efficient bargaining.

Second, most distributive theories of property rights and economic institutions highlight that previous conflicts shape them into specific forms and configurations. Most interest-based political economy theories of state and economy emphasize the role of particular actors and groupings of actors in affecting the structuring of state and economic institutions (Swenson, 1991; Esping-Anders, 1990; Swenson, 1990; Estevez, Iverson, and Soskice, 2001; Hacker and Pierson, 2010). Political scientists under a distributive conception argue social conflict is key in producing the distributional effects of property rights and the organization of economic production (Knight, 2004). Sociologists note how conflict shapes economic institutions and labor

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2 Yet, other economists argue that the costs of entering entrepreneurship and self-employment are low and thus not real barriers (Hurst and Lusardi, 2004).
market institutions (Sorenson, 2005; Wright, 2000; Fligstein and Fernandez 1988; Fligstein, 1996). Other scholars argue that previous distributional outcomes influence de facto political power and thus the ability to structure future economic institutions (Acemoglu, Johnson, and Robinson, 2005). A key difference in these perspectives often involves the mechanisms of the social conflict and the nature of institutions, but all agree that economic institutions are shaped and configured by this conflict.

Implicit in this pre-configuration of property rights is the role of the state in legitimizing these configurations of property rights and economic institutions. Economic relations are traditionally conceived of as dyadic relationships between actors in the contractual view; however, because economic institutions involve shaping and enforcing power of the state, these relationships involve more triadic relations of the state (Carruthers and Ariovich, 2004). In fact, sociologists see property rights as giving the state, even a fragmented U.S. state, an unrecognized source of strength within the economy (Campbell and Lindbergh, 1990). Due to state legitimization and authorization, property rights are pre-configured so that they are somewhat resistant to change, are enforced by the agents of the state, and implicate the state in maintaining or generating the inequality effects of property rights and economic institutions (Campbell and Lindbergh, 1990; Sorenson, 2005). The implication of this pre-configuration view is that property rights and economic institutions, once established, are hard to change before, during, or after bargaining. Therefore, the contracting and bargaining space are as likely to be occupied by pre-written, structured contracts based upon the property rights order.

A third key assumption of distributional conceptions is that property rights and economic institutions are tightly coupled to processes of power (Campbell and Lindbergh, 1990; Carruthers and Ariovich, 2004; Acemoglu, et. al 2005). Scholars have traditionally viewed power over
things as allocations of power over people because owners of productive property can prevent others from using it (Marx, n.d; Weber, 1978; Campbell and Lindberg, 1990; Carruthers and Ariovich, 2004). The links between economic institutions and power have long been explored within particular economic institutions. Labor control theorists argue that organizational rules serve “to contain and appropriate labor power” (Clegg, 1981; Sutton and Dobbin, 1996). Sociological rent theorists argue that a change in laws and conceptions of the firm as an economic institution shift power between economic actors, for example within the financial sector which enabled them to accumulate a larger share of national income (Sorenson, 2005; Tomaskovic-Devey, and Lin, 2011). Others examine how state licensing, credentialization, certification, and unionization serve to increase occupational power through non-market mechanisms of closure whereby workers are able to limit the supply of other workers (Weeden, 2002). More recently, political economists have argued that distributive outcomes arising from economic institutions shape political processes and thereafter determine the future structuring of political institutions and the shape of economic institutions (Acemoglu, et al, 2005).

Placed against this literature, the present inquiry highlights two constitutive processes of property rights and economic institutions and how they distribute powers: (1) by defining property objects and (2) by creating economic actors and agents. Economic institutions allocate, segment, and distribute powers by defining property and economic objects. Carruthers and Ariovich (2004) highlight the basic dimensions of property rights as (i) what can be owned, (ii) who may own, (iii) what can be done with property, and (iv) who can enforce rules related to property. Each of these dimensions represents formal allocations of powers into and over objects and into social relationships. The relevant economic objects are varied as societies permit different things to be owned based on varying cultural and moral conceptions (Carruthers and

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Arivioch, 2004). Importantly, these objects do not have to be physical as the modern shift in property rights has been from only traditional ownership (land and physical objects) to intangible objects (bonds, patents, trademarks) (Carruthers and Ariovich, 2004).

However, these dimensions emphasize that property rights and economic institutions determine which actors can do what vis-à-vis other actors with these economic objects. Property rules determine who can establish a property object, how it can be used, whether it can be passed to others, and who can enforce (Carruthers and Ariovich, 2004). Additionally, property rights may constrain or enable activities by excluding powers or arrangements that would have been contractually preferred or, alternately, creating more extensive powers.

An important aspect of how property rights allocate power is not unitary, but may be segmented around various dimensions of a property object and toward specific purposes. As described earlier, the state often is key in enforcement of property relationships, but also often shapes standards and precedent related to how powers can be used. Moreover, legal articulations around the use of property may restrict or expand what may be done with property in relationship to other individuals (Carruthers and Ariovich, 2004). For example, *Citizens United v. Federal Election Commission, 558 US 310, (2010)* now permits corporations to use their treasury funds for direct political advocacy, thus expanding corporate power in U.S. elections.

In addition to creating property objects, scholars have also argued that economic institutions are important in how they allocate powers to create new economic actors and agents (Fligstein and Fernandez, 1988; Fligstein, 1996). Scholars highlight the importance of economic

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3 Functionally, the creation of property or economic objects may serve multiple purposes. Without this state allocation of powers to property objects, certain arrangements may be too costly to create. Secondly, they may serve to provide categories and symbols for economic sense-making. The availability of particular property rights may provide the identification, consistency and certainty that traditional contracting may not address. Moreover, they may determine status of individuals in relationship to each other. Yet, the present argument emphasizes that property and economic objects represent particular allocations of legal powers granted to certain actors over an object or context in relationship to other actors, all of which is provided some level of enforcement by the state.
institutions in defining and establishing economic actors and agents, from corporations to unions, which influence the shape of labor market bargaining (Fligstein and Fernandez, 1988; Fligstein, 1996). Others note the role of economic institutions in enabling large corporations and private organizations to dominate economic governance (Campbell and Lindbergh, 2004). Legal scholars have argued that corporate forms are more than mere aggregation of individuals, but that corporate forms, such as corporations, contain unique legal allocation of powers, which may include legal personhood, perpetual status, and for private entities limited liability and other unique entitlements (Blair, 1999; Hansmann and Kraakman, 2000). Similar to the creation of new objects, the creation of new economic actors determine the powers of actors through similar dimensions as property objects, but often with more expansive powers.

