



The Perils of Regulating COVID–19: Insights from Kirznerian Entrepreneurship and Ostromian Polycentricity

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Abstract

During the COVID-19 pandemic, governments at every level in the United States made various policies to reduce the spread of the disease and to mitigate pandemic-related economic impacts. Such policies included stay-at-home orders that shuttered “non-essential” businesses and economic stimulus programs that provided financial assistance. Using Israel Kirzner’s insights from “The Perils of Regulation,” we argue that local, state, and federal COVID-19 policies have had and will continue to have long-run spillover effects and other negative unintended consequences. Pandemic policies have stifled entrepreneurial discovery and created opportunities for superfluous discovery, thus directing entrepreneurial efforts in directions that would not have existed otherwise. The normative implications of this analysis are that policymakers should better account for the wide variety of seen and unseen costs of policies that are likely to have many negative unintended consequences, regardless of the intentions behind such policies. One of the most effective ways to limit the perils of regulation is polycentric governance systems. With multiple, overlapping decision-making centers, polycentric systems allow for policymakers to experiment with different policy approaches and learn from other jurisdictions. Polycentric systems also limit the spillover effects of negative unintended consequences onto other jurisdictions.

Keywords Regulation · Public policy · Entrepreneurship · Polycentricity · COVID-19 · Crisis

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1 Introduction¹

Beginning in early 2020, the COVID-19 pandemic has devastated the United States, leading to hundreds of thousands of deaths, economic decline, unemployment and labor shortages, and countless other economic and social effects. Policymakers at every level of government responded. For example, nearly every state enacted some form of executive or emergency order to reduce the spread of the disease beginning in March and April 2020. Many of these policies lasted, in some form, well into 2021. These orders provided broad guidelines to prevent the spread of the virus, such as maintaining physical distancing, practicing good hygiene (like handwashing, wearing facemasks, etc.), and limiting travel. Most of these policies also included stay-at-home orders that temporarily prohibited people from leaving their homes, except for “essential” activities.² The federal government did not implement a national stay-at-home order or enforce essentialness designations, but instead, provided guidelines to determine the “essentialness” of businesses, leaving each state to choose the specific contents of their own stay-at-home policies (Cybersecurity and Infrastructure Security Agency 2020). “Non-essential” businesses were ordered to close, and violators were sometimes fined or imprisoned (see Storr et al. 2021).³

Additionally, the federal government carried out several economic programs to mitigate the pandemic-induced recession (US Government Information and Services 2020). Congress passed two pieces of pandemic-related legislation during 2020: the Coronavirus Aid, Relief, and Economic Security (CARES) Act and the Coronavirus Response Relief Supplemental Appropriations Act. These two relief packages provided trillions of dollars to individuals and businesses impacted by both the pandemic itself and the economic repercussions caused by state restrictions meant to limit the spread of the disease.

In this paper, we use Israel Kirzner’s insights from “The Perils of Regulation” (1985) to argue that local, state, and federal COVID-19 policies have had and will continue to have spillover effects on other markets, public policies, and individuals. Kirzner’s arguments about the perils of regulation emerge from a long intellectual tradition related to the dynamics of interventionism (Mises [1949] 1998; Kirzner 1985; Ikeda 2002, 2005). Markets are highly complex spontaneous orders that cannot be easily controlled. When policies directly and indirectly impact markets, the spontaneous order that makes markets function is altered. An entrepreneur, by definition, is alert to potential opportunities that might arise and is the driver of the market process (Kirzner [1973] 2013, 1985). Public policies alter previously existing entrepreneurial opportunities and simultaneously create new ones, therefore transforming entrepreneurial activity in a direction it would not have gone otherwise. Public poli-

¹ We would like to thank participants of the Polycentrism vs. Gargantua in Municipal Governance: crises and community resilience workshop for their valuable feedback and suggestions. We also want to thank the two anonymous reviewers who gave thoughtful and helpful comments.

² Only South Dakota did not issue an executive order; the governor just recommended businesses to comply with CDC guidelines.

³ It is important to note that some states took policy actions that deregulatory as well, such as removing cumbersome “certificate of need” provisions that require potential or existing healthcare providers to obtain permission from state officials to open or expand their operations (see Erickson 2021).

cies often disrupt existing and impose new incentives and constraints that entrepreneurs face. In other words, these policies stifle entrepreneurs from discovering the socially beneficial opportunities that they would have discovered if the policies were never enacted. Additionally, the new incentives and constraints lead entrepreneurs to be alert to and take advantage of different profit opportunities, which are often superfluous and possibly socially harmful because they change positive-sum scenarios of mutually beneficial exchange to zero- or even negative-sum scenarios of rent seeking and political competition.

We argue that many COVID-19 policies, such as stay-at-home orders and large economic stimulus programs, have exhibited signs of Kirzner's perils of regulation, including the stifling of entrepreneurial discovery and creating opportunities for superfluous discovery. This paper fills a gap in the emerging literature on the political economy of COVID-19 by showing how pandemic policies have altered the entrepreneurial market process. Additionally, this paper builds on the previous work of Storr et al. (2021) on the epistemic limitations of COVID-19 policies like stay-at-home orders.

It is difficult to determine to what extent COVID-19 policies prevented a worse scenario than if there had been no interventions at all. State restrictions and federal spending programs have undoubtedly benefited many people, but when considering the full range of tradeoffs and unintended consequences, such policies may have created more harm than good in some instances. For example, the increase in the unemployment benefits changed the incentive structure of workers who were laid off. Some people earned more money from the unemployment benefits than they previously earned at their job, causing a disincentive to return to work at the margin when it was deemed safe to do so (Ganong et al. 2020; Holzer et al. 2021).⁴ Similarly, the Paycheck Protection Program (PPP) loans system, provided by the Small Business Administration (SBA), was subject to billions of dollars in fraudulent claims (Bailey et al. 2021). Thus, pandemic policies can and have disrupted the market's discovery process and led entrepreneurs to engage in activities that are often socially wasteful.

The normative implications of this analysis are that policymakers should consider the wide variety of seen and unseen costs of policies that are likely to have many negative unintended consequences. Highlighting the perils of regulation does not mean that policymakers cannot or should not create public policies during a pandemic; however, Kirzner's insights illuminate the costs of public policies so that policymakers can more accurately account for the opportunity costs of their decisions. To prevent socially harmful public policies in the future, it is imperative to examine the perils of regulating COVID–19.

