ORGANIZATIONAL INFRASTRUCTURES FOR ECONOMIC RESILIENCE: ALTERNATIVES TO SHAREHOLDER VALUE-ORIENTED CORPORATIONS AND UNEMPLOYMENT TRAJECTORIES IN THE US DURING THE GREAT RECESSION

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ABSTRACT

Despite recent advances, neither organizational studies nor the scholarship on economic resilience has systematically addressed how the ecologies of organizations that populate local economies can serve as infrastructures for responding proactively to economic shocks. Using county-level data, this study analyzes relationships between the prevalence of organizational alternatives to shareholder value-oriented (SVO) corporations within a particular locality and its unemployment levels during and after the Great Recession. The results support the hypothesis that the presence of such alternative organizations can enhance the capacities of local economies to resist and recover from recession shocks. Cooperative, municipal, and community-based enterprises, research universities, and nonprofits more generally were associated with greater resistance to the recession shock and stronger recoveries – specifically, lower surges

Organizational Imaginaries
Tempering Capitalism and Tending to Communities through Cooperatives and Collectivist Democracy, Volume 72, 187–228

ISSN: 0733-558X/doi:10.1108/S0733-558X20210000072008

in unemployment rates from 2007 to 2010 and greater reductions in unemployment rates from 2010 to 2016. By contrast, SVO corporations were associated with greater surges in unemployment and perhaps weaker recoveries. Providing a proof of concept, this study opens up new lines of inquiry for organizational studies by linking organizational ecologies to the promotion of collective efficacy and a more broadly shared prosperity in economic life.

Keywords: Alternative organizations; cooperatives; nonprofit organizations; organizational ecologies; resilience; unemployment; universities

Inspired by the financial crisis and the Great Recession, policymakers, scholars, and activists have sought to understand and promote the resilience of local economies. Researchers supporting these efforts have clarified the nature of resilience, distinguishing between local economies' vulnerability to crisis, their capacities to resist economic shocks, and their abilities to recover (Fingleton, Garretsen, & Martin, 2012; Martin & Sunley, 2015; Simmie & Martin, 2010). They have focused attention on how local economies can redeploy or reconfigure their activities, assets, composition, and even their institutions, in response to crisis (Boschma, 2015; Christopherson, Michie, & Tyler, 2010; Hassink, 2010; Martin & Sunley, 2015). They have also identified key determinants of resilience, including the economic composition of local economies, their level of industrial diversity, human capital profiles, research and labor market institutions, and links with other local economies (Chapple & Lester, 2010; Doran & Fingleton, 2018; Han & Goetz, 2018; Hill et al., 2012; Martin, Sunley, Gardiner, & Tyler, 2016). Yet, the organizational compositions of local economies, and how the organizational ecologies that populate those economies can serve as infrastructures for responding to economic shocks, are less systematically explored. Using county-level data on the organizational structures and unemployment trajectories of local economies in the United States, I develop this line of inquiry by analyzing relationships between eight ecologies of organizations and economies' capacities to resist and recover from shocks during the Great Recession.

This study focuses on the contributions to resilience of organizational alternatives to large, investor-owned, shareholder value-oriented (SVO) corporations – notably, cooperative, municipal, and community-based enterprises, organizations like research universities that provide public goods, and nonprofit organizations more generally. Its broad working hypothesis is that ecologies of non-SVO organizations operating within contemporary capitalism can temper its worst excesses, fostering organizational diversity and capacities for action in local economies that support adaptability, resistance, and recovery in the face of shocks. Not-for-profit organizations and municipalities have been combined with corporations and market development projects in various configurations (e.g., McQuarrie, 2010; Pacewicz, 2013). Yet, nonprofits, cooperatives, universities, and the like

can support local collective action, collaborative problem-solving, and regional development in ways that large corporations and SVO firms typically cannot or will not do. They can foster cross-sector networks, distinctive incentives, and relational practices within and between firms. They can propagate logics of community, localism, and civic engagement that focus people's actions on the flourishing of local communities and institutions. They can cultivate sensitivities and commitments among elites to wider groups of stakeholders and the welfare of their communities (e.g., Brandtner & Dunning, 2019; Marquis, Davis, & Glynn, 2013; Marwell & McInerney, 2005; Powell, Packalen, & Whittington, 2012; Safford, 2009; Sampson, McAdam, MacIndoe, Weffer, & Elizondo, 2005; Schneiberg, 2007, 2011). Such ecologies bring something distinctive to local economies. They may thus serve as a useful counterweight or platform for resilience. This may prove especially important insofar as capitalism's core economic institutions – large corporations – have become less embedded locally, exquisitely attuned to investors and short-term pressures from financial markets, and increasingly prone to abandon employment, local economies, and the pursuit of shared prosperity for the pursuit of shareholder value (Davis, 2009; Davis & Cobb, 2010; Lazonik & O'Sullivan, 2000; Zorn, Dobbin, Dierkes, & Kwok, 2006).

In developing this agenda, I take as the backdrop the shortcomings of the large, investor-owned corporation and its recent reconfiguration as the shareholder value-maximizing firm. From the Pennsylvania Railroad Company at the dawn of the corporate era, to the Ford Motor Company and AT&T in the postwar period, to JP Morgan Chase and Amazon today, continent-spanning and global corporations have sometimes quite strikingly delivered on their promise as engines of growth, economic development, and an endless supply of goods, services, and credit. Yet whether and how they deliver are both fraught with tradeoffs, and are contingent on arrangements for sharing gains from development and productivity growth (Esping-Anderson, 1990; Galbraith, 1952; Johnson & Kwack, 2010; Katzenstein, 1977; Maier, 1977; Piore & Sabel, 1984; Schneiberg, 1999). Whether they are large banks whose risk-taking leads to financial crisis, or utility giants whose skimping on inspections and maintenance leads to wildfires and devastated communities, investor-owned firms come with their own moral hazards. As for-profit enterprises organized by and for a class of independent shareholders, these firms are structured in ways that generate incentives to economize on certain investments and benefit investors at the expense of their workers, suppliers, customers, and the local economies they serve (Galbraith, 1952; Hansmann, 1996; Schneiberg, 2011, 2017). Such tradeoffs, if anything, have worsened in recent decades, as financialized capitalism and reforms demanded by shareholder-value revolutionaries have tied CEO compensation to the ups and downs in securities markets, and to corporate strategies that sacrifice jobs and investment in productive capacity in exchange for higher share prices and profits from financial transactions (Davis, 2009; Dobbin & Jung, 2010; Ho, 2009; Lazonick, 2013).

Dramatizing these tradeoffs, the 2008 financial crisis sparked renewed interest in non-SVO forms of organization that can reconnect enterprises to the interests

of workers, consumers, and their communities and foster employment, development, and democracy (e.g., Alperovitz, 2011; Bianchi & Vieta, 2019; Block, 2014; Mair, Battilana, & Cardenas, 2012; Rothschild, 2016; Schneiberg, 2011). What this study adds is an ecological analysis of these forms and their broader economic effects – specifically, an inquiry into how systems of cooperatives, nonprofits, and other non-SVO organizations can support revitalization and resilience within local economies, counterbalancing concentrated economic power and fostering a more broadly shared prosperity.

This study also returns to classic institutionalist agendas of understanding how the organization of economies enhances or hinders their responses to crises and challenges (Dyson & Wilks, 1983; Gourevitch, 1986; Zysman, 1983). In doing so, it brings an analysis of organizational systems to research on resilience. Resilience scholars have developed provocative ideas about the importance of organizations in shaping local responses to shocks, but have not systematically addressed the organizational compositions of local economies. At the same time, this study brings an analysis of economic resilience to organizational studies. It opens new lines of inquiry for ecological analyses, which have focused mainly on evolutionary outcomes in populations – that is, how identity, density dependence, mutualism, and economic conditions like recessions can reshape organizational compositions by way of selection (e.g., Hannan & Freeman, 1989; Hannan, Pólos, & Carroll, 2007; but see Negro, Perretti, & Carroll, 2013). This study shows how different organizational compositions can, conversely, reshape how local economies respond to recessions. It also opens lines of inquiry for institutional research on organizations and communities, presenting evidence that organizations tied to communities can generate practical and cultural resources for adapting to recessions within local economies, both through their own distinctive practices and by propagating community logics more broadly (Greenwood, Raynard, Kodeih, Micelotta, & Lounsbury, 2011; Marquis & Battilana, 2009; Marquis & Lounsbury, 2007; Marquis, Lounsbury, & Greenwood, 2011).

Finally, this study extends prior research on how organizations foster resilience in social life. Past studies in this tradition have demonstrated, for example, how nonprofits and other organizations foster the formation of cooperatives during pandemics (Rao & Greve, 2018) and cultivate the sorts of collective efficacy that help neighborhood residents withstand heatwaves or make claims against state agencies (Klinenberg, 2015; Sampson et al., 2005). This study examines how nonprofits, cooperatives, and other community-based organizations serve as infrastructures for economic resilience, helping local economies withstand and recover quickly from recessions.

I begin with a discussion of the nature of resilience and how systems of organizational alternatives to SVO corporations can support adaptability in responses to shocks within local economies. After describing my data and methods, I present my analysis of the relationship between the organizational ecologies of US counties and the subsequent unemployment trajectories of their local economies during the Great Recession and its aftermath. Specifically, I examine the prevalence of eight organizational forms: (a) three ecologies of banks (community

banks, credit unions, and top derivative-holding bank corporations), (b) three ecologies of the electrical utility industry (municipal utilities, electrical cooperatives, and investor-owned utilities), (c) research universities, and (d) nonprofit organizations. I focus on changes in unemployment rates because the abilities of local economies to weather hard times and support the general welfare depend first and foremost on their capacities to generate and retain jobs.

ECONOMIC RESILIENCE

Following Martin and Sunley (2015), this study defines resilience as the adaptive capacity of a local or regional economy to absorb and recover from shock. Resilient economies maintain, restore, or even improve their performance trajectories (employment, investment, and growth) in the face of disruptions. If necessary, they adapt by changing their economic structures, internal organization, and external linkages and transitioning to different developmental paths.

Viewing resilience in adaptive terms involves three advances over simple equilibrium models that view the problem in terms of a "return to normal" or a jump to a new equilibrium (Boschma, 2015; Chapple & Lester, 2010; Hassink, 2010; Simmie & Martin, 2010). First, it takes resilience as a complex, contingent process that unfolds over time. It thereby avoids the assumption that economies will necessarily bounce back to pre-shock structures or equilibria and adopts instead a more open-ended sensitivity to how multiple outcomes are possible – including steady decline. In an adaptive view, resilience entails restoring or improving core performances, rather than maintaining structural stability per se. It can even involve pioneering structural change that builds on and reconfigures a local economy's assets, capabilities, sectoral composition, and organization.

Second, viewing resilience in terms of adaptive processes over time has prompted theorization of its different phases: vulnerability, resistance, and recovery (Martin et al., 2016; Martin & Sunley, 2015). Specifically, it has supported distinctions between: (a) the extent to which local economies are vulnerable or resistant to recession, their capacities to sustain investment and employment in response to shock, and how far their performance declines; and (b) their robustness, their capacities to rebuild, reconfigure, restore, or improve performance trajectories after disruptions or declines, and how well they recover. Such distinctions allow us to consider whether different factors matter for different phases of a community's response to a shock. They have also driven significant improvements in operationalizing resilience in empirical research (Chapple & Lester, 2010; Doran & Fingleton, 2018; Han & Goetz, 2015, 2018; Martin et al., 2016).

Finally, an adaptive conception of resilience highlights three ways that action and decision-making at multiple levels serve as proximate causes of resilience. First, it underscores the importance of individual-level actions by key actors, such as whether banks curtail or continue to lend during recessions, or whether firms

try to restore profits primarily by cutting labor and other costs, selling assets, and abandoning markets, or by redeploying workers and seeking new markets and investment opportunities (Martin & Sunley, 2015). Second, it calls attention to collaborative processes of intra- and intersectoral learning and recombination in which firms draw upon resources and ideas from different domains to explore new possibilities, perhaps finding new uses for resources or transferring technologies and capabilities from one task, sector, or product to another (Boschma, 2015; Simmie & Martin, 2010). Third, it emphasizes political and institutional responses – for example, how firms, industry leaders, public officials, foundations, and think tanks forge coalitions, establish taskforces, or create other vehicles for collective problem-solving, planning, policymaking, and interorganizational coordination (Hill et al., 2012). While this approach roots resilience in practice and action, it also considers how responses to shock emerge within the structural contexts of economies – their industrial makeups, labor market conditions, governance schemes, and financial arrangements, which are themselves partly products of past efforts to restore or reconfigure local economies (see also Martin et al., 2016).