Importantly, these state and institutional allocations of powers to create economic agents result in unique configurations of interests (Swedberg, 2003). These interests arise from how allocations of legal power configure the features and processes of these economic actors. One clear example is the allocation of powers related to governance. A key difference between the corporation and the union is the allocation of governance power. A union may have legal powers allocated on the basis of membership through a one member-one vote basis. Corporations are governed by quasi-ownership rights based on the level of equity investment, even though it may separate formal ownership and control. These differences in allocations of power effect governance and structuring and, thus, produce systematic differences in interests.

One premise that results from the convergences of these two processes of creating property objects and economic agents is that the creation of new property objects allocates powers differently between actors. The assumption is that a property object may be better suited to one agent's interests more than another agent. Similarly, it may be categorically better suited
to a set of actors' interest versus another set of actors, for example firms versus individuals or unions versus firms. There may be certain complementarities between the legal powers and purposes of the economic actor and the property object.

However, it is not necessary that a property right be utilized for its power to be allocated, but simply that it exists. Some configurations of powers and property rights are extremely difficult or impossible to contract without the formal existence of the property right or economic institution. Without corporate law and the state-provided powers of limited liability, perpetual existence, and other features, corporations would be less feasible. And, because of their existence, actors with congruent interests are likely to utilize these property objects. Under neoclassical assumptions, economic relationships would involve primarily individuals contracting with each other. However, the definition of economic objects and economic agent shifts the alternatives available for realizing specific interests and purposes as well as the arrangements of powers of one set of actors in relationship to others. For example, the wealthy can finance large corporations which they govern financially rather than use simple or complex contracts to advance their economic purposes. This legal existence assumption aligns with power-dependency conceptions which typically depict power as inversely proportionate to the number of alternatives (Emerson, 1962). The argument, therefore, is that the mere existence or creation of a property right begins the process of reallocating and distributing powers among economic agents.

Within the present argument about stakeholder arrangements and firm asset-sharing, the availability of appropriate stakeholder and firm asset-sharing property objects would be positively associated with the increased adoption of these mechanisms. The idea is that where appropriate stakeholder property rights exist, there will be an increase in the types of powers that
support firm asset sharing and employee stakeholding. The correlate is that the lack of a set of property rights or the availability of substitute economic institutions would reduce the adoption of these property rights forms. Effectively, the mere availability of substitute economic institutions would reallocate legal powers from firm asset sharing and employee stakeholding. Therefore stakeholder-reducing or substituting property rights are likely to decrease bargaining power related to the adoption of stakeholder arrangements.
0.3 Research Context

Description of Data Set

To test how distributive conceptions may shape bargaining power in stakeholder arrangements and firm-asset sharing, I create a dataset of employee stock ownership plan adoptions for 50 U.S. states for the period 1981-1990. This results in a data set with 500 state-years and 12,980 firm-years. This time period is utilized because it captures the period during which the key legal changes occurred, but also precedes a significant change in the laws regarding broad-based stock ownership. The dependent variable, the adoption of ESOPs, was obtained from the National Center for Employee Ownership, which collects data from U.S. Department of Labor's (DOL) Employee Benefits Security Administration. We supplement this dataset with information on state economic conditions from the Current Population Survey, the Bureau of Economic Analysis of the U.S. Department of Commerce, and the Longitudinal Business Database of the U.S. Census. In addition, I reorganize a streamlined dataset of over 882,886 observations in the IPUMS American Community Survey to create state by time proxies for highly educated and highly skilled indicators for educational and occupational groups.

In the following sections, I highlight the key variables of interest including broad-based stock ownership, covenants not to compete, and unionization measures, emphasizing predictions from a distributive conception of economic institutions and private property, and particularly where they may contrast with classical bargaining power predictions. In addition, I also briefly highlight key covariates and controls utilized.
Employee Stakeholder Arrangements and Firm Asset Sharing – Dependent Variable

I utilize the adoption of ESOPs as the central dependent variable for employee stakeholder arrangements and firm-asset sharing. ESOPs emerged under Congressional concerns over the viability of the Social Security System (Freeman and Knoll, 2008). Originating under the leadership of San Francisco Attorney and investment-banker Louis Kelso and U.S. Senator Russell Long of Louisiana, these plans aimed to broaden the ownership of stock among employees, increase performance of the companies, and spur the productivity of the employees (General Accounting Office, 1986). As a supplement to Social Security, ESOP legislation was part of the Employment Retirement Income Security Act (ERISA) of 1974 (Freeman and Knoll, 2008).

The act permits companies to establish ESOP trusts that hold the stock of a company on behalf of the plan’s participants. The company is able to appoint a fiduciary who manages the plan on behalf of its participants. Additions to the Act have included a number of nondiscrimination requirements to ensure that most employees of a firm have an opportunity to participate in plans, that the plans operate in their interests, and that a significant time period is not required for vesting.

ESOP legislation also includes a number of benefits and tax incentives. Leveraged ESOPs can uniquely borrow money to buy shares. The company’s contributions of stock to ESOPs are tax deductible, direct cash contributions are deductible, and any repayment of a loan taken out by the ESOP to buy the company’s shares are tax-deductible and done in pre-tax dollars. Moreover, dividends are tax-deductible. There also are additional possibilities, depending on the corporate form, for other types of tax deferrals and having the ESOP shares not being taxed at the federal level. Employees pay no tax on the contributions to the ESOP, only the
distribution of their accounts, and then at potentially favorable rates. The significant tax benefits of the ESOP make it both a way to provide stock ownership to employees, but also a corporate finance option. The plans can be used to provide working capital, carry out a recapitalization, buy out a larger shareholder or finance investments.

As mentioned previously, for this research, I utilize the adoption of ESOPs within all U.S. states for the period 1981-1990. Firms are required annually to file form 5500 with the IRS, which includes information on plan initiation, location, participation, distributions, and contributions. As part of its ERISA responsibilities, the DOL’s Employee Benefits Security Administration, the Internal Revenue Service, and the Pension Benefit Guaranty jointly developed this form and collect the data, which is generally maintained for seven years. The National Center for Employee Ownership has annually collected this data from the U.S. DOL to create a combined dataset of all firms with ESOPs. The present dataset creates a balanced panel of 50 states with the numbers of these plans initiated for each state from 1981 to 1990, which generates 500 state-year observations. Figure 1 and 2 provide broad perspective on the distribution of these plans and their adoption during the 1981-1990 period. During this period, firms within the U.S. adopted a total of 1,298 trusts. As shown in Table 1, the average state has 2.596 trusts adopted with a standard deviation of 2.989. The maximum number of trusts adopted during this period is 15. The average stock held by each plan is 8 million shares. The average number of people in each plan was 10,401 persons. Figure 1 demonstrates that the adoption of ESOPs has a distribution similar to count variables. Particularly relevant for this research is Figure 3, which demonstrates the change in the adoption of ESOPs during the 1985-1987 period. A key issue in this project is whether the change in the enforcement of covenants not to compete caused the change in adoption of ESOP trusts.