Further, particular governance systems, such as polycentricity, may be better suited to adapt to the changing circumstances of an ongoing, global pandemic. Polycentric governance structures may be especially helpful when considering the stifled and superfluous discovery processes that were sparked by the various COVID-19 policies. Since polycentric systems have multiple decision-making centers, policy-

⁴ Some scholars are skeptical that most individuals would reject offers to return to work at their previous wage under the CARES Act expanded unemployment insurance payments (see Petrosky-Nadeau and Valletta 2021).

makers can experiment with different policies in various jurisdictions. Through this “laboratory of democracy,” policymakers can mutually learn from the successes and failures of their counterparts in other jurisdictions as well as tailor policies based on their unique circumstances. Additionally, an institutional failure in one jurisdiction is limited in how much it can spillover onto other jurisdictions and lessons from more successful jurisdictions may be utilized to correct course (Ostrom 1976). Due to the diversity of stay-at-home orders and essentialness designations among the various states, not all places in the United States experienced the same types of stifled and superfluous entrepreneurial discoveries. However, federal policies tended to create similar patterns of stifled and superfluous entrepreneurial discovery throughout the country.

This paper proceeds as follows. In Section 2, we review the theoretical foundations of the market process, the dynamics of interventionism, and Kirzner’s conception of the perils of regulation to understand and analyze pandemic policy responses. In Section 3, we analyze some important public policies during the COVID-19 pandemic, including stay-at-home orders and the major COVID-19 relief bills, which have exhibited signs of Kirzner’s perils of regulation. Section 4 examines the way in which polycentric governance structures can mitigate the perils of regulation. Section 5 concludes with the implications of this research.

2 The Perils of Regulation and the Kirznerian Entrepreneur

To understand Kirzner’s conception of the perils of regulation, it is first important to understand the entrepreneurial market process, which is rooted in private property, market prices, and the feedback mechanism of profit and loss. If private property exists, a market for private property can emerge where people engage in voluntary exchanges. Subsequently, monetary prices emerge from these voluntary exchanges. Monetary prices communicate the relative scarcity of goods, enabling rational economic calculation, which is the ability to weigh the economic feasibility of a given decision from the array of possibilities (Mises [1949] 1998; Hayek 1945). Economic calculation allows individuals to make the most economically viable decision from among the multitude of technologically possible alternatives. Using economic calculation as a guide, entrepreneurs make decisions in a world of uncertainty. They test out their ideas in a market, and profit or loss give entrepreneurs important feedback on their decisions. Receiving profits is a signal that entrepreneurs are fulfilling the needs and wants of consumers, and incurring losses is a signal that an entrepreneurs should alter their plans in some way. Thus, the combination of market prices and profit-and-loss provide the knowledge and incentives for entrepreneurs to engage in socially beneficial action.

In Kirzner’s conception, entrepreneurs are the driving force of the market process because they are alert to profit opportunities that arise in a dynamic world (Kirzner [1973] 2013). As such, entrepreneurs are alert to and discover new ends or more efficient means of attaining ends. Once entrepreneurs discover a potentially profitable opportunity in the market, they make adjustments in systems of exchange and production to take advantage of that opportunity.

Entrepreneurial choices are disciplined by market prices and the feedback mechanism of profit and loss. Entrepreneurs are dependent on market prices, which communicate relevant knowledge necessary for both producers and consumers to know when to economize on their use of any resource (Mises [1922] 1981, [1949] 1998). Entrepreneurs interpret the embedded knowledge in prices and act on that knowledge. In the real world, change is constant, and entrepreneurs read the signals of price changes and react to the feedback of profit and loss to adapt their behavior (Hayek 1945).⁵ As Mises ([1944] 2007, 23) argues, “Population figures, tastes, and wants, the supply of factors of production and technological methods are in a ceaseless flux. In such a state of affairs there is need for a continuous adjustment of production to the change in conditions. This is where the entrepreneur comes in.”

In an unhampered market, profit is an indicator that an entrepreneur’s ideas and actions are fulfilling human wants, and losses are an indicator that the resources an entrepreneur is using would be employed in more highly valued ways elsewhere. The market process is a discovery procedure in the sense that it is a dynamic mechanism in which entrepreneurs discover profit opportunities that arise from exchange. Through the market process, entrepreneurs have both the incentives and the feedback to determine which goods consumers need, how urgent those needs are, which qualities and quantities of goods that consumers demand, where those goods are needed, and when they are needed.

The theory of the dynamics of interventionism explains why one policy intervention into a market is often followed by subsequent interventions. Government interventions can significantly impact what entrepreneurs are alert to as well as the price signals and the feedback mechanisms of profit and loss they receive (Kirzner 1985). Such policies can incentivize entrepreneurs or potential entrepreneurs to respond directly to the intervention, possibly undermining the stated intentions behind the policy (Mises [1929] 2011). Further, policies are necessarily simple relative to the complex system being intervened upon. Well-intentioned, micro-level actions will differ from the macro-level patterns that emerge (Wagner 2016). The complexity of markets means that any policy interventions, no matter the underlying intentions, will result in a chain of consequences that the interveners could not perfectly predict, given the limitations on human reason. In the context of government responses to public health crises, the unintended chain of effects from policy can potentially produce significant costs and undermine the intended goals (Coyne et al. 2021). For example, the spread of COVID-19 triggered governments around the globe to institute restrictions on businesses, travel, and social gathering and encouraged (and sometimes forced) residents to remain at home to slow the spread of the disease and not overburden the healthcare system. The longer these practices remained in place (both formally and informally through changes in consumer behavior), the more necessary it became to offer stimulus checks and other forms of assistance to counter the

⁵ We use the term “knowledge” here as a shorthand for both “knowledge” and “information.” However, Hayek, Kirzner, and others in the Austrian tradition use those terms to mean related but distinct things. Some forms of knowledge are tacit and inarticulable, which cannot be reduced to information (see Lavoie 1986). However, information is a component of many types of knowledge. Market prices aggregate and communicate both knowledge and information, and market prices can also aid in the discovery of new forms of both knowledge and information.

economic downturn. Additionally, isolation can lead to more pressure on assistance programs that provide mental health services. In this sense, each policy is partially caused by the ones proceeding it, and each incurs costs as well as providing relief.

Government actors must then decide to implement more interventions to combat these unintended consequences, or to retract the intervention and allow people to engage in the exchanges that they would have if the intervention had never been in place (Ikeda 2002, 2005). The dynamics of interventionism is a coherent explanation for why some government policies do not achieve their stated ends, and why policymakers may tweak or add on new interventions to stem those unintended consequences. The dynamics of interventionism also explains why policymakers sometimes remove highly distortionary policies once they realize they are not workable. Take two examples from the pandemic. First, Denver, Colorado attempted to close liquor stores and recreational marijuana dispensaries in March 2020, deeming them non-essential (see Redford and Dills 2021; Sexton et al. 2020). However, when long lines formed outside of the stores just hours after the announcement, the decision was reversed due to public health concerns regarding exposure risk (ibid.). In an attempt to limit activity, policymakers actually instituted policies that could increase the spread of COVID-19 rather than reduce it. Second, in the summer of 2020, the federal government declared that any international students enrolled in online courses for the fall would be required to return to their home countries (see Griswold and Salmon 2020; Storr et al. 2022). Universities across the country filed lawsuits and the decision was quickly reversed. In the short time it was in place, students, universities, and communities realized the uncertainty and compliance issues with enforcing the rule as well as the economic and social impacts of forcing over one million international students to leave the country (ibid.).