ORGANIZATIONAL INFRASTRUCTURES FOR RESILIENCE

Grounding resilience in adaptive activity provides a key entrée for organizational analysis. Organizations and ecologies of organizations are, at their core, enabling structures – platforms and infrastructures for problem-solving and collective action. And as their forms vary, so do the kinds of activities and adaptive capacities they support. In this study, I focus on ecologies of non-SVO organizations, including community banks, credit unions, electrical cooperatives, state-owned municipal utilities, research universities, and nonprofits more generally. This is a varied lot, with diverse relationships to capitalism and large corporations, and substantial differences in the specific roles they play during an economic recovery. For example, whereas electrical cooperatives are customer-owned electricity utility firms, and credit unions are cooperatively owned nonprofit banks that serve groups of employees or residents, community banks are small, privately owned, for-profit banks that provide traditional banking services to small businesses and farms in local communities, and municipal utilities are city- or town-owned providers of electricity, water, gas, and internet. Yet these organizations differ from large corporations in common fundamental ways and constitute distinctive ecologies within capitalism, which potentially enable them to cultivate resilience via two broad pathways:

(1) *Via their own responses*. One possibility is that non-SVO organizations contribute to resistance and recovery directly, through the particular approach they take in organizing activities, relationships, and commitments among their members and managers in response to economic shocks. The broad hypothesis here is that non-SVO organizations will be less inclined than investor-owned firms to abandon communities or cut employment, loans, or services in order to shore

up revenues or profitability. They will be less focused – or not focused at all – on share prices or immediate returns to an investor class. Instead, they will be more likely to consider broader concerns, agendas, and stakeholders in making decisions and more inclined to sustain or even increase expenditures and investments to help clients, citizens, and their communities manage downturns.

Consider in more concrete terms how the types of organizations studied here might respond to such crises. Community banks and credit unions might eschew the wholesale abandonment of lending to small businesses and communities that big banks often pursue when conditions decline. Instead, they might favor more patient capital: partial workouts, customized contingent loans, and even increased lending, all of which would mitigate credit freezes and sustain credit, helping small-business borrowers weather the recession and adjust once conditions improve (Schneiberg & Parmentier, 2020). Both community banks and credit unions would be more hesitant than banking mega-corporations would be to shift loan capital away from troubled places and redeploy it more profitably in distant markets, so local economies where these organizations are situated would be less vulnerable to "flights to quality" (Martin & Sunley, 2015). Credit unions in particular might offer their members payment deferrals on consumer and mortgage loans. Similarly, cooperatives in electricity might forgo patronage dividends to keep costs low for households and local businesses in need. Moreover, like city-owned municipals, they might also prove more likely than investor-owned utilities to extend service, provide bill assistance, and roll back late fees, penalties, and shutoffs. Furthermore, all of these cooperative and community-based enterprises are themselves less likely to be sources of economic disruption. For example, they have largely eschewed the business and financial market strategies adopted by SVO corporations in past decades that so dramatically destabilized the electricity and banking industries and brought instability, in turn, to local economies (Johnson & Kwack, 2010; Tett, 2009; see also Almandoz, 2014).

Compared to investor-owned firms, we might also expect universities to be slower to curtail their activities. They would be relatively reluctant to cut faculty, staff, and research contracts, and their continued employment and spending could conceivably help sustain local markets and businesses in hard times. The potential economic impacts might be substantial, given that large research universities are often important local employers and spend significant amounts through grant-funded research projects (Chhabra, Levenstein, & Owen-Smith, 2019). In the face of crisis, research universities might also double down on regional economic development, which has become central to their missions in many localities. To this end, they could continue their work with foundations and other grant agencies, supplying faculty expertise, conference and lab facilities, technology transfers, training, analyses, policy proposals, and other resources to foster industry development, regional revitalization programs, and the growth of local startups (Owen-Smith, 2018).

Nonprofits more generally – and especially those that employ clients as part of their programs – might likewise prove less quick to shed employees. In fact, they

may actively seek to renew their commitments to their local communities as they – or those they serve – struggle, opting to serve rather than conserve (Horvath, Brandtner, & Powell, 2018). At the very least, nonprofits operating amid downturns would wrestle seriously with tradeoffs between organizational viability and social welfare. While as organizations they would face pressures to cut services in order to keep themselves afloat, as service providers they would also encounter calls to increase expenditures to assist those affected by the recession – whether that means training workers for new jobs, helping clients stay in their homes and keep their families and mental health intact, or developing plans for local revitalization (Battilana, Sengul, Pache, & Model, 2015; Binder, 2007).

These distinctive responses by non-SVO organizations arise from fundamental characteristics of their organizational types – first and perhaps foremost, from how these organizations configure relationships and incentives for members, managers, and owners in ways that avoid or internalize externalities associated with SVO corporations. All of these non-SVO organizations have ownership structures that eliminate the independent shareholder or otherwise temper the incentives to shift risks or losses to consumers, workers, and communities (Hansmann, 1996; Schneiberg, 2011, 2017). For example, cooperatives in banking, utilities, and other sectors unify ownership with consumption, production, or supply; municipal companies unify ownership with consumer-citizens. This removes conflicts of interests between owners and consumers, and between producers and citizens. It ties what firms do for consumers, workers, or citizens more directly to the profits or losses of their owners, creating incentives within firms for expenditures and investments that benefit those groups. Nonprofits couple constraints on the distribution of profits with the elimination of ownership, thereby reducing pressures to sacrifice the welfare of clients and communities in order to improve financial metrics of interest to investors. Although community banks are often for-profit investor-owned firms, they are typically privately held rather than publicly traded and organized as S rather than C corporations – arrangements that insulate them from stock market pressures for short-term payoffs at their clients' expense. Community banks also operate via relational banking practices based on long-term personal or obligational ties between banks and clients. In addition to encouraging the "patient capital" approach toward lending mentioned earlier, these ties facilitate the kinds of fine-grained information transfer, joint problem-solving, and customization that help sustain lending during recessions, even as credit scores fall below thresholds (Schneiberg & Parmentier, 2020; Uzzi & Lancaster, 2003).

Furthermore, nearly all of these non-SVO organizations are locally operating, transacting, and controlled – and where owned, locally owned. Even large research universities are locally embedded and immobile. On the one hand, their rootedness in their communities can leave organizations unable to draw resources from other regions and therefore weakly equipped to ride out downturns in local markets (Calomiris & Haber, 2014; Martin & Sunley, 2015). But it also ties the fates of these organizations to the welfare of their local economies in ways that are not true for globally or nationally operating corporations, giving them a direct

interest in investing in their immediate environment. Their localism can also render the immediate impacts of their actions visible, subjecting such organizations to more in the way of community feedback and discouraging them from closing local offices, relocating to distant places, or otherwise acting in ways that harm local economies when things get tough (Greenwood, Díaz, Li, & Lorente, 2010; Martin et al., 2016).

Complementing these incentive-aligning socio-material dynamics are cultural and normative forces: non-SVO organizations are also platforms for certain kinds of value commitments, social projects, and institutional logics. They attract, concentrate, connect, coordinate, and cultivate resources and people committed to justice, social reform, and logics of community or economic and human development (Almandoz, 2014; Greenwood et al., 2010; Marquis et al., 2011; Marquis & Lounsbury, 2007; Schneiberg, 2007). At least in principle, they are mission-driven organizations, chartered to solve social problems or serve a collective or public good. They are therefore vehicles for expressing values, fostering social entrepreneurship that combines commitments to a cause with commerce, and furthering moral sentiments and commitments – including those that qualify, transcend, and even reject imperatives for organizational preservation, profits, and shareholder value (Frumkin, 2002; Goldstein, 2018; Haveman & Rao, 1997; Rothschild & Whitt, 1986; Seelos & Mair, 2017). Granted, the missions of non-SVO organizations are diverse – ranging from the common bond requirements of credit unions to serve affinity group members, to the goal of universities to push frontiers of knowledge, to the efforts of some cooperatives to supplant competitive, hierarchical, or commodified relations. And all these organizations face pressures to succumb to mission drift and competing logics or prioritize maintenance over mission (Atzeni & Ghigliani, 2007; Binder, 2007; Eliasoph, 2014; Marwell, 2004; Minkoff & Powell, 2006; Pache & Santos, 2013). In general, though, non-SVO organizations concentrate and cultivate actors with commitments to stakeholders and to solving problems of community, moral, or economic development that go beyond narrow commerce. They also concentrate and cultivate mission statements, expertise, analytical frames, and discourses for crafting and defending claims on behalf of those broader aims. Moreover, these missions, logics, and value commitments anchor organizational identity. They are baked into routines, frame conversations, serve as cultural resources within organizations, and are honored – at least in principle – by decision-makers, which means they also serve as filters through which non-SVO organizations interpret, deliberate on, and respond to economic challenges (Almandoz, 2014; Greenwood et al., 2010, 2011; Horvath et al., 2018).

(2) *Via influencing others' responses*. Non-SVO organizations may also contribute to resistance and recovery indirectly, by shaping socio-material relations and cultural resources within local economies in ways that enhance the resilience of other parts of the community. First, such organizations can serve as generators of social capital (for a review, see Brandtner & Dunning, 2019) or "anchor tenants" of regional economic clusters (Padgett & Powell, 2012). Just as nonprofit daycare centers can help urban mothers cope with challenges by brokering ties to other mothers and well-resourced organizations (Small, 2009), non-SVO organizations

can benefit the business owners, managers, and bankers who do business or volunteer with these organizations, strengthening their local ties and expanding and diversifying their networks across social and industrial sectors (Davis, Renzulli, & Aldrich, 2006; Kwon, Heflin, & Ruef, 2013; Safford, 2009). For example, the loan officers of community banks can draw on their relationships with other local businesses when tackling the problems that face a particular client, supporting information flows, referrals, sourcing, and transfers of ideas within and across industries (Schneiberg & Parmentier, 2020; Uzzi & Lancaster, 2003). Similarly, the routines of credit unions, cooperatives, and municipals can foster interactions among patron-owners, officers, and board members who are themselves often small-business owners, farmer-owners, or local officials. And the universities, foundations, and nonprofit intermediaries that anchor communities can foster open and diverse networks that link scientists and industries, academics and policymakers, government agencies and local entrepreneurs, and community-based organizations and financial institutions, among other actors (McQuarrie, 2010; Owen-Smith, 2018; Powell et al., 2012; Safford, 2009).

The networks that non-SVO organizations foster can, in turn, enhance adaptive capacities within local economies. They can promote trust, information exchange, and referrals critical for entrepreneurship – for recognizing opportunities and acting effectively on them – while supporting relational contracting practices of learning, collaborating, and joint problem-solving that are vital for a farsighted, longer-term approach toward investment and restructuring in response to changing conditions (Kwon et al., 2013; Uzzi, 1999; Uzzi & Lancaster, 2003). They can promote cross-fertilization and interactions across fields, exposing entrepreneurs and others to diverse perspectives and resources and creating possibilities for transposing and recombining ideas, resources, and relations across sectors that help entrepreneurs adapt creatively to shocks (Hollingsworth & Hollingsworth, 2000; Padgett & Powell, 2012; Saxenian, 1994; Wry & York, 2017). And they can facilitate collective, coordinated responses via private-public partnerships and regional planning efforts (Hill et al., 2012; Safford, 2009). Indeed, past research has found that network crossroads fostered by ecologies of universities, foundations, and nonprofits have supported local development in a wide variety of settings – spurring the growth of the wine industry in California's Napa Valley, accelerating the biotech boom in New Haven, Connecticut, and helping Rustbelt cities like Allentown, Pennsylvania, and Cleveland, Ohio, diversify their economies and exploit national financial markets for local redevelopment (McQuarrie, 2010; Owen-Smith, 2018; Powell et al., 2012; Safford, 2009).