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Covenants Not to Compete

The present research examines the 1985 change in Michigan law, permitting the public enforcement of covenants not to compete. Covenants not to compete ("non-compete agreements") are agreements, as a condition of employment, that restrict the activities in which an employee can engage after his/her employment ends. These agreements aim to protect the interests of the employer. They are governed by state contract law and thus vary across the country. The basic legal conflict in these agreements emerges within the opposing goals of freedom to contract and contractual restraints on trade (Pynnonen, 1994).

Many states have allowed their courts to rule on non-compete agreements, but Michigan chose to leave these decisions to legislators. This decision resulted in the Michigan statute having not changed from 1905, when these covenants were ruled void, until 1985 (Pynnonen, 1994; Marx, Strumsky, and Fleming, 2009). In 1985, the Michigan legislature repealed the previous statute and permitted enforcement of covenants not to compete under the Michigan Antitrust Reform Act.

A number of researchers have examined the role of non-compete agreements on employee mobility, human capital development, and adoption of broad-based stock ownership. Marx, Strumsky, and Fleming (2010) argue that non-compete agreements affect employees by decreasing their mobility. They also find that with enforcement of non-compete agreements, workers who have developed firm-specific human capital are 15.4% less likely to change employers (Marx et al, 2010). Other researchers have found that in enforcement regions, when individuals with greater human and social capital leave their companies, they are also likely to leave the region (Marx, et al, 2010). Marx (2011) finds that non-compete agreements shape labor markets through "career detours" where individuals change industry for fear of being
prosecuted and “seek shelter” where individuals work for large entities to protect against legal claims. In terms of significance, Marx (2011) argues that nearly half of all technical professionals are subject to non-compete agreements by employers, thus suggesting its importance.

Garmaise (2011) develops an index of non-compete agreement variation by state and finds that the stronger enforcement of non-compete agreements ensures executive stability, shifts executive compensation toward the use of salary, and reduces capital expenditures per employee. Relative to our interest, Garmaise (2011) did not find that the use of stock options for executives varied with noncompetition enforcement. Kedia and Rajgopal (2009) examine the impact of location on the use of broad-based option grants. They find location matters through state use of non-compete agreements, firm stock price movement, and the highly educated workforce. While Kedia and Rajgopal (2009) utilize Garmaise (2011) index on non-compete variation, they do not investigate, theoretically, the distributive role of economic institutions as an explanation for the impact of non-compete agreements. Moreover, our findings utilizing the Garmaise (2011) index demonstrate that it does not provide any strong conclusion on the effect of covenants not to compete.

Unions and Employee Stakeholder Arrangements

Unions figure strongly into the bargaining power of workers. Not only do they bargain directly for increasing wage and compensation benefits for the less educated, younger, and junior workers, but they also impact non-union firms who seek to avoid unionization by implementing higher wages and better working conditions (Freeman and Medoff, 1984; Farber, 2005). Scholars argue that the union decline explains a significant part of the decline in wage growth across OECD countries as well as rising inequality (Western and Healy, 1999; Western and Rosenfeld,
2011). The U.S. has the lowest ranking among OECD countries with 16% of U.S. workers being in unions and 18% covered by collective bargaining contracts.

Scholars note that labor unions have maintained a mixed relationship with employee stakeholder arrangements, such as ESOPs, because these plans have been more associated with firm interests than worker interests. Early views found that firms wanted to use employee ownership to reduce unionization efforts; in welfarist versions of capitalism in the 1920s, employee stock ownership was used as a way to block the unionization of workers (McCarthy et al, 2011). Broad-based stock ownership may reinforce worker identity with the firm, which may undermine industry-wide standards for labor (McCarthy et al, 2011). Additionally, there are concerns that firms may want try to unload unprofitable or failing firms onto workers (McElrath and Rowan, 1992).

The union’s pecuniary interests are also important. Unions prefer that their compensation and benefits be incorporated in their collective bargaining contracts. Also, the National Labor Relations Act requires that the compensation and accumulation of benefits feature of ESOPs only be mandatory during collective bargaining. Unions often prefer financial compensation programs that add to base pay and pension, rather than put pay and retirement at risk (McCarthy et al, 2011). Moreover, the differential pay across facilities associated with employee stock ownership may undermine the interests of equal pay for equal work that unions advocate (McCarthy et al, 2011). Legally, firms are able to exclude union members from the plan (Bagchi, 2007).

Empirically, I utilize unionization rates within the state to control for the effects of unions on broad-based stock ownership. This indicator allows us to control for state level effects of
unionization. However, it does not allow us to see the union specific mechanisms or systems through which these effects may be occurring.

Additional Covariates

In addition, I utilize a number of covariates to capture the effect of varying aspects of the state economy. I use a set of controls to capture key time variant factors for the state economy including: the total population measured in individuals, the total state income measured in dollars, net earnings per capita measured in dollars, wage and salary earnings in dollars, the unemployment rate, and the per capita income. The population and total income measures allow me to capture the effects of labor productivity. In order to capture the effect of human capital, I utilize a few indicators. First, following Acemoglu and Autor (2012), I utilize the percentage of above bachelor degree population. Second, I also utilize the percentage of professionals and technical workers.

I also utilize a set of controls for the state of the financial markets. A key concern could be other legal changes, which may affect the ability of firms to receive financing. Alternatively, financial markets could have been experiencing significant fluctuations, which had some effect on broad-based stock ownership adoption. Following Morgan, Rime, and Strahan (2003), I utilize the housing price index, which acts as a measure of collateral in the state. I utilize state-based indicators for financing because a significant number of states during this period were more independent of national sources of finance (Morgan, Rime, and Strahan, 2003). In addition, I utilize dividends and interests by state to capture similar financial effects. Jou and Lee (2004) have extended Aoki’s model from the monopoly context to the oligopoly context with competitive pressures. Their conclusion is that a firm facing more competitors will grant lower
shares of profits to employees (Jou and Lee, 2004). Therefore, I also utilize an indicator to capture the population of businesses.
0.4 Research Model and Hypotheses

The use of an informal, conversational game model is helpful to bring together our previous discussion of the literature to describe more specifically the effect of a change in law on firm asset sharing and the adoption of employee stakeholder arrangements and to distinguish between the three hypotheses. Imagine the classical two-period model of bargaining. The first period involves firms and workers contracting and making investments and the second period involves production outcomes and allocation of benefits.