Not all types of entrepreneurship are socially productive, and some forms of entrepreneurship are socially unproductive or even destructive. Productive entrepreneurship yields a net increase in wealth in a society, whereas unproductive entrepreneurship is simply a transfer of wealth, and destructive entrepreneurship reduces the net amount of wealth in a society (Baumol 1990; March et al. 2016). In other words, productive entrepreneurship is a positive-sum game, unproductive entrepreneurship is a zero-sum game, and destructive entrepreneurship is a negative-sum game. The formal and informal incentives and constraints that entrepreneurs face will shape how productive, unproductive, or destructive entrepreneurship will be.

In societies that have relatively free markets, well-protected property rights, and the rule of law, market entrepreneurship will generally lead to socially productive outcomes as they discover the needs and wants of consumers and compete among themselves to best provide consumers with goods and services. Legal structures and public policies are important sources of incentives and constraints for entrepreneurs. Despite the intentions motivating public policies, the incentives created by those policies direct market entrepreneurs to be alert to and discover different opportunities that would not have existed if the policy had not been created. Policies can encourage productive entrepreneurship if the altered incentives counter market failures or lead to socially beneficial outcomes. Political rent-seeking, however, is unproductive and can become destructive when competition is restricted. When rules and institutions

change, the relative payoffs of different activities will also change, leading entrepreneurs to direct their attention and action in different ways.

Kirzner's (1985) "perils of regulation" argument articulates how unintended consequences of policies can arise due to entrepreneurs rationally responding to the incentives and constraints that the policies create, which can then spur further interventions. Kirzner outlines four types of discovery processes that emerge from government interventions into the market process: regulators may try to correct perceived inefficiencies or failures in the market that entrepreneurs have not previously identified or corrected (undiscovered), regulators attempt to simulate market outcomes but fall short (unsimulated), regulators end up restricting entrepreneurship (stifling), and regulators incentivize alternative, less socially useful entrepreneurial activity (superfluous).

The stifling of the entrepreneurial discovery processes of the market is problematic because discoveries that would have satisfied the needs and wants of consumers remain undiscovered. Additionally, it is impossible to know the costs of the innovations that went undiscovered because we cannot know what would have happened if a policy was never put into place. Despite this limitation, we can imagine the types of discoveries that would have been made if public policies had not stifled the discovery process. For example, when public policies raise compliance costs, large firms are better equipped to handle those costs, and smaller firms are squeezed out of the market. New entrepreneurial discoveries may arise from smaller or newer firms. As such, smaller firms lose out on potential profit, and consumers lose out on innovations that could have occurred if the smaller firms were able to test out their ideas.

Kirzner acknowledges that government regulations may be beneficial in many ways, but just because a public policy has benefits, that does not mean that there are not also costs. To know whether a public policy is socially desirable, the marginal social benefits should equal the marginal social cost. If regulations stifle the entrepreneurial discovery processes, the marginal costs of that stifling might outweigh the marginal benefits that come to a society from a particular regulation. As Kirzner (1985, 143–144) argues,

Price and quality restraints and requirements and restriction on organizational forms operate (in a generally understood but not precisely predictable way) to inhibit entrepreneurial discovery. Price ceilings, for example, not only restrict supply from known sources of natural gas (or from known prospects for search), but also inhibit the discovery of wholly unknown sources. Drug testing regulations, as another example, not only reduce the flow of new pharmaceutical drugs where successful research might have been more or less predictable, but also discourage the entrepreneurial discovery of wholly unknown research procedures. Against whatever benefits might be derived from government regulation and intervention, one is forced to weigh, as one of regulation's intrinsically immeasurable costs, the stifling of the market discovery process.

Politicians often gain support by enacting policies that favor certain industries, companies, or individuals at the expense of taxpayers. Policymakers have the power of the state to compel others to obey government policies, which may be normatively

desirable in some cases and detrimental in others. The coercive nature of the state allows policymakers to concentrate benefits for special interest groups, while dispersing the costs among everyone else. Thus, political actors can and do design policies in ways that benefit special interests instead of the public interest (Holcombe 2018). Public policies can create new, superfluous opportunities for entrepreneurial discovery, and many entrepreneurs take advantage of those opportunities. For example, entrepreneurs may engage in lobbying and rent seeking to persuade politicians to provide subsidies or protections from competition. However, the policy-dependent opportunities may not be positive-sum like those in an unhampered market. In fact, many of these opportunities exhibit socially harmful tendencies, such as restricted market competition, rent seeking, lobbying, bribery, and other forms of corruption.

Additionally, once a public policy is enacted, superfluous discovery arises in the market process in response to that policy, regardless of any nefarious or benevolent intentions behind it. Entrepreneurs will be alert to and discover new goods and services that correspond directly to the public policies, and those goods and services would not have been discovered if the policy had never been enacted. For example, COVID policies might alter health and safety requirements for business owners who might not have the time or expertise to keep up on the latest requirements. Individuals who are familiar with those requirements might act entrepreneurially by selling their knowledge-based services to business owners. Thus, selling services to help others comply with regulations is a form of superfluous discovery that came about due specifically to the existence of regulations.

3 COVID-19 policies and the Perils of Regulation

COVID-19 policies have stifled entrepreneurial discovery and created opportunities for superfluous discovery, directing entrepreneurial efforts in directions that would not have existed without those policies. The effects of stifled and superfluous entrepreneurial discovery often contradict the goals of the policies that were enacted to suppress the virus and provide assistance for those impacted by the economic and social costs of the pandemic. We examine two types of policies using this lens: stay-at-home orders and economic stimulus programs.

3.1 Stay-at-home orders and essentialness designations

In early 2020, US policymakers at various levels of government began implementing stay-at-home orders or equivalent policies that called for “non-essential” businesses to close while allowing “essential” businesses to continue operations. Stay-at-home orders directly affected the livelihoods and economic wellbeing of tens of millions of Americans, thus making them one of the most controversial policies during the COVID-19 pandemic. Nationwide, a total of 4.4 million businesses (52%) told employees not to work, at least temporarily, during the pandemic, and roughly 1.6 million businesses (19%) were required to close due to government mandates (Bureau of Labor Statistics 2020).