Ecologies of alternative enterprise can also enhance governance capacities in local economies in ways broadly akin to their roles in urban settings (Brandtner & Dunning, 2019; Marwell, 2007; Marwell & McQuarrie, 2013). First, non-SVO organizations are essential vehicles for implementing public policy, most obviously in the ways they employ state funds to provide social welfare services (Salamon, 1987), but also in how states use them as tools for making and regulating markets – for example, by mobilizing electrical cooperatives,

insurance mutuals, and savings and loan associations to promote rural electrification and development, fire prevention efforts and price regulation in insurance markets, and expanded mortgage markets for home ownership (McQuarrie, 2010; Schneiberg, 2011). Even without direct state support, non-SVO organizations can serve as counterweights and stimulants for market development by serving groups and areas ignored by for-profit corporations. By being the "first in," cooperatives, nonprofits, and the like can bring resources and attention to unmet needs, absorb risks or start-up costs of market formation, signal profitable areas in which for-profit firms might then invest, and introduce new forms of competition (Marwell & McInerney, 2005; Schneiberg, 2011, 2017).

Second, nonprofit intermediaries, foundations, cooperative federations, and other non-SVO forms can and have served as vehicles for coordinating private and public responses to problems – whether as organizers of groups, conveners of discussion, repositories of expertise, platforms for community representation and engagement, or suppliers of technical and financial assistance to community development organizations (Clemens & Guthrie, 2010; McQuarrie, 2010; Safford, 2009). Of course, as critics have noted, nonprofits and community-based organizations sometimes evolve in ways that circumscribe deliberation and participation or support profit-seeking investments that reduce resilience (Eliasoph, 2014; Lee, 2014; McQuarrie, 2013). Yet in combining intermediary bodies, foundations, and deliberately cultivated ties with their distinctive commitments and structures, nonprofit systems can produce capacities for governance – for developing policy ideas and expertise, supporting conversations, funding pilot projects, and otherwise organizing collective action to address social problems – that rival and even exceed states' capacities, making them partners, even leaders, in coordinating responses to recession and recovery.

Finally, as organizational and institutional scholars have shown, ecologies of non-SVO organizations can operate as cultural and normative forces in their local contexts. In their public engagement, they can propagate the sorts of moral sentiments and commitments they internally collect and cultivate, populating local economies with cultural resources for advancing claims on behalf of their communities or regions (Marquis et al., 2011). For example, non-SVO organizations often nourish supportive "ecologies of ideology" by providing like-minded organizations with grants, personnel, technical support, and organizational templates or legitimacy (Ingram & Simons, 2000; Marwell, 2007; Owen-Smith, 2018; Ruef, 2000; Schneiberg, 2007, 2013). Cooperatives, nonprofits, and universities can be powerful incubators for organizations that share their agendas and commitments. Non-SVO organizations can also propagate their sensibilities and logics to other organizations via their volunteers, donors, officers, trustees, and board members, who are often themselves managers, bankers, or small-business owners. Participating in mission-driven organizations and interacting with others committed to the cause can leave these participants with new insights and perspectives that they then carry back into their home organizations; this, in turn, can potentially make those organizations more sensitive to the economic suffering in their communities and influence their decisions regarding downsizing and

investments. In their interactions with numerous businesses, community banks and credit unions can disseminate logics of community quite effectively; even the death of such organizations does not necessarily mean the demise of those logics, as their carriers often undertake new ventures (Marquis & Lounsbury, 2007). "Social ecologies" of nonprofits and local firms can likewise propagate sentiments that discourage investors from pursuing speculative approaches in markets (Goldstein, 2018), and as logics of regionalism and localism spread, they leave firms less inclined to downsize (Greenwood et al., 2010).

METHODS AND DATA

This study assesses possible relationships between the organizational composition of local economies and their resilience during the Great Recession. Using counties as proxies for local economies (Foner, Kali, & Yeager, 2011; Hooks, Mosher, Genter, Rotolo, & Lobao, 2010; Moller, Alderson, & Nielsen, 2009), I track county unemployment rates from 2007 to 2016 to observe how localities across the United States resisted and recovered from the common, nationwide shock of the economic crisis. I then examine whether ecologies of organizations within those localities – measured according to the county-level prevalence of eight types of non-SVO organizations on the eve of the crisis – shaped those responses. There is substantial variation in both the organizational compositions of counties and their unemployment rate trajectories as they traversed the decade of the recession and its aftermath, providing ample analytical leverage for assessing associations.

I opt for a cross-period strategy to assess whether differences across counties in the prevalence of cooperatives, nonprofits, and other non-SVO organizations before the recession were associated with two dependent variables: (1) spikes in county unemployment rates from 2007 to 2010; and (2) subsequent recoveries in unemployment from 2010 to 2016. I also examine whether any associations between the organizational composition of local economies and their unemployment surges and recoveries persist after I control for the size of those economies, their demographic characteristics and economic composition, and local housing market conditions.[1]

I employ simple structural equation models to estimate simultaneously models of both key outcomes – unemployment rate spikes and recoveries – fitting the two models below. (I describe each variable in the corresponding sections that follow.)

$$\begin{aligned}\text{unemprate spike}(2007-10)_i &= \alpha + \beta_1 * \text{unemprate2007}_i + \sum \beta_2 * \text{Org ecologies}_i \\ &+ \sum \beta_3 * \text{Basic controls}_i + \sum \beta_4 * \text{Demographics}_i \\ &+ \sum \beta_5 * \text{Econ composition}_i + \sum \beta_6 * \text{Housing market}_i + \varepsilon_{i\ \text{spike}}\end{aligned}$$

$$\begin{aligned}\text{empraterecov}(2010-16)_i &= \alpha + \beta_1\text{*unempratespike}(2007-10)_i + \sum\beta_2\text{*Org ecologies}_i \\ &+ \sum\beta_3\text{*Basic controls}_i + \sum\beta_4\text{*Demographics}_i \\ &+ \sum\beta_5\text{*Econ composition}_i + \sum\beta_6\text{*Housing market}_i + \varepsilon_{i\ \text{recov}}\end{aligned}$$

This strategy lets me analyze both unemployment spikes and subsequent recoveries as functions of the organizational composition variables, while controlling for other characteristics of local economies on the eve of the crisis. It also allows: (1) the baseline unemployment rate right before the recession to affect the size of the unemployment spike during the recession; (2) the unemployment spike to affect the size of the subsequent recovery; and (3) for correlated errors across models. Of main interest here are the coefficients for the organizational ecologies variables in each equation (the vectors of $\beta_2 s$), and how they behave in the presence of controls.

Dependent Variables: Resistance and Recovery

Following past scholars (Doran & Fingleton, 2018; Martin et al., 2016), I decompose resilience into two key dimensions – resistance and recovery – and measure those dimensions separately, via declines and recovery in employment performance. I use unemployment to assess economic decline and recovery rather than other commonly used indicators (poverty rates, local GDP, income inequality, average wages, etc.) because the performance of local economies in generating and retaining jobs most directly captures their capacities to sustain general prosperity during hard times. Having a job is essential to the welfare of individuals and their households, with knock-on effects for their ability to keep their homes, access health care, and otherwise maintain their quality of life. Moreover, shifts in poverty rates, income inequality, average wages, or local GDP could reflect changes in fortunes concentrated mainly among the least or most well-off segments of the economy. For example, the gains accruing to corporate executives and financial workers due to rising asset prices might boost GDP or average wages even when employment remains stable or falls. Finally, unemployment rates appear to be less "sticky" than poverty rates, average wages, and income inequality in the face of shifting market conditions, therefore providing a more sensitive measure of economic declines and recoveries.

I opt for a simple, easily interpretable measure of employment performance, using unemployment rates (the percent of the labor force that was unemployed in the counties). I anchor the beginning and end points for the two phases in fixed time points: 2007, a pre-crisis reference point, when the unemployment rate was relatively low; 2010, the year that the unemployment rate peaked immediately following the 2008 financial crisis; and a fixed number of years after that as a post-peak reference for the recovery. I measure resistance to the recession shock posed by the financial crisis using the variable *unemployment rate spike*, calculated as the unemployment rate in the peak year of 2010 minus the rate in 2007. I measure

recovery from that shock using the variable *employment rate recovery*, calculated as the peak unemployment rate in 2010 minus the rate in 2016.[2] The data come from the U.S. Bureau of Labor Statistics data series *Local Area Unemployment Statistics*.

Independent Variables: Organizational Systems

Unless otherwise noted, I measured all independent variables in 2006 in order to capture conditions within local economies one year prior to the onset of the 2007–2009 recession. This decision reflects my argument that the ecological composition of local economies prior to the shock and recession shaped their responses. In theory, conditions within local economies prior to 2006 could have shaped these responses. It is also possible that changes in ecologies during the recession might have influenced how local economies responded, or that dramatic shifts in economic performance might have reconfigured local organizational ecologies, raising concerns about endogeneity. However, the organizational systems studied here are remarkably stable over time, especially during the 2000s and 2010s, making the cross-period strategy of measuring independent variables on the eve of the crisis a reasonable approach.[3]

I measured the organizational composition of local economies using the pre-crisis densities of eight ecologies of organizations – three ecologies each in the key industries of banking and electrical utilities, along with the ecologies of research universities and nonprofits. To provide some comparative leverage, I included densities for two non-SVO forms and SVO corporations in both key sectors: community banks, credit unions, and top 50 derivative-holding bank corporations in banking, and municipal utilities, electrical cooperatives, and investor-owned utilities in electricity.

To measure the prevalence of non-SVO organizations and corporations in the two sectors, I use (1) annual geocoded data on all banks and credit unions operating in the United States from 1994 through 2016 (collected from the FDIC's *Summary of Deposits* and *Statistics on Depository Institutions* databases and the National Credit Union Association's *Quarterly Call Reports*) and (2) geocoded data on all electrical utilities operating in the United States from 1994 through 2016 (collected from the U.S. Energy Information Administration's annual Form EIA-861 data files). I measure the *prevalence of community banks, credit unions, and the 50 largest derivative-holding banking corporations* by calculating, for each bank type, the number of branches operating per 10,000 residents in a county in 2006.[4] I experimented with shares of deposits and branches for each banking type (which were highly correlated) and density measures based on the counts of banks or banking organizations for each type, but I ultimately settled on the branch densities, given that branches represent the public-facing organizational units of banks. There is no branch-level equivalent for utilities in the data, so I measured the *prevalence of electrical cooperatives, municipal utilities, and investor-owned utilities* using the counts per 10,000 residents of each type of electrical utility operating in a county in 2006.

For research universities, I used the *Carnegie Classification of Institutions of Higher Education* for 2005, the closest to 2006 for which data are available. I coded R1 universities (doctoral degree-granting institutions with "very high research activity") and R2 universities (doctoral institutions with "high research activity") to their home county location, and created a series of indicators for (1) whether or not a county has, or is contiguous to a county that has, an R1 or R2 university, and (2) how many R1 or R2 universities there were in, or adjacent to, a county. After some experimentation, I opted for a two-dummy variable scheme. The variable *haveR1orR2* was equal to 1 if a county contained an R1 or R2 university, and zero otherwise. The variable *neighborhaveR1orR2* was equal to 1 if an R1 or R2 university was present in an adjacent county, and zero otherwise. As large and regionally oriented institutions, research universities clearly have the potential to influence regional rather than just local economies, warranting a strategy that considers separately their impacts in their counties and on surrounding locales.

For nonprofits, I used a density measure – the *number of nonprofits in a county per 10,000 residents* in 2006 – calculated using geocoded data obtained from the National Center for Charitable Statistics' annual *Business Master Files*.

Controls

I controlled for prior unemployment conditions using the *2007 county unemployment rate* as the baseline control in models of unemployment spikes from 2007 to 2010, and the spike from 2007 to 2010 (*unemployment rate spike*) as a baseline control for models of recoveries from 2010 to 2016. I used 2007 for the initial baseline as it represented the average, pre-crisis unemployment rate minimum across county economies. I also controlled as much as possible for variables that prior work has established as shaping resilience, paying particular attention to those that could be correlated with both organization compositions and unemployment trajectories in local economies during the recession. I included in all models a basic set of controls for the *size of the local economies* in 2006 (using combinations and subsets of the natural logs of population, total branches, total deposits, total utility customers, and total establishments within the county), *overall organizational density* (calculated as the total number of establishments per 10,000 residents in a county), and *population density*. The size measures were highly correlated, so I settled on population for the size control. I also included in all models dummy variables for *geographic region*, using the four U.S. Census Bureau-designated regions (Northeast, Midwest, South, and West). I included the economy size and population density controls to eliminate confounds due to larger for-profit corporations and research universities being drawn to dense, urban, and high-growth economic areas. These areas might be prone to larger employment shifts over time than rural economies, where community banks, cooperatives, and the like are more heavily concentrated. I included controls for geographical region as a first-pass effort to deal with the clear geographical clustering of forms (including the tendency of cooperatives, municipals, community banks, and nonprofits to be located in Midwestern places) and its potentially confounding effects.