In order to fit the present theory, we add a period zero which involves the random choice of legal regime. In time period zero, the legal regime is established with one regime representing only ESOPs and another with ESOPs and covenants not to compete. In the first period, workers and firms contract and make investments. At this stage, firms contract with wages plus some share of the profits and the firm. Firms share profits through the adoption of ESOP plans. In the second period, production occurs and the firms and workers receive their share of the profits. Workers receive the share of the profits and the firm according to their bargaining power.

With firm specific human capital, firms want to incentivize workers to make investments in firm specific human capital. Yet, workers know that the benefits of these specific investments will go only to the firm because they are not valuable in the market. Using backward induction, the firms contract via ESOPs in the first period as firm asset sharing devices and as credible commitments not to hold up the worker. In the second period, workers receive the allocations through these ESOPs. With general investments in human capital, firms realize that any general investments made in human capital will walk away from the firm in the second period. This is because general investments in human capital are reflected in an increase in the worker’s market
wages. Typically, workers subsidize investments in human capital in previous periods by taking lower wages and receive the benefits of these subsidies in later periods.

In the ESOP only regime, the firm can primarily decide whether to share the assets of the firm based upon its need for firm specific human capital. As we noted earlier, the share of profits and the firm is represented by the adoption of ESOPs and determined by the bargaining power of employees. In the covenants regimes, the firm decides whether to utilize the covenants not to compete based primarily to make and protect general investments in human capital. Covenants not to compete may be used with firms which must reveal their intellectual property with their employee, as a form of investment in general human capital, in order to promote the development of more intellectual property.

Importantly, the use of covenants not to compete by firms should increase the risk of a worker. That is, if a worker contracts with a covenants not compete, then they would need to be compensated for the added risk of a below market wage if they left the present company. Part of the compensation for the risk may occur through increased firm asset sharing during the first period contracting phase. Effectively, worker power should increase with the covenants not to compete regime because the increased risk to workers would require a higher level of asset sharing and stakeholding in order for them to make these deals. Therefore, firms that use covenants not to compete because of need to invest in general human capital or protect intellectual capital should therefore increase their firm asset sharing devices, such as ESOPs, due to the increase in worker risk and worker power.

(H1 - Rational Hypothesis) The hypothesis, under rational-material perspectives is that covenants not to compete regime should at least maintain the rate of adoption of ESOPs.
Under a distributive conception, the mere creation of economic institutions and property rights allocate, segment, and distribute powers related to firm asset sharing and employee stakeholding. In this case, the enforcement of the covenants represents a structural re-allocation of powers from the previous allocation of powers. The covenants provide firms with an alternative to realize and protect their economic interests and realize their economic purposes. The availability of covenants not to compete increases the alternatives available to protect firm side interests; alternatives which limit employee powers. It is important to remember that this reallocation is occurring in a situation of pre-distributed property rights, which involve credit and liquidity constraints, as well as other distributive features that create inefficient bargaining for employees and opportunities for moral hazard for firms.

(H2 – Distributive Hypothesis) The distributive hypothesis is that the re-allocation of powers involved in the enforcement of covenants not to compete reduces the bargaining power of employees related to firm asset-sharing and employee stakeholding and thus decrease the adoption of ESOP plans.

Under the distributive conception, we also contend that powers are shaped by how property rights and economic institutions allocate and segment within property objects and economic agents. As discussed previously, firms have the ability to unilaterally initiate ESOPs. ESOPs can be initiated to exclude union workers from the agreement and from participating in ESOP governance.

(H3 – Distributive Hypothesis with Unions) Union bargaining power will not necessarily have a positive association with ESOP adoption.

The cognitive-cultural hypothesis proposes that mechanisms other than rational efficiency mechanisms or quasi-rational distributive mechanisms may be involved in the uptake
of economic institutions after a rule change. In this perspective, the legal change encourages normative or cognitive shift of appropriateness and legitimacy. What is difficult in the present case is determining the difference between a mere normative shift or a distributive shift. Therefore, I argue that a normative shift may be best explored in nearby subnational contexts which are not directly affected by the rules. I employ a regional indicator that captures the effect of the region surrounding Michigan including, Wisconsin, Ohio, and Illinois.

(H4 – Cognitive-Cultural Hypothesis) The adoption of ESOP in nearby states may be negatively affected by a shift in covenants not to compete in Michigan.
0.5 Estimation Strategy

The current research assesses the causal impact of a change in property rights — the enforcement of noncompetition provision in Michigan — on the adoption of firm asset sharing and employee stakeholder arrangements. In the quasi-experimental setting of Michigan’s change in law, I utilize a Difference-in-differences estimator. Difference-in-differences estimators are a version of fixed effects estimator using more aggregate data (Angrist and Pischke, 2008). The key identification assumption for Difference-in-differences estimation is parallel trends in the treated $Y_t^1$ and nontreated groups $Y_t^0$ such that it is only the treatment which causes the deviation from the common trend (Angrist and Pischke, 2008). Although treated groups can differ, this should be captured by the fixed effect for the unit $i$ (Angrist and Pischke, 2008). More formally

$$E[Y_1(1) - Y_0(1)|D = 1]$$

$$= \{E[Y(1)|D = 1] - E[Y(1)|D = 0]\}$$

$$- \{E[Y(0)|D = 1] - E[Y(0)|D = 0]\}$$

where treated groups are $D = 1$, control groups are $D=0$, the pre-period $t=0$, and post-period, $t=1$.

Card (1990) utilized the Difference-in-differences estimator to model the effect of immigration on unemployment following the Mariel boatlift from Cuba to Miami. Additionally, we will utilize a Difference-in-differences estimator with synthetic control methods (Abadie, Diamond, and Hainmueller, 2011). Synthetic control methods resolve problems with traditional comparative case studies where control groups are arbitrarily selected. Synthetic control methods create synthetic control units that are a weighted average of the available control units that approximate treated units (Abadie, et al 2011).