Nearly all definitions of essentialness centered on the health, safety, and welfare of the public and utilized federal guidance for prioritizing certain industries over others (Cybersecurity and Infrastructure Security Agency 2020). Most orders had a broad consensus on which industries were essential, including healthcare and pharmaceutical facilities, transportation-related firms, agriculture and food related firms, hardware stores, funeral services, banks, internet and phone providers, energy and utility providers, and many types of retailers. However, some notable differences existed among the states regarding the essentialness of some businesses. For example, while most states determined that liquor stores and medical and recreational marijuana dispensaries were essential, Pennsylvania notably closed state-run liquor stores and Massachusetts closed recreational dispensaries (Redford and Dills 2021; Storr et al. 2021). In some states, pawn shops could be categorized as financial services (and therefore essential) where in others they were not (Storr et al. 2021).

Even bordering states with overlapping metropolitan areas had significant differences in their essentialness designations, such as Delaware, Pennsylvania, and Maryland (WFMZ 2020; Delaware 2020; Maryland 2020; Redford and Dills 2021; Storr et al. 2021). For instance, Pennsylvania officials determined that most kinds of construction and electrical and mechanical equipment manufacturing were not essential, but Delaware and Maryland allowed these industries to continue. Pennsylvania and Maryland forced clothing and footwear manufacturing to stop, but Delaware allowed those industries to continue. Pennsylvania forced its alcohol stores to close, but Maryland and Delaware kept them open. And Delaware closed its consumer-goods rental businesses, but Maryland and Pennsylvania allowed them to remain open. Navigating the sometimes vague and other times incredibly detailed orders can be challenging for business owners and consumers alike, and especially so when living in one state and working in another bordering state.⁶

Policymakers who implemented stay-at-home orders and the accompanying essentialness designations implicitly or explicitly assumed that they knew *ex ante* which goods, services, and activities are essential. However, from a market process approach, policymakers cannot know the true essentialness of any good, service, or activity for at least three reasons: (1) they do not have access to the dispersed, inarticulate, and subjective knowledge of consumers; (2) they lack intimate knowledge about the complex network of production processes that rely on market prices and on-the-ground knowledge to create final consumer goods; and, (3) the world is constantly changing and goods and services that might be essential at one point in time might no longer be essential, meaning that policymakers lack the knowledge to adapt quickly and efficiently to these changes (Storr et al. 2021). Thus, in Kirzner's terms, policymakers cannot simulate the advantages of the entrepreneurial discovery process because they lack market prices and the profit-and-loss mechanism to guide their decisions and cannot accurately discover inefficiencies over time and as circumstances change.

⁶ Despite the benefits of polycentric systems, there are undeniable tradeoffs with having overlapping and nested decision-making centers. Navigating multiple regulatory regimes is one potential cost of polycentric jurisdictional competition during a public health crisis. Despite these potential costs, polycentric systems often produce more socially desirable results when compared to the relevant alternative of monocentric decision making (discussed in more detail in Sect. 4).

Take, for example, the need for medical equipment during the pandemic. As cases rose in the US, it became clear that ventilators were often necessary treatment for severe cases and that many hospitals lacked enough ventilators to meet demand. In response, the federal government utilized the Defense Production Act to contract with General Motors to produce 30,000 ventilators (Coyne et al. 2021; Wayland 2020). However, most hospitals did not have enough trained staff and equipment needed to effectively take on more ventilators (ibid.). While there was potentially a lack of supply, just increasing the number of ventilators would not solve the complex problem of hospital capacity (which includes not only equipment but staff and the services they provide) on its own. It is only by using the knowledge embedded in market prices and the feedback of profit and loss that allows market entrepreneurs to determine whether their actions are fulfilling the needs and wants of consumers. A central authority is epistemically limited from determining *ex ante* the kinds of goods or services consumers want and how urgently consumers want them (Hayek 1937, 1945; Kirzner [1973] 2013, 1985; Lavoie 1985a, b; Boettke 2002; Storr et al. 2021). Thus, this example shows how stifling entrepreneurial action undermines the ability to adapt to uncertain and dynamic circumstances. In this example, staffing issues were not the only problem; these staffing issues made it more difficult for entrepreneurs to use tacit knowledge that would best allow them to exploit the dispersed information necessary to adapt to consumers' desires. Stifling entrepreneurial discoveries during a crisis is especially problematic because crises are exactly when such discoveries are most needed.

Perhaps even more important than the inability of policymakers to simulate the process of entrepreneurial discovery is the stifling of that process. The restrictive nature of many stay-at-home orders created an environment where the normal entrepreneurial discovery process was stifled. During a time of crisis when entrepreneurial discoveries are most needed, stay-at-home orders suppressed the ability of entrepreneurs to engage in finding and exploiting opportunities to fulfil the needs and wants of consumers. Kirzner (1985, 141) notes that, "A price ceiling, a price floor, an impeded merger, or an imposed safety requirement might block possibly profitable entrepreneurial actions." Stay-at-home orders and essentialness designations are imposed safety requirements that can block profitable entrepreneurial actions.

Stay-at-home orders and essentialness designations stifled the discovery process because they restricted freedom of entry into the market, which subsequently limited the ability of entrepreneurs to make the discoveries that are essential to provide consumers with the goods and services they need. As mentioned earlier, the Bureau of Labor Statistics reported that 19% of businesses were forced to close due to government mandates during the 2020 (Bureau of Labor Statistics 2020). While some industries could shift to telework, large firms were better able to make the switch with 86% increasing telework options compared to only 31% of small businesses (ibid.). Additionally, restrictions on travel and indoor gatherings and subsequent decreases in demand limited the activities of food, retail, travel, and entertainment industries across the country. These industries are still struggling to find and keep

staff as demand begins to rebound.⁷ Indeed, a recent study found that the states with the most severe stay-at-home orders had lasting negative impacts on employment 12 and 15 months after the onset of the pandemic (George Center for Opportunity 2021).

Despite facing obstacles, many entrepreneurs found ways to provide consumers with the goods and services they desired (Storr et al. 2022). Many entrepreneurs altered their business models to address government restrictions as well as changes in consumer demands. Restaurants switched to curb-side pickup and delivery, and some began selling staple foods and cleaning supplies that they could get from their wholesalers when grocery stores faced shortages. Distilleries began making hand sanitizer, clothing manufacturers constructed masks, and vacuum manufacturers made ventilators. Gyms, therapists, and veterinarians turned to online platforms to engage their customers and clients (Storr et al. 2022). Due to supply constraints and/or demand-side hoarding, toilet paper became increasingly scarce during the early part of the pandemic. This situation provided the incentive for entrepreneurs to find creative solutions, and many entrepreneurs responded by selling bamboo-based toilet paper (see King 2020; Ceniza-Levine 2020). This adaptability allowed some businesses to survive the worst of the pandemic, finding unique ways to respond to government stay-at-home orders as well as changing consumer demand. Indeed, in a survey of adults in the US that we conducted in August 2020, we found that almost 78% utilized pickup, delivery, and mail order to purchase goods during the peak months of the pandemic.⁸ For the same group, 49% increased, and 38% maintained, their online purchasing behavior.

