

Rules In Crisis

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ABSTRACT

RULES IN CRISIS

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Societies exist where individuals agree to live together and abide by a common set of rules. These rules seek to limit, but to not eliminate, predation. When a community is struck by a disaster the environment changes but rules frequently do not adapt; discouraging investment and repopulation and hindering recovery. The laws governing private contracts have evolved mechanism for avoiding harmful rigidity during times of crisis. This thesis proposes a means of applying a similar mechanism to the binding constraints in social interactions with the aim of increasing the likelihood of the community surviving and rebuilding.

CHAPTER 1

Introduction

The state can be and has often been in the course of history the main source of mischief and disaster

Ludwig von Mises (1969, 47)

Disaster, by its nature, is a disruption to human orders. Societies are not designed primarily for the condition of emergency. Indeed, to have resources constantly committed to the relief of all possible disasters would be socially crippling. Instead, through experience and learning, human communities, states and nations establish reserves and disaster rules that come into effect when disaster strikes. Yet there can be disasters that go beyond what experience might have taught. When those disasters strike, societies must reorder to meet new needs that may have never arisen before. Yet societies must do this under the institutional constraints – the rules of the game – that were created in other circumstances, or risk the dissolution of these social bonds entirely. Whether disaster strikes in the form of a hurricane, a terrorist attack, or a global financial and economic crisis, the ability of a society to recover will be determined by the rules that govern how people interact during the disaster, during the recovery from disaster, and after the

disaster has passed. This thesis explores this dimension of social order, the factors that determine whether a society confronted with a disaster survives and thrives, or perishes.

In all normal circumstances and in crisis, rules constrain how public and private actors behave. Good rules are those that protect individuals from predation; they protect and enhance wealth. Protection is a necessary condition for a rule to be called good.

Enhancement of wealth is the sufficient condition. Bad rules may protect but they can impede entrepreneurship and innovation; they destroy wealth. In a disaster, rules that may previously have been wealth enhancing can become burdensome. In other words, rules that are effective and wealth-enhancing in normal times may be ineffective and wealth-destroying in exceptional circumstances.

This chapter explores the nature of rules that may allow a society to respond in a crisis and rules that do not work as well. The first section looks at rules in general. The second section looks at the specific example of New Orleans. The last section offers final thoughts on the chapter and describes the layout of this thesis.

1. Adapting to Disaster

Disasters can create urgent needs, and demand new forms of social organization for meeting those needs. In normal circumstances, societies can agree upon rules to drive on the left or on the right, provided everyone drives on the same side of the road. In a

disaster the need to evacuate a large number of people can be met by making two-way roads into one-way evacuation routes. Later, in retrospect, the disaster-driven change may be understood by all to be beneficial on balance. Some will also recognize that the rule change imposed a serious cost on their preferred action. When highways that formerly allowed for two-way traffic become evacuation routes, there will be some who will be barred from getting to their homes, loved ones and possessions so that they can evacuate. Disaster rules, no matter how well developed, carry a real opportunity cost when activated.

As a consequence of the sometimes significant costs associated with rules, when disaster strikes, some rules may need to be tightened while others may be relaxed or waived altogether. For example, when police resources are stretched it may become necessary to impose stiffer penalties on criminals who are caught. Behavior that is merely unruly or anti-social can become threatening when social bonds are stretched and new rules, such as curfews, may be needed to keep order. At the same time an ordinarily good law, that protects property from trespassing, may result in relief being denied to those who need immediate shelter: relief that would have been granted had the need been known

Once the actual disaster has passed, a society must rebuild before returning to normalcy. Rules must adjust in the short run. Consider the fiscal problem. The tax base of a government may shrink following a disaster. The government must respond by cutting

services or raising taxes. In some circumstances the government may be forced to shift taxes onto sources of income less affected by the disaster. In other cases, government may respond by printing money to fund government services, recognizing that the action will lead later to inflation and destruction of the value of privately held assets. In yet other instances, laws may need to be suspended. For example, zoning laws are rendered unnecessary when a neighborhood is knocked flat, and residential or commercial use become totally irrelevant. Zoning rules and building codes that may make sense in normal times can stand in the way of rebuilding a living and functioning community following a disaster. While any society must adjust to the change brought by disaster, each occasion will be varied, requiring a different response. The next section looks specifically at one example: New Orleans.

2. Mischief and Disaster in New Orleans

On August 29, 2005, Hurricane Katrina made landfall in Louisiana, striking the City of New Orleans. The hurricane caused the levies to burst, flooding much the city:

Hurricane Katrina was a disaster of nearly unimaginable proportions. 80 percent of New Orleans was flooded (Johnson 2006). The American Red Cross estimates that more than 350,000 homes along the Gulf Coast were destroyed (Kirchhoff 2005). Direct fatalities from the storm are estimated near 1,500, with 1,300 of those in Louisiana alone. Damages are expected to

exceed \$100 billion (Knabb, Rhome, Brown 2006).

Sadowski (2008, 2)

The subsequent human tragedy was a result not only of the natural disaster but also of the man-made constructs that govern human interactions. Since 2005 the Mercatus Center at George Mason University has been tracking recovery efforts in New Orleans.

The Mercatus project:

seeks to determine the roles that public, commercial, and non-profit sectors play in rebuilding communities affected by large scale catastrophes... using verbal interviews with people rebuilding in the Gulf Coast supplemented by quantitative and qualitative data

Mercatus Center¹

The evidence collected by the Mercatus Center revealed problems that limited recovery and growth in New Orleans following Hurricane Katrina. Interviews by the Mercatus Center indicate that wages and rents rose dramatically, but that neither population nor economic performance returned to their prior levels. Sadowski (2008) reports that wages rose in 70% of occupations with an average rise of 6.89%, but that population growth has slowed with population in 2008 at two-thirds pre-Katrina levels. Liu and Plyer (2008) find that shortages of workers still existed in key fields despite the rise in wages.

¹ <http://www.mercatus.org/ResearchAreaLanding.aspx?Category=186>

In a study of American cities struck by severe outbreaks of disease (that reduced population by 10% to 25%), Beeson and Troesken (2006) find that cities struck by natural disaster often display a rapid convergence of population and economic performance to their prior levels. This was not the case for New Orleans. Following the hurricane New Orleans showed common attributes of a city struck by natural disaster, but not recovery. To explain this phenomenon, confidential interviews collected by Mercatus were collated according to the types of problem encountered by public and private actors. One of the problem areas was regulation, the rules that had evolved for promoting order before disaster struck. From these interviews six of the most problematic classes of regulation were identified.

2.1 Planning Laws

Any person wishing to build, or even rebuild a property, is required to purchase a permit from the city. The fee itself appears to have been nominal but obtaining the permit was significantly costly in other ways. Bureaucratic hurdles intensified when the government apparatus was damaged, becoming a bottleneck in the recovery process. Interviewees reported residents living in unsafe buildings because structural repairs would have required a rebuilding permit.

Planning laws, zoning and land-use regulation existed in New Orleans prior to Katrina. There is also substantial evidence from interviewees close to the planning process, that

local authorities attempted to leverage their powers after the disaster to shape the rebuilding of the city around a master plan. Planners delayed new buildings being erected (and thus workers returning to the city) and in some cases prevented buildings that had been erected from being occupied.

The laws did not only restrict new buildings. Following the disaster, residents of New Orleans needed new services for which they had previously had less demand. One interviewee reports being unable to open a laundromat because it amounted to a change of purpose. Prior to Katrina most residents had been able to do their laundry at home. In the aftermath many homes were without basic services creating an immediate need for laundromats. In other words, the land-use regulation contained no emergency escape clause that might have given some relief to the unmet needs of the surviving population.

2.2 Restrictions on Rebuilding

New Orleans had extensive licensing required of repair personnel prior to (and following) Katrina. Interviewees indicated that only licensed professionals were allowed to carry out certain jobs even on a person's private residence. Building codes required any home that was flooded be completely rewired and in other ways brought up to code, putting substantial strain on a small number of electricians.

In New Orleans many jobs (such as plumbing or electrical work) must be inspected even if they are carried out by a licensed professional. Immediately following Katrina interviewees reported that New Orleans had only four such inspectors. Buildings had to be assessed before they could be reoccupied. A building that was assessed 49% damaged could be repaired but a building that was 51% damaged had to be demolished and rebuilt (requiring a permit). The subjective nature of this judgment meant residents may seek repeated assessments, further straining the limited number of individuals doing providing this service.

2.3 Restrictions on Travel and Commercial Activities

Immediately after Katrina, the federal government prevented anyone from entering the city. When return was first permitted, a permit was required. One gas station owner reported being prevented from returning to his business until explaining to police that his was the only gas station still operating in New Orleans (and therefore responsible for supplying gas to the police). In addition to other restrictions, some businesses that were able to open were closed down. This was not limited to small businesses; FEMA briefly closed down a Wal-Mart.

2.4 Regulation of Insurance

Insurance in Louisiana is regulated by a Commissioner of Insurance. One interviewee reported lobbying efforts to reduce the cost of insurance although not on the success of those efforts. A number of interviewees reported insurance companies dropping customers after the disaster, indicating prices were not able to rise in response to increased costs.

2.5 Restrictions on Re-opening Schools

A number of public schools did not re-open until a year after the hurricane and some have never re-opened. Local entrepreneurs and non-profits attempted to bridge this gap through charter schools but were limited by tight restrictions (early deadlines, paperwork, etc...) on providing educational services. In one significant deviation, Louisiana substantially waived regulation to make it easier to start charter schools, resulting in New Orleans now having a high proportion of students in charter schools.

2.6 Minimum Staffing Ratios

Interviewees revealed that child care facilities were prevented from taking children due to restrictions on child/staff ratios, resulting in parents being unable to place children in a facility at all. Louisiana operates minimum staffing ratios for child care and also for

nursing care. In ordinary circumstances this may result in a higher standard of care, but in a crisis there may be too few resources to provide that level of care to all.

2.7 Conclusion

Regulations that existed prior to the crisis limited the ability of public and private actors to respond. For recovery to occur these regulations needed to be relaxed in some cases, but the political considerations that existed before the hurricane still exist afterwards. Powers granted to the government to change laws in an emergency also led to new problems. Table 1 divides the six classes of regulation described above into four general classes, separating those rules that constrain public versus private actors, and rules that needed to change in response to disaster versus rules that were created in response to the disaster.

Table 1 - Classes of Regulation

	Pre-disaster Regulation	Post-disaster Regulation
Regulation of Entrepreneurs	I	II
Regulation of Government	III	IV

Category I describes regulations that were in place before Katrina but that affected entrepreneurial activity that became problematic afterwards. Some planning laws fall into this category such as those which prohibited the building of new laundromats after a

shift in demand. Licensing of professionals also fall into this category. Reducing regulatory problems in this category requires rules to change in a disaster, but permitting rule changes also lead to problems in category II: regulations imposed on entrepreneurs after the disaster that inhibited recovery. Restrictions on returning to the city fall into this category as do some planning restrictions that were imposed by local government after the destruction. Rules in this category may be created in response to the disaster or rules created beforehand but triggered by the disaster such as automatic price ceilings.

The third and fourth categories include regulation of government activity. Restraints on government activity can be desirable to protect liberties but can constrain or impede the ability of governments to respond to crises. For example, laws that restricted the building or opening of new schools reduced school capacity following the disaster, and possibly reduced incentives for workers to return to the city. Again, while reducing some rules may desirable, the relaxation of restraints in category III can lead to problems in category II.

The fourth category of restraints are those imposed on governments after disaster. For example, the Stafford Act regulating FEMA.² This may prevent overstretch such as the category II problem when FEMA prevented the re-opening of a Wal Mart but reduces the

² The Robert T. Stafford Act (42 U.S.C. 5121-5207) gives the federal government authority to respond to a disaster when a presidential disaster declaration is issued on the request of a Governor.

ability of the aid agency to respond. The Stafford Act prevented FEMA from supplying money for permanent housing even when trailers were more expensive, resulting in a costly misallocation of resources.

These categories of rules illustrate the nature of the problem explored in this thesis.

Consideration of the Katrina experience suggests the possibility that a set of social rules can be devised that contain circuit breakers to temporarily relieve normal constraints when disaster strikes. Indeed, an exploration of disaster rules adopted by the U.S. states suggests that institutions have evolved that can accommodate disaster situations while providing stout support for economic operations in normal times.

3. Organization of this Chapter

The chapters that follow develop a theory of how institutional constraints affect societies afflicted by disaster, forming refutable hypotheses. These hypotheses are then tested against evidence from states to draw specific recommendations for policymakers.

Chapter Two develops a model of how rules emerge under conditions of rent-seeking and inter-jurisdictional competition. The model is then used to predict of how societies will respond to a disaster. The chapter then looks at legal mechanisms used to cope with disasters in private contracts and generates an equivalent concept for the social contract. This concept is used to form refutable hypotheses about the factors that are most likely to lead to a society surviving disaster.

Chapter Three tests the refutable hypotheses by looking at a sample of seven states. These states are selected according to the criteria laid out in the previous chapter. The chapter surveys the disaster laws in each of the states and compares the findings to predicted performance. To broaden the scope of the empirical evidence considered, the chapter also reviews disaster literature.

Chapter Four concludes with a summary of the findings, and makes specific recommendations for policymakers based on those findings. The chapter also discusses some of the limitations of the theory and its application in practice.

CHAPTER 2

From Emergence to Emergency

There is no such thing as society. There are individual men and women, and there are families. And no government can do anything except through people, and people must look to themselves first.

Margaret Thatcher (1987)

Introduction

Individuals avoid isolation and benefit from co-operative enterprise by living in groups. Societies emerge from these groups when individuals agree on rules to live by (Brennan and Buchanan, 1985). These rules define the individual's rights and obligations. As discussed in Chapter One, when disaster strikes, rules that previously helped create order and sustain life may become unwieldy constraints that limit emergency management; societies must adapt to the changing environment around them. For example, a highway that normally operates with two-way traffic may better serve a disaster-struck area as a one-way, rapid evacuation route. Community protected and enforced private property

rights may have to give way to provide emergency shelter. There are obvious trade-offs to consider. Uncertain enforcement of rules reduces long-term investment, but unbending rules may limit the community's chances of survival in the face of serious emergency.

This chapter seeks to explain the theoretical relationship between the process of designing rules, and ability of a society to respond to a disaster. The first section considers major contributions by scholars who show how a social contract can emerge from anarchy or from the actions of a self-interested leviathan. It describes how individuals choose rules through market and non-market mechanisms. The section then proposes a model of rule selection in evolutionary competition. The second section expands on the difference between rules that emerge and rules that are designed, referencing English and French legal traditions, which are summarized in the section. The section considers how these traditions affect a society's response to disaster; how rules need to change; and the barriers to achieving this. The third section suggests how these barriers are overcome, and discusses the circumstances under which implementation is likely. The penultimate section briefly applies the preceding discussion to the 2008 U.S. financial crisis, showing how rules that functioned reasonably well in normal times actually worsened the crisis and stood in the way of recovery. Specific proposals arise from this discussion to address current and future

crises. Finally, the conclusion surmises the arguments and proposes how democracies can better prepare for disasters.

1. No Such Thing as Society

Locke (1690) argues individuals are born into a state of nature. Rights arise from a common law of nature. An individual cedes to a community his right to enforce natural law. The community then establishes rules and provides exclusively for their enforcement. Hobbes' (1660) contrasting approach describes man beginning in the Jungle, doomed to a pitiful existence. To escape the Jungle, man turns to a leviathan who holds dominion over all men. Both Hobbes and Locke recognize a society as individuals agreeing to abide by common rules of conduct.

Brennan and Buchanan (1985) write that the contractarian approach rests on the presumption that value exists only within the individual. The individual operates within a larger society – he is no Robinsons Crusoe – but society modifies the values of the individual rather than acting as an external source of value. The state, which is seen as a mechanism for developing and enforcing common rules, emerges from, and exists within, the social contract. In the viewpoint of Brennan and Buchanan, neither society nor the state can have its own goals; there are only the goals of those individuals who comprise society:

[T]here is no resort to any source of value external to the expressed preferences of individuals who join together in political community... The state does not exist as an organic entity independent of the individuals in the polity. The state does not act as such, and it cannot seek its own ends or objectives. "Social welfare" cannot be defined independently, since, as such, it cannot exist.

Brennan and Buchanan (1985, 2:13)

Although it may be committed to broad principles espousing such things as the rights of man or statements about pursuit of happiness the state cannot have its own goals. Nonetheless, the state represents a bundle of rules which somehow emerged in its absence.

1.1. The Origins of Rules

Buchanan (1975) describes the emergence of rules from anarchy. These rules are not derived from natural rights but are present to minimize expenditures on predation and protection from predation. Individuals bargain to establish rights and rules for their protection but the contracts arising from these bargains are unenforceable:

The gains-from-trade that are potentially achievable by an agreement on rights are realized by all parties through the disinvestment in socially

wasteful effort devoted to both predatory and defense activity. An agreed-on assignment will not normally be stable in one particular sense. Once reached, one or all parties may find it advantageous to renege on or to violate the terms of contract.

Buchanan (1975, 35)

Buchanan argues that in a crude two-person society repeated interactions between individuals bring about mutual recognition of rights:

[I]t is surely plausible to suggest that rationality precepts will direct each person to adhere to the initial contractual terms. Each person will recognize that unilateral defection cannot succeed and that any attempt to accomplish this would plunge the system back into a position that is less desirable for everyone than that which is attained upon adherence to contract.

Buchanan (1975, 85)

Olson (2000) offers an alternative explanation for the emergence of order. His story begins in the Hobbesian Jungle with predation by roving bandits. Olson's leviathan is a stationary bandit with a monopoly on theft. Roving and stationary bandits both choose the revenue-maximizing level of theft. The roving bandit has only a narrow interest in societal wealth and so does not gain from restraining his predation. He gains only by

engaging in successful theft. By contrast the stationary bandit has an encompassing interest and gains from reducing the percentage of income he takes from his victims.

[T]he criminal who is only one among many will take 100 percent of the money in any till he robs. By contrast, the stationary bandit with continuing control of an area wants to make sure the victims have a motive to produce and to engage in mutually advantageous trade. The more income the victims of theft generate the more there is to take. A secure stationary bandit, by making his theft a predictable tax that takes only a part of his victims' outputs, thereby leaves them with an incentive to generate income.

Mancur Olson (2000, 8)

The stationary bandit's encompassing interest leads him not only to restrain his predation but become a benefactor. Olson does not argue for the bandit's judiciousness, only his self-interest. Like a cattle rancher looking after his herd, the bandit will provide public goods to increase his victims' outputs. Thus he becomes an autocrat, providing law and security. The autocrat will enforce private contracts but there is no way for him to make enforceable promises. It is the continuing relationship between the bandit and his victims that makes the advantageous relationship possible.