I controlled for *demographic compositions of local economies* in 2006 using median household income, the proportion of the population over 25 with high school diplomas or less education, and the proportions of African Americans, Hispanics, Asian Americans, and Native Americans. I controlled for the *economic composition of local economies* using the proportion of employment in firms with fewer than 500 employees, and the proportions of employment across industries, including agriculture, manufacturing, construction, FIRE (finance, insurance, and real estate), transportation and utilities, and various service subsectors. Potential concerns here regarding confounding effects include: correlations of universities with high proportions of technical and science employment and higher concentrations of educated workers; correlations of community banks, cooperatives, and municipals with larger small-business sectors and agriculture; correlations between derivative-holding bank corporations and concentrated subprime mortgage lending in less affluent minority communities; and similar correlations between nonprofit densities, affluence, and ethno-racial compositions. I also included Herfindahl indices using the proportions of employment across sectors, following Doran and Fingleton (2018) and arguments in the resilience literature about the importance of economic specialization or diversification for resistance and recovery.

Finally, I controlled for *housing market conditions* and the extent to which local economies experienced the housing bubble and collapse, using growth in housing units, growth in owner-occupied housing, foreclosure rates, and changes in average housing prices from 2000 to 2007 calculated by the Federal Housing Finance Agency for a subset of counties using an experimental housing price index.[5] Associations of community banks with smaller unemployment surges, for example, might be artifacts of their focus on agricultural and small-business lending or other sectors or places that were less exposed to drops in demand, employment busts, or housing booms.

The data for the controls used came from the following sources: the U.S. Census and American Community Survey (population, demographic composition, housing units, and occupancy); RealtyTrac (foreclosure rates); the Federal Housing Finance Agency (housing price appreciation); the U.S. Bureau of Labor Statistics' *Quarterly Census of Employment and Wages* (economic composition of local economies); and the Small Business Administration's *Statistics of U.S. Businesses* and the Census Bureau's *County Business Patterns* (firm and establishment size).

Tables A1 and A2, respectively, provide descriptive statistics for the independent variables and a correlation matrix for the organizational variables and controls used in the analyses. There were positive correlations among the various density measures for non-SVO organizations – including community banks, municipal utilities, electrical cooperatives, and nonprofits – which might reflect some of their common roots, as well as a marked regionalism in these organizations, as I discuss further below. However, only the negative correlation between the densities of investor-owned firms and cooperatives within the electrical utility industry exceeded 0.60, and variance inflation factors for all models estimated did not suggest troubling levels of multicollinearity.[6]

RESULTS

Descriptive Results

Fig. 1 charts the average (unweighted) unemployment rate for US counties from 1994 to 2016, which includes the dramatic rise in unemployment during the Great Recession. On average, the percentage of unemployed workers spiked within counties by 4.29 points from 2007 to 2010, and fell by 3.91 percentage points during the subsequent recovery. Fig. 2 plots the distribution of the spikes and recoveries in the percent unemployed across counties for the two periods (both positively coded for ease of interpretation). It depicts the percentages of counties that experienced spikes in the percent unemployed from 2007 to 2010 (left panel) and reductions in the percent unemployed from 2010 to 2016 (right

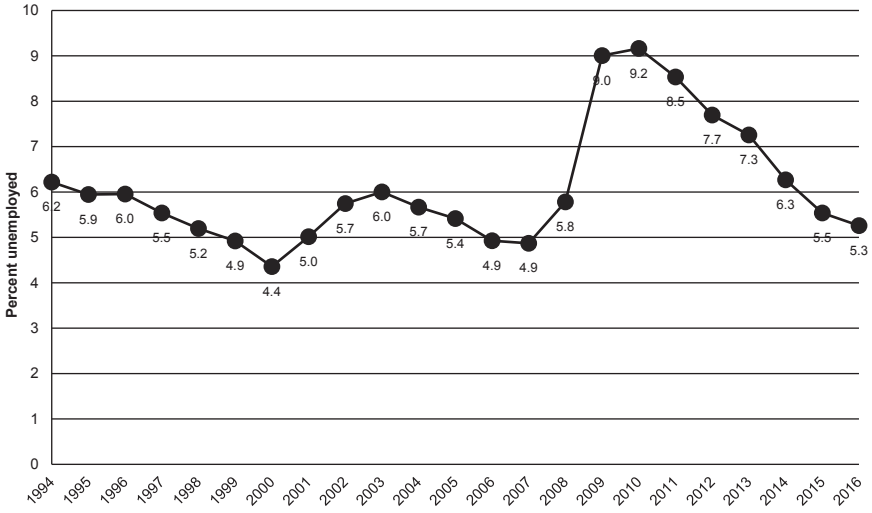

Fig. 1. Average Unemployment Rate in Local (County) Economies, 1994–2016.

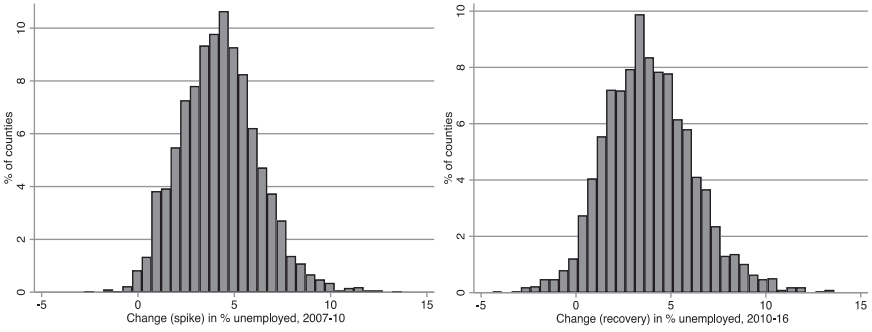

Fig. 2. Changes in Percent Unemployed by County from 2007 to 2010 (Spikes) and from 2010 to 2016 (Recoveries).

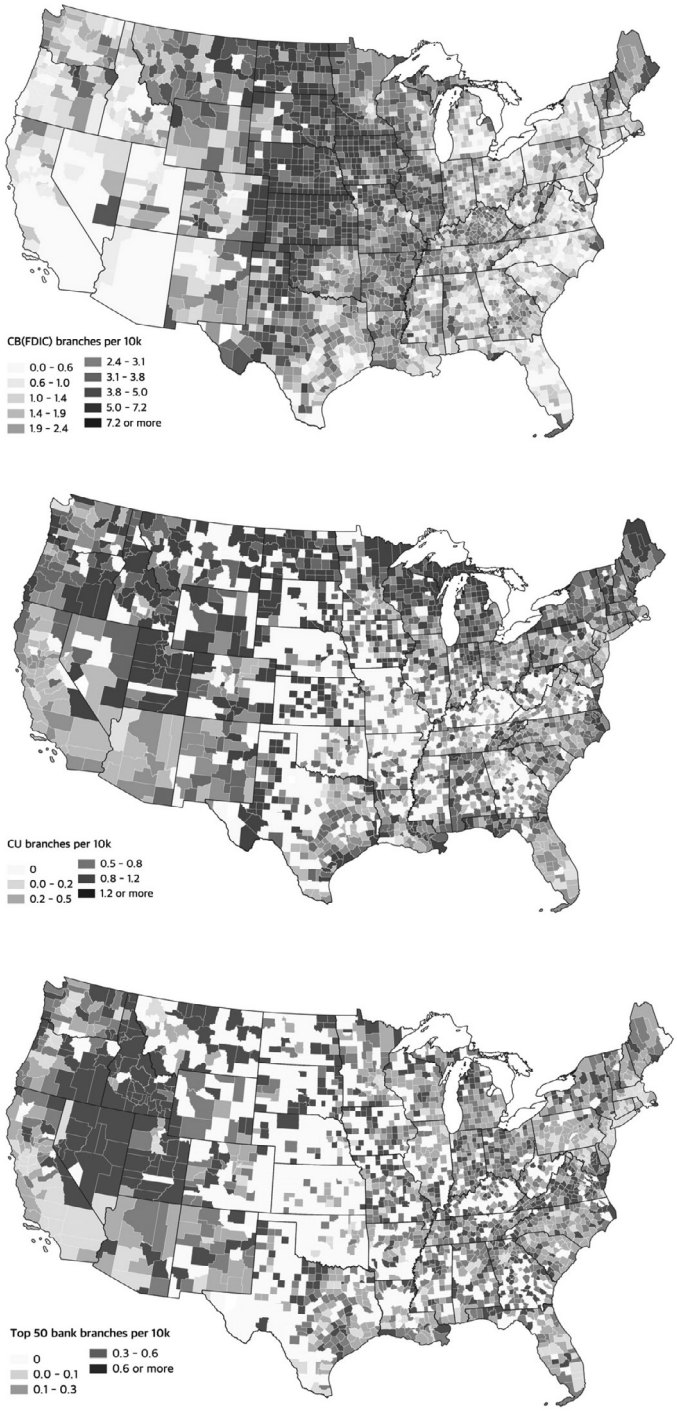

Fig. 3. Community Bank, Credit Union, and Top 50 Derivative-Holding Bank Corporation Branches per 10,000 Residents in 2006.

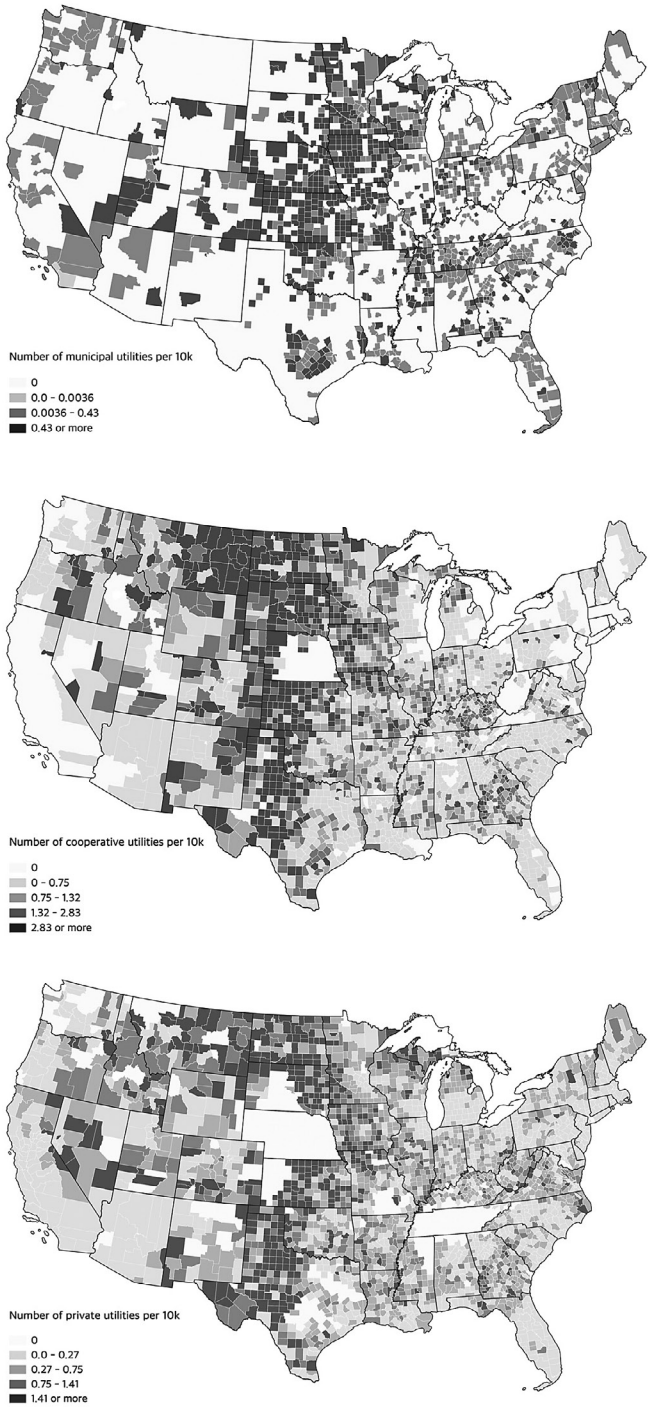

Fig. 4. Municipal Electrical Utilities, Electrical Cooperatives, and Investor-Owned Utilities per 10,000 Residents in 2006.