Additionally, the present research will utilize a count model process with a Difference-in-differences estimator to understand other features of the hypothesized relationships. A key
feature of the data set is that the trusts are modeled as count variables and has a panel structure. Count variables take on non-negative integer values, have no natural upper bound, and have population members who will be zero (Wooldridge, 2001). Traditional linear OLS models are generally found not to fit the assumptions of the data generating process for count data\(^4\). Additionally, OLS models have limitations when used with panel data\(^5\). Therefore, the methodological response to the count and panel feature of the data is to utilize a poisson process augmented by a fixed effect strategy. This approach relies on Hausman, Hall, and Griliches (1984), who have modeled a poisson process in panel data sets, examining the research and development expenditures of firms and number of patents applied for and received. A poisson model is used for count data where the response variable is modeled as having a poisson distribution.

The assumptions for a poisson process include equidispersion, constant rate, and independence assumptions. Equidispersion assumes that the conditional variance is equal to the mean. The constant rate and independence assumptions of the poisson distribution assumes that event outcomes are independent over time such that when an event occurs it does not affect the probability that the event occurs in the future. The variance of the poisson distribution is only equal to the mean if the constant rate assumption and the independent assumptions are true. If

\(^4\) In part, because the dependent variable is only zero or greater than zero with count variables, its expected value conditional on the independent variables \(X_{ij}\) should be nonnegative for all \(X_{ij}\), but the OLS estimator can result in values of the \(X_{ij}\) such that the predicted value of dependent variable \(Y_{ij}\) is negative (Wooldridge, 2002). In addition, when the dependent variable \(Y_{ij}\) can take on the value zero with positive probability, the transformation of \(\log*Y_{ij}\) cannot be used to obtain a model with constant elasticities or constant semi-elasticities (Wooldridge, 2002).

\(^5\) OLS processes assume that the variance of the errors is the same for each unit of analysis by the homoskedasticity assumption (Castilla, 2007). Moreover, OLS models assume that errors are not correlated across sections or cases with any of the independent variables (Castilla, 2007). However, cross-sectional and cross-time data are known to have observations that may not be independent from each other leading to erroneous correlations across panels and time (Castilla, 2007). While heteroskedasticity does not bias the OLS estimators, it does make the standard errors inefficient (Castilla, 2007).
these assumptions are interrupted, then a negative binomial process may be used where the variance is greater than the mean, traditionally known as overdispersion (Wooldridge, 2002). It is also possible that data may have a larger frequency of zeros than what is expected from a Poisson or negative binomial processes. In such cases, a zero inflated count process may be helpful because it assumes that there are multiple processes: one for the count process and one that produces the additional zeros.

A key opportunity is the panel structure of this data which allows us to examine more individual level heterogeneity, in this case state level heterogeneity (Cameron and Trivedi, 1989). Here we utilize the Poisson fixed effects model instead of the random effects model. Traditionally with count data, the researcher would need to determine which count models — Poisson, negative binomial, zero-inflated — best fit the data. However, Cameron and Trivedi (1989) argue that because using negative binomial and zero inflated models are used to control for unobserved heterogeneity, these techniques may not be necessary since fixed effect longitudinal models already control for unobserved heterogeneity (Cameron and Trivedi, 1989). As such, I will utilize fixed effects with both Poisson pooled and fixed effect models. More formally, a Poisson model where the response variable $Y_{it}$ is modeled as having a Poisson distribution.

$$Pr(Y_{it} = y_i | \lambda) = \prod_{i=1}^{n} \frac{e^{-\lambda} \lambda^{y_i}}{y_i!}$$

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6 Generally, the alphais are unknown parameters (Cameron and Trivedi, 1989). It is notable that in count model, individual specific effects are multiplicative. Fixed effects count data models can be estimated using maximum likelihood and conditional maximum likelihood, and moment based models (Cameron and Trivedi, 1989).
Similar to the previous model, I utilize a regression version of the Difference-in-differences estimator to understand the treatment effect in Michigan. Angrist and Pischke (2002) highlight the usefulness of a regression version of the Difference-in-differences estimator, particularly as it permits additional controls, covariates, and tests for causality. The Difference-in-differences estimator thus appears as follows

$$\mu_{it} = \exp(\gamma * D + \delta * T + \alpha * (D * T) + X'_{it}B)$$

where D is a dummy variable for the state, T is a dummy variable for the time period, and the coefficient \(\alpha\) is the treatment effect that we are measuring.

Notably, Besley and Case (1994) argue that studies that involve state laws should be attentive to policy endogeneity. Because state policy making is often purposeful and responds to local conditions within a state, it is necessary to identify and control for these forces in order to obtain unbiased estimates of a policy (Besley and Case, 1994). However, examining the impact of non-competing agreements on employee mobility, Marx, Strumsky, and Fleming (2010) argue that in 1985, Michigan randomly reversed state enforcement of non-compete agreements. They argue that the bill was an unintentional byproduct of the uniform acts where states align their provisions with other states. (Marx et al, 2010). The legislative bill contained the Restatement of Contracts and New York’s statute on covenants not to compete. In addition, labor lawyers highlighted that the repeal of the non-competing agreements was unintentional (Marx et al, 2010). Moreover, they argue that the Michigan repeal is notable because generally courts merely tighten or loosen constraints, but the Michigan provision fully reversed the previous policy.

This has two implications for the present research project. First, we argue that the effect of the Michigan state law is different from more marginal changes in laws, for instance, due to changes in legal interpretation. We will model the general marginal effect of covenants not to
compete, utilizing the Garmaise (2011) index of covenants not to compete, differently than how we model an exogenous change in Michigan’s laws. Notably, the effect of the index will only be revealed in the pooled poisson model due to the lack of variation across the years in question. The change in Michigan’s laws will be revealed in both the pooled model and fixed effect version of the count models.

Figure 3 visually represents the negative change in the adoption of ESOP plans in Michigan during the 1985 to 1987 period. The key question our estimation seeks to resolve is whether the decrease in the adoption of ESOPs is caused by the change in the enforcement of covenants not to compete or some other factors. Measuring the effect starting in the year 1985 is prudent because the establishment of many ESOP agreements occur at the end of the year as firms try to complete these arrangements before the next year due to the numerous tax benefits. As such, any change in law that occurs at the beginning of the year will be reflected in plan adoption by the end of the year.