As the pandemic continued through 2020 and into 2021, policymakers extended stay-at-home orders or implemented new restrictions on gathering (such as limiting indoor capacity, restricting the number of people at gatherings, requiring mask wearing and distancing of six feet, etc.). Restrictions on daily activities were no longer temporary as the months went on, and as such, demands changed. For example, teleworkers began to seek out furniture and equipment to improve working from home. Not only were companies like Amazon inundated with online orders, but supply was limited by manufacturers of furniture, lighting, and other retail goods (like those in Pennsylvania) that were forced to close and subsequently adjust their processes when allowed to reopen. Additionally, many homebound people started new hobbies, such as baking and crafting, to fill their time. These new sources of home-based entertainment increased demand for a variety of goods and resulted in shortages of flour, lumber, and even particular types of pasta (Mull 2020; Lambert 2021). While entrepreneurs adjusted to these demands, they had to do so within the confines of pandemic-related restrictions.

⁷ It is important to note that shutdowns contributed to the labor shortage, but they may not have been the major driver of the labor shortage. Other causes likely included (1) people who were close to retirement age deciding to retire early, (2) people choosing to leave the labor force to care for someone with vulnerabilities to COVID-19, and (3) unemployment benefit generosity providing disincentives to return to work.

⁸ The survey was administered through Qualtrics in August 2020 and targeted United States residents over 18 years old. It asked a series of questions about pandemic-related community connectedness, regulations and policies, and changes to work and education. We received 1,105 total responses and used 967 for our analysis (removing those that included multiple nonsensical answers). The sample was diverse with even distribution across regions (though with less respondents from west coast), age, gender, education, employment, and marital status. However, the population was predominantly white (75%).

Not only did stay-at-home restrictions stifle entrepreneurial discovery, however, they also sparked superfluous entrepreneurial discovery because entrepreneurs took advantage of entirely new profit opportunities created by the restrictions. These profit opportunities arose exclusively from the government mandates, and not from changes in consumer desires. Many business owners could not afford to remain closed, so they began to search for potential solutions, which sometimes involved evading the state restrictions by switching the industry to which they were associated. For instance, bars and breweries started to offer food so they could operate as restaurants when they were forced to close or reduce activities otherwise (Carman 2020). Even in Florida, which had fairly weak restrictions, strip clubs turned into restaurants to keep their doors open (*ibid.*). In other places, strip clubs also provided car washes, started meal delivery services, and devised drive-thru entertainment services (see WNCT 2020; Prewitt 2020; Licea 2020). Hair salons in California reopened on the black market, offering haircuts in people's houses in order to make ends meet (Carlton and Ansari 2020). In Pennsylvania, restaurants surrendered their liquor licenses so they could stay open (Strebig 2020). This process of adapting took time, bureaucratic paperwork, and other resources that could have been directed at serving customers.

An example of beneficial policy change during the pandemic is that many state governments relaxed restrictions on alcohol sales, allowing restaurants to offer to-go cocktails and for contactless delivery (Redford and Dills 2021). Several states have now made these deregulations permanent, and a majority of Americans support them (Barrios 2021). Similarly, making telehealth and occupational licensing easements permanent would give entrepreneurs the flexibility to adapt in more sustainable ways and increase services for those in need (see Weiner 2021).

It can be difficult to determine which adaptations were beneficial or superfluous given the sharp change in both policies and consumer behavior, which was likely also impacted by stay-at-home orders. For instance, Glaeser et al. (2021) found that as stay-at-home relaxed, citizens saw that as a signal that it was safer to go to restaurants and went out more (even if risk of COVID-19 was still prevalent). Likely, some will continue after the pandemic ends, like customers shifting to more sustainable hygiene products or restaurants offering curbside pickup. While others may not, such as the food services at some strip clubs and bars. That said, the influence of essentialness orders altered the options for entrepreneurs in significant ways.

3.2 Federal economic stimulus programs

In 2020, Congress passed two large economic stimulus bills that appropriated trillions of dollars. On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law and appropriated \$2.2 trillion (US Congress 2020a). On December 27, 2020, the Coronavirus Response Relief Supplemental Appropriations Act provided another \$900 billion (US Congress 2020b).⁹ Money was directed broadly, including direct cash payments to individuals, loans designed to keep workers on small-business payrolls through the Paycheck Protection Program

⁹ It was passed together with a \$1.4 trillion omnibus spending bill for the federal fiscal year of 2021 and constituted the Consolidated Appropriations Act (US Congress 2020b).

(PPP), and resources to create strategic stockpiles of medical supplies. The primary provisions of the first bill included \$300 billion in cash payments to (almost) every American, \$260 billion in unemployment benefits, \$669 billion in loans to small businesses, and \$500 billion for corporations. The second act granted \$166 billion in stimulus checks, \$120 billion in unemployment benefits, and \$325 billion to small businesses. Additionally, the Federal Pandemic Unemployment Compensation program provision in the CARES act provided an additional \$600 per week for those receiving unemployment benefits (US Congress 2020a).

The vast sums of money that were appropriated by Congress created an environment ripe for Kirzner's (1985) conception of superfluous discovery. The members of Congress who wrote and passed these two spending bills likely did not aim to rearrange profit opportunities and did not fully know how such large amounts of public spending would spark new, superfluous forms of entrepreneurial discovery. Since policymakers cannot be perfectly informed about all relevant data about the market, their policies inevitably set in motion a series of entrepreneurial actions that they could not have anticipated (Kirzner 1985). The billions of dollars that were put up for grabs from these two bills altered the patterns of discovery that entrepreneurs made. Many of these unexpected outcomes are socially undesirable and even undesirable from the view of the policymakers themselves.

Nominally, the federal economic programs were meant to help struggling individuals and firms who had been negatively impacted by the pandemic. However, these government programs also caused many entrepreneurs to change their behavior in unproductive ways because they began to focus on the zero-sum and negative-sum activities of acquiring government aid without creating new wealth. Thus, one of the unintended consequences of these spending bills was to spark superfluous entrepreneurial discoveries related to rent seeking, and in the worst cases, bribery and corruption.¹⁰

One of the programs that produced opportunities for superfluous entrepreneurial discovery was the Federal Pandemic Unemployment Compensation program. Ganong et al. (2020) found that between April and July of 2020, 76% of laid-off workers eligible for unemployment benefits had replacement rates above 100%, meaning that they were earning more than they had in their previous jobs. This created disincentive effects for people to return to work. Another problem with the unemployment benefits was fraudulent claims. Some people saw an entrepreneurial opportunity to take advantage of unemployment insurance requests because the states' systems were often overwhelmed with requests and could not accurately process these benefits. Moreover, due to the relatively large number of fraudulent claims, authorities in some states responded by freezing the accounts of people they suspected of illegally receiving unemployment benefits, but many of those people were innocent, thus placing additional financial stress on the least fortunate (Chaney Cambon et al. 2020). The flood of applications overwhelmed state unemployment offices, making it difficult for applicants to contact them with questions or appeal when their requests were denied.