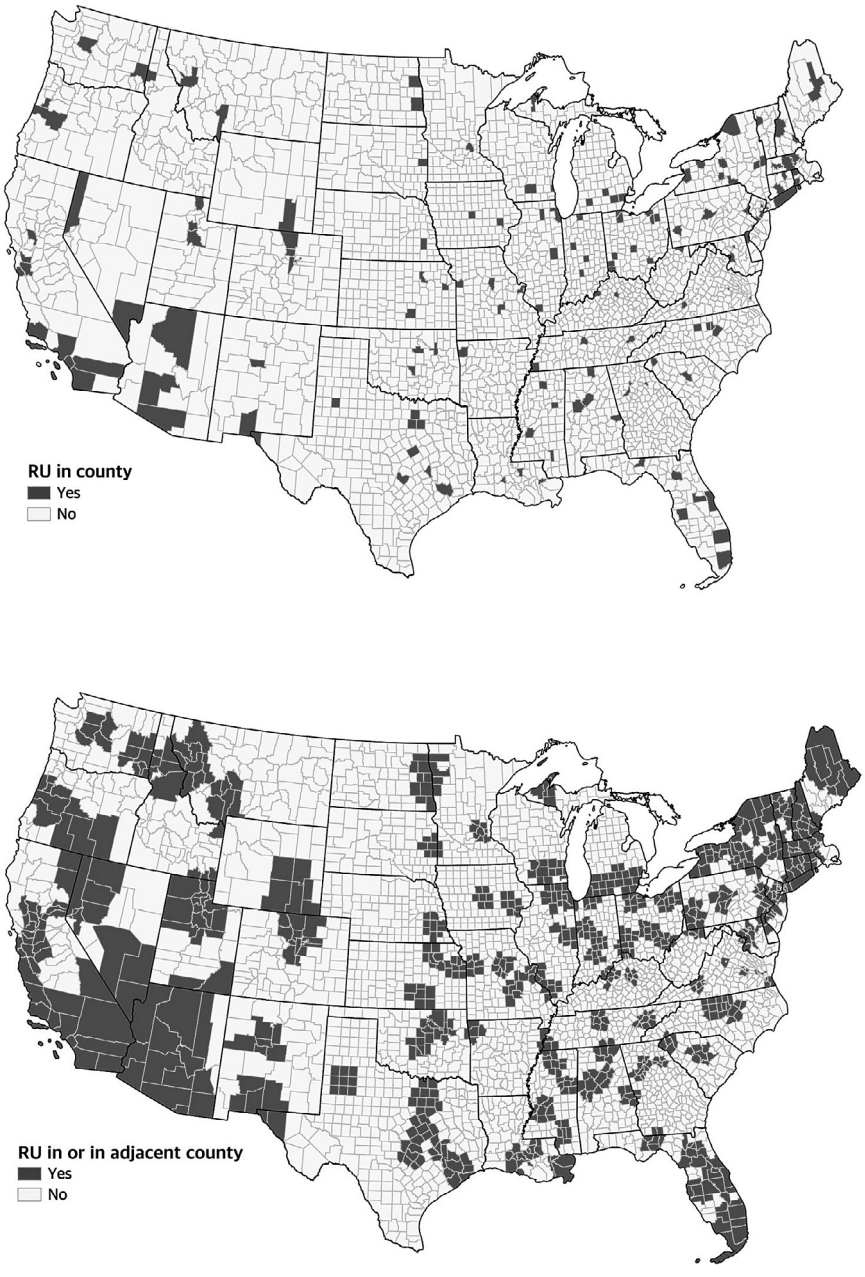

Fig. 5. R1 and R2 Universities in 2005.

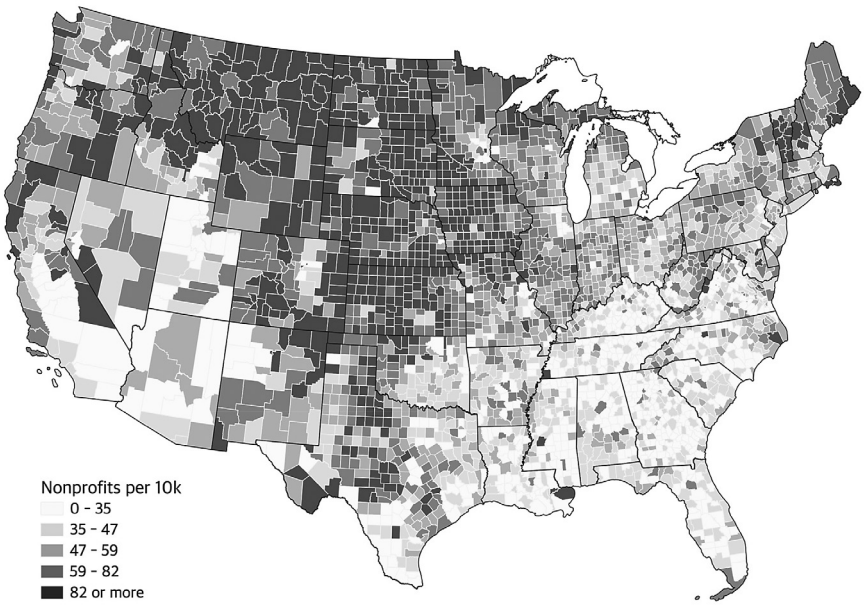

Fig. 6. Number of Nonprofits per 10,000 Residents in 2006.

panel). These plots of my performance outcome measures reveal substantial variation in how much employment local economies lost or recovered. Between 2007 and 2010, 25 percent of counties saw their unemployment rates increase by 2.9 percentage points or less, but 25 percent experienced spikes of at least 5.6 percentage points – with 10 percent having spikes of 7.6 to 13.3 points. Similarly, during the recovery, 25 percent of counties experienced weak employment gains (i.e., unemployment rate reductions) of 2.3 percentage points or less, while the top 25 percent of counties saw gains of 7.9 points or more, and 10 percent had gains of 10.3 to 13.5 points.

Figs. 3 and 4 map the distributions of relevant organizations across US counties in 2006: in the banking industry, roughly 6,600 community banks, 7,000 credit unions, and the 50 largest derivative-holding bank corporations, and in the electrical utility industry, approximately 1,850 municipal electrical utilities, 890 electric cooperatives, and 217 investor-owned utilities. Figs. 5 and 6 map the distributions across counties, respectively, of the 199 Carnegie-designated research universities in 2005, and the over 1 million nonprofits operating in the United States in 2006.

While many of these non-SVO organizations were dwarfed in size and assets by their corporate counterparts (this was especially the case for those in the banking and electricity industries), their widespread and marked geographical distributions reveal ample variation in organizational compositions across local economies, which I could analytically exploit. Community bank branches were concentrated in a broad swath of counties running from the upper Midwest

down to the Plain states and through Texas and Louisiana. By contrast, large derivative-holding bank branch concentrations traced an almost reverse image, and credit union branches were concentrated more in New England, the East Coast, the Upper Midwest, and the West. Municipal electric utilities displayed the most marked clustering in the Midwest, but they were also present in some medium-sized and even larger cities in Texas, Florida, and the West. Outside of California and eastern Nebraska, electrical cooperatives operated in more rural places, and investor-owned utilities operated virtually everywhere. Research universities were located in 5 percent of the counties and were adjacent to 27 percent. The number of nonprofits per 10,000 residents in 2006 averaged 62 nationally. But across counties, it ranged from a low of 4 to over 368, with nonprofits populating counties far more densely in the Midwest, Northern Plain states, and Northeast than in the South or Southwest.

Modelling Estimates

Table 1 presents five sets of structural equation modeling (SEM) estimates of the relationships between organizational ecologies and changes in unemployment rates within local economies during the recession, controlling for other characteristics of local economies. I produced these results using the SEM routines in Stata 15. These routines let me simultaneously estimate models for both variables, while providing for correlated errors across models, allowing the size of the spike to directly affect the size of the recovery, and producing variance estimates robust to heteroskedasticity. Models 1a and 1b serve as a baseline. These models include the organizational composition variables and basic controls for prior unemployment conditions, total population (for the size of the local economy), overall organizational density, population density, and regions. Model sets 2 through 5 add additional sets of variables to the spike and recovery models, controlling, in turn, for the economic composition of local economies, their demographic features, and their housing market conditions – first without the index of housing price appreciation (as that was only available for 2,379 counties), and then with it. Table 1 provides unstandardized coefficients for all models, but I standardize their magnitudes in Fig. 7.

Fig. 7 charts the sizes of the associations between organizational systems, unemployment spikes, and recoveries within counties. These are calculated using the results from the baseline model. The figure shows how many percentage points a 1 standard deviation increase in organizational densities (or the presence of research universities) added or subtracted to spikes and recoveries in unemployment rates – that is, the increase or decrease in the *changes in the percent unemployed* over each period. As noted above, the unemployment rate in the counties spiked by an average of 4.29 percentage points from 2007 to 2010, and decreased on average by 3.91 percentage points during the 2010 to 2016 recovery.

The associations between the organizational compositions of local economies and their unemployment trajectories were strikingly consistent across non-SVO forms. However, there were some noteworthy differences in the magnitudes of these associations and how they behaved in the face of controls, which might shed light on how different ecologies shape resilience.

Banking. The coefficients for the densities of community banks and credit unions were *negative* and *significant* in the first unemployment rate spike model (1a) in Table 1, and *positive* and *significant* in the first unemployment rate recovery model (1b). Consistent with core expectations, denser ecologies of community-based and cooperative enterprise in banking were associated with smaller spikes in unemployment rates during the Great Recession, along with stronger recoveries in unemployment rates, net of those spikes, thereafter. As Fig. 7 indicates, 1 standard deviation increases in community bank and credit branch densities reduced unemployment rate spikes, respectively, by 0.35 and 0.13 percentage points, and boosted employment recoveries after 2010 by 0.32 and 0.12 percentage points. All of these associations retained their significance and magnitudes in the face of controls across the various models. By contrast, coefficients for the branch densities of the top 50 derivative-holding bank corporations displayed the opposite pattern. They ran *positive* and *significant* in the first spike model, and *negative* but *not significant* in the first recovery model. This suggests that these banking forms are associated with larger increases in unemployment – exposure rather than resistance – and perhaps weaker recoveries. One standard deviation increases in the branch densities of these bank corporations added 0.11 percentage points to spikes in unemployment rates. These results also held up across models.

The results for these three forms and their persistence in the face of controls support the core arguments about the contributions to resilience of non-SVO organizations. They also likely reflect mainly direct, rather than indirect, mechanisms, given the roles that banks and credit unions play as lenders to firms and households. In addition, the pattern of results suggests that any direct lending-channel effects on unemployment for these forms operated primarily through small-business and perhaps consumer lending, rather that mortgage markets or subprime loans. First, the coefficients remained significant when controlling for the characteristics of local economies, including housing market conditions. Second, the magnitudes of the associations for community banks, which focus heavily on small-business loans, were almost three times larger than for credit unions. Credit unions have numerous branches across the United States, and may have helped households and small businesses avoid crushing credit card debt and other high-interest borrowing by providing consumer loans, some small-business lending, and payment deferrals in the aftermath of the financial crisis. But they are smaller players in banking markets and limited in their small-business lending, which again suggests direct effects via small-business (and perhaps consumer) lending. That said, community banks' substantially larger impact might also reflect their indirect contributions to resilience – for instance, how their relational banking practices forged local ties among small businesses across sectors.

The notably smaller associations of top 50 bank corporations with more severe declines and perhaps weaker recoveries might reflect indirect cultural mechanisms, such as how big banks propagated financial logics in local economies focused on short-term profits, cutting costs, or boosting stock prices. Yet it is likely that any effects here were directly due to their lending practices in small-business loan markets and credit freezes there. Moreover, the small associations could reflect

Table 1. SEM Estimates of the Relationships between the Organizational Composition of Local Economies, Unemployment Spikes from 2007 to 2010, and Employment Recoveries from 2010 to 2016.