Whereas Buchanan's state emerges as the enforcer of rules, Olson's rules are created by the state (the stationary bandit). Buchanan's approach emphasizes the importance of separating the role of rule creator from that of rule enforcer. Both result in a crude contract that reduces uncertainty to individuals and in both cases that contract must be internally enforced.

Of the two accounts, only Olson's matches the historical record and only Olson seeks an explanation of the transition from autocracy to democracy. This happens, he argues, when there is a broadly equal dispersion of power. A leader who cannot become an autocrat should favor non-autocratic government. By this method democracy can (not will) emerge autonomously.

1.2. Rent-Seeking in a Democracy

In a democracy the individual receives some additional protection from predation. An individual is less likely to suffer unfavorable rules if his approval is required but a majority has little incentive not to predate on a minority, except to preserve rules it finds beneficial. The virtue of democracy is not a virtue at all but the broad encompassing interest of the majority. The majority limits predation and provides public goods out of self-interest.

Whilst the stationary bandit is a sole residual claimant on rents, no individual has a complete encompassing interest to set taxation and public good provision at levels that maximize the residual claims of the majority. Tullock (1971) shows that public decisions are themselves public goods. The costs of gaining information are borne by the individual but the benefits are shared by society. The individual thus chooses to be rationally ignorant. Tullock describes a static process emphasizing the importance of wasted expenditures on acquiring rents. Tullock (1975) shows that new government programs deliver only transitional gains to incumbents. New entrants expend the value of these gains to enter the industry, and do not make super-normal profits but would still suffer a loss if the program were repealed.

Similarly, Olson (1982) shows how the free-rider problem prevents large groups from organizing effectively against predation. Smaller coalitions, with lower costs of organizing, have disproportionate influence in a democracy. Olson illustrates the problem with the example of the income tax. The cost of knowing the entire tax code is high; the voter is thus rationally ignorant of those parts which do not affect him. The majority knows the nominal tax rate and vote to predate on the wealthy with a progressive tax. Only the affected minority are fully aware of tax breaks so these are regressive.

Whereas Tullock's process describes rules that are hard to change, Olson's process is continuous. Regulations lead to yet more regulations, creating and closing loopholes, and increasing the cost and complexity of rules. In a stable society the number of distributional coalitions grows over time. As interests become more diffuse the state acts less like the stationary bandit and more like the roving bandits.

Olson (2000) shows that participants to a power-sharing arrangement will want to place limits on the power of the majority. Knowing that they may not be a part of a majority at any given time, individuals wish to secure their property against rules that are arbitrary or capricious. Olson argues that parties will agree on constitutional procedures that secure property rights against the government and place limits on the power of the executive.

Buchanan and Brennan (1985) separate the concept of operating rules and constitutional rules with the latter describing how the former may be changed. Constitutional rules can limit rent seeking by placing restraints on the state. By this method individuals, or groups with common interests, may overcome the dilemma where an individual could gain if rent seeking was reduced overall but has no incentive to limit his own.

Individuals and groups can agree on a set of constitutional rules such as a parliamentary procedure or a specific restraint on the power of the state that limits the power of all parties to seek rents.

1.3. Markets in Government

Olson (2000) illustrates how his theory may work in practice with the story of a Chinese warlord. The warlord amassed considerable support from his victims who preferred him to the roving bandits. The stationary bandit had become a seller of services. If rules could be sold as commodities then a market could arise. In a perfectly competitive market, economic rents from the provision of public goods could be eliminated. In a political market, stationary bandits and their democratic successors cannot make enforceable contracts so rent-seeking cannot be eliminated entirely.

There is no homogeneous product called the law. Different individuals prefer different mixtures of public and private goods, but public goods cannot be unbundled. On the other hand, there are bundles of state provided services that may include private and public goods, meaning the exclusion principle does not apply. Tiebout (1957) examines a market for publicly provided goods where individuals vote with their feet. The voter-consumer chooses between bundles of government-provided goods based on individual preferences and the efficiency with which the goods are provided. Tiebout argues that if costs of movement are zero then competition between local governments for voter-consumers results in an efficient allocation of government-provided goods. The efficient allocation or bundle of government goods includes rules, regulations, and statutes that form legal institutions across competing jurisdictions.

The voter-consumer who chooses between jurisdictions bears the full costs and benefits of her decision. Tullock (1971) predicts that once she arrives in her jurisdiction of choice, she should then proceed to act as a rationally ignorant, rent-seeking individual. Whereas prices guide the profit-seeking firm toward equilibrium, the same is less true of the market for public goods.

That the voter-consumer will move to the jurisdiction that best matches her preferences does not mean she will necessarily vote in the same way as existing residents. It is highly unlikely that with a large number of government provided goods, and a small number of bundles, that she will find a bundle which exactly matches her preferences. Even if she is so lucky, it has been shown that voting is unlikely to yield the bundles of goods an individual would choose in competition. Thus, when an individual chooses a jurisdiction that matches her preferences, she is unlikely to vote in a manner consistent with maintaining those preferences. Furthermore, her presences in a local economy may alter the preferences of existing residents.

Evolutionary competition is an exogenous process that selects for bundles of rules on the preferences of voter-consumers. Within a society, endogenous entropic forces lead to gradual decay. The entropy law is reflected in the second law of thermodynamics. Georgescu-Roegen (1986) describes entropy as a concept or measurement of a process by which the quantity of available energy in a system “continuously and irrevocably

degrades into unavailable states,” requiring the input of new available energy. In society this degradation occurs as the relations between individuals become increasingly rigid or less random. Olson (1982) finds that the number of coalitions in a stable society will grow over time, leading to a slower decision making process. Furthermore, this accumulation:

increases the complexity of regulation, the role of government, and the complexity of understandings, and changes the direction of social evolution.

Mancur Olson (1982, 74)

When the voter-consumer chooses between bundles of publicly provided goods her future choices are path-dependent.³ Historical choices affect the choices available to her in the future. Choosing a jurisdiction not only selects a bundle of current goods but weakly commits her to future unknown bundles of goods.

Physical and social capital are somewhat immobile. When individuals invest in a jurisdiction they can become locked in. Rent seekers can exploit this: for instance, a cable company that invests in a jurisdiction could be forced to hold their prices artificially low. Path dependency allows a jurisdiction with costly rules, but a significant stock of social or physical capital, to survive competition with jurisdictions that have more

³ David (2000) defines path dependence as a property of non-reversible dynamical evolutionary processes

efficient rules. Knowing that changes in rules create risk, individuals seek certainty in rules before making investments. For example, Troesken (1997) notes that in the early 20th century gas companies lobbied state governments to shift regulation of rates from municipalities to state regulatory commissions which were less responsive to the demands of voters.⁴ The author finds evidence that consumers benefited in states that made credible commitments to controlling predation.

Although these arguments may suggest the voter-consumer would prefer an unchanging social contract, this is only the case in the sense of relatively absolute absolutes. Exogenous change, whether rapid (such as external shocks and war), or gradual (such as technological and demographic change), may alter the demand for publicly provided goods and sometimes for the constitutional rules that form the foundation for the state. Buchanan (1975) notes that there is no reason rules should remain the same except to fulfill a demand for certainty, which would be substantial in a static condition. The voter-consumer must trade off constitutional rules that offer certainty and protection from predation, with sufficient flexibility to adapt to changing circumstances.

⁴ The state regulators were also more vulnerable to producer capture.

2. Albion versus Leviathan

Hobbes (1660) posits that society may exist in two possible states; anarchy and leviathan. Buchanan (1977) advances this discussion by considering a spectrum of intermediate conditions. Consider two societies, one beginning in anarchy and the other in leviathan. Both can reach either end of the spectrum and any point in between. It is not impossible that if our two societies found themselves in perfect competition that both could independently satisfy the same demands of voter-consumers in the same way. Indeed, societies beginning from both ends of the spectrum often do arrive at the same set of rules.⁵ Tetley (2000) describes how mixed jurisdictions overcome differences between two distinct legal traditions of common law and code law.

Common law arises from private law, and follows the principle that the individual only forfeits certain rights to the state. Judges decide cases first on the basis of the specific facts and then apply a principle. Their rulings apply only to the parties to the case before them; they do not become part of the social order (meaning they would apply to all future similar situations). Nevertheless, judicial precedent is highly important; under the

⁵ Schwartz (1975) and Tetley (2000) both note that there is significant overlap in the legal traditions of common and code law countries. Many mixed jurisdictions survive around the world, including in the American State of Louisiana. Furthermore, the United States has imported much of the principles of civil law through the introduction of administrative codes. Tetley also finds that civil law jurisdictions have incorporated many common law principles through statutes. While both legal traditions do often arrive at the same set of rules, observers of the two systems have found systematic differences in the rules each society lays down.

English doctrine of *stare decisis* judges are expected to follow precedent set by higher courts established in previous similar controversies, but may take another position with justification. Ultimately, it is the appeal process and actions taken by higher courts that will either ratify or deny a revision of precedent. In this sense, the common law process is dynamic and organic.

Unlike the common law, code law is a specific form of civil law, arising from state itself. Whereas judge-made law applies to parties to a controversy before the court, code law applies to all parties who are members of the state. The civil law follows Rousseau's theory that the state is the source of all rights. Civil law judges are less influenced by the detailed jurisprudence of common law; instead civil law judges read the code and find ways to explain and apply the code in novel situations. While common law is continuously evolving, code law changes as legislative bodies, or the leviathan himself, can change the code. Along these lines, David and Brierley (1985) note that while common law systems are open to creating new rules for new facts, civil law systems are closed until revised because every situation is already accounted for within the principles. In both types of jurisdiction, statute law takes precedence. In common law systems, statutes are written precisely and cover one part of the law in specific detail. By contrast in civil law systems, statutes describe only broad principles that must apply across the law, not just to specific facts.

2.1. Society of Laws

Posner (2007) argues that judge-made law reduces the operating cost of a common law society because it is less likely to lead to rent-seeking. Common law judges must consider the cases of only those parties with standing. In code law, lawgivers consider the interests of all parties, regardless of standing, including tightly organized special interest groups. By contrast, Tullock (1997) disputes Posner's wise judge argument, arguing that litigation is a form of lobbying. Tullock concludes that the common law may be more costly than code law because the majority of resources are consumed by the adversarial process, while in the code law the greater proportion of resources are dedicated to the inquisitorial process.

Rubin (1977) argues that Posner's wise judge is unnecessary because costly laws are more likely to be litigated or relitigated to establish an efficient precedent. Priest (1977) extends this theory by arguing that costly rules generate greater stakes and are therefore more likely to be litigated. Goodman (1978) argues that court litigants will spend more to overturn or avoid a high-cost ruling. Rubin (1982) describes how opportunities for economic gain in the common law can be obtained through Coasean bargaining. This is because common law judges can announce the prevailing party in a controversy and then order litigants to bargain in final settlement, and because the courts will follow contracts that modify costly rules. If courts are less willing to enforce contract rights over the government then socially embedded costs must be overcome by political bargaining.

Dixit and Olson (2000) show that Coasean bargaining is highly sensitive to transaction costs, making political bargaining highly difficult. Acemoglu (2002) contends that political Coasean bargaining is impossible because contracts are unenforceable.

Hayek (1960) argues that knowledge is diffuse such that no lawgiver could ever know the full range of possible actions. A society is subject to exogenous change, including constant technological change. Whereas code law jurisdictions start with an inclusive set of principles, elaborated by a code, and seek to apply these to new facts; common law jurisdictions start with the facts of the case and decide principles after. Thus while common law judges must only decide the principle on known facts, the writers of code law must decide the law before the facts are known.

Hayek focuses on greater protection of property rights and contract rights under common law rather than efficiency arguments. He distinguishes between code law judges who are a part of the political bureaucracy, and common law judges who are considered independent. Judges in common law countries are therefore more willing to protect property rights and the right of contract from the government. Olson (2000) also predicts that securing property and contract rights against the government is necessary to generating investment, noting that countries with stable contracting are most likely to have developed financial industries.

La Porta et al. (1996) find that common law countries have better legal rules for the protection of investors than code law countries. The authors' results support their argument that although firms can opt out of these rules there are transactions costs associated with doing so.

[The] evidence confirms our basic hypothesis that being a shareholder, or a creditor, in different legal jurisdictions entitles an investor to very different bundles of rights. These rights are determined by laws; they are not inherent in securities themselves.

La Porta et al. (1996, 40)

La Porta et al. (1997) looks at both the quality of investor protection arising from legal rules and the enforcement of contracts, finding that poorer investor protection results in less developed financial markets. Furthermore, the authors find that countries under French civil law provide the poorest investor protection and have the least developed capital markets. King and Levine (1993a) find evidence that countries with more developed financial systems have greater rates of GDP growth, physical capital accumulation, and more efficient allocation of capital.

The evidence from La Porta et al. supports the arguments of Posner and Rubin that the common law produces (or has produced) better law but does not indicate why. Mahoney (2001) finds that common law countries experience faster growth in gross domestic product, but argues common and code law countries frequently arrive at the same set of rules. Mahoney attributes faster growth to Hayek's theory that the common law places stricter limits on the government thus providing for greater protection of property and contract rights.

Common law may be said to triumph over code law in two important aspects. First, common law provides greater protection against a predatory leviathan. Second, common law is open, allowing cases to be judged on facts first and principles to be decided later. These two aspects become more significant when a society must adjust to a shock.

2.2. Transitional Adjustment to Shock

When change is gradual, the code law jurisdiction can observe the common law jurisdiction and permit only those changes which are shown to be beneficial. In the absence of major shocks or disasters it is possible for code law and common law jurisdictions to evolve rules that are similar but when change is sudden and dramatic, or isolated to one society, the law must respond to the new conditions. When wars occur, famines strike, or a major hurricane hits a city, relative scarcity changes.. Some people

are killed and others evacuate. Property is destroyed, relationships are severed and governmental institutions are likely impeded in their activities. In some instances a stable society with an operating rule of law reverts to a Hobbesian jungle, but a jungle that now contains the legal artifacts of the failed society.

The society does not move to a new punctuated equilibrium⁶ but finds itself in a transitional phase: new property must be built to replace that which has been destroyed, and the society must either adjust to the reduced population or attract new inhabitants. The optimal political and market responses are different to the optimal responses to previous and future states of the world. Before and after the disaster, for example, there may be voter demand for zoning laws but when entire neighborhoods are knocked flat that demand evaporates.

In both common and code law societies, lawgivers cannot create rules with reference to all possible states of the world. Rules are made in reference to past states of the world and adjusted in response to changing conditions. The rules are relatively absolute absolutes. In the transitional phase, markets are in constant adjustment.

⁶According to Beinhocker (2006) the term punctuated equilibrium originated with Gould and Eldridge to describe a “pattern of alternating calm and storm.” The term does not describe equilibrium in the true mathematical sense but rather a period of relative stability between bursts of activity.

Previous capital allocations may no longer make sense following the destruction of some capital or a shift in demand. In making this point, Heller (1998) defines the tragedy of the anti-commons where overlapping property rights lead to the underuse of capital. Zoning laws serve as useful example of a potential anti-commons tragedy. The owner of zoned land does not have an unrestricted right to build on that land; others have an exclusionary right to prevent the owner from building. If the existence of exclusionary rights sufficiently increases transaction costs then the land could be underused. An anti-commons tragedy can be created under the common law also; for instance a restrictive covenant can serve the same purpose as a zoning law. If the number of parties involved are great enough, then bargaining may be too costly. It is more likely that the zoning laws would lead to an anti-commons tragedy because a greater number of parties are involved in the bargaining process. The code law inherently brings in parties without standing, potentially raising transaction costs.

A process of adjustment necessarily involves trial and error by entrepreneurs. Diffuse local knowledge is not known immediately to lawgivers who must respond to the activity of entrepreneurs. Whereas the common law is open - judges decide cases on the facts and apply a principle or create a new one - code law is closed, judges must apply pre-existing law. Following a disaster the common law society initially errs towards anarchy; individuals face greater uncertainty over what principles will be employed. By contrast, the code law society initially errs towards greater rigidity; judges must apply

existing law to the new circumstances. Both of these initial tendencies can be overridden by the creation of new statutes.

In both societies there is demand for new laws permitting or prohibiting activities not before considered but in neither case must these laws all move in the same direction. The optimal response may be to allow a previously prohibited activity or to rescind permission for previously allowed activities. Separately, the demand for enforcement of rules is also likely to change although the size and direction of the shift cannot be predicted in any universal sense.

2.3. Moving to a Post-Transitional Phase

The destruction of capital by some disaster shock potentially frees the society from its path dependent course. After capital is destroyed, both code and common law societies can rebuild their capital stock according to current incentives, not the previous path dependent incentives. It may have been too costly to demolish a neighborhood to build a factory, even if a factory would be a more beneficial use of the land. The destruction of the neighborhood now allows that path to be taken. The law too is path dependent as lawgivers lack the ability to predict all future states of the world, meaning that potentially beneficial innovations can be lost.

A shock delivers new information to markets. For example, insurers may have previously underpriced the risk of a hurricane and will now send price signals, by increasing their premiums that discourage rebuilding in risky areas. Even if risk has been correctly priced, the trial and error process only allows entrepreneurs to know what innovations are successful under existing conditions. A retailer may know an area is vulnerable to a hurricane and plan accordingly. The retailer will only know when the hurricane strikes, whether or not his plans are successful.

Allowing entrepreneurs greater freedom to innovate by relaxing laws, allows the society to find a potentially more prosperous path. Relaxing the existing rules and specialized resources devoted to their enforcement will eliminate associated rents. Any effort to change or relax an existing regime of rules, short of total destruction, will be resisted. The ability of a society to choose an alternate path will depend upon the level of capital destruction. Some surviving capital may yet succumb to the creative destructive process; including the law as a form of social capital. This destruction, however, is costly. The optimal response of a society is therefore more path dependent than a simple analysis of physical capital alone would suggest.

In the absence of a shock, path dependency can also benefit societies where predation survives due to weak protection of property and contract rights. In choosing to invest in new capital, entrepreneurs are effectively establishing a new path dependent course. As

such they will seek societies that offer freedom to innovate but also protection of their capital from predation. If rules can be changed easily then entrepreneurs will be less willing to invest.