Tables 4 and 5 display the results from the change in the enforceability of the Michigan law on covenants not to compete based on a 3-year regime model. Table 5 utilizes an incident ratio rate formulation. Generally, the quantity of interest in a poisson model is the expected count. To compare two observations, we must divide the expected count for one scenario to some other scenario. Generally an incident ratio rate coefficient in Tables 5 and 6 signals that if a value is above 1 there is a percentage increase in the effect. If the value is below 1, there is a percentage decrease in the effect.
0.6 Results

I utilize the Difference-in-differences models first to test causal effects. Initially the pre and post data are pooled for the treatment and controls. The broad findings indicate that the covenants not to compete result in a decrease in the adoptions of ESOP arrangements. This is reflected in Table 3a and Figure 5, which show the pre and post difference in Michigan versus other states. Here it is shown that covenants not to compete generally have a negative effect. I check these finding by utilizing a synthetic model as demonstrated in Table 3b and Figures 5 and 6. Table 3b contains the collapsed version of the synthetic model which demonstrates only the pre and post model. It is clear that the synthetic Michigan is increasing in the adoption of ESOP arrangements; while, the treated unit is decreasing in adoptions. The non-collapsed, year-by-year version of the synthetic model in Figure 6 provides a synthetic control and treated unit value for each year. As shown in Figure 6, the treated unit has a decreasing trend for the 1985 period when the law was implemented, but not in other periods after the change.

I then model the direct change in Michigan in two ways, remembering that we utilize the regression version of the Difference-in-differences model estimator to document the state effect, the time effect, and finally the interaction of the two as the treatment effect of the enforcement reversal. First, I model the treatment effect as a three year period, covering the period from 1985-1987. This approach is appropriate for multiple reasons. First, the impacts of enforcement would likely be greatest in the first three years, if we assume that the strength from a change of law should occur in the first few years after a change. Second, there was a significant change related to the use of ESOPs as an option to resist hostile takeover culminating in the Delaware Polaroid case in 1989. Third, compiling the effects over the three year period may start to resolve some of problems indicated by Bertrand et al (2002). Table 4 documents the coefficients.
from the direct poisson models. Table 5 and 6 utilize the incident ratio rates (IRR) as described previously. In addition, I model the change as yearly effects. This method permits us to understand the treatment effects of the law over each year. Table 6 displays the result from the change in enforceability based on a year by year model, similarly utilizing an incident ratio rate formulation.

The majority of the models indicate that Michigan indicator and the indicator for the time period 1985-1987 generally have a positive effect on the adoption of broad-based stock ownership. The effect of the regime time period is displayed in the row marked “Time 1985-1987” in Tables 4 and 5. These effects are also seen in the yearly model for Michigan and 3 year model for Michigan.

Yet, on the other hand, the Difference-in-differences estimators labeled “Michigan Treatment” signal that, while holding all other variables constant, the enforceability of the covenants not to compete had a significant negative effect upon the adoption of employee stock ownership plans. This negative effect reads as negative in Table 4 and a value less than one in Table 5. Generally, the pooled poisson model has a slightly lower significance than the fixed effect models. They permit the null hypothesis only to be rejected at the .10 level. Whereas, the poisson fixed effect and negative binomial fixed effect models allows the null hypothesis to be rejected below the .01 level.

To facilitate interpretation, we utilize the incident ratio rate estimates in Table 6. In Table 5 Model 6, we interpret the impact of the Michigan enforcement/treatment as reducing the number of adoptions by 37%, holding all other variables constant. In Table 6 Model 2, we interpret the yearly effect as reducing the number of adoptions by 45% in 1985. The effect of the law increases the effect size from 1985 to 1986. Using the incident ratio rate, we find a 22%
reduction for 1986 and a 63% reduction for 1987 with a discrete change in enforcement. By 1988, the effect size had changed from negative to positive, indicating an increase of 8%. This aligns with our sensibility that other factors were relevant during the later period.

Next, we examine the Garmaise (2011) index on non-competes agreements by state, as displayed with the gray bar reading “Covenants”. Effectively, this is the marginal effect of legal variation in non-competes agreement enforcement. As signaled across all pooled models in Tables 4 and 5, the marginal effect of increasing enforcement regime is an increase in the adoption of broad-based stock ownership. This is indicated by a positive value in Table 4 and a value over 1 in Table 5. This effect is only significant in the pooled models with controls, but signals a sixteen percent increase in the adoption of ESOPs utilizing the non-competition index. This effect contravenes theoretical expectations.

Columns 5 and 6 in Tables 5 and 6 include controls for regional effects. This includes Wisconsin, Illinois, and Ohio. We model this regional effect utilizing a similar Difference-in-differences estimator. Utilizing the pooled estimator in Column 5, we find a generally positive effect of the region on ESOP adoption. However, we find a similar negative effect of the region during the treatment period. The treatment effect signals a reduction of about 19% for the region, which is smaller than the effect for solely Michigan.

Generally, these estimates indicate that firms are less likely to adopt these firm asset-sharing and employee stakeholder arrangements when the noncompetition law in Michigan was enforced. This aligns with both traditional bargaining power theories and distributive theories of property rights and economic institutions. On the other hand, the index for non-competes agreements contravenes theoretical expectations for bargaining power.

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These findings also suggest that a change of law in Michigan affected the region more generally. This regional effect has two possible implications. First, despite our controls, there may be a common unobserved variable that affected the region during this period. Alternately, the change in enforcement affected not merely the state in question, but also the region. Previously, we proposed that this mechanism for the region may have occurred through the shifts in cultural-cognitive institutions, which include normative expectations, mimetic pressures, and cognitive processes. This could have occurred through multiple channels. For instance, media publicity of the change in enforcement may have signaled that other states may follow Michigan’s direction, thus employers reduced their use of ESOP mechanisms. We believe the second interpretation is more appropriate given that the size of the effect for the region is much smaller.

The findings for unions confirm the predictions derived from distributive conceptions of property rights and economic institutions and the segmented allocations of power. In our bivariate analysis demonstrated in Table 6, unions have a positive relationship with the adoption of broad-based stock ownership that is significant at the below the .10 level of the p-value. However, this relationship reverses once we control for other factors. Tables 7 and 8 present the results for the effect of unionization on the adoption of employee stakeholder arrangements. Only the pooled models demonstrate a significant effect for unionization on firm-asset sharing. None of the fixed effect models demonstrate a significant effect for unionization. Generally, across all models, the relationship between unionization and employee stakeholder arrangements was negative. This parallels other findings for this time period. The quantity of interest decreases by approximately 1% across all models with a one factor decrease in unionization.
This finding suggests that unionization confirms the hypotheses emerging from distributive conception of property rights and economic institutions and how they distribute power.