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)	(4a)	(4b)	(5a)	(5b)
	Basic controls		Economic composition		Demographic conditions		Housing markets		Housing markets + HPI	
	Spike	Recovery	Spike	Recovery	Spike	Recovery	Spike	Recovery	Spike	Recovery
Organizational ecologies										
Community banks	−0.109***	0.0999***	−0.110***	0.0883***	−0.110***	0.177***	−0.103***	0.113***	−0.149***	0.153***
	(0.0166)	(0.0275)	(0.0170)	(0.0291)	(0.0159)	(0.0416)	(0.0155)	(0.0283)	(0.0241)	(0.0435)
Credit unions	−0.143***	0.132***	−0.149***	0.140**	−0.111***	0.183***	−0.106***	0.120**	−0.218***	0.224***
	(0.0361)	(0.0497)	(0.`w0372)	(0.0546)	(0.0336)	(0.0679)	(0.0317)	(0.0477)	(0.0465)	(0.0709)
Top 50 derivative bank corporations	0.112***	−0.0846	0.128***	−0.114**	0.0834**	−0.137*	0.0892**	−0.0547	0.114**	−0.107
	(0.0407)	(0.0531)	(0.0387)	(0.0559)	(0.0409)	(0.0722)	(0.0404)	(0.0557)	(0.0544)	(0.0753)
Municipal electrical utilities	−0.0359	0.118**	0.00158	0.0904*	−0.0216	0.123	−0.0494	0.143**	−0.111*	0.278***
	(0.0341)	(0.0539)	(0.0332)	(0.0488)	(0.0343)	(0.0760)	(0.0327)	(0.0569)	(0.0564)	(0.0903)
Electrical cooperatives	−0.0332*	0.0946***	−0.0426	0.123***	−0.00882	0.0714**	−0.0499***	0.114***	−0.142***	0.294***
	(0.0172)	(0.0254)	(0.0319)	(0.0460)	(0.0165)	(0.0334)	(0.0163)	(0.0265)	(0.0432)	(0.0628)
Investor-owned utilities	−0.00398	−0.0177	0.0647	−0.0668	−0.00570	−0.0245	−0.0172	0.009i10	0.171**	−0.305**
	(0.0328)	(0.0461)	(0.0489)	(0.0727)	(0.0328)	(0.0655)	(0.0313)	(0.0474)	(0.0841)	(0.127)
Research university in county	−0.477***	0.684***	−0.296***	0.573***	−0.0682	0.483**	−0.376***	0.674***	−0.309***	0.680***
	(0.116)	(0.176)	(0.112)	(0.169)	(0.111)	(0.222)	(0.104)	(0.170)	(0.102)	(0.165)
Research university adjacent county	0.0197	0.203**	−0.0385	0.210**	0.0594	−0.0281	−0.0960	0.288***	−0.126*	0.276***
	(0.0674)	(0.0959)	(0.0678)	(0.0996)	(0.0655)	(0.127)	(0.0660)	(0.101)	(0.0669)	(0.107)
Nonprofits	−0.00757***	0.0101***	−0.00592***	0.00886***	−0.00606***	0.0125***	−0.00652***	0.0106***	−0.00621**	0.00900**
	(0.00294)	(0.00386)	(0.00222)	(0.00329)	(0.00212)	(0.00455)	(0.00237)	(0.00403)	(0.00243)	(0.00354)

Table 1. (*Continued*)

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)	(4a)	(4b)	(5a)	(5b)
	Basic controls		Economic composition		Demographic conditions		Housing markets		Housing markets + HPI	
	Spike	Recovery	Spike	Recovery	Spike	Recovery	Spike	Recovery	Spike	Recovery
Basic controls										
Unemployment rate (2007)	0.369***		0.365***		0.299***		0.372***		0.387***	
	(0.0234)		(0.0242)		(0.0252)		(0.0241)		(0.0261)	
Unemployment spike (2007–2010)		1.999***		2.008***		2.632***		2.057***		2.100***
		(0.110)		(0.120)		(0.196)		(0.114)		(0.127)
Log population	0.148***	−0.0375	0.169***	−0.159***	0.267***	−0.472***	−0.0635	0.131**	−0.131***	0.158**
	(0.0360)	(0.0513)	(0.0391)	(0.0610)	(0.0387)	(0.0962)	(0.0388)	(0.0572)	(0.0447)	(0.0683)
Establishments per capita	3.83e−05	0.00177**	0.000198	0.000957	0.00153**	−0.00233**	−0.000273	0.00169*	−0.000695	0.00305***
	(0.000684)	(0.000883)	(0.000607)	(0.000867)	(0.000596)	(0.00116)	(0.000628)	(0.000935)	(0.000656)	(0.000931)
Population density	1.00e−05	−2.35e−05**	3.20e−05**	−4.09e−05***	8.14e−06	−2.85e−06	2.21e−05***	−2.98e−05**	1.35e−05*	−4.72e−07
	(7.17e−06)	(1.12e−05)	(1.25e−05)	(1.29e−05)	(6.49e−06)	(1.36e−05)	(7.12e−06)	(1.16e−05)	(7.01e−06)	(1.53e−05)
Midwest	0.215**	0.521***	−0.0299	0.647***	0.477***	−0.162	−0.100	0.745***	0.176*	0.0180
	(0.0860)	(0.137)	(0.0894)	(0.139)	(0.0837)	(0.209)	(0.0873)	(0.137)	(0.0950)	(0.160)
South	0.861***	−0.955***	0.763***	−0.794***	0.886***	−1.126***	0.520***	−0.797***	0.615***	−1.086***
	(0.0939)	(0.158)	(0.0973)	(0.174)	(0.100)	(0.241)	(0.0894)	(0.151)	(0.0873)	(0.159)
West	1.752***	−2.219***	1.743***	−1.998***	2.560***	−4.534***	1.194***	−1.906***	1.245***	−2.154***
	(0.106)	(0.241)	(0.111)	(0.270)	(0.118)	(0.551)	(0.110)	(0.218)	(0.110)	(0.230)
Economic composition										
Small-business share			0.224	3.968**						
			(1.034)	(1.550)						
Agriculture, natural resources			−2.790***	−2.902***						
			(0.547)	(1.077)						
Construction			4.851***	−5.082***						
			(0.968)	(1.392)						
Manufacturing			2.043***	0.0438						
			(0.448)	(0.684)						
Trade, transportation, and utilities			−1.792**	2.693**						
			(0.776)	(1.120)						

Table 1. (*Continued*)

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)	(4a)	(4b)	(5a)	(5b)
	Basic controls		Economic composition		Demographic conditions		Housing markets		Housing markets + HPI	
	Spike	Recovery	Spike	Recovery	Spike	Recovery	Spike	Recovery	Spike	Recovery
FIRE			−3.431**	6.704***						
			(1.593)	(2.583)						
Education and health			−2.966***	1.240						
			(0.598)	(0.915)						
Professional, science, technical			−4.249***	5.056***						
			(1.076)	(1.740)						
Government			−1.485***	1.585***						
			(0.463)	(0.608)						
Herfindahl Index			1.278	−2.138						
			(1.157)	(1.436)						
Demographic conditions										
Median household income					2.41e−05***	−1.42e−05*				
					(4.30e−06)	(8.26e−06)				
% Less than high school diploma					0.0537***	−0.125***				
					(0.00844)	(0.0207)				
% High school diploma					0.0625***	−0.116***				
					(0.00639)	(0.0184)				
% Black					0.0138***	−0.0343***				
					(0.00322)	(0.00731)				
% Hispanic					−0.0104***	0.00776				
					(0.00314)	(0.00775)				
% Native American					−0.0351***	0.0433***				
					(0.00553)	(0.0132)				

Table 1. (*Continued*)

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)	(4a)	(4b)	(5a)	(5b)
	Basic controls		Economic composition		Demographic conditions		Housing markets		Housing markets + HPI	
	Spike	Recovery	Spike	Recovery	Spike	Recovery	Spike	Recovery	Spike	Recovery
% Asian/Pacific Islander					−0.0333**	0.0539**				
					(0.0136)	(0.0270)				
Housing market conditions										
Growth in housing units							0.0185***	0.00507	0.00842**	0.0152***
							(0.00386)	(0.00551)	(0.00381)	(0.00556)
Growth in owner-occupied							0.0113	−0.0754***	0.00350	−0.0428
							(0.0166)	(0.0248)	(0.0188)	(0.0292)
Foreclosure rates							0.364***	−0.356***	0.351***	−0.305***
							(0.0440)	(0.0739)	(0.0488)	(0.0852)
HPI appreciation									0.00462***	−0.0151***
									(0.00140)	(0.00209)
Constant	1.228***	−5.419***	1.349	−8.275***	−4.391***	4.423***	3.381***	−7.462***	3.669***	−5.973***
	(0.462)	(0.731)	(1.092)	(1.606)	(0.672)	(1.435)	(0.487)	(0.980)	(0.602)	(1.228)
var (e.spike)	2.364***		2.105***		2.133***		2.228***		1.996***	
	(0.0809)		(0.0756)		(0.0742)		(0.0784)		(0.0767)	
var (e.recov)	4.817***		4.619***		8.406***		5.049***		4.488***	
	(0.636)		(0.654)		(1.564)		(0.669)		(0.676)	
cov (e.spike e.recov)	−2.794***		−2.652***		−3.876***		−2.836***		−2.581***	
	(0.290)		(0.281)		(0.458)		(0.284)		(0.287)	
Observations	3,078	3,078	2,904	2,904	3,078	3,078	3,078	3,078	2,379	2,379

Robust standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

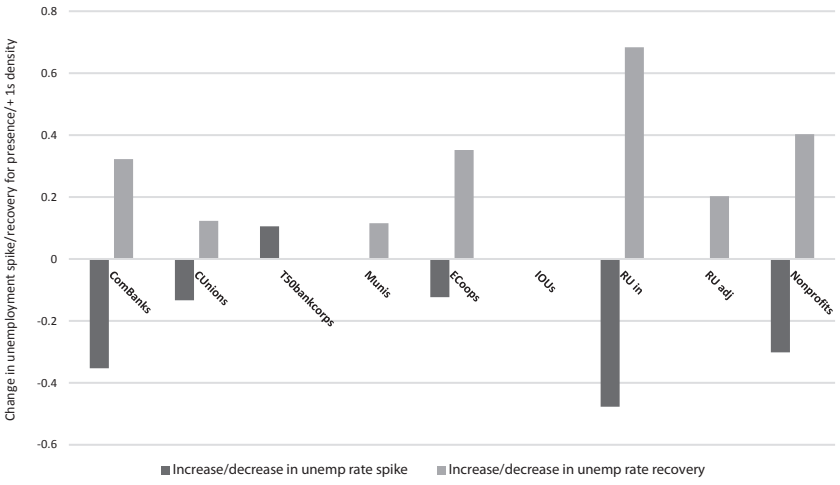

Fig. 7. Increases or Decreases in Unemployment Spikes and Recoveries Associated with the Presence of Research Universities or Increasing Densities of Organizational Forms, 2007–2016.

how big banks helped at least some local economies access broader pools of loan capital, partly mitigating the negative impacts of their lending practices.

Electrical utilities. As was the case for non-SVO organizations in banking, the coefficients for electrical cooperatives were *negative* and *significant* in the first unemployment spike model (1a), and *positive* and *significant* in the first recovery model (1b). Coefficients for municipal utilities were also *negative* but *not significant* for unemployment spikes, and *positive* and *significant* for recoveries. A 1 standard deviation increase in electrical cooperative densities reduced spikes in unemployment rates by 0.12 percentage points and boosted recoveries in rates by 0.35 percentage points, while the same increase in municipal utility densities added 0.12 percentage points to unemployment rate recoveries. The coefficients for electrical cooperatives remained significant on the recovery side for all models, but lost significance in spike models that controlled for the economic and demographic composition of local economies. Likewise, the significance of the municipal utility coefficients disappeared in the third recovery model (3b) that controlled for demographic conditions. Coefficients for investor-owned utilities were only significant in the fifth set of models (5a and 5b), which controlled for the full set of housing market conditions. Like SVO corporations, investor-owned utilities were associated there with larger unemployment rate spikes and weaker recoveries.

