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An Introduction to the Economic Dynamics of Law

Law influences the future, not the past.[1] Legislative bodies may write laws in response to a past event, such as the recent financial crisis. But legislative bodies around the world can no longer prevent the crisis of 2008; they can only seek to prevent a different financial crisis from occurring in the future. A vigorous and appropriate response to the 9/11 attacks might conceivably prevent future terrorist attacks, which might or might not use airplanes, but by 9/12, keeping the World Trade Center from collapsing lay beyond human power. Attempts to address climate disruption[2] cannot lower last year's temperature; they can only ameliorate future flooding, drought, disease, and ecosystem destruction.

Even common law (judge-made law), which scholars think of as retrospective, does not alter the past. A court may order damages to compensate a spouse for the death of his or her partner. But the most powerful judge in the world cannot bring the spouse back to life. The judge can only order compensation in hopes that this solicitude will somehow comfort the bereaved (beginning

[1] Cf. Jed Rubenfeld, *Freedom and Time: A Theory of Constitutional Self-Government* 85 (2001) (pointing out that law exists "*over time*," because law implies that after a rule is established it is followed) (emphasis in original).

[2] I use the term "climate disruption" because scientists expect warmer average surface temperatures to disrupt global ecosystems. See Perry Wallace, "An Overview of This Issue: Climate Change in 2009," 9 *Sust. Development L. & Pol'y* 2 (2009) (listing threats to food production, contamination of fresh water, catastrophic flooding, and pests in new terrain as potential consequences of climate change). The literature more often refers to climate disruption as either "climate change" or "global warming." See, e.g., *Climate Change 2007: Impacts, Adaptation, and Vulnerability*, vii (Michael Parry, et al., eds. 2007) (hereinafter *Impacts*). The "global warming" term describes a central scientific finding that human emission of greenhouse gases has warmed the earth's average surface temperature, but says nothing about why this warming presents a problem and suggests, wrongly, that no local cooling is possible. The term "climate change" is accurate, but conveys nothing substantive about the change's nature. Cf. *Impacts*, supra (assessing the nature of anticipated changes in detail). Hence, "climate disruption" more cogently describes the heart of the phenomenon.

on the day he or she renders judgment) and provide an incentive for the defendant and other potential wrongdoers to act more carefully in the future. Even the judicial practice of adhering to precedent influences the future, by helping establish the legitimacy of judicial decisions in order to allow the custom of accepting judicial interpretation of law to continue into the future. That custom of accepting judicial rulings, in turn, becomes a force that allows legislative actions, even legislative actions radically changing course, to gain influence over the future through judicial enforcement of the legislation.

Because law aims to influence the future, rather than the past, its architects must often address surprise, change, and uncertainty. In other words, we must deal with the dynamics of an unknowable future.

These dynamics often prove nonlinear and make at least the magnitude and timing of consequences unpredictable. For example, when we started launching rockets, satellites, and other objects into space, we began to create space debris, cast-off rocket shells, abandoned satellites, and so on.[3] A little debris in space does not matter a lot; collisions appear unlikely in the vastness of space. But those studying space debris' dynamics pointed out that at some point collisions could increase rapidly and cause serious problems. For once two pieces of space debris collided, they could break into many pieces, thereby multiplying the probabilities of another collision. The many pieces created by a couple of collisions might create several more hits, each multiplying the dangers of yet more collisions, and so on. Hence, scientists, while unable to correctly quantify the number of collisions, could predict from their dynamics that space debris eventually would create a lot of risk for satellites and other objects in space, unless addressed properly.[4] While a major collision occurred in 2009, measures to reduce space debris and the fortuitous demise of the Soviet space program have at least delayed the onset of the type of cascade of collisions predicted in the 1970s, but scientists still consider space debris as subject to a dangerous nonlinear dynamic.[5]

These same sorts of dynamics influence the future events law often addresses here on earth. For example, bank failures occur every year without having broad serious consequences, thanks to deposit insurance. But during the recent financial crisis, policymakers realized that if large financial institutions involved in a vast web of transactions went bankrupt, their failure could set off a chain reaction not unlike one that space debris might cause. While nobody

[3] See generally Donald Kessler, *The Kessler Syndrome*, webpagescharter.net (2009). I thank Douglas Kysar for suggesting this example.
[4] See id.
[5] Id.

could quantify the costs such a disaster would impose or reliably predict what threshold event might push the economy over the edge, policymakers recognized that failing to take these dynamics seriously could lead to a long-term global economic collapse. Arguably, their actions in response to these economic dynamics converted a catastrophic long-term economic collapse into a serious, but not immediately fatal, setback.

Indeed, many of our most important challenges stem from the possibility – even the likelihood – of serious problems developing in the future. Global climate disruption and terrorism provide prominent examples.