¹⁰ Corruption is not only a harm to society; it also may lead to worse regulations (see Breen and Gillanders 2012).

This meant that while some people received benefits they were not eligible for, others were left without and had to spend time navigating the system before receiving aid.

The PPP, provided by the Small Business Administration (SBA), was not exempt from the superfluous discovery process either. PPP was used to distribute up to \$669 billion in loans, which could potentially be forgiven, to businesses (and particularly small businesses) to keep employees on their payrolls and assist with other liquidity issues. The program was plagued with issues, from the process design, communication, evaluation, and distribution. The application process was done on a “first-come, first-serve” basis and applications quickly exhausted initial funding in April 2020. As the second wave of funding was released, rules and guidance around the program evolved (Simon and Rudegeair 2020; Humphries et al. 2020) analyzed daily surveys of small business owners during this time period and concluded that the smallest businesses took longer to become aware of the program, and therefore, were less likely to apply or applied later than bigger businesses. If they did apply, they waited longer for their decisions and were less likely to get aid. As time went on, survey respondents became more pessimistic about the future. While PPP seems to have helped businesses retain employees, avoid bankruptcy, and recover, the smallest firms (who likely needed that help the most) did not have as much access to these benefits (ibid.). Similarly, Li (2020) found little evidence that those companies that were hit hardest by the pandemic were in fact the ones that applied and were approved for assistance.

Granja et al. (2020), however, found evidence that the PPP did not always meet its target when measured by the decline in hours worked or number of business shut-downs. From April to August, \$525 billion was distributed, roughly 78% of the allotted funds (Tracy 2020). Months afterward, SBA began surveying recipients of large loans (over \$2 million) on why they needed the funds, highlighting that evaluation standards may have been overlooked (Omeokwe 2020).

In addition to the unintended consequences from the implementation of the program, there were billions of dollars in fraudulent claims (Bailey et al. 2021). Common tactics in fraud cases included falsifying tax data, inflating payroll numbers, and applying for multiple companies (ibid.). The SBA inspector general noted that tens of thousands of businesses that received PPP loans were ineligible because they were established after the pandemic began, exceeded workforce size requirements, or owed back taxes (Tracy 2020). In other instances, banks submitted suspicious activity for multiple government payments going to single accounts (ibid.). For example, a Florida man was sentenced to 18 months in federal prison for obtaining over \$250,000 in PPP loans by providing false payroll and tax documents on his company (US Department of Justice 2021a). A Texas man was indicted for receiving over \$3 million in PPP loans across three fabricated businesses and could face over 20 years in prison (US Department of Justice 2021b). A Texas accountant organized a PPP scheme to get \$23 million where he applied for loans for clients and received over \$1 million in fees (Sentendrey 2021). And, shockingly, a Massachusetts man attempted to fake his own death after getting caught and charged for trying to fraudulently receive over \$500,000 in PPP funds (Santucci and Mulvaney 2021; Beggs and Harvison 2022) found that fraud was fairly common in the investment advisory industry; they estimate that of the \$590 million in PPP funds received by investment

advisors, more than 6% of those funds consisted of overallocations to firms abusing the PPP. These examples of superfluous discovery are clear examples of destructive entrepreneurship, not just a transfer of wealth that could have gone to those in need and who continue to struggle, but costly to taxpayers through investigations, court proceedings, and prison sentences.

4 Polycentric Governance can limit the Perils of Regulation

Kirzner has illuminated how the perils of regulation can arise, but insights from the Bloomington school of political economy clarify how to avoid or mitigate those perils. The Bloomington school's analysis focuses on polycentric governance systems, which may provide the most effective way to limit the perils of regulation. Polycentric governance systems have multiple overlapping centers of decision-making power operating within the same rule environment (Ostrom 2005; Aligica and Tarko 2012). Polycentricity is more nuanced than just simple decentralization. Polycentric systems have a large degree of decentralization, but the nested and interdependent nature of a polycentric system allows for policies to be made at the appropriate level for the scale of the social problem (Ostrom 2005; Wagner 2005; Aligica 2019). Additionally, the various overlapping spheres of decision-making power provide checks and balances; the higher levels can provide a necessary backstop to failures at the lower levels, and the lower levels can challenge abuses of power at the higher levels. Polycentric systems tend to yield several socially beneficial outcomes, and three of the main benefits are (1) the ability to engage in experimentation and mutual learning among decentralized jurisdictions, (2) the mitigation of widespread institutional failures, and (3) interjurisdictional competition (Ostrom 1976, 2010; Aligica 2019).

Experimentation and mutual learning are important for creating regulations because policymakers are not omniscient. In the face of a crisis, such as a pandemic, policymakers may not have full information about the nature of a disease, how to best limit the spread of the disease, or how people will respond to regulations. Policymakers may use the advice of highly educated experts, but even experts are fallible. Experts may fail to foresee the consequences of particular policies, or they may not properly evaluate the tradeoffs of a policy. Thus, policymakers in many different jurisdictions can use different approaches to solve similar social dilemmas. Policymakers can borrow knowledge from the experiences of other places and tailor their policies to match their local needs. If policymakers in one jurisdiction fail to achieve their desired policy outcome, other policymakers can learn what not to do.

When policymaking is centralized, however, fewer opportunities exist for innovation and experimentation, and fewer opportunities exist for mutual learning from both good and bad examples. For instance, Hall et al. (2020) find that city-county consolidation can have more negative effects than economies of scale, including exacerbating differences between rural and urban jurisdictions. When the same policy is imposed over an entire country, the same types of stifled and superfluous entrepreneurial discoveries will tend to occur. However, when smaller jurisdictions, like states, counties, and cities, can make their own policies, they can engage in mutual learning based on the successes and failures in other jurisdictions. Local poli-

cymakers also have better access to local and tacit knowledge than far-removed ones, and local policymakers are often more responsive to the demands of their constituents compared to higher levels (Ostrom 1976, 2005, 2010; Aligica 2019; Lofthouse 2020). Thus, polycentric institutional arrangements help to mitigate the unintended consequences of stifled and superfluous entrepreneurial discovery that are caused by particular public policies.