Overall, non-SVO organizations in this industry were associated with greater resistance and especially recovery, and investor-owned utilities, if anything, were associated with opposite trajectories. Cooperatives (and perhaps municipal utilities as well) might have contributed directly to resilience by deferring billing or electricity cutoffs, keeping rates down, or otherwise sustaining a key resource flow

for households, small businesses, and redevelopment efforts. However, the results here might also, or instead, reflect indirect mechanisms. First, the associations observed in this sector are notably weaker than in banking, indicating that electrical utilities had a smaller impact via their own actions on the adaptive capacities of local economies. Regulatory oversight and obligations to serve might have left utilities with less discretion regarding provision and terms than was the case for banks. Second, it is not clear why direct resource-based mechanisms would produce stronger associations with recovery than with resistance for cooperative and municipal utilities. Third, some of the associations between non-SVO forms and resilience were due to their associations with certain kinds of industry or demographic profiles – that is, to the associations of electrical cooperatives and municipal utilities with agricultural regions and largely white populations. These results suggest that indirect effects were in play, such as the ways that non-SVO organizations link actors or promulgate logics of cooperativism, mutualism, and self-help within homogenous, agricultural, and rural communities.

Research universities and nonprofits. The results for research universities and nonprofits parallel those for the non-SVO organizations in banking and electricity. Having a research university and denser ecologies of nonprofits in a local economy were both significantly associated with smaller increases in unemployment rates during the recession (model 1a), and stronger recoveries thereafter (model 1b). Having a research university in an adjacent county was also significantly associated with stronger recoveries. These associations were among the largest observed in this study. The presence of a research university in a county mitigated unemployment spikes and boosted employment recoveries, respectively, by .48 and .68 percentage points – a substantial impact. Having a research university in an adjacent county boosted a county's recovery by 0.20 percentage points. A 1 standard deviation increase in nonprofit density reduced spikes and boosted recoveries, respectively, by 0.30 and 0.40 percentage points. Furthermore, the coefficients for having a research university in a county remained significant across all recovery models, as did the coefficients for nonprofits across all spike and recovery models. In contrast, the coefficients for having a university in a county and having a university in an adjacent county lost significance, respectively, in the spike and recovery models that controlled for demographic conditions.

The strong associations with resilience found for research universities likely reflect their large size relative to some local economies, and how they influence local economies via multiple mechanisms. In terms of direct impacts, they serve as sources of employment, spending, ideas, and highly trained people. Indirectly, they serve as incubators and anchors for new organizations, regional development, and connections and conversations across fields. The finding that two of the three research university variables lost significance after controlling for a county's demographic characteristics points strongly toward direct mechanisms – that research universities made their communities more resilient by populating their surroundings with well-educated workers and recomposing the pool of human capital in local economies. Yet, the strong associations with local recoveries net of demographic controls also suggests that large research universities fostered resilience through some of the indirect mechanisms described above as well.

The strong associations observed for nonprofits may reflect how their diversity and numbers strengthen local economies – here, too, in direct and indirect ways. Nonprofits employ a substantial fraction of many local labor forces, and they likely make a greater effort than for-profit firms do to retain their employees in hard times, especially when they hire clients as a part of their mission to serve. There is also a subset of nonprofits devoted to economic development and employment that could directly foster resilience in the pursuit of their missions. That said, the aggregate measure of nonprofits used in this study captures a large and astonishingly heterogeneous group of organizations that could potentially involve a host of indirect mechanisms. Nonprofits range from foundations, chambers of commerce, and boards of trade (which connect actors across sectors and serve as platforms for deliberation, policymaking, and coordination), to advocacy groups (which demand broader representation for excluded groups), to mutual benefit associations, neighborhood groups, and community organizations (which support local identities and community logics).

Controls. The results for the control variables highlighted potential impacts of other features of local economies in ways that make sense, lending credibility to the analysis. The more that local economies relied on manufacturing and construction, the worse they fared during the recession. Increased employment in both (but especially construction) was associated with greater spikes and slower recoveries. Increased reliance on agriculture and natural resources was also associated with slower recoveries. Economies fared better during both phases of the recession if they depended more on trade and transportation, FIRE, education and health, government, and, above all, the professional, science, and technical sectors. This is consistent with previous findings about the importance of "new economy" sectors for resilience (Hill et al., 2012; Simmie & Martin, 2010). Local economies also experienced greater recoveries when their employment was concentrated in small business. Areas with larger populations of African Americans (but not Hispanics, Asian Americans, or Native Americans) and with less educated residents experienced great surges in unemployment and weaker recoveries, as did those that had experienced greater housing bubbles (i.e., greater growth in housing units and housing price appreciation in the run-up to the financial crisis, and higher foreclosure rates immediately after).

CONCLUSION

The results of this study support its core argument that organizational alternatives to investor-owned corporations can contribute positively to resilience in local economies, increasing a community's capacity to respond effectively to economic shocks. The findings also support the idea that there are important common features and shared dynamics associated with non-SVO organizations, despite differences in their specific histories, missions, and relationships to capitalism, or in the particular roles they adopt when helping economies resist and recover from recession. Community banks, credit unions, electrical cooperatives, municipal electrical utilities, research universities, and nonprofit organizations

more generally were all associated with lower surges in unemployment rates from 2007 to 2010 and/or greater declines in unemployment rates from 2010 to 2016. Sometimes, these impacts were quite substantial. In contrast, SVO corporations – specifically, the largest derivative-holding bank corporations, and perhaps investor-owned utilities as well – were associated with greater increases in unemployment and weaker recoveries. Moreover, the associations between ecologies and unemployment trajectories persisted, with a few exceptions, when controlling for the economic and demographic compositions of local economies and pre-crisis housing market conditions. The principal exception involved research universities, where two out of the three associations lost significance once demographic factors were controlled for. Yet in the case of research universities, this finding may actually speak to a key mechanism by which they foster resilience: cultivating a well-educated and highly adaptable labor force.

To the best of my knowledge, this is the first study of its kind to systematically address the impacts of the organizational composition of local economies – namely, ecologies of alternatives to SVO corporations – on the performance of those economies in the face of crisis. In doing so, this study makes several contributions to scholarship and public policy, while highlighting some fruitful directions for future research.

First, this study deepens our theoretical understanding of economic resilience while also providing an empirical demonstration of the role that organizational systems play in fostering adaptive capacities within local economies. To date, the scholarship on resilience has focused mainly on the role of economic factors, like the human capital profiles of local economies, their sectoral composition, industrial specialization, or diversification, and the prominence of "new economy" sectors. In redirecting attention to organizational compositions, this study not only addresses a gap in the research literature, but also identifies practical ways that policymakers can enhance local resilience – namely, by cultivating local ecologies of community-based enterprises, cooperatives, and nonprofits, and by protecting, rather than gutting, research universities (see also Owen-Smith, 2018). Building this organizational infrastructure helps shield communities from downturns and speed up their recoveries.

For organizational studies, this study contributes an analysis of how systems of organizations have effects beyond organizational populations – specifically, on the capacities of local economies to adapt proactively to recession. Ecologists have long examined the organizational compositions of industries (e.g., Carroll & Hannon, 1995; Freeman & Audia, 2006; Hannan et al., 2007; Ruef, 2000), but that work has focused overwhelmingly on the evolutionary dynamics of populations, interactions among distinct populations, the effects of regulatory and economic conditions on ecologies, and identity and audience. Looking beyond density dependence, mutualism, and selection, this study joins recent efforts to address the broader effects of organizational systems (Negro et al., 2013; Rao & Greve, 2018), reviving some of ecologists' earlier insights about organizational diversity and adaptability.

Institutional scholarship has described the use of community and localism as organizational principles or logics, interpretive filters for organizational

decision-making, and cultural resources for action, all of which can shape organizational formations, responses to pressures for downsizing, and approaches to risky investment (Almandoz, 2014; Goldstein, 2018; Greenwood et al., 2010; Marquis & Huang, 2010). This study deploys such insights to address how logics of community and localism and systems of nonprofit or community organizations can affect adaptive processes and economic performance more broadly in local economies. It also builds on nonprofit research, which has examined how linkages among nonprofits and other organizations influence urban politics, the adaptive capacities of communities and individuals, and social resilience (e.g., Brandtner & Dunning, 2019; Klinenberg, 2015; Marwell & McQuarrie, 2013; Small, 2009), but does not consider, as I do here, how systems of cooperatives, community-based for-profit firms, and other non-SVO forms affect the resilience of local economies.

Future research could disentangle the mechanisms by which non-SVO organizations influence adaptive practices or capacities. After all, variation in their missions, structures, and relations to markets implies that different forms exert their effects via different pathways, and not all of those effects are positive. Past research has found, for example, that nonprofits can undermine growth adaptability or resilience (McQuarrie, 2010; Pacewicz, 2013).[7] Neoliberalism and market pressures also raise questions about the extent to which nonprofits or other non-SVO forms can sustain their missions, identities, and practices within local contexts (Atzeni & Ghigliani, 2007; Marwell & McInerney, 2005; Minkoff & Powell, 2006).

One fruitful direction for future research would be to employ more detailed breakdowns of the non-SVO organizations that populate local economies. Disaggregating nonprofits by type – which can be done, albeit imperfectly, with the National Center for Charitable Statistics data used here – could help sort out the issue of mechanisms. It would allow future work to compare organizations that deal directly with the economy, like local economic development and unemployment nonprofits, with those more likely to have indirect effects on adaptive processes, like foundations, interfaith organizations, boards of trade, or mutual benefit associations that can forge ties across sectors, convene discussions, and promulgate local identities or logics of community and mutualism. Disaggregation would also provide opportunities to consider whether some nonprofits undermine resilience, whether nonprofits that foster bonding and bridging ties have different effects, and how specific kinds of organizational diversity might matter, including the diversity of nonprofits (Rao & Greve, 2018) or the diversity of businesses within key sectors of local economies (Schneiberg & Parmentier, 2020). Disaggregation could even permit analyses of interactions between populations, including whether the presence of important resource or collective good providers like community banks or research universities could amplify the effects of, or substitute for, chambers of commerce, small-business associations, or employment and local development nonprofits.

A second fruitful avenue for future research would incorporate the state into the analysis. Governments obviously affect local economies and resilience directly, via development and recovery policies (Davies, 2011; Hassink, 2010; Hill et al.,

2012; Martin & Sunley, 2015), but also indirectly, via state interventions that support local ecologies of nonprofits and other organizational forms (Clemens & Guthrie, 2010; Marwell & McQuarrie, 2013; Salamon, 1987). Moving in this direction would involve new kinds of data and likely a shift to higher-level units of analysis – from counties to metropolitan statistical areas or core-based statistical areas – as municipalities and regional governments are public interlocutors in local economic development. But data on local policies are available, and my preliminary MSA-level analyses indicate that non-SVO organizations fostered resistance to recession in American cities. This raises exciting possibilities for analyzing the interactions between public policies and ecologies, including whether research universities, nonprofits, and community banks support or undermine policymakers' efforts to support local economies.

A third promising direction for future research would be to examine whether the impacts of corporations and non-SVO organizations on local economies have changed over time, perhaps due to financialization or reorientations among nonprofits in the face of neoliberalism or market pressures. The cross-period analyses conducted in this study could be extended to cover other recessions and address some forms of endogeneity. The organizational populations considered here were remarkably stable over the relatively short time period of the analysis, but other factors associated with resilience might have varied more substantially over the recession and recovery, such as the sectoral composition of local economies and housing market conditions. It would thus be possible to model how organizational compositions on the eve of the recession might have shaped subsequent local responses indirectly by supporting or impeding sectoral shifts and housing market recoveries during the early stages of the recession. Alternatively, following Schneiberg and Parmentier (2020), future work could develop annual panel data and models that track organizational compositions, unemployment rates, and other characteristics of local economies by year. Such an approach could model recession effects on local economies as exogenous shocks using year dummy variables and fixed effects, and analyze whether SVO corporations and non-SVO forms amplified or dampened recession effects on local employment.