2.4. Political Challenges

The demands described above are the competitive demands a society faces. In practice a democratic society does not respond directly to external competitive demands but to lawmakers' perception of the demands of voters. The distribution of power and wealth before and after a shock may be different. If so, the coalitions that stand to lose power will become roadblocks to change. A city may be locked in to an inferior technology, such as gas lighting instead of electric. When the street-lighting must be rebuilt it is sensible to switch to electric but gas companies may still have effective power in the legislature.

The constitutional rules designed to harness rent-seeking behavior may also lock in the power of incumbents. When the gas lighting was first installed, the gas company made a significant capital investment for which they would have sought protection against rent-seeking. For example, gas companies may have lobbied for state regulators who were more easily captured by producer interests, or entered into franchise agreements that

share monopoly rents with powerful interests.⁷ Arrangements such as these give the gas companies the ability to block change but now that ability can be used to prevent the city choosing electric street lighting.

The gas company's opposition could be overcome if constitutional rules were relaxed. This relaxation could be procedural, such as the transfer of rulemaking power from the legislature to the president. Alternatively the relaxation could eliminate specific restraints on government action, such as permitting conscription in times of war. Higgs (1987) traces the relationship between emergency and the growth of government power, noting that such relaxations of constitutional rules are rarely temporary.

If relaxation of constitutional rules appears permanent then future investors will be discouraged. It is not only necessary that the opposition of the gas company be overcome, but that the electric company believes it can safely invest. Restoring the protection of constitutional rules is as important as the relaxation. Moreover, the city must be able to signal that the relaxation is temporary.

Even if this obstacle is overcome, allowing greater freedom in rulemaking allows for a preferable bundle of rules to be selected but does not promote that outcome. The rent-

⁷ For actual examples, see Troesken (1997)

seeking individual or group has no less incentive to rent-seek because of emergency. Indeed, there is more incentive to become a looter in a society facing possible collapse than in a stable society. Thus relaxation needs to be both temporary and selective.

Altering constitutional rules selectively can limit the degree of freedom available to lawgivers. The objective is to reduce the cost of relaxing undesirable operational rules, rather than a broad expansion of the powers available to leviathan. By shifting the balance from the code to the common law, a society can increase the rate of innovation. To affect such a shift without undermining the social contract, the society must adopt a mechanism that changes rules in a predictable way in response to unpredictable events. Ideally, such a mechanism would be costly to use to avoid abuses that create additional uncertainties.

3. The Devil and the Deep Blue Sea

A society will be better able to attract individuals and capital after a shock if laws offer protection from predation and freedom to innovate. Changing the law may allow for innovation, but laws that are easily changed offer no guarantees of the future. Incumbent powers that stand to lose out can block change with constitutional rules designed to

protect property and contract rights. Making it easier to change rules reduces the power of coalitions to block change, but also opens the door to greater rent seeking.

The society is trapped between anarchy and leviathan, looking for an accommodation that breaks down the doors to change without also letting in the looters. Such an accommodation exists already in the sphere of private law. The doctrine of Force Majeure excuses a party from contractual obligations or for engaging in trespass or other property rights violations if an outside force intervenes:

A claim of "force majeure" is equivalent to an affirmative defense. What types of events constitute force majeure depend on the specific language included in the clause itself...A party relying on a force majeure clause to excuse performance bears the burden of proving that the event was beyond its control and without its fault or negligence.

Williston on Contracts (2008)⁸

Although social rules did not emerge from contracting, Brennan and Buchanan (1985, 26) argue that they can be modified as though they had. In private contracting each right puts a corresponding obligation on the other party. To the extent the social contract embodies equality before the law, every right puts a corresponding obligation on the

⁸ 30 Williston, Contracts §§ 77:31

same party. Thus while Force Majeure in a private contract comes into effect when a party is unable to meet their commitment, in a social contract Force Majeure modifies the individual's relationship with the state. A Force Majeure clause would thus modify the constitutional rules on which the state or the contractual relationship between agents is founded following an outside shock such as war or an Act of God. In the context of the theory described above, Force Majeure is an example of an evolved basis for a circuit breaker that temporarily allows otherwise binding constraints to be relaxed.

3.1. Vis Major, 'Tisn't Minor

Force Majeure is sometimes interpreted as an action resulting from the effects of an act of God, a circumstance not specifically specified in a contract. Binder (1996) discusses the history of the act of God, or Vis Major, defense in English and American torts, noting that an act of God is not equivalent to a force of nature:

[A] force of nature, [does] not constitute, as a legal matter, an unforeseeable act of God. Nature's blow may be sudden and unexpected. The storm may leave a trail of destruction, devastation, and tragedy. Both the victims and the defendants may be surprised and shocked by the awesome force unleashed by nature. Yet, the catastrophe will not necessarily constitute an unforeseeable act of God.

Binder (1996, 7)

A Vis Major defense rests upon both the defendant's lack of predictability and lack of control. Although an Act of God "may serve as a defense, its absence does not establish a duty of care."⁹ According to Binder the Act of God defense was first invoked in *Shelley's Case*¹⁰ (1579-1581) and then again in *Coggs v. Bernard*¹¹ (1703), applying the doctrine to the liability of common carriers. *Forward v. Pittard*¹² (1785) excluded acts of man from the defense and established a strict liability rule. In *Nichols v. Marsland*¹³ (1875) the defendant created dams to store water on his own land which failed due to exceptionally heavy rainfall and damaged property downstream. The jury found the failure was caused by Vis Major; although the judge overturned the finding the case extended the Act of God defense to cases of negligence. Vis Major may also apply to cases of trespass, where necessity is a defense.¹⁴ For instance, one may moor one's boat to another's property to avoid a severe storm.¹⁵

3.2. Pacta Sunt Servanda Rebus Sic Stantibus¹⁶

Although courts have used Force Majeure to refer to an Act of God, the former is more expansive than the latter.¹⁷ Thus the concept of Force Majeure can also be applied to

⁹ Binder (2008, 9)

¹⁰ 76 Eng. Rep. 199 (1579-1581)

¹¹ 92 Eng. Rep. 107 (1703)

¹² 99 Eng. Rep. 953 (1785)

¹³ 10 L.R.-Ex. At 256

¹⁴ 75 Am. Jur. 2d Trespass § 69

¹⁵ *Ibid.*, citing *Buffalo Marine Service, Inc. v. Monteau*, 761 S.W.2d 416 (Tex. App. Houston 14th Dist. 1988); *Ploof v. Putnam*, 81 Vt. 471, 71 A. 188 (1908)

¹⁶ All contracts must be honored provided the circumstances remain the same

¹⁷ Thomson Reuters/West. Volumes 33-34B (2008), 1 Am. Jur. 2d Act of God § 2

unforeseeable acts of man events such as war or terrorism. In both common and code law countries, Force Majeure excuses a party from discharging a contract based on established rules. The language included in the contract will determine what type of event triggers a Force Majeure clause.¹⁸

The doctrine of impossibility was introduced to the common law by *Taylor v. Caldwell*¹⁹ (1863). The court found that because it would have been impossible to carry out a contract (the rental of a music hall that had burned down), that the obligations of the lessor should be excused even though the parties had made no such provisions for this in the contract. The doctrine may only be applied when performance of the contract is absolutely impossible.²⁰ It is not sufficient that the contracted party be unable to fulfill the contract; it must be impossible for any party to do so.²¹ Nor is economic hardship a sufficient argument.²²

Impossibility of performance only applies to the performance affected by intervening force, leaving the remainder of the contract intact.²³ In an ongoing contract an impossibility defense only excuses the duty to perform for as long as the impossibility

¹⁸ *Maralex Resources, Inc., v. Gilbreath*, 2003-NMSC-023, 134 N.M. 308, 76 P.3d 626 (2003)

¹⁹ 122 Eng. Rep. 309 (K.B. 1863)

²⁰ *Mont.-360 Ranch Corp. v. R&D Holdings*, 278 Mont. 487, 926 P.2d 260 (1996)

²¹ *B's Co. v. B. P. Barber & Associates, Inc.*, 391 F.2d 130 (4th Cir. 1968)

²² *Marcovich Land Co. v. J. J. Newberry Co.*, 413 N.E.2d 935 (Ind. Ct. App. 4th Dist. 1980); *Hilgendorf v. Hague*, 293 N.W.2d 272 (Iowa 1980)

²³ CJS Contracts §§ 520

exists;²⁴ the exception being if resuming the contract would create a substantially greater burden than before.²⁵ In the *Matter of Fuzzy Thurston's Left Guard of Eau Claire* (1980) the court allowed a debtor greater time to perform certain duties due to the effects of severe weather.²⁶ Where a contract involves multiple promises, of which some become impossible, the promisor must still fulfill those promises that remain possible.²⁷

In U.S. law, the term “impossibility” was replaced by “impracticability;” a lower burden but still higher than merely impractical. Duesenberg (1981) describes how the choice of this term in the Uniform Commercial Code²⁸ shifted the emphasis away from something that was physically impossible to do to something that was unreasonably difficult.²⁹ Impracticability allows a party’s obligations to be excused if a basic assumption of the contract is violated so as to make the party’s performance impracticable, through no fault of their own.³⁰

Frustration of purpose goes beyond impracticability, allowing performance to be excused not just for unreasonable difficulties but for a frustration of an individual’s original goals

²⁴ Idaho- Sutheimer v. Stolenberg, 127 Idaho 81, 869 P.2d 989 (ct. App. 1995)

²⁵ Cal.-Oosten v. Hay Haulers Dairy Emp. & Helpers Union. 45 Cal 2d 784, 291 P.2d 17, 37 L.R.R.M. (BNA) 2317, 29 Lab. Cas. (CCH) 69743 (1995)

²⁶ Matter of Fuzzy Thurston's Left Guard of Eau Claire, Inc., 6 B.R. 955 (Bankr. W.D. Wis. 1980)

²⁷ U.S. – Cook v. El Paso Natural gas Co., 560 F 2d 978 (10th Cir. 1977)

²⁸ Uniform Commercial Code, Section 2-615

²⁹ Mishara Constr. Co., Inc v. Transit-Mixed Concrete Corp., 365 Mass. 122, 310 N.E. 363, 367 (1974); cited by Duesenberg(1981) at 38

³⁰ Restatement (Second) of Contracts §§ 261. Massachusetts Bay Transp. Authority v. U.S., 254 F.3d 1367 (Fed. Cir. 2001).; see also 30 Williston, Contracts §§ 77:26

when entering into the contract.³¹ English courts founded the doctrine in *Krell v. Henry* (1903) where a lessee was excused of his obligation to rent a room after the purpose no longer existed (to view the King's coronation which was subsequently cancelled).³² In contrast to impossibility, frustration of purpose looks at the desirability of the outcome.

Duesenberg (1981) notes that U.S. courts have proven unwilling to excuse defendants for frustration of purpose. Litvinoff (1985) finds that although French law incorporates a strict definition of impossibility into the Code Civil, that French courts have adopted a broader definition of Force Majeure. Civil law does not require contracts consideration to make contracts binding, but cause. Thus, in enforcing a contract French courts must consider if it is possible for parties to achieve their objectives for entering a contract.

Prior to *Taylor v. Caldwell*, English legal theory was dominated by concept of *Pacta Sunt Servanda*, meaning all contracts must be honored. The doctrine of impossibility, and later those of impracticability and frustration of purpose, added *Rebus Sic Stantibus* – provided the circumstances remain the same. In private contracts, a Force Majeure clause can overcome costs by modifying judicial precedent. The same benefits can be had in the social contract but first societies must choose which standard of Force Majeure to adopt.

³¹ See *Aluminum Co. of America v Essex Group, Inc.*, 499 F. Supp. 53 (W.D. Pa. 1980); cited by Duesenberg (1981) at p32

³² *Krell v. Henry*, [1903] 2 K.B. 740.

3.3. Application of Force Majeure to the Social Contract

Applying Force Majeure to the social contract would excuse the state of its obligation to enforce laws that are inapplicable to the post-disaster state of the world. This potentially provides a mechanism for a society to relax laws without introducing uncertainty. The greatest benefits will come from relaxing regulatory rules. Not all laws should be relaxed; a society may choose to increase enforcement of some laws including those that protect private property and life. Nor must every force of nature invoke a Force Majeure clause; other legal mechanisms may serve adequately for foreseeable events. For instance, if a river floods every year and special rules are needed for this event, parties may be able to negotiate a compromise beforehand. It is those events which are unforeseeable for which a Force Majeure clause is needed to temporarily change the process by which rules are made.

The social contract is an unenforceable contract. As a repeated game the social contract can be maintained without external enforcement. On this basis a flexible social contract is more likely to be sustainable than a rigid contract. Overall, it is preferable to have a weaker contract that is sustainable than a strict contract that is more likely to fail. In private contracting, the higher burden of the doctrine of impossibility allows greater efficiencies to be extracted from contracting because these contracts are externally enforceable. If a private contract becomes inefficient (i.e., suffers a frustration of purpose as opposed to a frustration of performance) then the affected parties can still

reach the most efficient outcome through a Coasean bargain. In the political sphere efficient Coasean bargaining is prevented by high transactions costs and the unenforceability of contracts. The higher burden of impossibility is thus more likely to result in an undesirable allocation of resources. If such misallocations are common, or especially grievous, a rigid contract may reduce, rather than increase, faith in the certainty of the social contract.

Private contracts may be invalidated by a Force Majeure only when predetermined conditions are met. It is not necessary so stipulate every possible event that would invalidate the contract, only that the affected parties know the type of condition that would invalidate the contract. If contracts could be invalidated for arbitrary or capricious reasons, then the ability of parties to contract is undermined. In the case of the social contract, it must be clear to all parties what type of event would activate a Force Majeure clause.

In the absence of judges or other external enforcer, it is the institutions of the state that must determine when that event has occurred and what rules should be affected. Thus the same institutions that are created and empowered by the social contract will determine the circumstances under which the rules designed to bind those institutions shall be waived. A concept of Force Majeure for the social contract must not only describe what events can trigger change, but also how change is triggered. It must be easier to waive or

relax rules than under ordinary conditions or the clause becomes redundant. Equally if constitutional rules can be easily changed then lawgivers will overuse Force Majeure: rules would fall as readily as governments creating uncertainty and inefficiency.

3.4 Structured Bargaining in Bankruptcy

The trade-off facing society has parallels to the corporate world. The legal mechanisms that have evolved or been designed for coping with commercial emergency – specifically bankruptcy – thus contain lessons for the disaster-struck society. In common with the contractarian view of society, the joint-stock corporation is a nexus of contracts between individuals; a legal fiction that does not exist in its own right. Corporations exist in evolutionary competition, are prone to path dependency, and have rationally ignorant shareholders. The corporation's contracts, however, are more likely to be asymmetric and can be enforced externally.

Whereas the doctrines of impossibility and impracticability address situations involving as few as two parties, corporate bankruptcy law addresses situations where an insolvent debtor faces multiple creditors with competing claims. While the debtor firm may be able to meet some of its obligations, it cannot meet them all. Creditors can become engaged in a wasteful race to stake their claim ahead of other creditors. In some instances this race leads to the firm's assets being broken up and sold for less than the

value of the firm as a whole. Just as individuals in a society would prefer to restrain their predation if all others did the same, creditors have an incentive to hold off, and potentially reduce the size of their claim, if other creditors do the same. Bankruptcy law makes this possible by altering the rules of the game in a pre-defined manner.

As with a Force Majeure clause, the intention is not to prepare for foreseeable events but for the knowledge that unforeseeable events do occur. Although firms may make their own arrangements beforehand, Hart (2000) claims that this is rarely the case³³ and that most countries have “off the shelf” bankruptcy procedures. The author suggests that the changing relationship between multiple parties makes it hard to reach a private arrangement. Miller and Stiglitz (1999) also note that while external enforcement theoretically allows parties to make *ex ante* arrangements, such contracts are costly to write because parties cannot predict all future contingencies.

The simplest form of bankruptcy procedure is a cash auction: either the firm’s assets are sold off in piecemeal fashion or the whole firm is sold as a going concern. The receipts of the sale are distributed amongst claimants according to some pre-determined order of priority. Although simple, cash auctions may result in assets being sold for less than the

³³ Aghion et al. (1992) note that this may be because parties are not permitted to opt out of state bankruptcy procedures.

maximum attainable value.³⁴ Hart notes a general shift toward an alternative form of bankruptcy procedure: structured bargaining. The basic elements in the American version of structured bargaining – Chapter 11 bankruptcy – are described as:

A stay is put on creditors' claims (that is, they are frozen: no creditor is allowed to seize or sell any of the firm's assets during the process); claim holders are grouped into classes according to the type of claim they have (secured or unsecured, senior or junior); and a judge supervises a process of bargaining among class representatives to determine a plan of action and a division of value for the firm.

Hart (2000, 7)

Placing a stay on claims allows creditors to avoid a costly race to seize limited assets but does not solve the problem of what should be done with the firm or how the proceeds should be divided. To reach a bargain that maximizes the amount available to creditors, parties must first overcome a potential anti-commons tragedy. If each creditor has exclusionary to prevent a deal being reached then each individuals has an incentive to free ride; refusing to reduce his claim in the hope that others will reduce theirs. Olson's theory of collective action suggests that a successful bargain is less likely the larger the number of groups that are involved. Bankruptcy procedure overcomes the free-rider

³⁴ Ibid., the authors suggest cash auctions work well only when "raising cash for bids is easy and there is plenty of competition among bidders;" Pulvino (1998) finds empirical evidence linking cash auctions to fire sales.

problem by eliminating the exclusionary rights of creditors – contracts may be modified without unilateral consent if a majority of each claimant class approves – but is costly. Firms should therefore be more likely to use bankruptcy procedures when there are a larger number of parties or when judicial costs are lower. In an empirical survey of bankruptcy procedures in 35 countries Claessens and Klapper (2002) find bankruptcy is used less in countries with bank-oriented financial systems versus market oriented systems.³⁵ Countries with fewer small and medium sized companies also have less use of bankruptcy but the procedure is used more frequently in countries with less costly judicial systems.

To maintain an incentive for companies to pay their debts it is desirable that entering bankruptcy be somewhat costly to managers and shareholders. For instance, shareholders can lose their claims and managers can lose their jobs. If bankruptcy were not sufficiently costly then firms would have an incentive to use the procedure to renege on contracts. Ordinarily bankruptcy that is too cheap would make it harder for firms to raise finance in the first place. In the special circumstance when this is not the case – where government underwrites debts – Akerlof and Romer find that firms do exploit bankruptcy laws for profit.

³⁵ It is less important here but worth noting that the authors also found that bankruptcy procedure is used more often in common law countries than in code law countries.