One potential criticism of polycentric systems is that they might not achieve fast enough results for a pressing public health emergency. Admittedly, the processes of experimentation and mutual learning take time so that results can be compared between various jurisdictions. Many of the policy experiments that some jurisdictions attempt will likely fail to achieve their intended goal. However, a more monocentric approach is likely to be slower than a polycentric one in solving a pressing public health emergency because monocentric systems can only try one policy at a time. In other words, the single policy must be enacted, and then policymakers must wait for the results. If they don't like the results, they will have to repeal the first policy, enact another policy, and then wait for the results again. Polycentric systems have the benefit of comparing many different policy outcomes at the same time, which hastens the learning process. It would be a mistake to compare an idealized form of monocentric systems to real-world forms of polycentric systems. When comparing the relevant alternatives of real-world monocentric system to real-world polycentric systems under conditions of uncertainty and human fallibility, polycentric systems generally provide a more conducive environment for learning from mistakes quickly.

The various states' approaches to mask mandates are one manifestation of the laboratory of democracy at work. Over the course of the COVID-19 pandemic, different states, counties, and cities experimented with different policies that conformed to local preferences. Although most states had implemented mask mandates in 2020, many of them removed the mandates in late 2020 or early 2021. However, as infections surged at the end of 2021 due to the delta and omicron variants, several states reinstated their mask mandates. For example, in August 2021, Washington State reinstated the indoor mask mandate for all people, with some exceptions for small gatherings or office environments where everyone is vaccinated and interaction with the public is rare. In December 2021, California implemented a new statewide indoor mask requirement for all people and New York required businesses and venues to implement a mask requirement or require proof of full vaccination. In January 2022, New Mexico reinstated its indoor mask mandate for all individuals age two and older (National Academy for State Health Policy 2022; Markowitz 2022).

On the other end of the spectrum, some states got rid of mask mandates and banned local governments from imposing mask mandates in 2021. For instance, in March 2021, the Arkansas governor lifted the mask mandate, and he later approved a ban on all local governments from imposing mask mandates. However, businesses can still require patrons to wear masks. In Florida, the governor banned city and county governments from imposing mask mandates. Even though several cities and large counties have implemented mask requirements, the governor's executive order barred local governments from assessing fines and penalties for noncompliance. In addition, the Texas governor issued an order banning mask mandates at the county and city level (National Academy for State Health Policy 2022; Markowitz 2022).

Other states have taken a more moderate approach compared to the extremes of strict mask mandates or mask mandate bans. In May 2021, the Colorado governor ended the statewide mandate, but left the mask mandate in place for high-risk areas, such as nursing homes, prisons, and hospitals, and in certain school settings. Additionally, Colorado now requires COVID-19 vaccinations to attend indoor, unseated events with more than 500 people in certain counties. Alaska's officials strongly encourage the wearing of masks in public and allow local mask mandates to be implemented if necessary. Maryland ended its statewide mask mandate in July 2021, but masks are still required on public transportation and in transit hubs. The city of Baltimore and the state's five largest counties have implemented local orders requiring most people to wear masks in indoor public settings (National Academy for State Health Policy 2022; Markowitz 2022).

In addition to experimentation and mutual learning, polycentric systems also promote resilience because they protect against institutional failures. Due to uncertainty that arises in the real world, especially during pandemics, policymakers cannot know with certainty what is the best or most appropriate course of action. Policy failures will inevitably happen, and some failures will be worse than others. Polycentric systems mitigate the scale, scope, and spillovers of policy failures. Failures and errors may not be perfectly contained to one jurisdiction, but they will be better contained than if there were just one decision-making center. In highly centralized systems, a one-size-fits-all policy failure results in the whole system experiencing the failure (Ostrom 1976, 2005, 2010; Aligica 2019; Lofthouse 2020). Mask mandate bans, such as those mentioned above in Arkansas, Florida, and Texas, limit polycentric governance within states because they do not allow local policymakers to tailor rules and regulations to local circumstances or preferences. As such, the governance system is less resilient to local challenges that might arise and less responsive to local preferences that might differ from the prevailing preferences in a state. Polycentric governance provides robust and resilient forms of public administration because many decisions can be made at lower levels, while higher levels provide critical backstops against failures at the lower levels. For example, when Texas's governor initially implemented the mask mandate ban, it included school districts. Many parents and nonprofit organizations saw this as a policy failure, and as such, they challenged the ban in court. In November 2021, a federal judge ruled that the executive order prohibiting mask mandates in schools violated the Americans with Disabilities Act, which then gave local officials autonomy to create their own mask policies without risk of backlash from state authorities (Lopez 2021).

Monocentric systems are more vulnerable to systemic failures than polycentric ones because of the lack of contestation or alternative sources of governance. One salient example of monocentric governance is the FDA's authority over the approval of rapid antigen COVID tests, also known as at-home tests. Beginning in early to mid-2020, several companies created rapid at-home tests for COVID. For example, Irene Bosch and her colleagues at E25Bio quickly developed a test that would detect the coronavirus in 15 min. On March 21, 2020, Bosch submitted the new COVID test for FDA emergency authorization (DePillis 2021). However, the FDA did not approve Bosch's tests or any others for several months because regulations required that they must have accuracy similar to standard polymerase chain reaction (PCR)

COVID tests (Bourne 2021; DePillis 2021). PCR tests are highly accurate, but during the first several months of the pandemic, PCR tests took multiple days for labs to process and then disseminate results. Due to concerns with lower accuracy rates and false negatives, the FDA did not approve the rapid antigen tests (Bourne 2021). On November 17, 2020, the FDA issued its first emergency use authorization for a rapid COVID test (US Food and Drug Administration 2020), but authorization for other tests was slow, resulting in more approvals delayed until spring 2021 (DePillis 2021). As such, less accurate but socially beneficial rapid antigen tests could not be used during the first few waves of the COVID-19 pandemic. It is difficult to know exactly how many lives could have been saved if rapid antigen tests could have been used much earlier in the pandemic. Thus, the FDA's monocentric authority to approve or bar the use of rapid antigen COVID tests led to consequences affecting the entire United States.

Polycentric systems also allow for interjurisdictional competition, which provides both incentives and constraints for policymakers to create laws and regulations that are broadly appealing. Constituents can "vote with their feet" and move to other jurisdictions where policies better fit their preferences. The freedom to enter and exit various jurisdictions induces competition so that policymakers have a stronger incentive to produce better policy outcomes. If policymakers choose policies that produce poor outcomes, constituents are more likely to move to other jurisdictions where policies are more favorable. Thus, the existence of interjurisdictional competition means that politicians and bureaucrats have fewer opportunities to engage in opportunistic behavior because they are disciplined by the potential loss of constituents and tax revenues (Aligica 2019, 25–32; Lofthouse 2020). Additionally, interjurisdictional competition helps mitigate abuses of power by limiting the power of any given policymaker (Ostrom et al. 1961; Ostrom 1979; Wagner 2005).