In addition to our primary hypotheses, I also sought to evaluate a number of hypotheses that emerged from the literature on human capital and profit sharing firms. Aligning with theoretical expectations, increases in the population of persons with more than six years of college had a positive effect on the adoption of broad-based stock ownership. However, a significant positive relationship only appeared in the pooled model. The fixed effect models contained both negative and positive results, but none of these were significant. Interestingly, an increase in the percentage of persons with four year degrees showed a negative effect across all models. This effect was only significant in the pooled poisson model with controls at the ten percent level of the p-value. The variable percent professional also maintained a negative relationship across both of the fixed effect models, but this finding was similarly not significant. As such, the estimates are not clear as to what role human capital generally plays on the adoption of employee stakeholder arrangements, but does suggest that more than six years of college has a positive effect on adoption.

An additional area of inquiry is related to the population of businesses. The coefficient for businesses was negative, but extremely small. When this coefficient is converted to the incident rate ratio it becomes unity. This suggests that increases in the population of businesses had a marginally negative impact on firm asset-sharing. This was consistent across both poisson fixed effect models. This supports the theoretical expectation that increasing oligopoly would decrease the adoption of broad-based ownership arrangements.
0.7 Conclusions

The present research has explored how a change in economic institutions and property rights affects the adoption of firm asset sharing and employee stakeholder arrangements. It has sought to look beyond theories of human capital and bargaining power to understand the more subtle ways property rights and economic institutions shape economic processes and decision-making. Grounded in theories of how institutions constitute markets, this analysis utilized arguments of economic institutions that encompassed rationalist, distributive, and cognitive-cultural conceptions.

Part of the puzzle in the literature has been the differential effect of unions on the adoption of particular employee stakeholder arrangements, such as ESOPs. Under a classical bargaining power analysis, unions should increase the adoption of firm asset sharing and employee stakeholder arrangements which has contravened empirical evidence. We employ a distributive conception which proposes that property rights and economic institutions differentially allocate, segment, and distribute powers. These features arise from the pre-distributed, pre-configured, and power-allocative features of property rights and economic institutions. Distributive conceptions suggest that economic institutions allocate and distribute powers through the creation of property objects and economic agents. Therefore, unlike classical conceptions, power is not simply a sum function, but actually may be segmented and distributed differently by property rights and economic institutions. These differences produce varied configurations of interests and varied relationships with other property objects.

Specifically, we examine the impacts of covenants not to compete and unions. Consistent with the traditional bargaining power view and a distributive conception, I find that a discrete state law change of enforcement of noncompetition agreements matches theoretical expectations.
These agreements curtailed the previous allocation of powers provided by ESOPs, by creating alternative property objects. The specific estimates suggest that Michigan’s law resulted in almost a third less ESOP adoptions than prior to the law.

Second, consistent with our hypotheses regarding the distributed and segmented impact of property rights and economic institutions on allocations of power, we find in panel data that union density does not predict the adoption of ESOPs as employee stakeholder arrangements. This finding aligns well with previous research on the relationship of unions with employee stakeholder arrangements such as ESOPs. Notably, the covenants may have not only affected the state in question, but the region more generally. We argue that this supports cognitive-cultural theories of economic institutions affecting the adoption of firm asset sharing arrangements. We presume that Michigan state law does not have jurisdiction over firms in the region.

However, I discover one further question related to bargaining power. The present findings indicate that the marginal enforcement of covenants not to compete, reflected in the Garmais (2011) index of the strength of noncompetition enforcement by state, may have a positive relationship with the adoption of employee ownership. This finding suggests that policy endogeneity may be a real issue when examining marginal variations in state law that may be caused by gradations in legal interpretation, rather than discrete changes in enforcement.

A key limitation of the present research is its level of analysis. I examined these issues at the level of states. This permits us to measure larger global effects, for example educational levels, unemployment, capital availability, or other effects in the spirit of comparative case studies. However, more localized or micro-firm data may be more helpful in truly understanding these effects as they are likely not the same across areas in a state, for example between urban, suburban, and rural areas. I have not controlled for variations in the national or regional business
cycle which might have a significant effect on the outcomes if they are drivers. Finally, in future iterations, it may be useful to formalize the informal conversational game model used here.

Nonetheless, this research seems to support broadly the distributive conception that changes in economic institutions and property rights affects the distribution of powers and thus the adoption of firm asset sharing and employment stakeholder arrangements, such as ESOPs. Moreover, it supports the conception that these allocations of power by economic institutions and property rights are distributed and segmented such that not all bargaining power has the same effect on the adoption of firm asset-sharing and employer stakeholder arrangement. Future research may seek to be more attentive to pathways by which specific features of economic institutions and property rights distribute powers to employees and other economic actors as well as their affects in varying contexts.

If employee stakeholding and firm-asset sharing arrangements are considered a substantive indicator of structural variation in the firm, the present research may have important implications for considering the relationship between the labor, property rights, and corporate structure, and inequality outcomes. Additionally, these findings may inform theory about what legal factors influence firms to choose high road or low road options in wage and benefit structuring. Finally, these findings may suggest the direction that policy-makers may not want to pursue in order to encourage the adoption of labor stakeholder arrangements and firm asset sharing with employees.
0.8 Bibliography


50 | Asset Sharing and Stakeholder Arrangements


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0.9 APPENDIX:

Figure 1: ESOP Trust Adoption by Number of Adoptions per State per Year

ESOP Trusts by State and Year
Figure 2: ESOP Trust Adoption by Year All States

ESOP Trust Adoption by Year

excludes outside values

61 | Asset Sharing and Stakeholder Arrangements
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Figure 3: ESOP/Trust Adoption by Year in Michigan

ESOP/Trust Adoption by Year in Michigan

year

63 | Asset Sharing and Stakeholder Arrangements
Table 2: Bivariate Analysis

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* Garmaise Index of Enforcement of Non Competition Agreements by State
Table 3a: Differences in Differences Estimates of the Effect of Covenants not to Compete

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Table 3b: Differences in Differences Estimates of the Effect of Covenants not to Compete on Michigan and Synthetic Michigan

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Figure 5: Basic Differences and Differences (Accompanies Table 3a)