On the other hand, Hart notes that if shareholders and managers get nothing then firms may seek to avoid bankruptcy to the detriment of creditors. There may therefore be benefits to leaving shareholders some claim on the firm's assets in bankruptcy (as is the case under Chapter 11). The law must balance preserving contracts, and thus the ability of firms to raise capital, with mitigating the harm to creditors resulting from insolvency. Likewise, implementing a Force Majeure clause in the social contract should be sufficiently costly to legislators and the controlling coalitions that it would not be used to violate the social contract, but not so costly that its use would be avoided at all costs.

3.5 Overcoming Political Barriers to Change

The problem confronting the society is political. Just as Heller's anti-commons tragedy applies to private property, so too can it apply to the political sphere. Power is held by distributional coalitions who can block change. To reach an agreement, transaction costs must be overcome. Olson (2000) shows that the executive has the greatest encompassing interest; and that the protection of property and contract rights requires the power of the executive be limited. To succeed, a Force Majeure clause must use the executive's encompassing interest but keep the checks and balances on executive power.

Tullock (1976) describes how logrolling can overcome barriers to change by allowing minority interests to be packaged into a deal that a majority will support. Logrolling can

be an effective way of overcoming political transaction costs. Programs that are desirable but would only garner the support of a minority, can be bundled into a program that wins the support of a majority. Legislators can also use logrolling to win support for programs that benefit special interests at the expense of the general wellbeing of society. This is because constituents are better able to observe the benefits of the program than the cost of other programs that provide special interest benefits to people in other jurisdictions.

Logrolling could be used as an alternative to a Force Majeure clause; providing a mechanism for allowing a mutually beneficial relaxation of rules to take place while retaining constitutional limits on power. This approach would encounter higher, but not necessarily insurmountable, transaction costs. Tullock does, in fact, find several examples showing that logrolling can overcome the transaction costs of forming large coalitions. Olson (1982) shows that such large coalitions make decisions more slowly. This may not ordinarily be an impediment but in an emergency the cost of delaying decisions increases. A Force Majeure clause overcomes the time costs by handing power to an executive, but can still utilize the logic of implied logrolling to retain constitutional limits on power without sacrificing expediency.

Primo (2007) finds an example of an institutional mechanism that exploits the benefits of logrolling but overcomes transaction cost. He describes how, in the mid nineties, a congressional majority sought to reduce military expenditures. The spending rationale of

the cold war had disappeared but the federal government continued to fund military bases whose strategic importance had diminished. Although a legislative majority wanted more base closures, individual lawmakers wanted to maintain bases in their constituencies. Voters had previously had little reason to care about bases other constituencies, but a great deal of reason to care about bases in their area. The solution was to establish an independent commission to determine what bases would be closed and to allow congress an up or down vote on the decision. Thus, congressmen could present their vote on the basis of the benefits of all base closures, rather than being seen to have merely voted to close their own local base.

A similar mechanism could be used to activate a Force Majeure clause. Individually, parties can benefit from a general relaxation of rules but have little incentive to restrain their own rent-seeking. A bargain is possible so long as the balance of power is unaffected, but may be precluded by high transaction costs. Presenting parties with an up or down vote reduces the cost of a bargain but provides some limitations on the scope for overuse.

The most powerful coalitions will still have power to block the use of Force Majeure. By recognizing the existence of power blocks, a politically astute executive (or committee or independent commission) should be capable of designing a bargain that will win approval, so long as one exists. A bargain is more likely to exist if the permanent

distribution of power would be unaffected. When a relaxation of rules would result in a society shifting to a different path, it may be impossible to reach a bargain.

4. Nightmare on Wall Street

The ongoing financial crisis in the United States and around the world presents a current example of the type of shock described in the model. Much of the capital that has been wiped off balance sheets may never have existed but while no physical capital has been destroyed, real capital has been destroyed nonetheless. The social capital that was held in now bankrupt institutions, dissolved relationships, and trust in the markets themselves, has been damaged or destroyed. Financial institutions must be rebuilt at a real cost.

4.1 The Origin of Crisis

The crisis began in the housing market. Schwarcz (1994) describes how securitization, a relatively new financial innovation, allowed banks to reduce the cost of raising funds by spreading risk. Under this method ordinarily risky loans could be bundled together and sold as investment grade securities. This, combined with government mandates, increased subprime mortgage lending. Demyanyk and Hemert (2008) show that over the same period as a dramatic expansion in loans, the quality of loans declined and risk

premiums fell. Weaknesses in subprime lending that had been disguised by rising house prices, were exposed when the housing market slowed in late 2007.

The financial crisis differs from natural or manmade disasters in two ways. First, the shock is endogenous to the financial community although not to the regulatory system. While no regulatory system can affect the occurrence of a hurricane, regulators can and do take actions that affect the likelihood of a financial crisis. No regulator, however, can design a system that entirely prevents financial crises. In this sense a financial regulator is no different from a local zoning board implementing rules to mitigate the impact of a natural disaster should it occur. In both cases, measures designed to mitigate the harm ex post can be counter-productive if they encourage increased risk taking ex ante. The second difference is that the inter-connectivity of financial markets may allow a contagion to spread to competing jurisdictions. This may be less true of some disasters such as hurricane or a terrorist bombing (although not entirely when trade leads societies to specialize) but not of others such as a biological contagion. The model described in previous sections is sufficiently general that neither of these differences breach any assumptions.

4.2 Regulation's Role

Banks in the United States and other countries are required to maintain a minimum ratio of equity to assets (capital asset ratio) to protect investors from bank failures. From the 1990s onwards federal agencies have required banks to use the market price of assets. When an asset falls in value the loss is taken off the bank's equity. Regulators aim to create a market mechanism by forcing the bank to either raise new capital or sell off assets.

Kashyap et al. (2008) describe how in a financial crisis, when banks have an incentive to sell assets rather than recapitalize, these requirements can lead to greater instability. During a crash, markets are illiquid and it becomes difficult to accurately price assets. When banks face losses they will choose to dispose of assets, resulting in fire sales which further reduce the value of assets on other banks' balance sheets. Thus, banks become unable to make "good" loans, exacerbating market downturns.

The Basel II Accord modified the international standard for calculating capital asset ratios. Under Basel II banks holding riskier assets are required to maintain a greater stock of equity than banks. Dan'ielsson et al. (2001) finds that these requirements rely on statistical methodologies known as "value at risk" (VaR) that do not take into account the fact that risk is endogenous. By calculating risk from times of stability, these

methods are inaccurate predictors of risk in a crisis. Furthermore the requirements are pro-cyclical meaning that banks are forced to increase their capital asset ratios during a downturn, exacerbating the problems caused by declining balance sheets. Greenlaw et al. (2008) find the average VaR numbers for several major investment banks rose 34% between August 2007 and February 2008.

Regulatory lock in can prevent beneficial financial innovation. For example, new security issuances must be rated for riskiness by professional credit rating agencies. That these agencies are paid directly by security issuers may have contributed to their inaccurately rating some subprime debt as investment grade. While this practice may have survived the bull market without a regulatory requirement, the financial crisis provided new information that would ordinarily spur innovation. Instead, markets had to wait for regulatory action to solve the problem.³⁶

Regulators have the option of designing a new system, as SEC has sought to do, or leave the task to markets. A temporary relaxation of regulation gives markets an opportunity to create innovative solutions that may not be predicted by a regulator. Such a relaxation takes advantage of the diffuse knowledge available to financial entrepreneurs. If regulators see financial innovation as only the cause of problems the potential of innovation to provide solutions will be lost.

³⁶ See SEC Release 2008-135 <http://www.sec.gov/news/press/2008/2008-135.htm>

Although the financial crisis has been held up as an example of under-regulation, there is scope for a system of regulatory waivers to prevent or mitigate the crisis. Market crashes are a part of the creative destructive process. Crises are frequent in history and unavoidable, but rarely happen for the same reason. Each crash provides new information that guides innovation. Rules that are designed only for stability can exacerbate the crashes that inevitably happen. Relaxing rules during the transitional recovery phase, and observing how markets innovate to avoid repeating past mistakes, can increase the efficiency of financial market regulation.

5. Conclusions

An individual seeks benefits from living in a society. To join a society he must agree to rules that will put both rights and obligations on him. In the contractarian view, societies emerge when individuals form contracts to avoid the costs of predation and protection from predation. In Olson's contrasting approach a unique individual within each society – a stationary bandit – provides protection from roving bandits. The stationary bandit establishes and enforces rules to protect people and property in order to maximize his own theft. Whereas the contractarian position argues that social arrangements can be

treated *as if* they arose from individual contracts, Olson argues that current social arrangements *did* arise from a stationary bandit.

In some cases the autocratic stationary bandit gives way to democracy. Majorities have a greater encompassing interest than stationary bandits and are thus more likely to protect property and contract rights. While democracy may reduce opportunities for predation, it does not eliminate them: Buchanan, Tullock, and Olson discuss how rent-seeking, collective action problems, and rational ignorance can all contribute to predation in democratic societies. Predation can be mitigated by constitutional rules that protect property and contract rights from the state itself. Such rules may even be favored by the beneficiaries of predation in order to maximize the size of the pot to be shared.

Individuals avoid predation and seek out a preferred bundle of publicly provided goods by moving between jurisdictions. The resulting competition selects between bundles of rules but, because democratic societies do not behave as profit-seeking firms, only weakly guides societies towards ideal bundles. Individuals choosing between bundles of rules in evolutionary competition face the constraints of lock-in and path dependency wherein current decisions will constrain future options. Individuals will not only seek rules that are optimal for current conditions, but also constraints that provide assurances against future predation, even at the cost of flexibility to adjust to future circumstances. Decision makers must therefore make a trade-off between certainty and flexibility.

Rigid rules that, to borrow Olson's term, "increase the complexity of understandings" will reduce growth, but rigid rules that protect property and contract rights will lead to higher growth in a dynamic world. Evolutionary competition selects for, and weakly guides societies towards, a set of organizational and constitutional rules that strike a balance between certainty and flexibility. In the exigency of disaster this inherently continuous process breaks down. Evolutionary competition can do nothing to guide a society away from failure; only eliminate societies that fail.

The manner in which a society responds will depend in part upon the legal system used. Common law countries decide cases first and then create principles. When confronted with a new circumstance the common law country can decide the case the facts and then generate a rigid rule. By contrast code law countries must decide which existing principle applies leaving less flexibility to cope with an entirely new circumstance. It is thus easier to keep rigid rules in the common law society while maintaining flexibility.

In both the common and code law there exists a Force Majeure clause in private contracts. This clause releases parties from their contractual obligation when confronted with circumstances which are not only unforeseen but unforeseeable. Such a clause in the social contract has the potential to provide a release valve, allow rules to remain rigid ordinarily but to flex when needed.

The 2008 financial crisis highlights the trade-off facing lawgivers. Rules can quickly become arcane in financial markets as new processes are continually developed. In the wake of the crisis it is possible to see which processes, and which rules, were effective, and which were not. Relaxing rules allows markets to adjust to the new conditions and permits greater innovation in the short-run. Regulators can take better advantage of the diffuse knowledge available to financial entrepreneurs by observing markets. Crises may also serve as an important part of the evolutionary market process, and in the rulemaking process, in a broader range of social applications.

5.1 Predictions

Disaster can change the demand for organizational rules and may demand a different temporary balance between flexibility and certainty. Absent the guidance of evolutionary competition it falls to the actors and institutions in existence at the moment of crisis to respond. The constitutional rules that exist for normal circumstances will give distributional coalitions exclusionary powers to delay or prevent change but breaking these rules ex post will undermine the confidence of potential investors. Societies must rely on ex ante arrangements to temporarily modify institutions and incentives in disaster.

While specific arrangements can be made only for foreseeable disasters a Force Majeure clause for the social contract allows a society to prepare for the fact that unforeseeable disasters happen. The adapted version of Force Majeure in private contracting creates a bargaining mechanism that reduces the transaction costs of bargaining between the controlling coalitions. Coalitions are more likely to reach an agreement whereby each party restrains their predation in return for a reduced likelihood of societal failure.

H1: Societies with Force Majeure clauses are more likely to survive a disaster.

Allowing greater flexibility at the expense of certainty creates a benefit in the short-run, but investors want assurance that any such flexibility should not be granted in the absence of a disaster. A Force Majeure clause that allows every political importunacy to change the rules of the game will reduce willingness to invest. Restraints, in the sense of costs to political actors, must remain rigid for minor emergencies; allow flexibility in the event of a major disaster; and return to their rigid state after a reasonable period of time. Restraints are therefore important to bring investment into a society following a disaster and to raise the likelihood of successful recovery.

H2: Societies with a Force Majeure clause are more likely to attract investment if there are restraints in place to prevent abuse.

The greater the rigidity of contracts the more likely it is that exclusionary rights will impede recovery. Private contracts are more easily changed than the social contract. The greater the extent that relationships between individuals are private and distributed, versus public and centralized, the lower the costs of adjustment. It will remain desirable to keep some relationships public but the demand for greater flexibility following a disaster implies that relationships need to shift toward the private sphere. Consequently, a society will be more likely to survive if rules are relaxed on balance. Furthermore, biasing a Force Majeure clause towards relaxation will reduce opportunities for rent-seeking and raise the cost to political actors for overusing the mechanism.

H3: Societies are more likely to survive a disaster with a Force Majeure clause that is biased towards relaxation.

Olson argues that long periods of stability lead societies to develop more complex regulation and expand the influence of the state. Disasters have the power to break through the rigidities that occur in stable societies by curtailing the growth of coalitions; of the role of government; and of the complexity of regulation. The need to regularly

seek new capital investment will reduce path dependency and lessen opportunities for rent-seeking. Disasters may also reduce political opposition to the introduction of a Force Majeure clause, not only because there will be fewer coalitions but because coalitions will be less likely to object. Disasters are less likely to cause shifts in the balance of power meaning that coalitions that have survived over time will have less to lose, and more to gain, from a Force Majeure clause.

H4: Societies with more frequent or severe disasters are more likely to have Force Majeure style clauses.

Less frequent or severe incidence of disaster imply a society is less likely to have a Force Majeure clause; nonetheless a society may still have a Force Majeure clause or a collection of legal mechanisms that can fulfill a similar function. The existence of such a mechanism may, for example, be the consequence of historical accident or of some event (such as a terrorist attack against another society) that raises public demand for disaster preparation. When such an ex ante mechanism does exist in a society where emergency is infrequent, the society may still be less willing or able to apply the clause when disaster strikes. The increased complexity of relations may make it harder to find a compromise that garners majority support, even with the benefits of logrolling. Distributional coalitions will also have a greater incentive to block the use of such a clause to avoid a shift in the balance of power. The society may have higher built-in

costs to activating a Force Majeure clause, reflecting either a greater preference for certainty or individual preferences for preserving relationships.

H5: Societies are more likely to make effective use of Force Majeure clauses when disasters are more frequent or severe.

5.2 Testing Predictions

The definition of societal failure includes, but is not limited to, complete collapse. Ghost towns are visible examples of complete collapse, although such a collapse need not be the result of a disaster. Societal failure may also be used to describe a less complete destruction. A society may continue to exist, through path dependency, even if the capital stock destroyed by disaster is never replaced. In this case the society does not suffer complete collapse but fails to return to its former level of prosperity. A society may be deemed to have failed if there is a long term reduction in population, capital stock, or significant downward deviation from the society's former growth trajectory. By contrast, surviving a disaster is defined as a society suffering relatively temporary effects of disaster.

If H1 is correct societies with a Force Majeure clause are more likely to survive a disaster. Evolutionary competition predicts that a random sample of currently existing

societies that have faced disaster would be biased towards societies with a Force Majeure clause. A simple correlation between frequency of disaster and the prevalence of a Force Majeure clause is not therefore evidence for H4. It is possible to compensate for this bias by putting a greater weight on societies that have suffered disaster and not recovered, although it must be recognized that these societies may have institutional constraints which make adoption of a Force majeure clause less likely.

By Olson's prediction, societies that endure frequent disaster are likely to have less government, less complex rules, and fewer distributional coalitions. These features make the society more likely to survive disaster even in the absence of a Force Majeure clause. To establish the benefit of a Force Majeure clause it is therefore necessary to control for size and flexibility of government. Some societies with infrequent disaster will have these less intrusive government for other reasons (whether cultural, demographic, or institutional). These societies can be used as a control group to establish the effectiveness of a Force Majeure clause. Societies where government is independently smaller would still place a higher value on the long-run certainty of rules than societies with more frequent disaster. Consequently societies with frequent disaster would still be more likely to have a Force Majeure clause and more likely to survive an unexpected disaster. It should be noted however, that societies with independently smaller government may have fewer coalitions and would be less subject to path

dependence and lock-in. They would therefore be more likely than average to have a Force Majeure clause and to use that clause effectively.

To test these predictions the next chapter will examine disaster laws in several states . These states will be selected to compensate for the difficulties described above, and for exogenous factors. It will also be necessary to examine the impact of the federal government and of compacts between the states. The likelihood of a society surviving disaster is tied to outside intervention. When an outside power such as the federal government becomes involved in disaster recovery a society's chances of survival are determined by political forces as well as the market forces of evolutionary competition. To adjust for political forces it is necessary to consider societies that receive varying amounts of assistance. It is also necessary to consider the possible impact of outside intervention in disaster planning that may influence the laws or expenditures of a society. (for example, federally mandated disaster plans).

Chapter 3

Crisis in the Laboratory of States

It is one of the happy accidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory, and try novel social and economic experiments without risk to the rest of the country.

Louis D. Brandeis (1932)³⁷

Just as states can provide policy makers with the opportunity to experiment, state activities can create natural experiments. Individual states have a similar form of government with differing policies but each state is differently exposed to disaster. The previous chapter developed a theory that predicts that states will make different policy decisions to deal with disaster risk, all else held equal, because of differential risk exposure. Frequent and severe disasters will affect a society's legal institutions and how those institutions will respond to future disasters.

When societies are systematically exposed to more frequent or sever disaster they are more likely to develop legal mechanisms to modify the social contract in response to

³⁷ New State Ice Co. v. Liebmann, 285 U.S. 262, 311 (1932)

extreme circumstances. These modifications can be understood as a public equivalent of the Force Majeure clause found in private contracts. In the social contract a Force Majeure clause symmetrically changes the relationship with individuals and the broader society – removing both rights and obligations. When societies possess these legal institutions they increase their chance of surviving disaster by allowing the nature of social relations to flex. This chapter applies the theory to a sample of seven states to generate specific predictions about the likely legal institutions in those states and the performance of those states in a disaster. These predictions are then compared with observations using a legal survey and a literature review.