One potential criticism of interjurisdictional competition is that it could lead to a "race to the bottom" when it comes to a public health emergency. This concern is complicated for at least two reasons. First, the term "bottom" implies normatively undesirable outcomes. However, if there are a diversity of preferences in a population, then one person's undesirable outcome is likely to be another person's desirable outcome. Allowing people to sort themselves into jurisdictions that fit their own policy preferences will give a broad diversity of policy approaches. For example, each state has different tax rates for sales tax and property tax; we don't see a "race to the bottom" where every state decides to eliminate taxation so that they can be competitive. Each state competes on the margin, with some states charging relatively higher tax rates and providing more public services, while other states charge relatively lower tax rates and provide fewer public services. Second, if people vote with their feet for "bad" policies, there could be spillover effects that put everyone else at risk. However, the nested nature of polycentric systems helps to mitigate this problem of one jurisdiction's policies from spilling over onto others. As mentioned previously, polycentricity is much more complex than simple decentralization. The overlapping spheres of decision-making power are divided both horizontally and vertically, which allows different jurisdictions to both compete and cooperate with one another. Additionally, higher levels can serve as a backstop against decisions at lower levels if those decisions lead to negative externalities.

During the COVID-19 pandemic, many businesses chose to move their headquarters or other operations to new jurisdictions with more favorable laws and regulations. For example, in December 2021, Tesla moved its headquarters from Palo Alto, California, to Austin, Texas. Elon Musk, Tesla's CEO, moved the headquarters due, in part, to California's relatively high capital gains taxes, as well as to lower the cost of living for Tesla employees and to avoid California's stricter COVID-related health regulations (Reuter 2021; Reuter and Kiersz 2021; Hiltzik 2021). SnapDNA, a company that created technology to improve food safety testing, moved its headquarters from the San Francisco Bay Area to Broomfield, Colorado. SnapDNA also considered moving its headquarters to Austin, Texas, but ultimately chose Colorado due largely to the state's Job Growth Incentive Tax Credits (Huspeni 2022; Colorado Office of International Development and International Trade 2022). In addition, Florida has also become a destination for many business headquarters or new business branches during the pandemic. Orlando hosts new offices for software company Civix and Sonesta International Hotels; West Palm Beach has the new headquarters for hedge fund Elliott Management; and, Miami is a new home for the private-equity firm Blackstone. The movement to Florida is likely due to a combination of factors, including less strict COVID restrictions, lower taxes, and Florida's climate and other amenities (Dean 2021; Randall 2021).

In addition to business, many individuals moved during the pandemic—roughly one in ten Americans moved to a new state (Storey and Manansala 2021). In many cases, the principal reason behind “voting with your feet” in the United States is for economic prospects. Previous research has shown that people within the United States tend to migrate to states with higher relative economic freedom (Ashby 2007). This economic freedom includes lower tax burdens, freer labor markets, less restrictive minimum wages, less concentration of unions, and less dependence on public employment. During the COVID-19 pandemic, evidence suggests that less economically free states issued stay-at-home orders earlier than more economically free states, which was likely a factor in so many people moving during the pandemic (McCannon and Hall 2021).

The United States' federated government system is polycentric both vertically and horizontally. Power is vertically separated among federal, state, county, and city governments. Power is also horizontally separated among the executive, legislative, and judicial branches at each level. Yet, as more activities are regulated, or financed, by the federal and state level, the United States also exhibits many characteristics of a more monocentric governance system. These dynamics have real impacts on the resilience and adaptability of the United States, especially during crises.

5 Conclusion and implications

The COVID-19 pandemic has led to widespread suffering in the United States, both in terms of lives lost and negative economic impacts. In 2020 and 2021, policymakers at the local, state, and federal levels created policies that were meant to limit the spread of the virus and also mitigate the pandemic's economic impacts. Stay-at-home orders that forced “non-essential” businesses to close and economic stimulus

programs that provided financial assistance to both individuals and firms were broad types of public policies that affected nearly every American during the pandemic.

These public policies altered the incentives and constraints of entrepreneurs, leading them to be alert to and take advantage of different profit opportunities. Some existing entrepreneurial opportunities were stifled by these policies, and other superfluous opportunities were created. Thus, the policies that aimed to stop the spread of COVID-19, such as stay-at-home orders and large economic stimulus programs, highlight Kirzner's (1985) "perils of regulation."

This paper has at least four important implications. First, the market process perspective provides important insights to understanding the political economy of COVID-19. Policymakers face epistemic limitations, especially when it comes to determining which goods and services that consumers want in an ever-changing world. Knowledge regarding the kinds of goods that consumers want must be discovered through entrepreneurial processes that rely on market prices and the feedback mechanism of profit and loss. When policymakers assume they have the knowledge to determine which goods and services are essential, they may create policies that are accompanied by a host of negative unintended consequences that may harm the very people they are trying to help.

Second, the costs of COVID-19 policies may be much higher than policymakers and consumers assume due to the hidden costs of stifled and superfluous discoveries. In a normative sense, policymakers should consider the wide variety of unseen costs that their policies are likely to create. Sound principles of public administration dictate that policymakers should carefully craft any law or regulation so that a full accounting of costs and benefits can take place. Kirzner's line of argumentation does not rule out a government approach to solving social problems like pandemics, but Kirzner's insights should cause policymakers to consider what their policies can reasonably achieve, given the epistemic limitations of policymakers and the role of entrepreneurial discovery in the market. The stifled discoveries and superfluous discoveries from the COVID-19 pandemic should serve as a lesson to policymakers in the future.

Third, seemingly helpful and well-intentioned policies, such as stay-at-home orders and economic stimulus packages, create opportunities for socially harmful forms of rent seeking. Such policies are socially harmful when entrepreneurs forgo positive-sum opportunities of mutually beneficial exchange and instead choose to engage in negative-sum scenarios of political competition. By recognizing the dangers of policy-driven superfluous discoveries, policymakers can have more tools to avoid further harms from pandemic policies.

Fourth, the policy responses to COVID-19 have illuminated the need for a polycentric approach to policymaking and the potential dangers of a consolidated, one-size-fits-all approach. Polycentric systems have several benefits for policymaking. Policymakers can experiment with different policies in their jurisdictions, and policymakers in other jurisdictions can learn from the successes and mistakes of their counterparts. Policymakers can then create new policies or tweak existing policies based on the lessons learned from other jurisdictions. In addition, polycentric systems limit any institutional failures in one jurisdiction from spilling over onto other jurisdictions. If normatively undesirable outcomes of stifled or superfluous discovery arise in

one jurisdiction, the negative consequences are largely contained to that place. If all policymaking was centralized at the national level, institutional failures and negative unintended consequences apply to everyone in a nation.

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