Finally, this study contributes to the critique of the shareholder value-maximizing corporation that so dominates contemporary financialized capitalism, while tempering some of its pessimism. Large corporations have been engines of development and growth, but the recent history of economic crisis and inequality has made it painfully clear that they can, and all too often do, benefit their owners and investors at the expense of consumers, workers, suppliers, communities, and local economies. The reconfiguration of corporate governance through the shareholder value revolution has only worsened these tradeoffs, disconnecting the pursuit of profits and CEO incentives from the "real economy" – growth in employment or market share – and tying them instead to the reactions of securities markets, gains from financial transactions, and regimes of "liquidation" (Davis, 2009; Davis & Cobb, 2010; Ho, 2009; Lazonik & O'Sullivan, 2000). This study adds some new empirical warrants for this critique. SVO corporations, if anything, were associated with greater instability

and vulnerability in local economies during the Great Recession. At the same time, ecologies of alternatives to SVO corporations – organizations with ownership structures, missions, logics of action, and outward ties that reconnect them to workers, citizens, and the welfare of their local communities – had precisely the opposite effects. In this regard, the study supports the views of activists and other scholars that alternative organizations can serve as important counterweights to corporate capitalism and its periodic crises – buffering communities and stakeholders from instabilities, helping workers stay employed as their firms fold, and helping entrepreneurs and policymakers pave higher-road paths to economic development (e.g., Alperowitz, 2011; Bianchi & Vieta, 2019; Block, 2014; Mair et al., 2012; Rothschild, 2016; Schneiberg, 2011, 2017; Chen & Chen, Spicer & Lee-Chuvala, and other works in this volume).

Of course, capitalism and corporations, for all their shortcomings, have proven remarkably resilient in their own right. This study makes no claim that these alternative forms promise a new cooperative order or contain the seeds of capitalism's destruction, but it does underscore the dangers of institutional monocropping and the benefits of organizational diversity within local economies. Ecosystems of alternatives to investor-owned firms can operate within contemporary capitalism to temper its worst abuses. Cooperatives directly provide economic autonomy and self-governance to their members, but even more broadly, this study finds, alternative organizations can support employment and prosperity in local economies. They can ensure that both the costs of recessions and the fruits of economic growth are more widely shared. They can harness profit-seeking to serve more public, collective, or communal ends. They can, in a word, provide a foundation for resilience and recovery within the world as it currently stands – grounds for hope that are much needed today.

NOTES

1. These research questions call for different modeling strategies and variables than those commonly employed in organizational ecology, given its focus on founding rate models and how foundings and other vital rates depend on competition among organizations, resource space, and the like. I share with ecologists an interest in organizational populations. But I am interested in how different ecologies have effects beyond organizational populations – that is, how the organizational compositions of local economies shaped their performance during the Great Recession, rather than, say, how the recession caused changes in organizational compositions by way of selection pressures.

2. There is some variation in the years in which counties enter and exit the recession, which led one research team to use county-specific cut points to measure initial values, unemployment peaks, spikes, and recoveries (Han & Goetz, 2015, 2018). However, I opted for the common practice of using fixed cut points to measure resistance and recovery for analytical and pragmatic reasons. First, I am interested in how local economies responded to the common, nationwide shock of the combined financial and economic crisis. Exploiting this natural experiment is a key feature of my research design. It meant starting my analysis of performance outcomes for all counties in 2007, using that year for both the pre-recession unemployment baseline and the start point for spikes, and anchoring the observation window for outcomes in a fixed point for all counties. Moreover, using different time cutoffs for different counties would have introduced other complications, requiring a series of decisions for which prior work provides little guidance. Specifically, it would

have resulted in different time lags between initial conditions and unemployment rate shifts for different counties, with some counties entering the recession before the financial crisis. It would have narrowed the time available to recover for counties that had entered the recession late and/or experienced prolonged declines, forcing the analysis to either let counties have different recovery windows or impose a shorter "minimum common denominator" window on all counties. And it would have forced the analysis to drop (or arbitrarily code) all counties that either experienced no unemployment rate increases or did not recover during the observation window. My approach introduces some measurement error, but it is in line with my research design, supports a consistent measurement strategy, and provides little reason for concern that its errors systematically bias the results.

3. Inter-year county-level correlations between the per capita densities of organizational forms in 2006 and all other years between 2000 and 2015 were strikingly high. They ranged from 0.937 to 0.995 for nonprofits, from 0.995 to 0.999 for community banks and credit unions, from 0.983 to 0.999 for municipal electrical utilities and electrical cooperatives, from 0.896 to 0.975 for private, investor-owned utilities, and from 0.713 to 0.948 for the top 50 derivative-holding bank corporations (arguably the most dynamically evolving organizational populations studied here).

4. I used the FDIC coding of community banks, which combines an inflation-adjusted size threshold (banks with assets less than $1 billion in 2010 dollars) with limits on the number of states and MSAs in which banks operate, a threshold for high loan-to-asset ratios, and other measures to reflect the character of community banks as small, locally operating, and embedded institutions that concentrate on traditional "boring banking" lending practices. The derivative bank measure isolates the bank holding companies with the 50 largest derivatives holdings in that year to capture the shares of the big commercial banking corporations that led the shift from "boring banking" to market-based banking, the "derivatives dream," and the high-volume production and sale of loans and instruments. The top 25 holding companies in this list include the usual suspects: JPMorgan Chase, Bank of America, Citigroup, Wachovia, HSBC Holdings plc, Bank of New York, Wells Fargo & Company, State Street Corporation, ABN AMRO Holdings, PNC Financial, SunTrust Bank, National City Corporation, Mellon Financial, Northern Trust, Keycorp, U.S. Bancorp, Royal Bank of Scotland, Fifth Third Bancorp, Merrill Lynch, Countrywide Financial, Capital One Financial, Regions Financial, First Horizon, BB&T Corporation, and Deutsche Bank.

5. The timing of the housing bubble and its collapse, pragmatic considerations, and data availability led me to use slightly different dates for measuring housing market conditions before the recession. For foreclosures – my measure of collapse – I needed to measure late enough to capture the surge in foreclosures, but early enough to preserve the time order between independent variables and outcomes. I settled on measuring foreclosure rates in 2007 rather than 2006 as a reasonable compromise. Inter-year county-level correlations of the 2007 rates with those in 2008 through the 2010 peak year ranged from 0.78 to 0.90. Those for 2006 were considerably lower. This led me to set 2007 as the cut-point year. To capture the bubble, I used the growth in housing units and the change in average housing prices up to that point, from 2000 to 2007, and – less satisfactorily – growth in the percentage of owner-occupied housing from 1990 to 2000. Data for ownership are only available decennially, and using linear interpolation between 2000 and 2010 to estimate the percentage of owner-occupied housing in 2007 would unreasonably assume linearity over a period that included the bubble and collapse. As a result, I opted instead to measure this feature of the bubble using the best pre-collapse data we had.

6. Average variance inflation factors (VIF) associated with all of the specifications shown below range from 2.06 to a maximum of 2.35. Individual inflation factors fall below 3 for virtually all variables in all models, save for the Midwest and South dummy variables, which range from 4.3 to 4.9.

7. Thanks go to one of the anonymous reviewers and the editors for encouraging this paper to address these issues and for suggesting some of the possibilities for future research discussed below.

ACKNOWLEDGMENTS

The research reported here was supported by National Science Foundation grant #1528190 and the Stillman Drake and Corbett/Goldhammer funds at Reed College. The author thanks Michael Lounsbury for some foundational conversations; Jason Owen-Smith, Woody Powell, Jerry Davis, Frank Dobbin, and the three anonymous reviewers for their helpful feedback; Annie Peng, Eleanor Parmentier, Darci Kovacs, and Chiara Packard for their research assistance on this project; and the editors, Victor Chen and Katherine Chen, for their careful attention, support, and patience. The usual caveats apply.

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Table A1. Descriptive Statistics for Independent Variables.

Variable	Observations	Mean	SD	Minimum	Maximum
Community bank branches	3,079	3.358385	3.235755	0	28.68069
Credit union branches	3,079	0.6861311	0.9359333	0	19.30502
Top 50 bank corporation branches	3,079	0.7990385	0.9093981	0	11.97936
Municipal utilities	3,079	0.3597893	0.9170302	0	13.31558
Electrical cooperatives	3,079	1.523392	3.141814	0	52.28758
Investor-owned utilities	3,079	0.7760832	1.392521	0	17.79359
R1 or R2 university in county	3,079	0.0509906	0.2200142	0	1
R1 or R2 in adjacent county	3,079	0.2442351	0.4297026	0	1
Nonprofits	3,079	61.80755	39.60664	4.003202	1,147.886
Unemployment rate (2007)	3,079	4.842644	1.688039	1.5	18.1
Log population	3,079	10.28057	1.423256	6.109248	16.09154
Total establishments	3,079	242.2806	93.15348	49.98508	1,140.281
Population density	3,079	251.5051	1716.277	.2643647	68,457.08
Midwest	3,079	0.3413446	0.4742378	0	1
South	3,079	0.456317	0.498169	0	1
West	3,079	0.131861	0.3383945	0	1
Small-business share	3,079	0.9179376	0.0348366	.5428572	1
Agriculture, natural resources	3,059	0.0388242	0.058508	0	0.489071
Construction	3,073	0.0506066	0.0354633	0	0.4037927
Manufacturing	3,033	0.1347059	0.1082047	0	0.6833386
Trade, transportation, utilities	3,078	0.1881383	0.0505034	0	0.5970955
FIRE	3,077	0.0389449	0.0195803	0	0.1941258
Education and health	3,059	0.1118264	0.0550779	0	0.4273943
Professional, science, technical	3,043	0.0300543	0.0302281	0	0.4499911
Government	3,025	0.2131662	0.1115855	.000396	0.8595264
Herfindahl Index	2,948	0.1663509	0.0500398	.0101181	0.6949348
Median household income	3,079	40596.09	10440.48	18719	100,772
Less than high school diploma	3,079	16.50953	7.092176	1.821429	56.49714
High school diploma	3,079	34.9054	6.829274	9.44	52.92857
Black	3,079	9.060134	14.60351	0	85.97258
Hispanic	3,079	7.550547	12.70524	0	96.33362
Native American	3,079	1.700501	6.053654	0	95.64309
Asian/Pacific Islander	3,079	1.089095	2.008672	0	34.20894
Growth in housing	3,079	8.436115	10.12809	−48.16611	88.02658
Change in owner-occupied	3,079	1.437198	1.988669	−6.057907	13.61783
Foreclosure rates	3,079	0.5830242	1.002488	0	11.24593
HPI appreciation	2,379	142.9351	26.6618	98.71	254.04

Table A2. Correlation Matrix for Organizational Variables and Basic Controls.

	Combank	CreditU	Top 50	Munic	ECoop	IOU	Nonprof	R1R2in	R1R2adj	Unemp	Pop	Estab	Popdens	Midwest	South	West
Community banks	1.0000															
Credit unions	−0.0460	1.0000														
Top 50 bank corps.	−0.3423	0.1419	1.0000													
Municipal utilities	0.4016	−0.0335	−0.1547	1.0000												
Electrical coops	0.4076	0.0549	−0.1620	0.1211	1.0000											
IOUs	0.3049	0.0373	−0.1139	0.0529	0.6757	1.0000										
Nonprofits	0.5009	0.1487	0.0034	0.2670	0.3651	0.2998	1.0000									
R1/R2 in county	−0.1606	0.0375	0.1486	−0.0763	−0.0954	−0.1006	0.0045	1.0000								
R1/R2 adj. county	−0.2155	−0.0027	0.1265	−0.0662	−0.1566	−0.1251	−0.1237	0.0775	1.0000							
Unemployment	−0.2079	−0.0765	−0.0772	−0.1344	−0.1302	−0.0787	−0.2360	−0.0740	−0.0273	1.0000						
Population	−0.5719	0.0142	0.2683	−0.2830	−0.5439	−0.5037	−0.4008	0.3967	0.3375	0.0327	1.0000					
Total estabs.	0.2880	0.1567	0.2549	0.1429	0.1198	0.0710	0.5389	0.0822	−0.0455	−0.3503	−0.0644	1.0000				
Pop. density	−0.1035	−0.0026	0.1244	−0.0477	−0.0587	−0.0589	0.0122	0.2529	0.1010	−0.0210	0.2502	0.0948	1.0000			
Midwest	0.4067	0.0638	−0.1613	0.2815	0.0889	0.0374	0.2898	−0.0421	−0.0521	−0.0187	−0.1526	0.1596	−0.0543	1.0000		
South	−0.2077	−0.1673	−0.0058	−0.2030	−0.0807	−0.0282	−0.3619	−0.0511	−0.1150	0.0739	0.0302	−0.3437	−0.0221	−0.6459	1.0000	
West	−0.1533	0.1359	0.1508	−0.0356	0.0736	0.0541	0.1372	0.0432	0.0881	−0.0538	−0.0311	0.2369	−0.0260	−0.2902	−0.3715	1.0000