This chapter is organized as follows. The first section establishes the criteria for selecting a sample of states to examine using the theory described in the previous chapter. The second section identifies the seven states selected and describes those states using the now established criteria to make predictions about state performance. The third section surveys the laws in those states, compares the findings to the theory, and considers the response of those laws and states to disaster. The fourth section reviews relevant academic literature, and the final section offers concluding thoughts.

1. Criteria for State Selection

1.1 General Characteristics

The states chosen for this sample are not random or a perfect cross-section of the United States. Instead, states have been chosen after considering factors that may affect their performance following a disaster. The first of these criteria is population. With a larger population greater exposure to harm may increase losses, but also the cost of bargaining. Population effects also increase the incentives for voters to be rationally ignorant, encouraging the proliferation of rent-seeking and potentially raising opposition to a Force Majeure clause. Thus while states with larger populations may have more to gain from a Force Majeure clause, they are less likely to have one.

Greater population density may mitigate the effects of a larger population by reducing the costs of sharing information and of reaching agreement. This is also true when population is concentrated in densely populated areas. If a state has a largely urbanized population but there are large unpopulated areas (such as deserts), the urbanized areas will act as centers where the cost of sharing information is low. To approximate the cost of sharing information it is therefore necessary to consider both the density of population and the urbanization of population using information provided by the census and by the Department of Agriculture.

Homogeneity implies shared preferences and tightly knit social networks that reduce the cost of gathering information. A more homogeneous population is therefore likely to have fewer competing coalitions, less rent seeking, and lower bargaining costs.

Homogeneity cannot be directly measured but can be approximated from several indicators. The racial composition of the state is estimated using Census Bureau data on the three largest racial groups (White, Hispanic, and Black). The census also measures the percentage of the population that was born in that state; the percentage that was born in another state; and the percentage of migrants from other countries.

Population is not static: population shifts affect homogeneity and the formation of coalitions. To capture dynamic population effects migration is used as both an indicator and as a determinant of state performance. A history of positive net migration implies success in Tiebout competition but migration increases population, increasing instances of rent-seeking and collective action problems. Net migration also measures population stability. The formation of coalitions is more likely to occur over time and under stable conditions.

Whilst net migration figures can help to identify states with well developed coalitions, low net migration can exist even when population churn is very high. For example, if a large portion of the population are members of the military on short term tours of duty (e.g. Hawaii), population would falsely appear stable over time. High in-migration and

out-migration can impede the formation of coalitions and reduce the homogeneity of a state's population even when net migration is low. Gross migration (the sum of in-migration and out-migration) data gathered by the US Census Bureau is therefore used to measure population churn.

Home ownership may be an indicator of prosperity as well as the permanence of a population, both future and current. A higher proportion of owner occupied properties also indicates a broader distribution of economic power, which may act as a break on rent-seeking. Home ownership implies willingness to invest, and therefore confidence in the institutions that protect property. In an extreme case (such as in a developing nation), low home ownership rates may be indicative of narrowly distributed economic and political power and the absence of the rule of law. Home ownership can also be affected by such factors such as immigration, tourism, a young (and particularly student) population, and localized property booms, which may not be indicative of the distribution of economic and political power. In addition to considering the other demographic data described above against home ownership rates, data is taken from two years – 2007 and 2000 – to account for cyclical trends.

States are also compared on indicators of macroeconomic performance. As with net migration, economic performance is both an indicator of success and a determinant of future performance. Five indicators are used to measure state economic performance:

State Personal Income (SPI); SPI per capita; Gross Domestic Product (GDP); GDP per capita; and median family income. GDP is a useful indicator of a state's productivity and ability to attract investment. SPI is a measure of income retained by households, as is median family income. Like net migration, better economic performance indicates less rent-seeking but increases the incentives for future rent-seeking.

An unequal distribution of wealth may increase the incentives towards rent-seeking. The U.S. Census Bureau calculates the Gini coefficient for each state, and the percentage of the population in poverty. As an additional control the population who have completed high school, and the proportion with a Bachelor's degree or higher, measure variations in education attainment. The existence of a substantial population that does not create wealth may also increase rent-seeking. The Census Bureau calculates the dependency ratio: the ratio of residents under 18 and over 65 to the working age population. A high dependency ratio indicates either a large number of retirees or a large number of children. As children cannot vote (and therefore cannot participate directly in political rent-seeking) the proportion of residents over the age of 65 in a state's population is also considered separately.

1.2 Government Characteristics

States are more likely to survive a disaster when there are fewer coalitions and when governments interfere less in the relations between individuals. Olson predicts that coalitions form over time suggesting that older states should have more coalitions. Some states that were members of the Confederacy suffered a greater loss to the continuity of their governments, and to coalitions, during the civil war and reconstruction era. When considering the age of a state is therefore important to also note whether that state was a member of the Confederacy. The growth of coalitions is not, however, linear or constant between states. To account for this, other measures of government size are considered.

Byars, McCormick and Yandle (1999) develop an index of economic freedom across the fifty states (1999 study). This study was updated using the same methodology by McQuillan, Maloney, Daniels, and Eastwood (2008) for the Pacific Research Institute (2008 study). Although both studies seek to explain migration patterns in the United States, the indices give a broader picture of government than net migration figures alone. Net migration can be the result of non-economic factors such as weather or demographic shifts. Moreover, in Tiebout competition jurisdictions compete by offering different bundles of publicly provided goods. Indices of economic freedom capture the degree of government intervention on a linear scale. The indices therefore do not capture whether a jurisdiction is providing a desirable mixture of public goods. States that score lower on

economic freedom indices are however expected to exhibit greater levels of rent-seeking and an increased complexity of understandings, regardless of the desirability of the bundle offered.

Government policy is shaped by equilibrating and entropic forces described in the previous chapter; these are dynamic rather than linear in nature. Legal institutions, however, are susceptible to path dependency and lock-in. As it may be easier for a state to reduce the size of, for example, transfers than to repeal regulation, both the 1999 and 2008 Economic Freedom indices are used. Although, no comprehensive study of economic freedom exists prior to 1999, both studies provide a breakdown of by the type of government intervention. The PRI study is comprised of five sectors: Fiscal, Regulatory, Judicial, Government Size, and Welfare Spending weighted by their ability to explain migration. Each of these sectors is therefore considered independently in selecting states with particular consideration given to the regulatory and government size sectors.

Licensing laws were used in both indices but are also considered separately. Licensing is one of the examples used by Tullock (cite) of a transitional gains trap – a classic example of lock-in. A study by the Reason Foundation gives a simple count of the number of professions licensed. Although this method does not reveal the cost of licensing

(restrictions on fortune tellers likely cost less than restrictions on electricians), a high number of licensed professions is indicative of a large number of distributional coalitions.

Not all constraints on human activity are strictly economic: non-economic constraints can have economic consequences. Intervention against personal freedom is both indicative of the scope of government and can constrain the ability of a society to recover from a disaster. For instance, moral restriction against gambling or alcohol can limit a city's tax base. Restrictions on gun ownership may become an issue when law enforcement breaks down. Ruger and Sorens (2009) index of personal and economic freedom, compiled for the Mercatus Center (Mercatus study), is therefore included to account for non economic constraints. The authors find that while some states receive similar scores in all sectors, many states compete by offering different bundles of publicly provided goods (including rules) across sectors.

The Mercatus study identifies, among other variables, the fiscal decentralization of government by taking local revenues as a percentage of total state and local revenues. Decentralized government may overcome some of the effects of population, as well as of large government, and reduce the potential for rent-seeking. States vary in size and a small state with highly centralized government may still have more localized government than a large state that is highly centralized. (Ruger and Sorens give the example of Vermont and Texas to illustrate this point.)

1.3 Frequency of Disaster

The Federal Emergency Management Agency (FEMA) provides records of presidential declarations of major disasters from 1953 to February 2009.³⁸ The ten most disaster prone states are listed below:

Table 1 - Top Disaster States

	STATE	NUMBER OF DISASTERS DECLARED SINCE 1953
1	Texas	83
2	California	74
3	Oklahoma	61
4	Florida	61
5	New York	56
6	Louisiana	55
7	Kentucky	49
8	Missouri	48
9	Alabama	48
10	Illinois	47

Disasters per head are also approximated by looking at the number of disasters declared since 1953 and dividing by population in the 2000 census.

³⁸ http://www.fema.gov/news/disaster_totals_annual.fema Information in survey was last updated 25th February 2009.

Table 2 - Disasters per Million

Rank	State	Disasters per Million
1	North Dakota	57.61
2	Alaska	51.04
3	Vermont	45.99
4	South Dakota	39.74
5	Maine	26.67
6	Nebraska	22.79
7	West Virginia	22.67
8	Montana	19.95
9	Hawaii	19.81
10	New Hampshire	18.61

The number of disasters per million gives some indication of the political impact of disasters but does not necessarily indicate how many individuals are affected by disaster. If a city of one million individuals is struck by a hurricane, and a neighboring city of two million is equally afflicted, then the first city will have double the number of disasters per head. As an additional indicator, the number of disasters per square mile is also considered. The top ten states for disasters per square mile is shown below.

Table 3 - Disasters per 1,000 Square Miles

Rank	State	Disasters per 1,000 Square Miles
1	Rhode Island	6.70
2	Delaware	6.14
3	Hawaii	3.74
4	New Jersey	3.23
5	Vermont	3.03
6	Massachusetts	2.81
7	Connecticut	2.68
8	New Hampshire	2.56
9	Maryland	1.84
10	West Virginia	1.70

Presidential disaster declarations, which allow the federal government to send money to a state, must be requested by a state governor. These declarations are subject to political considerations. In a study of disaster declarations from 1965 to 1997, Downton and Pielke (2001) find that major disaster declarations are more common in election years. To compensate for this effect the number of disasters was counted for congressional election years, and for presidential election years.

Garrett and Sobel (2003) observe several other factors that may influence the likelihood of receiving disaster aid and the size of the award. As a Force Majeure clause would likely be activated by a disaster declaration, it is important to measure both the real level of disaster and the level of incentives created by federal aid to overuse disaster declarations. These incentives may differ from state to state depending on the state's

internal institutions and the role of the state in federal politics. Garrett and Sobel summarize which states receive the most aid between 1991 and 1999. This figure is then divided by population in 2000 to give an approximation of expenditures by capital.

Table 4 – Top Recipients of Federal Aid

<i>State</i>	<i>Expenditures (\$ millions)</i>	<i>Expenditures per Capita(\$)</i>
California	\$ 8,871.5	\$ 262
Florida	\$ 2,594.0	\$ 162
North Carolina	\$ 950.3	\$ 118
Illinois	\$ 686.6	\$ 55
Georgia	\$ 640.5	\$ 78
North Dakota	\$ 590.5	\$ 919
Minnesota	\$ 510.7	\$ 104
Texas	\$ 506.2	\$ 24.2
New York	\$ 502.8	\$ 26
Louisiana	\$ 426.2	\$ 95

Using a long time frame for disaster declarations (55 years) should compensate in part for the variations in the electoral importance of states. As a further control, this study looks at the voting patterns of states in the 2008 presidential election. This information also provides information on the political homogeneity of the state. States which voted for one candidate by a wide margin are likely receive less external funding but have lower costs of reaching agreement.

FEMA also publishes the type and frequency of disaster by region. In assessing disaster risk, this data is useful for comparing states to their near neighbors. It also permits states to be broken down by different disaster type. States that are physically larger would be

expected, *ceteris paribus*, to have a greater number of disasters. To account for size the number of disasters per 1,000 square miles was included in the index of state characteristics.

2. Selection of States

2.1 States Selected

Seven states were selected according to the criteria described above. These are Arizona, California, Florida, Louisiana, New York, North Carolina, and Texas. The sample includes five of the top six states for disaster declarations. Table 6 summarizes the data. The full data set, is provided in the Appendix with a definition of the terms used.

From the general data set a selection of the characteristics were taken and the states rated on a scale of one to seven, with states scoring one most likely to survive a disaster and seven least likely. While the index is not weighted, some characteristics, such as multiple measures of income, were omitted to avoid double counting. Characteristics, such as whether a state was closely contested in the last election, which are helpful to interpreting the data but are not predicted to be linearly correlated with disaster survival, were also omitted. For disaster rank, a simple scale of one to seven was used. For other data, the original distribution is represented in the index.

Table 5 - Summary of State Data

State	AZ	CA	FL	LA	NY	NC	TX
Population (000's)	6,500	36,757	18,328	4,411	19,490	9,222	24,327
Pop. Density	45.2	217.2	296.4	102.6	401.9	165.2	79.6
Percentage urban	90%	98%	94%	74%	92%	70%	88%
HS (US = 100)	100.75	95.52	96.77	93.03	98.38	97.14	94.15
College (US = 100)	96.31	109.02	160.25	76.64	112.30	92.21	95.08
GDP (millions)	213,333	1,548,966	609,899	151,039	946,317	335,737	903,430
GDP per Capita	33,655	42,376	33,417	35,181	49,038	37,053	37,793
Med. Family Income	58,627	67,484	56,966	50,727	64,602	55,028	55,742
SPI (millions)	208,545	1,519,848	699,314	153,360	900,511	305,303	884,601
SPI per Capita	32,900	41,580	38,316	35,770	46,644	33,663	37,006
Gross Migration	1,276,692	3,653,464	3,114,521	582,799	2,327,202	1,500,789	2,577,458
GM/1,000	300.1	118.8	226	139.2	130	215	140.3
Net Migration	316,148	-755,536	607,023	-75,759	-874,248	337,883	148,240
NM/1,000	74.3	-24.6	44	-18.1	-48.8	48.4	8.1
Born In State	34.7%	50.2%	32.7%	79.4%	65.3%	63.0%	62.2%
Born Out-of-State	51.4%	22.5%	47.9%	17.5%	11.6%	30.8%	22.8%
Non-US	12.8%	26.2%	16.7%	26.0%	20.4%	53.0%	13.9%
White	59.1%	42.7%	60.8%	62.3%	60.3%	67.5%	47.9%
Hispanic/Latino	29.6%	36.2%	20.6%	3.2%	16.4%	7.0%	36.0%
Black	4.0%	6.7%	15.9%	31.9%	17.3%	21.7%	12.0%
Over 65 (%)	13.0%	10.6%	17.6%	11.6%	12.9%	12.0%	9.9%
Year of Statehood	1912	1850	1845	1812	1788†	1789	1845
1999 Score (Rank)	5.19 (25)	6.39 (44)	5.45 (30)	5.48 (31)	7.9 (50)	4.91 (17)	4.62 (8)
PRI Score (Rank)	19.78 (21)	23.89 (47)	21.16 (28)	21.36 (32)	27.39 (50)	21.87 (36)	21.32 (31)
Mercatus (Rank)	0.279 (8)	-0.413 (47)	0.068 (22)	-0.110 (34)	-0.784 (50)	0.019 (23)	0.346 (5)
Licensing (Rank)	72 (39)	177 (1)	104 (16)	88 (27)	77 (36)	107 (12)	78 (35)
% to Obama	45	61	51	40	62	50	44
Disasters (Rank)	20 (42)	74 (2)	61 (4)	55 (6)	56 (5)	36 (24)	83 (1)
Disaster/1000mi sq	0.176	0.474	1.131	1.263	1.186	0.739	0.317
All Election Years	55.0%	56.8%	57.4%	43.6%	53.6%	63.9%	51.8%
Presidential Years	20.0%	28.4%	31.1%	20.0%	30.4%	38.9%	22.9%
Decentralization	34.5%	34.8%	43.2%	28.8%	41.9%	31.4%	40.7%

Table 6 - Index of State Disaster Survivability

State	AZ	CA	FL	LA	NY	NC	TX
Population (census)	1.4	7.0	3.6	1.0	3.8	1.9	4.7
Population Density	7.0	4.1	2.8	6.0	1.0	5.0	6.4
Percentage urban	2.8	1.0	1.9	6.2	2.2	7.0	3.2
High School	1.0	5.1	4.1	7.0	2.8	3.8	6.1
Bachelor's	5.6	4.7	1.0	7.0	4.4	5.9	5.7
SPI per Capita	7.0	3.2	4.6	5.7	1.0	6.7	5.2
Percentage in Poverty	2.3	2.6	1.2	7.0	2.9	1.0	3.5
GM/1,000	1.0	7.0	3.5	6.3	6.6	3.8	6.3
NM/1,000	1.0	5.8	2.5	5.5	7.0	2.3	4.2
Percent Born In State	6.7	4.8	7.0	1.0	2.8	3.1	3.2
Age Dependency Ratio	7.0	2.0	6.7	3.2	1.0	2.1	4.0
Statehood	1.0	4.0	4.2	5.8	7.0	7.0	4.2
1999 Score	2.0	4.2	2.5	2.6	7.0	1.5	1.0
PRI Score	1.0	4.2	2.1	2.2	7.0	2.6	2.2
Mercatus	1.4	5.0	2.5	3.4	7.0	2.7	1.0
Reason Licensing	1.0	7.0	2.8	1.9	1.3	3.0	1.3
Decentralization	3.4	3.5	7.0	1.0	6.5	2.1	6.0
Disaster Rank	7	2	3	5	4	6	1
Disasters in Odd Years	7.0	2.5	3.7	2.7	3.7	6.2	1.0
Average	3.5	4.2	3.5	4.3	4.2	3.9	3.7

The index indicates that Florida and Arizona should be most likely to have a Force Majeure style clause and to survive disaster while California and New York should be least likely. As the index is unweighted, disaster frequency may be underrepresented. If this is the case then Florida should have a more developed Force Majeure style clause and be more likely to survive a disaster, and the same should apply to California relative to New York.

The selected states are generally more populous than the average state (the sample includes the four most populous states in the union). A consequence of size is a greater absolute number of disasters. For example, New York has had more disasters than Louisiana but fewer disasters per 1,000 square miles. Consequently, New York may not necessarily be expected to have developed superior disaster coping mechanisms.

On migration the states are more representative with some showing large inflows and others significant outflows. States are also distributed on economic measures but only New York shows substantial variance between income measures (likely due to commuters from New Jersey and New England). On economic and personal freedom, states are again widely distributed with New York and California having some of the lowest scores in the union in both categories.

For some aspects the states were closely grouped together. The Gini coefficient varied little between states (compared with the variation between European nations). Median age varied little, as did the dependency ratio. Only Florida had a significantly higher number of over 65 population.

Every state but Louisiana had more disaster declarations in election years than non-election years. Five states were closely grouped, with 50%-60% of disaster declarations

in election years. Only North Carolina experienced a far larger number of disasters in election years. Roughly two-thirds of that state's disaster declarations were in election years and nearly 40% were in presidential election years. North Carolina was also the most closely contested state (of the sample) in the last election.