Michigan with 3 years Pre and 3 Years Post

- Michigan
- Other States

Pre and Post Years

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Figure 6a: Synthetic Control (Accompanies Table 3b)

Michigan with 3 years Pre and 3 Years Post

Michigan with 3 Years Pre and 3 Years Post

Pre and Post Years

Michigan Synthetic Michigan
Figure 6b: Synthetic Control Years Not Collapsed (Accompanies Table 3b)

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- **treated unit**
- **synthetic control unit**

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### Table 4: Poisson Pooled and Fixed Effect Regressions

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Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.11

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Table 4 (continued): Poisson Pooled and Fixed Effect Regressions

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Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.11
## Table 5: Poisson Pooled and Fixed Effect Regressions – Incident Ratio

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<td></td>
<td>(0.00428)</td>
<td>(0.00792)</td>
<td>(0.00430)</td>
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<tr>
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<td>1.967***</td>
<td>0.238**</td>
<td>0.139***</td>
<td>0.0967</td>
<td>0.0967</td>
<td>0.0967</td>
</tr>
<tr>
<td></td>
<td>(0.390)</td>
<td>(0.171)</td>
<td>(0.0967)</td>
<td>(0.0967)</td>
<td>(0.0967)</td>
<td>(0.0967)</td>
</tr>
<tr>
<td>Observations</td>
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</tbody>
</table>

Robust standard error in parentheses

** ** p<0.01, ** p<0.05, * p<0.01

### Asset Sharing and Stakeholder Arrangements

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71 | **Asset Sharing and Stakeholder Arrangements**
<table>
<thead>
<tr>
<th>Models</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pooled Poisson</td>
<td>Fixed Effect Poisson</td>
<td>Pooled Poisson With Control</td>
<td>Fixed Effect Poisson With Controls</td>
<td>Pooled Poisson with Controls and Regional Controls</td>
<td>Fixed Effect Poisson with Controls and Regional Controls</td>
</tr>
<tr>
<td>% Professional</td>
<td>1.928</td>
<td>0.266</td>
<td>70.34*</td>
<td>0.411</td>
<td>(4.060)</td>
<td>(1.436)</td>
</tr>
<tr>
<td>% Educated (+6 yrs)</td>
<td>166.7*</td>
<td>1.287</td>
<td>214.6*</td>
<td>1.844</td>
<td>(492.3)</td>
<td>(3.885)</td>
</tr>
<tr>
<td>% Technical</td>
<td>7.731</td>
<td>0.151</td>
<td>2.150</td>
<td>0.129</td>
<td>(14.00)</td>
<td>(0.377)</td>
</tr>
<tr>
<td>% 4 Yr College</td>
<td>0.00815*</td>
<td>0.269</td>
<td>0.186</td>
<td>0.232</td>
<td>(0.0213)</td>
<td>(0.899)</td>
</tr>
<tr>
<td>Union</td>
<td>0.984*</td>
<td>0.982</td>
<td>0.983*</td>
<td>0.984</td>
<td>(0.00910)</td>
<td>(0.0288)</td>
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<tr>
<td>Unemployed</td>
<td>1.012</td>
<td>1.000</td>
<td>1.012</td>
<td>0.999</td>
<td>(0.0215)</td>
<td>(0.0243)</td>
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<tr>
<td>Covenants</td>
<td>1.038</td>
<td>1.160***</td>
<td>1.188***</td>
<td>1.0393</td>
<td>(0.04252)</td>
<td>(0.0383)</td>
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<tr>
<td>Regional</td>
<td>2.216***</td>
<td>0.820</td>
<td>0.804*</td>
<td>0.107</td>
<td>(0.322)</td>
<td>(0.147)</td>
</tr>
<tr>
<td>Regional Treatment</td>
<td>1.967***</td>
<td>0.238**</td>
<td>0.132***</td>
<td>0.0967</td>
<td>(0.390)</td>
<td>(0.171)</td>
</tr>
<tr>
<td>Constant</td>
<td>Observations</td>
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<td>490</td>
<td>500</td>
<td>490</td>
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</table>

Robust standard error in parentheses  *** p<0.01, ** p<0.05, * p<0.11
<table>
<thead>
<tr>
<th>Models</th>
<th>1 (Pooled Poisson)</th>
<th>2 (Fixed Effect Poisson)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan</td>
<td>1.197 (0.237)</td>
<td>1.437** (0.215)</td>
</tr>
<tr>
<td>1983 Michigan</td>
<td>1.188 (0.191)</td>
<td>1.392*** (0.165)</td>
</tr>
<tr>
<td>1984 Michigan Treatment</td>
<td>1.401 (0.300)</td>
<td>1.688*** (0.194)</td>
</tr>
<tr>
<td>1985 Michigan</td>
<td>1.520*** (0.207)</td>
<td>1.896*** (0.238)</td>
</tr>
<tr>
<td>1986 Michigan</td>
<td>1.204 (0.242)</td>
<td>1.080 (0.118)</td>
</tr>
<tr>
<td>1987 Michigan Treatment</td>
<td>1.896*** (0.238)</td>
<td>1.982*** (0.208)</td>
</tr>
<tr>
<td>1988 Michigan</td>
<td>0.587*** (0.114)</td>
<td>0.543*** (0.0601)</td>
</tr>
<tr>
<td>1989 Michigan</td>
<td>1.389** (0.190)</td>
<td>1.479*** (0.155)</td>
</tr>
<tr>
<td>1986 Michigan Treatment</td>
<td>0.891 (0.178)</td>
<td>0.775** (0.0861)</td>
</tr>
<tr>
<td>1987 Michigan Treatment</td>
<td>1.311 (0.225)</td>
<td>1.373*** (0.167)</td>
</tr>
<tr>
<td>1987 Michigan Treatment</td>
<td>0.396*** (0.0923)</td>
<td>0.367*** (0.0390)</td>
</tr>
<tr>
<td>1988 Michigan Treatment</td>
<td>1.506*** (0.217)</td>
<td>1.447*** (0.164)</td>
</tr>
<tr>
<td>1989 Michigan</td>
<td>1.270 (0.259)</td>
<td>1.086 (0.127)</td>
</tr>
<tr>
<td>1989 Michigan Treatment</td>
<td>1.428** (0.240)</td>
<td>1.259** (0.131)</td>
</tr>
<tr>
<td>1989 Michigan Treatment</td>
<td>0.973 (0.210)</td>
<td>0.873 (0.109)</td>
</tr>
</tbody>
</table>

Includes All Controls

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1