The seven selected states are grouped within four of FEMA's ten disaster regions. Although the data includes 1,500 disasters from 1964 to 2007, only 1,321 of these disasters are mapped by state. Regional disaster data revealed flooding to be the most common type of disaster declared overall and in every except region IV (which includes Florida and North Carolina) where severe storms were most common. In the region II (including New York) floods accounted for just over 40% of disasters. In region VI (including Texas and Louisiana) severe storms accounted for a smaller proportion of disasters than for the country as a whole, but hurricanes were more common. Region IX (including California and Arizona) experienced a higher proportion of earthquake and fire disasters. The table below summarizes disaster type by region.

Table 7 - Disaster Type by Region

Region → Disaster Type↓	III (NY)	IV (NC, FL)	VI (LA, TX)	IX (AZ, CA)
Hurricane/ Typhoon	18 (18.2%)	47 (16.8%)	19 (9.0%)	46 (27.2%)
Storm	21 (21.2%)	102 (36.4%)	44 (20.9%)	17 (10.1%)
Flood/ Coastal	40 (40.4%)	66 (23.6%)	97 (46.0%)	62 (36.7%)
Tornado	0 (0.0%)	37 (13.2%)	33 (15.6%)	0 (0.0%)
Ice/ Freeze	1 (1.0%)	3 (1.1%)	8 (3.8%)	0 (0.0%)
Drought	2 (2.0%)	0 (0.0%)	0 (0.0%)	3 (1.8%)
Snow	8 (8.1%)	9 (3.2%)	0 (0.0%)	1 (0.6%)
Fire	1 (1.0%)	1 (0.4%)	3 (1.4%)	15 (8.9%)
Earthquake	0 (0.0%)	0 (0.0%)	0 (0.0%)	15 (8.9%)
Other	8 (8.1%)	15 (5.4%)	7 (3.3%)	10 (5.9%)
Total	99	280	211	169

2.2 Arizona

Arizona is the second least populous state in the sample. Although she has the lowest population density of the sample she is more urbanized than several states. The state has substantially higher per capita gross and net migration than other states in the sample. She also has the highest percentage of residents born in another state with only Florida coming close. Her population is roughly 60% white and 30% Latino.

Arizona is the youngest state in the sample and, possibly as a consequence, has the fewest licensed professions. On economic freedom Arizona falls roughly in the middle of both the 1999 and PRI studies (scoring near the top on government size and fiscal measures but poorly on regulatory freedom). She performs better in the Mercatus study, being identified as one of the freest states in the union.

Significantly, the state is 42nd in the nation for disasters, putting her at the bottom of the sample and making Arizona the control for the sample. She was chosen as a state that is relatively free (though not the freest in her region) but with a similar population to the smaller disaster states in the sample (falling in between Louisiana and North Carolina). She is also in the same region as the disaster states of Texas and California allowing for some comparisons with those (admittedly larger) states.

2.3 California

California is the most populous state in the union but due to her geographic size is not the most densely populated state. She is however the most urbanized. California's \$1.5 trillion GDP exceeds that of New York (the second highest in the sample) by more than 50%. Although net migration to the state is negative, California has the highest proportion of foreign born residents in the sample (more than a quarter of her population). Less than 43% of her population is white; the lowest in the sample.

Although she is the second youngest state in the sample she consistently scores towards the bottom of state freedom indices for both personal and economic freedoms. She also has the highest number of licensed professions in the nation. In the 2008 election over 60% of votes cast were for the Democratic candidate. The state has the second highest number of declared major disasters in the nation after Texas. Her inclusion provides a control for government size when she is compared to the large but freer states of Texas and Florida, and for disaster when she is compared to New York (the only state that is less free, but has nearly 50% fewer disasters declared).

2.4 Florida

Florida is the fourth most populous state in the sample, and in the US overall. Her population is roughly equal to that of New York but her GDP is closer to two thirds the size. That gap narrows for SPI and median family income statistics. She also has both high gross and net in-migration. Of the sample group she has the highest proportion of her population born in state. She also has the highest proportion of 65s; 17.6% versus 13% for Arizona (the second highest state).

Florida has the fourth highest number of declared disasters, slightly more than New York although her disasters are potentially more severe, and is the second highest recipient of federal disaster aid in the nation (and in the sample). She is the also the most populous

swing state in the nation and second only to North Carolina in the closeness of the presidential election, and in both the percentage of disasters declared in all election years and presidential election years. Like California and Texas she is a populous state with a high number of disasters. Her inclusion helps to control for the political effect of outside intervention.

2.5 Louisiana

Louisiana is the least populous state in the sample with roughly 4.5 million people. In addition to a somewhat lower population density than the rest of the sample, she is less urbanized than every state but North Carolina, and significantly below the median of the sample group. She also has substantially lower levels of education attainment than the rest of the sample group. Her economy also fares towards the bottom of the group.

The state has relatively low gross migration and slightly negative net migration (the sample period not taking into account the exodus following Hurricane Katrina). In 2000 she had the largest proportion of her population born in state and the highest proportional black population (31.9% versus 21.7% in the next highest state of North Carolina). She also has one of the proportionally largest white populations but few Latinos; a possible consequence of her low in-migration. Her government ranks as moderately less free than the US median in both personal and economic criteria including licensing. In the last

election, the Democratic candidate won just 40% of the vote (a smaller percentage than in 2000 or 2004).

Despite her small size, Louisiana has experienced the sixth highest number of declared disasters (55 compared to New York's 56). Between 1991 and 1999 (hence, not including Hurricane Katrina) she received the 10th highest level of federal disaster aid in the nation, again only slightly trailing New York. Based on her political history, and her being the only state in the sample with fewer declared disasters in election years) it seems likely that these figures represent a high number of actual disasters.

2.6 New York

New York is the third most populous state in the sample, and in the nation. She is also considerably more densely populated. Although she is not the most urbanized state, much of her population is concentrated in a single city. Her economic and migration statistics suggest a pattern of lock-in. Despite having the highest GDP per capita in the sample she has the highest negative net migration. The impression is supported by the freedom indices, all of which place her as the least free state in the union. Only in the number of licensed professions does she outperform the median. Of the sample states she also gave the highest percentage of her vote to the winning (Democratic) candidate.

While New York has one of the highest rates of disaster declarations in the US, she has experienced fewer disasters than similarly sized states. Significantly, she has only two-thirds the number of disasters than California. Although California is a larger state (with many smaller cities), the two states have similar levels of government intrusion. This allows for a comparison to be made on the importance disaster. California is predicted to outperform New York following a disaster.

2.7 North Carolina

North Carolina is the second least populous state, and the last of the small states in the sample. She is a recipient of net migration. She also has the second highest population born in another state after Florida but has slightly higher migration than Florida and a population that is more predominantly white. While the state is somewhat average in many aspects (and has been included in the sample for this reason) she has the lowest degree of urbanization in the sample.

The state has fallen significantly between the 1999 study and the PRI study from 17th most free in the nation to 36th. She is also less free than her Southern neighbors (including Florida, Louisiana and Texas) and one of the most licensed states in the country.

The Democratic candidate won North Carolina in 2008 by roughly one third of a percentage point. Although past elections have been less closely contested, North Carolina received the third highest levels of federal disaster aid during the 1990s (Republican candidate Senator Robert Dole won the state in 1996 with less than 50% of the vote). Roughly two thirds of declared disasters in the past 55 years have been in election years and nearly 40% have been in presidential election years. Like her nearby neighbor, Florida, North Carolina is a beneficiary of federal aid but has experienced fewer disasters than Florida. The state's closeness to the US median in many aspects makes her inclusion a control for federal intervention.

2.8 Texas

Texas is the second most populous state in the sample. Although she is less densely populated than every state but Arizona, her population is largely urbanized. She has lower gross migration than the median sample state, and close- to-zero positive net migration. She also has the second lowest proportional white population in the sample after California. Her economic freedom score has decline from 8th in the nation in 1999 to 31st in 2008. In the Mercatus study she ranks as the 5th freest state in the nation. In the most recent election 44% of votes went to the Democratic candidate.

Texas has had the highest number of disasters declared in the past 55 years. She is included as an example of a state that should have a developed Force Majeure clause, which should be used effectively.

3. Survey of State Powers

The survey of state powers takes a sample of disaster laws in the seven states described. It is not possible for the survey to be exhaustive but it is intended to be as comprehensive as possible in describing the legal powers in each state that relate to the regulation of activity following a disaster; in describing the use of such powers; and in understanding the economic reasons motivating state powers. This section looks at each of the states in turn before reviewing the differences between the states.

All fifty states (and other US jurisdictions) have adopted a reciprocal agreement known as the Emergency Management Assistance Compact. This compact was formed in 1996 (although not necessarily adopted by each state at that time) and has been ratified by Congress. The law is primarily intended for the provision of mutual assistance but also deals with legal waivers. In the recommended language of the Act a person licensed or certified in any signatory state will be deemed licensed, certified or permitted to render aid requiring involving such skill. States may modify this and at least one state (California) has added the provision that the Governor may limit this arbitrarily. The

compact also provides certain legal immunities for responders.

3.1 Arizona

Arizona law expands the power of the Governor during a state of war emergency or a state of emergency, with specific distinctions between the two types of emergency.³⁹

While a war emergency generally confers greater powers on the executive branch the governor does not have discretion to determine whether or not a war emergency exists. A state of war emergency also terminates within 24 hours unless the legislature is in session or the governor calls a special session.⁴⁰ Arizona law also makes specific provisions for emergencies caused by commercial nuclear power.⁴¹

Making distinctions between types of disaster provides varying flexibility based on the scale of the emergency and the opportunities for abuse of power. War and nuclear disaster are foreseeable, albeit unpredictable, events whose occurrence can be positively determined. While the legislature leaves the executive branch considerable discretion to determine the appropriate response to these type of emergency (as the severity and consequences of the emergency cannot be foreseen) the provisions do are not equivalent to the Force Majeure clause in private contracting because they deal with specific foreseeable events.

³⁹ A.R.S. § 26-301

⁴⁰ A.R.S. § 26-303

⁴¹ A.R.S. § 26-306.01

During an emergency or war emergency, specific executive powers relating to emergency management are not vested in the governor but in a director of emergency management.⁴²

This director has no power to declare a state of emergency. Arizona law also provides for the creation of an emergency council comprised of executive officers of the state. In addition to its responsibilities for advising the governor, the council is responsible for monitoring the necessity of the ongoing state of emergency:⁴³

The council shall monitor each emergency declared by the governor and the activities and response of the division [of emergency management] to the emergency. The council shall recommend to the governor or the legislature based on the reports submitted to it by the auditor that the emergency conditions have stabilized and that the emergency is substantially contained.

Arizona State Code

In a state of emergency the governor, executive agencies designated by the governor, and local authorities may make or rescind rules and regulations that impede emergency functions. In a war emergency local authorities have broad additional powers to waive legal impediments.⁴⁴ Local authorities also have the power to declare local

⁴² A.R.S. § 26-306

⁴³ A.R.S. § 26-304

⁴⁴ A.R.S. § 26-307

emergencies.⁴⁵

The declaration of a statewide emergency or war emergency also puts in place an immediate waiver of licensing requirement for any person licensed in another state for the purposes of assisting with emergency recovery.⁴⁶ That the waiver is automatic and without exception utilizes the benefits of logrolling: it becomes impossible to selectively waive rules for the benefit of rent-seekers. This also creates an economic incentive for coalitions to seek an end to the state of emergency.

3.2 California

The State of California recognizes three types of emergency: a state of war emergency that is created automatically; a state of emergency which may be proclaimed by the governor; and a state of local emergency.⁴⁷ The possible causes of emergency include air pollution and energy shortages⁴⁸ but not labor disputes.⁴⁹ The specific exclusion of labor disputes as a cause of emergency may be interpreted either as protection against abuse of executive power, or as safeguarding the power of one special interest group.

⁴⁵ A.R.S. § 26-311

⁴⁶ A.R.S. § 26-310

⁴⁷ CA GOVT s 8558

⁴⁸ As the current disaster law was passed subsequent to the energy crisis in California, this provision may be a response to that crisis

⁴⁹ CA GOVT s 8558

Response to emergencies remains primarily a responsibility of local governments.⁵⁰

Local authorities in California are required to provide shelter in a disaster but this requirement may be waived when the authority is unable to cope with the number of people displaced.⁵¹ When a shelter crisis is declared ordinary regulatory standards may be waived and political subdivisions become immune from liability.⁵² In *Jesse Nathaniel DAVIS, v. Justice Court Of The Pittsburg Judicial District*, the court upheld the power of the local authority to put in place a curfew during a civil disturbance.⁵³

in the event that a local government is deemed to be overwhelmed by a disaster, the state government has the power to intervene.⁵⁴ Local authorities must provide 25% of financing for post-disaster reconstruction projects unless the local authority operated a disaster mitigation plan prior to the event.⁵⁵ The state also has measures in place to withhold revenue from local authorities in order to force repayment of debts to the state government.⁵⁶ Such a restriction provides limited protection against moral hazard by requiring local authorities to implement (potentially unpopular) rules that mitigate disaster risk or bear a greater proportion of the cost of recovery.

⁵⁰ For example, see The California Earthquake Hazards Reduction Act; CA GOVT s 8871 (c)

⁵¹ CA GOVT s 8698.2

⁵² CA GOVT s 8698.1

⁵³ 10 Cal.App.3d 1002, 89 Cal.Rptr. 409

⁵⁴ Ca Draft SEP (2008) line 2882-8

⁵⁵ CA GOVT s 8685.9

⁵⁶ CA GOVT s 8687

During an emergency the Governor of California has additional powers to centralize and coordinate emergency services.⁵⁷ These powers can overcome problems that may arise when the local governments or state agencies are disabled but reduce the ability of actors to use local knowledge to respond to disasters. In a provision more similar to a Force Majeure clause, the Governor can:

[M]ake, amend or rescind orders and regulations during an emergency, and temporarily suspend any nonsafety-related statute, ordinance, regulation or rule that imposes restrictions on the emergency response activities

California State Emergency Plan (2008)⁵⁸

Additional executive powers include the authority to seize private property,⁵⁹ and to enter into private contracts to mitigate the effects of a disaster. In *California Correctional Peace Officers Assn., v. Arnold Schwarzenegger*, the court upheld the power of the governor to outsource the provision of correctional facilities.⁶⁰ When the a special session of the California legislature adjourned without addressing problems with overcrowding in the prison system, the Governor declared a state of emergency allowing him to contract to send inmates to out-of-state prisons. In denying the claim by representatives of prison officers, the court noted that no state of emergency had ever been overturned by an

⁵⁷ CA GOVT s 8550

⁵⁸ line 1372-4

⁵⁹ CA GOVT s 8572

⁶⁰ CALIFORNIA CORRECTIONAL PEACE OFFICERS v. Arnold SCHWARZENEGGER, Governor, 2007 WL 2964077 (Cal.App. 3 Dist.) (Appellate Brief)

appellate court in California. Thus, the emergency powers in California grant the executive broad powers to overcome legislative logjams and ignore special interests by overriding the normal system of checks and balances. Local authorities also gain additional powers to create laws during an emergency.

California law also makes provisions for hazard mitigation, which may be explained as a means of overcoming moral hazard which results from giving disaster aid. In the case of California disaster mitigation extends to “[i]mproving design and construction methods and practices...land use and redevelopment planning... public information and education programs... long-term social and economic recovery strategies... [and] basic research of physical and social earthquake phenomena.”⁶¹ These measures go beyond mitigation of moral hazard and imply the existence of a disaster industry that is itself engaged in rent-seeking.

The executive authority of the Governor during an emergency is limited by an Emergency Council with special authority from the legislature, including the power to “consider, recommend, and approve orders and regulations that are within the province of the Governor to promulgate.”⁶² Thus a pre-emptive brake is provided on the executive while avoiding the cost of requiring legislative consideration.

⁶¹ CA GOVT s 8871

⁶² CA GOVT s 8579

Although the California “Legislature finds and declares that this state can only truly be prepared for the next disaster if the public and private sector collaborate” the relationship defined by law gives government the power to coordinate private efforts rather using local knowledge available to business.⁶³ While state law creates a “[s]tatewide registry of businesses and organizations interested in donation of goods and services,” the law does waive regulations or licensing requirements for donated goods.⁶⁴ State agencies may also use volunteers who then become eligible for worker’s compensation.⁶⁵ Requirements such as applying commercial regulations to donated goods and making compensation available to disaster volunteers would reduce the quantity of aid made available, and may be evidence of interest groups successfully protecting rents during a disaster.

Some laws are created or changed automatically during a state of emergency. Increasing the price of many goods and services by more than 10% following a disaster becomes a criminal offence.⁶⁶ The crimes of second degree burglary and grand theft become looting during some disasters (leaving the court some limited discretion as to whether the law should apply).⁶⁷

3.3 Florida

Florida’s Emergency Management Act the includes language noting the state’s high

⁶³ CA GOVT s 8588.1

⁶⁴ CA GOVT s 8588.2

⁶⁵ CA GOVT s 8574.3

⁶⁶ 2 Witkin, Cal. Crim. Law 3d (2000) Crimes--Public, § 437, p. 1070

⁶⁷ Ibid. Crimes--Property, § 136, p. 169

vulnerability to disaster. The legislature and further asserts this vulnerability has been exacerbated by growth in the state’s population and particularly by growth in “the number of persons residing in coastal areas, in the elderly population, in the number of seasonal vacationers, and in the number of persons with special needs.”⁶⁸ A particularly vulnerable population, especially where a population that is largely comprised of dependents, may be more supportive of intrusive government measures. Tourists are less able to block the exercise of government power that may be demanded by the resident population in an emergency implying a preference for greater action in an emergency.

When a state of emergency is declared by the Governor, the emergency state continues for 60 days without requiring renewal.⁶⁹ The state of emergency may however be ended within this period by the Governor or by the concurrent resolution of the legislature.⁷⁰ During a state of emergency the Governor has the power to issue rule, executive orders, and proclamations that have the force of law.⁷¹ He may also suspend any regulation, control the movement of people compel evacuation, commandeer private property, and suspend the sale of alcohol and weapons.⁷² As is the case in several other states, emergency powers in Florida do not permit interference in labor disputes,⁷³ but Florida makes an exception this limitation “when necessary to forestall or mitigate imminent or

⁶⁸ FL ST s 252.311

⁶⁹ FL ST § 252.36

⁷⁰ FL ST s 22.08

⁷¹ FL ST § 252.36

⁷² Ibid.

⁷³ FL ST § 252.33

existing danger to public health or safety.”⁷⁴

The Governor may move the seat of Government whenever he determines “the exigencies of the situation require [it],” including knowledge of potential threats to the city of Tallahassee.⁷⁵ Similar powers are granted to the political authority of any political subdivision.⁷⁶ Officers of political subdivisions have the power to appoint their own successors who may assume the duties of that office should the serving officer become unavailable.⁷⁷ This rule potentially allows for continuity in government without handing additional power to the executive authority.

If the Governor declares a major or catastrophic disaster this serves as automatic “authority for a health care practitioner licensed in another state to assist in providing health care in the disaster area.”⁷⁸ During disasters restrictions on receiving prescription medicines are waived to allow patients to obtain refills in advance.⁷⁹ Anyone person allowing their property to be used for sheltering persons during a disaster, so long as they make no profit and there is no misconduct or gross negligence, has legal immunity if sheltered persons suffer harm.⁸⁰ These measures are automatically triggered by the declaration of a state of emergency, utilizing the benefits of logrolling and raising the

⁷⁴ Ibid.

⁷⁵ FL ST § 22.15

⁷⁶ FL ST § 22.20

⁷⁷ FL ST § 22.06

⁷⁸ FL ST § 252.36

⁷⁹ FL ST § 252.358

⁸⁰ FL ST § 252.51

cost of declaring an emergency to special interest groups.

In addition to triggering automatic waivers, emergency declarations trigger price controls.⁸¹ These controls prohibit the selling of goods at “unconscionable prices” – a term which leaves significant discretion to judges. Florida also maintains a registry of persons with special needs who may give authority in advance for emergency personnel to enter their home in an emergency.⁸²

The Director of the Office of Financial Regulation has the power to modify or suspend the financial institutions code to “to encourage financial institutions to meet the credit, deposit, and other financial needs of such communities” for up to two periods of 120 days or until the director deems such measures unnecessary.⁸³ The Commissioner of Insurance has similarly general powers.⁸⁴ These laws give executive power an authority other than that which declares the emergency, reducing the scope for rent-seeking.

3.4 Louisiana

In Louisiana a Force Majeure event empowers the Governor to issue a state of emergency

⁸¹ FL ST s 501.160

⁸² FL ST s 252.355

⁸³ FL ST § 252.62

⁸⁴ FL ST § 252.63

by executive order. Under a state of emergency the Governor can issue laws by executive diktat and rescind or repeal them by the same.⁸⁵ Among the executive powers conferred by a state of emergency, the Governor may suspend regulations and laws if their enforcement would hinder recovery; commandeer private property with compensation; organize evacuation efforts; restrict the sale of alcohol and some weapons;⁸⁶ and make provisions for temporary housing.⁸⁷ In emergencies, the executive authority may also compel evacuation as a last resort.⁸⁸ Similar powers are granted to the executive authority of parishes.⁸⁹

A Unified Command Group, whose membership is always comprised of the holders of the same offices designated by law, has the role of reviewing executive action before and during an emergency but no power to override the governor.⁹⁰ The legislature has no power to countermand these orders except by amending the enabling act, but may rescind the state of emergency by a petition of the majority of the surviving members of either house.⁹¹ Barring action by the legislature, the Governor may extend a state of emergency until the executive determines the threat or emergency conditions have passed with the condition that a state of emergency may not continue more than thirty days without renewal.

⁸⁵ LA R.S. 29:724

⁸⁶ The confiscation of firearms is, however, prohibited.

⁸⁷ LA R.S. 29:724

⁸⁸ LA R.S. 29:723

⁸⁹ LA R.S. 29:737

⁹⁰ LA R.S. 29:725.6

⁹¹ *Ibid.*

Governor Kathleen Blanco used her power to make new laws following Hurricane Katrina. She issued an order that elevated the crime of burglary in the affected areas to that of looting – increasing the penalty threefold.⁹² The legislature also awards greater power to law enforcement: any person receiving aid during a disaster may be compelled to provide identification to a sheriff within his jurisdiction.⁹³ It also becomes an automatic offence to sell, or offer for sale, a good at prices exceeding those “ordinarily charged for comparable goods and services in the same market area at or immediately before the time of the state of emergency during a state of emergency.”⁹⁴

After Hurricane Katrina, the non-governmental *Louisiana Family Recovery Corps* was formed to supplement government efforts. Louisiana law recognizes the Recovery Corps, and seeks to incorporate the resources available to this group and others into statewide disaster mitigation plans. Although coordination may reduce unnecessary replication of disaster provision, centralizing control also reduces the benefits available to non-governmental agencies such as local knowledge and accountability to private actors.

Louisiana law provides additional immunities during a disaster. Agencies and employees of agencies “engaged in any homeland security and emergency preparedness activities... [are not] liable for the death of or any injury to persons or damage to property as a result

⁹² cite

⁹³ LA R.S. 29:731.2

⁹⁴ LA R.S. 29:732

of such activity.”⁹⁵ Furthermore, sheriffs who failed to release prisoners at the appropriate time due to the effects of Hurricanes Katrina and Rita were retroactively excused of civil liability.⁹⁶ Persons and organizations offering shelter are also immune for liability except in cases of “gross negligence or . . . willful and wanton misconduct.”⁹⁷

Special consideration is given to those providing medical care. Recognizing additional pressures on medical resources and personnel in a disaster, Louisiana has created an Emergency/Disaster Medicine Review Panel to serve in the place of an ordinary criminal investigation following accusations of medical misconduct.⁹⁸ Medical personnel who administer (or fail to administer) treatment or evacuation have special immunity in a disaster.⁹⁹ Similar immunities are given to those providing emergency care.¹⁰⁰ Health care providers licensed in other state are also automatically allowed to operate in Louisiana provided documents are submitted to the relevant authority when it becomes possible to do so.¹⁰¹ The construction of these provisions, and particularly the licensing waiver, allows the provisions to operate when government is disabled.

3.5 New York

The State of New York awards the governor partial power to “temporarily suspend

⁹⁵ LA R.S. 29:735

⁹⁶ Ibid.

⁹⁷ LA R.S. 29:733.1

⁹⁸ LA R.S. 29:735.4

⁹⁹ LA R.S. 29:735.3

¹⁰⁰ LA R.S. 29:735.1

¹⁰¹ LA R.S. 29:735.2

specific provisions of any statute, local law, ordinance, or orders, rules or regulations, or parts thereof, of any agency during a state disaster emergency” to facilitate disaster recovery.¹⁰² Such suspensions must “provide for the minimum deviation possible” and can be overturned individually by the legislature.¹⁰³ These restraints, and others, give courts the power to overturn executive action; providing a check on any abuse of emergency powers. Such vague limitations on power may also lead to greater uncertainty in a disaster. The ability of the legislature to relieve individual suspensions reduces the power of logrolling to overcome rent-seeking although the time cost of political bargaining is eliminated when rules are suspended in the interim.

The law described above refers only to those restraints on government activities as opposed to rules governing private actions. New York does allow for limited waivers of particular regulations. For instance, the appropriate public official may waive the weight limit for trucks on public roads,¹⁰⁴ or the labor laws limiting the work week. In emergency situations the jurisdiction of the board of standards is temporarily restricted.¹⁰⁵ Rather than giving regulatory relief to nursing and assisted living homes in a disaster (such as relaxing staffing requirements), New York requires such facilities to make special plans for disaster.¹⁰⁶ The state also maintains a register of disabled persons who have given consent in advance for emergency services to enter their homes in a disaster;

¹⁰² NY EXEC § 29-a

¹⁰³ *Ibid.*

¹⁰⁴ McKinney's Unconsolidated Laws § 9141

¹⁰⁵ *Id.* § 9158

¹⁰⁶ NY EXEC s 23-b

thus modifying the relationship between particular individuals and the state without altering or reducing the rights protected by the social contract.

New York also makes special provision to permit government to respond to the needs of disaster. For example, “the chief executive of any political subdivision [can] use any and all... resources of his political subdivision in such manner as [is needed],” removing restraints on government action.¹⁰⁷ Local chief executives may also activate civil defense forces to assist with disaster.¹⁰⁸ When it is deemed necessary the government may also override private property rights.¹⁰⁹

While New York modifies the social contract to cope with disaster, the law generally emphasizes the continuity of government action through modifying government powers over the relaxation of government obligations. For example, state law requires the creation of a disaster plan which “[p]lans to coordinate the use of resources and manpower for service during and after disaster” including “centralized coordination of resources.” While a Force Majeure clause may relax some constraints on state power the clause would be expected to make provision for unavoidable disruptions in service and to utilize decentralized local knowledge to deliver resources effectively.

¹⁰⁷ NY EXEC § 25

¹⁰⁸ NY EXEC § 29-b

¹⁰⁹ NY EXEC § 29

3.6 North Carolina

The State of North Carolina was included in this sample, in part, as a control for political interference. The state's disaster laws show evidence of having been tailored toward the receipt of federal aid. For example, the type of disaster the governor may declare based on federal criteria for financial relief. A Type I disaster exists if the "preliminary damage assessment meets or exceeds the criteria established for the Small Business Administration Disaster Loan Program."¹¹⁰ A Type II or Type III disaster "may be declared if the President of the United States has issued a major disaster declaration pursuant to the Stafford Act."¹¹¹

Tying disaster declarations to outside criteria reduces executive discretion that may lead to abuse by special interests. By linking disaster declaration so explicitly to federal aid however, North Carolina is itself engaging in rent-seeking activity. The incentives created by federal aid thus lead the state to expend resources in pursuing rents, leading to overall welfare losses.

State emergency laws adjust ordinary legal procedures to bring economic incentives in line with publicly demanded outcomes. Individuals who ignore state issued safety warnings from any government agency responsible for disaster management can become

¹¹⁰ N.C.G.S.A. § 166A-6

¹¹¹ *ibid.*

civilly liable for the cost of their own rescue.¹¹² By contrast, the law waives normal civil liability for those providing aid or shelter from disaster.¹¹³ Both modifications effectively reduce the provision of a publicly provided good: in the first instance the provision of free emergency rescue and in the second instance the provision of assurances through rules. The modifications are automatic with disaster declaration but leave some flexibility with the courts as a Force Majeure clause does.

3.7 Texas

The State of Texas includes in the 1975 Texas Disaster Act, provisions granting the executive additional powers. When a Governor declares a state of emergency, they may rescind existing laws or issue new ones by fiat. A state of emergency also confers additional powers on mayors and county judges. Texas law treats any person with evidence of a qualification whose assistance is requested by a local government as being licensed in their special discipline.

The Texas Utilities Code includes a provision allowing electric companies to increase prices to recoup costs associated with a Force Majeure.¹¹⁴ By contrast, Texas emergency law requires local jurisdictions to develop plans providing for “wage, price, and rent controls and other economic stabilization methods in the event of a disaster.”¹¹⁵ While

¹¹² 166A-15.1

¹¹³ N.C.G.S.A. § 166A-15

¹¹⁴ Texas Utilities Code § 39.055

¹¹⁵ Texas Government Code § 418.106

the utilities law protects capital investors (i.e. the electric companies), the ability to set price controls would relax limits on rent-seeking in a disaster and potentially discourage rebuilding. A possible explanation in the disparity between the two laws is that electric companies invest over long periods of time and would therefore be less willing to invest without such assurances. In addition, electric companies can more easily organize against price controls than a large number of smaller entities who do not know in advance they will be affected.

3.8 Conclusions

Although the legal survey above cannot be exhaustive, both strong similarities and differences are observable. Many states employ similar language in disaster laws, implying that legislators or their staffs are willing to copy laws that are perceived as having been successful. All the survey states follow a pattern of awarding greater power to the executive authority in an emergency and while each state has some form of Force Majeure clause, there is a tendency in the language of legislation in each state to emphasize the role of government in coordinating a disaster response.

In general states exhibited the tendencies predicted. The two states predicted to have the most effective Force Majeure clause and to survive disaster in the index of state disaster survivability – Arizona and Florida – both had laws likely to be effective at facilitating

disaster recovery. Arizona attaches greater political costs and has greater brakes on executive abuse of emergency power; consistent with fewer and weaker coalitions, and less frequent and severe disasters. Florida has fewer brakes on executive power and has more specialized disaster provisions in place.

California and New York fell at the bottom of the disaster survivability index but the survey indicated that California was better placed to recover from a disaster. California, however, had a more restrictive set of waivers than either Florida or Texas. Furthermore, California case law indicates a broad potential for abuse of emergency powers by the executive. California law also includes standards for disaster mitigation that may be indicative rent-seeking in of themselves; implying that, in the case of California at least, frequent disaster may be a factor in increased rent-seeking.

Neither Florida nor Texas exhibit the same level of disaster-caused rent-seeking as California, suggesting a confluence of intrusive government and disaster is need to generate this effect. Assuming that greater rent-seeking reduces the chances of a society surviving a disaster, the evidence from the legal survey suggest that the relationship between disaster and survivability is not linear. This may however be a short term phenomena as California exhibits substantial out-migration. This is also true of New York but as California is more likely to suffer an event which destroys significant capital

and displaces persons and business, reform in response to such a disaster remains more likely in California than New York.

North Carolina also shows evidence of disaster as a cause of rent-seeking; in this instance the state adjusting its behavior to maximize rents obtainable from the federal government. The legal survey did not reveal increased powers resulting from disaster but did show fewer costs to special interests to declaring a disaster. This suggests that incentivizing disaster declaration only increases the number of declarations but may encourage the state to attach more limited powers to the declaration.

The survey failed to find waivers of zoning laws or other similar types of law in any state (although such waivers may still exist at a local level). All of the states in the survey offered some kind of immunity to those offering aid, or to government employees or agencies involved in the emergency response. Louisiana went further in this respect than other states with alterations to the procedure for medical tribunals.

In summary, the survey found evidence of a positive relationship between disaster and the quality of a Force Majeure clause. The relationship between how a Force Majeure was used was less evident and efforts to demonstrate such a relationship were hampered by the difficulty of performing an exhaustive search. A relationship not predicted was

found between the frequency of disaster and the abuse of a Force Majeure clause for other purposes. It was not possible to show the relationship between the quality of the Force Majeure clause and the chances of surviving disaster through the legal survey. The usefulness of the relationships found is somewhat limited by the complex interplay of variables, not all of which are measurable. To supplement the shortcoming of the legal review it is necessary to also survey other literature on the subject.

4. Literature Review

In recent years, federal and state disaster assistance in the United States has been such that recovery does not refer to community survival in the basic sense. There, in fact, no ghost towns in the U.S. as a result of natural disaster in recent times. Some communities have decided to relocate in part or in total because of fear of future hazards; but that has been a calculated decision rather than an involuntary occurrence.

Rubin (1985)

While there have been no recent examples of complete societal collapse, historical examples are available. Beeson and Troesken (2006) observe several epidemics that destroyed 10-25% of the population of American cities between 1690 and 1880. The

authors found that the effects of catastrophic epidemics were generally short term. Moreover, cities on an upward growth trajectory tended to recover whereas cities characterized by lock-in were less likely to recover. The results imply that the existing institutions of a society are key to recovery.

Federal intervention has been successful in the sense that natural disasters are no longer creating ghost towns but federal relief programs may have exposed individuals to greater harm by subsidizing building in hazardous areas.¹¹⁶ Federal insurance and loan programs bring about economic recovery by making direct capital investments in afflicted areas. Federal actors may however be less effective at protecting individuals from harm or repairing institutional barriers to private investment.

Sobel and Leeson (2006) argue that the incentives facing rescuers are rarely aligned with the public interest. Absent price signals rescuers lack knowledge of immediate needs while political institutions distort the incentives to rescuers and impede rapid decision making. The authors argue that misaligned incentives not only slowed FEMA's response following Hurricane Katrina, but that FEMA impeded private responses to the disaster.

¹¹⁶ U.S. Congress (1975)

If the existing institutions are broken, the intervening authority is faced with either subsidizing rent-seekers in an otherwise failed society or attempting to impose institutional reform. In looking at the problems facing post-war reconstruction from the perspective of public choice and institutional economics, Cowen and Coyne (2005) offer insights that are also relevant to post-disaster recovery. The authors note that an outside actor attempting to rebuild a society – which may apply to the federal government entering a disaster-struck locality – face a co-ordination problem. In other words the intervening force must convince existing actors must co-ordinate around a new institutional arrangement – one that will be opposed by coalitions that stand to lose.

Rather than altering corrupt institutions federal aid may be contributing to corruption. Leeson and Sobel (2008) find a positive correlation between receipt of federal disaster aid and an index of state corruption. The authors argue that natural disasters cause increased corruption as result of receiving greater federal aid. The relationship the authors find is, however, between corruption and declared disasters. Garret and Sobel (2003) found that disaster declarations between 1991 and 199 were correlated with the political importance of the state. Political pressures may have been reduced since the incorporation of FEMA into the Department of Homeland Security. Sobel, Coyne and Leeson (2007) found that congressional committees had less impact, thus lessening but not eliminating political pressures on FEMA. As disaster declarations are themselves a result of political considerations, the correlation found by Leeson and Sobel (2008) may

not be between actual disasters and corruption but between corruption and the ability of a state to obtain federal disaster declarations.

Sobel and Leeson (2007) identify the knowledge problem in disaster relief. Absent a price mechanism it is difficult for federal actors to observe the outcomes of their actions. In response to this problem, North Carolina and Florida mandate local authorities to develop disaster mitigation plans.¹¹⁷ Local authorities can more easily observe the outcomes of their actions and be accountable by local voters. Under the Stafford Act that the majority of the cost of natural disaster is still born by the federal government.¹¹⁸ Rubin (1985) notes this distribution of cost this creates a moral hazard, contributing to the tendency of local governments to short-sightedness and type 2 errors – the same problems that Sobel and Leeson (2006) identify at the federal level. Moreover, due to the infrequency of disaster local officials lack expertise available to federal actors. Horwitz (2008) argues that intervention at all levels of government failed in New Orleans following Hurricane Katrina but that private actors were able to provide relief. He shows that Wal-Mart benefited both from increased incentives to deliver effective relief, but also better knowledge as a consequence of the price mechanism.

¹¹⁷ Berke and French (cite)

¹¹⁸ 42 U.S.C. 5121-5207

5. Conclusions

The theory in the previous chapter predicted that, all else held equal, societies with frequent or severe disaster would be more likely to have a Force Majeure clause. In the survey of legal powers, states identified with greater disaster costs showed evidence of having something closer to a Force Majeure clause for the social contract than comparable states. The survey, however, indicated that the effect of disaster was less significant than other factors which affect the strength and number of coalitions. For example Arizona outperformed New York and, in some respects, California both of which had far higher incidents of disaster.

The literature survey did not clearly show that a Force Majeure clause was an indicator of increased likelihood survival. One reason for this may be federal intervention which has prevented societies from collapsing. Federal aid can crowd out other investors, and mask market signals. Aid also distorts incentives to governments to lower the political cost of disaster declarations and to limit the powers associated with a disaster declaration.

The Beeson and Troesken study indicates that in the absence of substantial federal intervention, cities are more likely to survive when desirable bundles of rules are in place. Moreover, cities which attempted to expand the power of government rather than relax rules were more likely to fail following a disaster. This supports the hypothesis that a

system of waivers is more likely to be successful than attempts to centralize control of the problem. Other academic literature surveyed suggests that relaxing constraints on entrepreneurs has been more successful in the past than have attempts by government to coordinate disaster relief.

The next chapter will draw on these conclusions, and on the legal survey, to make specific recommendations to state and federal policymakers.

CHAPTER 4

Conclusions

There are no constraints on the human mind, no walls around the human spirit, no barriers to our progress except those we ourselves erect

Ronald Reagan

When circumstances change, societies must change the rules that bind individuals. When disaster strikes and circumstances change rapidly, the institutions that ordinarily protect individuals from predation are unable to respond fast enough. Indeed, the institutions that may work effectively in normal times can become binding constraints on recovery when disaster strikes. The second chapter developed a theory of rules, of the constraints that stand in the way of change, and of the theoretical solutions. The third chapter surveyed the laws adopted by a selection of seven states to overcome the challenges disaster presents. These states were Arizona, California, Florida, Louisiana, New York, North Carolina, and Texas.

This chapter is divided into two sections. The first section takes evidence from the state survey conducted in the previous chapter – highlighting laws that are likely to assist or impede recovery – and makes specific recommendations for state policymakers. The impact of federal intervention is also considered and recommendations are made for the federal level. The second section discusses the limitations of the theory and problems for implementing recommendations. The section concludes with final thoughts.

1. Specific Policy Recommendations

1.1 Automatic Licensing Waivers

Following a disaster the demand for licensed services may increase while the supply may decline. Under the Emergency Assistance Management Compact all states make some provision for this eventuality by accepting out of state licenses. The benefits will, however, be limited in states where only state and local governments can accept out-of-state licenses. Moreover, licensing laws vary state to state and some professions are not licensed in every state.

States overcome differences in licensing laws by treating individuals who are otherwise qualified as being temporarily licensed. Some states award the governor power to waive licensing requirement, generally as part of broader powers to alter regulation, permitting

unlicensed individuals from other states permission to sell their services. Allowing the governor to selectively waive licensing laws will further facilitate disaster recovery, but again benefits may be limited because special interests can protect their own profession. While not every profession is needed for disaster recovery (and demand may fall for many professions) a general waiver will increase benefits. States should also permit qualified but unlicensed individuals for within the state (such as retired professionals) to perform the services for which they are qualified.

In addition to maximizing benefits, automatic waivers that tied to disaster declarations, increase the political cost of using Force Majeure powers. Licensing waivers can therefore serve as both a means of increasing the likelihood of disaster recovery, and as a break on abuse of executive power.

1.2 Separation of Emergency Declaration and Executive Powers

To reduce the bargaining costs following a disaster, it is usually necessary to transfer power from legislative bodies – which are designed to be slow and deliberative – to executive authorities who can make decisions more quickly. In every state sampled, the power to declare an emergency rested with the chief executive, albeit not always exclusively. Leaving an individual the unilateral authority to increase their own power

leads to incentive problems; illustrated by the example of the California governor using his executive power to circumvent the legislature.

Incentive problems may be mitigated by putting legislative breaks on the power to declare emergencies and by preventing the executive from making multiple specific statewide emergency declarations. With these measures in place, the governor would still have an increased power to determine the legislative agenda. While it is beneficial in an emergency for the executive to be able to put proposals before the legislature without the opportunity for modification, this is not desirable in ordinary circumstances. The legislature may therefore be tempted to place additional restraints on the power of the executive in an emergency, leading to a Force Majeure clause that is both too flexible in non-emergency conditions and too rigid when needed.

Many states have elected statewide offices besides that of the chief executive. In addition political subdivisions may have their own chief executives. Vesting emergency powers in these offices separates the declaration of emergency from the power it confers, and removes the incentive problem to the extent the officers are independent of the governor. In many cases these officers may have better local knowledge but in some instances coordination problems may arise. When there is a need for a central political authority to make decisions –such as for the waiving of rules or the creation of new ones – powers may be transferred to an emergency management council comprised of statewide officers

(which may include the leaders of the legislative bodies). Such councils which exist in several of the states surveyed, retain the encompassing interest of the executive and offer a compromise between the slowness of legislatures and the incentive problem facing chief executives.

1.3 Immunities and Boards of Conduct

The state sample suggests that many states waive governmental obligations under the social contract during a disaster. One way in which this is done is by suspending liability for agencies and state employees. Several states also extend immunity to a limited extent to private individuals offering aid or shelter. These provisions can increase the amount of aid made available and reduce the degree of human harm.

In several cases reduced liability is dependent on the person giving aid or shelter to either receive no compensation or to make no profit. Normally liability under civil law provides a degree of quality assurance but raises the cost of the good or service provided. The default level of protection offered by law may be altered by private contracting, but altering legal provisions involves transaction costs making the default relevant. During a disaster the ideal balance between cost and assurance of quality would be expected to shift. Reducing the liability of those providing services for compensation or profit can help increase the provision of needed services in the aftermath of disaster.

Medical care is an example of a service where a reduction in the level of quality assurance provided may be beneficial. Louisiana provides for alternative legal proceedings that reduce the time and expense involved in hearings for care givers. If copied by other states, these provisions could expand the availability and affordability of healthcare. States may also benefit from automatically waiving other quality assurance mandates. For example, regulatory standards in several states maintain a minimum staff ratios for child care and nursing homes. Automatically waiving these requirements in a disaster would reduce the quality of the product provided but increase the provision available.

1.4 You Get What You Pay For

The state survey indicated that in several cases states strengthened existing rules or added new rules following a disaster. In some instances, such as when disaster brings an increase in anti-social behavior that may impede recovery, stricter rules may facilitate recovery. Many states, however, implement price gouging rules which reduce the incentives to entrepreneurs to provide of goods in the aftermath of disaster. In theory, price gouging laws may be beneficial if they constrain the ability of a seller, who by fortunate happenstance temporarily becomes a monopolist, to make supernormal profits. Reducing the benefits to a monopolist however would reduce the incentives for businesses to invest in preparation for a disaster.

No price gouging laws would be effective if they did not somehow constrain the function of prices to deliver information and the ability of entrepreneurs to respond to price signals. Nevertheless, states may seek to minimize the harm while responding to political pressures. States which allow sellers to pass on higher costs will be more successful than those who do not. Sellers also endure costs from preparing for a disaster, and any hardship involved in providing services in the immediate aftermath of disaster. A more flexible price gouging law that satisfies political demands may allow sellers to pass on higher costs and to collect higher accounting profits, but to cap the latter.

1.5 Only God Knows Everything, but Hayek Came Close.

In most of the states surveyed, the language used in the legislative intent of emergency management acts emphasized the importance of organizing disaster response. Evidence from the literature review, and from interviews in New Orleans, suggests that the problem of local knowledge is exacerbated during disasters. Attempts to centralize economic activity in the aftermath of a disaster are therefore likely to be counter-productive.

Many of the states surveyed made provisions to reform land use after a disaster to mitigate future harm. It is proper for societies to change rules in response to new information or new conditions, especially when there is an element of moral hazard. The

state survey did not, however, reveal any instance of a state relaxing land use rules where it was appropriate to do so. In New Orleans, local authorities sought to use the destruction of neighborhoods to plan rebuilding. Centralization of this nature runs afoul of both local knowledge problems and potential anti-commons problems.

1.6 Raise Political Cost of Federal Assistance

Federal aid that is tied to disaster declarations creates financial incentives for states to overuse disaster declarations. States may respond by removing brakes on use of disaster declaration but reducing the powers conferred by the declaration. For example, North Carolina has established criteria for disaster declaration that forces the Governor to declare a major disaster if the criteria for federal aid is reached. The federal government, recognizing the moral hazard problem, requires state or local governments to provide 25% of disaster spending but these measures reduce aid and incentives in equal measure. The federal government could delink aid from incentive to some extent by raising political costs to disaster declaration.

Some of the measures described above have political costs that would discourage disaster declarations. For example, automatic waivers of licensing requirements and reductions in civil penalties and regulatory standards. If the federal government were require these occur as part before federal disaster aid could be made available then states would be less likely to declare disasters but more likely to recover when disasters are declared. Federal

mandates may also overcome local resistance to a Force Majeure clause from special interest groups.

1.7 Dr Schumpeter: Or How I Learned to Love Creative Destruction

Increasing the political costs of receiving federal aid may reduce moral hazard problems without creating new ghost towns. Protecting communities from failure has political payoffs but may be undesirable to the extent that the elimination of communities providing undesirable bundles of goods is a part of evolutionary competition. By directing capital investment towards communities supplying undesirable bundles of goods the federal government distorts incentives and may subsidize rent-seeking. Government investment potentially crowds out private investment towards existing communities with more desirable bundles or towards new communities being created.

Federal relief aimed at minimizing human suffering can be delinked from the goal of economic recovery. The federal government can decline to make capital investments in damaged communities while maintaining a commitment to protecting human life.

Alternatively, economic relief programs can be adjusted to help individuals rather than communities.

The Small Business Administration's (SBA) disaster loan program requires entrepreneurs to assume some of the risk of rebuilding: entrepreneurs receive subsidized loans for investment but they must repay the loan. The federal government can use the local knowledge available to entrepreneurs avoid spending money without first ensuring the existence of institutions necessary to bring about private investment. Transferring money from FEMA to programs more similar to the SBA would reduce distortions in evolutionary competition and improve the return to federal spending.

The federal government could also shift from direct disaster aid to insurance programs which do not tie payments to rebuilding in the same area. Such a reform would reduce artificial path dependency but not eliminate the moral hazard arising from building. To achieve this the government would have to implement some kind of risk sharing where the government would only insure a portion of the value of the property.

2. Discussion

For the above recommendations to be adopted by policymakers requires that coalitions can be overcome. States must also overcome the distortions that are created by federal intervention which make it harder to impose the constraints that would improve disaster recovery. Federal disaster aid both creates incentives to overuse disaster declarations and

their associated powers, and reduces the benefits of measures that increase the chances of survival.

The last two proposals above are specifically aimed at reforming the distortions created by the federal government. Attaching federal aid to policies that are economic theory suggests would be successful in the first instance, and to the decisions of individuals who have local knowledge to judge the appropriateness of policy the second, would align the incentives of state and local policymakers with improving the likelihood of surviving disaster. For these recommendations to be implemented would require for federal policymakers to surrender some of the benefits of being able to send money to politically valuable states.

The transfer of spending decisions from the legislature to the executive that occurred when FEMA was moved to the Department of Homeland Security may have depoliticized some spending decisions but it also tied the authority to spend with the authority to declare disasters. The trend towards increased federal involvement in disasters, and the associated politicization and distortion of incentives, may therefore be expected to continue. At least in the short run.

APPENDIX

Terms Used in State Data Tables

Population – Population calculated by US Census Bureau (200)

Population Density - Census calculated population divided by geographic area of state

Population (USDA) – Population calculated by US Department of Agriculture

Urban Population – Population living in urban areas according to USDA

Percentage urban – Urban population calculated by USDA as a percentage of total USDA calculated population

High School – Percentage of population with High School education or higher

Bachelor's – Percentage of population with Bachelor's degree or higher

HS (US = 100) – Proportion with High School education or higher as US average

Bachelor's (US = 100) – Proportion with Bachelor's degree or higher as US average

GDP – Millions chained 2007 dollars

State Personal Income – Thousands Dollars

Percent Born In State – According to U.S. Census Bureau

Percent Born In Another State – US citizens born in other states, does not include those born overseas

Foreign Born – non-citizens and naturalized US citizens

Full Data Set

Table 8 - Population Characteristics

State	Population (census)	Population Density	Population (USDA 2007)	Urban Population	Percentage urban
Arizona	6,500,180	45.2	6,338,755.0	5,677,158	90%
California	36,756,666	217.2	36,553,215.0	35,719,435	98%
Florida	18,328,340	296.4	18,251,243	17,093,365	94%
Louisiana	4,410,796	102.6	4,293,204	3,159,652	74%
New York	19,490,297	401.9	19,297,729	17,749,934	92%
North Carolina	9,222,414	165.2	9,061,032	6,348,616	70%
Texas	24,326,974	79.6	23,904,380	20,926,984	88%

Table 9 - Education and Equality

State	High School	Bachelor's	High School (US = 100)	Bachelor's (US = 100)	Percentage in Poverty	Gini
Arizona	81.0	23.5	100.75	96.31	13.9	0.45
California	76.8	26.6	95.52	109.02	14.2	0.475
Florida	77.8	39.1	96.77	160.25	12.5	0.47
Louisiana	74.8	18.7	93.03	76.64	19.6	0.483
New York	79.1	27.4	98.38	112.30	14.6	0.499
North Carolina	78.1	22.5	97.14	92.21	12.3	0.452
Texas	75.7	23.2	94.15	95.08	15.4	0.47

Table 10 - Economy

State	GDP	GDP per Capita	Median Family Income	State Personal Income	SPI per Capita	Average Household Size
Arizona	213,333	33,655	58,627	208,544,895	32,900	2.73
California	1,548,966	42,376	67,484	1,519,847,746	41,580	2.92
Florida	609,899	33,417	56,966	699,314,136	38,316	2.49
Louisiana	151,039	35,181	50,727	153,359,577	35,770	2.63
New York	946,317	49,038	64,602	900,511,325	46,644	2.63
N Carolina	335,737	37,953	55,028	305,303,259	33,663	2.48
Texas	903,430	37,793	55,742	884,601,064	37,006	2.82

Table 11 - Migration Patterns

State	Gross Migration	Gross per 1,000	Net Migration	Net per 1,000	Percent Born In State	Percent Born In Another State
Arizona	1,276,692	300.1	316,148	74.3	34.7	51.4
California	3,653,464	118.8	-755,536	-24.6	50.2	22.5
Florida	3,114,521	226	607,023	44	32.7	47.9
Louisiana	582,799	139.2	-75,759	-18.1	79.4	17.5
New York	2,327,202	130	-874,248	-48.8	65.3	11.6
North Carolina	1,500,789	215	337,883	48.4	63	30.8
Texas	2,577,458	140.3	148,240	8.1	62.2	22.8

Table 12 - Demographics and Homogeneity

State	Foreign Born	White	Hispanic/Latino	Black	Median Age	Over 18 (%)	Over 65 (%)	Age Dependency
Arizona	12.8	59.1	29.6	4	34.9	73.4	13.0	64.7(2)
California	26.2	42.7	36.2	6.7	34.7	72.7	10.6	57.8(33)
Florida	16.7	60.8	20.6	15.9	39.9	77.2	17.6	64.3(3)
Louisiana	2.6	62.3	3.2	31.9	35.6	72.7	11.6	59.5(20)
New York	20.4	60.3	16.4	17.3	37.7	75.3	12.9	56.4(39)
North Carolina	5.3	67.5	7	21.7	36.8	75.6	12.0	57.9(32)
Texas	13.9	47.9	36	12	33.1	71.8	9.9	60.6(14)

Table 13 - Government

State	Arizona	California	Florida	Louisiana	New York	N Carolina	Texas
Statehood	1912	1850	1845*	1812*	1788†	1789†*	1845*
1999 Score	5.19 (25)	6.39 (44)	5.45 (30)	5.48 (31)	7.9 (50)	4.91 (17)	4.62 (8)
PRI Score	19.78 (21)	23.89 (47)	21.16 (28)	21.36 (32)	27.39 (50)	21.87 (36)	21.32 (31)
Fiscal	21.46 (14)	25.63 (35)	28.54 (44)	24.11 (28)	30.17 (48)	26.09 (37)	24.51 (29)
Regulatory	15.98 (43)	17.76 (48)	17.36 (45)	19.09 (50)	14.04 (35)	13.89 (33)	18.67 (49)
Judicial	14.67 (32)	15.93 (38)	11.80 (15)	14.80 (33)	17.467 (43)	16.267 (39)	13.87 (27)
Government Size	20.43 (11)	23.29 (18)	25.29 (26)	22.86 (16)	37.714 (50)	31.714 (41)	37.43 (49)
Welfare Spending	25.22 (23)	34.22 (46)	22.78 (18)	25.11 (22)	39.22 (50)	24.44 (21)	18.44 (10)
Mercatus	0.279 (8)	-0.413 (47)	0.068 (22)	-0.110 (34)	-0.784 (50)	0.019 (23)	0.346 (5)
Regulatory	0.10 (14)	-0.16 (46)	0.05 (19)	0.01 (25)	-0.16 (44)	0.01 (26)	0.00 (27)
Fiscal	0.09 (15)	-0.09 (44)	0.00 (25)	0.02 (29)	-0.44 (50)	0.03 (21)	0.22 (4)
Personal	0.190 (11)	0.351 (48)	0.047 (25)	0.012 (28)	-0.596 (50)	0.041 (26)	0.225 (7)
Economic	0.089 (12)	-0.063 (37)	0.022 (23)	-0.098 (40)	-0.188 (48)	-0.022 (30)	0.121 (5)
Licensing	72 (39)	177 (1)	104 (16)	88 (27)	77 (36)	107 (12)	78 (35)
College Votes	10	55	27	9	31	15	34
% to Obama	45	61	51	40	62	50	44
Decentralization	34.55%	34.77%	43.19%	28.80%	41.95%	31.44%	40.75%

†=original state, * = confederate state

Table 14 - Disasters Characteristics

State	Arizona	California	Florida	Louisiana	New York	N Carolina	Texas
Major Disasters	20	74	61	55	56	36	83
Size	113,635	155,959	53,927	43,562	47,214	48,711	261,797
Disasters/1,000 sq miles	0.176	0.474	1.131	1.263	1.186	0.739	0.317
Disaster Rank	42	2	4	6	5	24	1
Disasters in Odd Years	9	32	26	31	26	13	40
Disaster in Even Years	11	42	35	24	30	23	43
Disasters in Presidential	4	21	19	11	17	14	19
Disasters In Election Years	55.0%	56.8%	57.4%	43.6%	53.6%	63.9%	51.8%
Disasters in Presidential Election Years	20.0%	28.4%	31.1%	20.0%	30.4%	38.9%	22.9%

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