NEOCLASSICAL LAW AND ECONOMICS

Unfortunately, the dominant policy approach of the past thirty years – the approach emanating from neoclassical law and economics – is ill equipped to deal with dynamic and potentially catastrophic phenomena. This approach treats government decisions that should decisively shape our future direction as mere resource allocation decisions. Furthermore, this approach tends to focus policymakers on the static normative criterion of allocative efficiency: the goal of choosing actions that balance costs and benefits at the margin for a fixed technological state (in spite of the existence of dynamic economic models not defined in terms of a fixed technological state). This goal leads to an attempt to quantify, and then convert to dollar values, all of an action's consequences, in order to formulate "optimal" policies. Unfortunately, cost-benefit analysis (CBA) in a strict quantitative sense becomes impossible or incomplete and unreliable when we face important future consequences. Subsequent chapters will defend the proposition that too much reliance upon CBA can prove quite destructive when serious systemic risks loom and when our primary concern is with the future, because CBA tends to focus policymakers on the most easily quantifiable aspects of a problem, rather than its most important dimensions. It helps us mask, rather than seriously confront, the dangerous, uncertain world we live in. Since CBA defines costs in terms of the difficulty of departing from the status quo, this methodology reinforces conservatism even when looming systemic risks suggest a strong justification for departures from the status quo.

While economists formulated neoclassical theory to describe markets, rather than dictate policy, the U.S. law and economics movement used this theory as an underpinning for advocating massive deregulation. This movement's work extolling the virtues of spontaneous private ordering and expressing skepticism about government "intervention" in the marketplace helped support rising faith in free markets which dominated U.S. – and, to some extent, British – policy throughout the late twentieth century and beyond. This enthusiasm for

free markets led to a disdain for regulation, a disdain that has played a key role in increasing systemic risks. For example, the U.S. Congress repealed the Glass-Steagall Act – a Depression-era law designed to limit systemic risks by separating retail banking from the sale of securities. This repeal set the stage for the sales of securities backed by subprime mortgages at the heart of the financial meltdown. The United States also deliberately left unregulated derivatives (securities that derive their value from other securities' performance) that investors can use to try to reduce risks, but that can increase systemic risk.

Many of the corporations involved in pushing this deregulation either directly or through the funding of conservative think tanks, such as the Heritage Foundation, relied heavily on the teachings of neoclassical law and economics to support their agenda. These advocates pushed a worldview in which markets basically regulate themselves, often a logical corollary of assuming that market actors are rational and systematically consider all available information to arrive at good decisions. That view enjoyed sufficient support in government to lead policymakers to assume quite often that the costs of regulation must be high and its benefits low. Economists and other economically sophisticated academics understood that the rational market actor and the perfect information assumptions in neoclassical economics function as simplifications to facilitate economic modeling, but do not accurately describe the world. Yet law and economics – and to some extent, economics itself – tended to minimize the significance of the variances between neoclassical economics' assumptions and the real world, treating these assumptions as "good enough" for their purposes. And these apologists for artificiality may have been right that for purposes of facilitating economic modeling exercises, simplifying assumptions can sometimes prove "good enough" and even illuminating. But influential conservative think tanks, corporations, and some adherents of the law and economics school sought to apply the teachings of neoclassical economics to contexts, such as contexts implicating systemic risk, where these assumptions are not good enough, indeed where these assumptions undermine sound policy.

More fundamentally, the whole emphasis of modern law and economics on microeconomics – the study of individual actors' economic behavior – as a guide to government decision making equips policymakers poorly when they seek to address the most central questions they must confront. Policy is often about macro-level change, not about the fine-grained decisions that economists designed microeconomics to model. And macroeconomics, not microeconomics, studies the economy as a whole and therefore focuses on the systemic risks and economic development opportunities that should constitute a major focus for policymakers.

Fortunately, the policymakers who confronted the risk of an economic collapse in 2008 did not rely on a quantitative analysis of costs and benefits aimed at identifying an economically efficient course of action for a fixed state of technology; instead, they employed an economic dynamic analysis of the crisis to envision the future direction of change over time. They then chose among a limited set of alternative policies to countervail a destructive dynamic. I will argue that leaders in Europe did much the same thing to address risks of catastrophic climate disruption and that thoughtful analysts of counterterrorism policy likewise evaluate the economic dynamics of terrorism in order to take effective action against it, with quantification of costs and benefits of their actions playing little or no role. Furthermore, many thoughtful scholars in intellectual property, financial regulation, property, and other fields implicitly analyze law's economic dynamics, rather than its efficiency.

ECONOMIC DYNAMIC THEORY

This book develops an account of law's economic dynamics to help us understand what thoughtful policymakers and scholars have been doing and to help us craft future policy in the world we live in, a world where the future's uncertainty makes it impossible to accurately calculate law's costs and benefits, but where careful thought and analysis might allow us to discern the future's general shape and dynamics. Chapter 4 elaborates and defends this account in greater detail, but setting out its basic contours here will orient the reader.

The economic dynamic theory focuses on the shape of change over time. It adopts avoidance of systemic risk while keeping open a reasonably robust set of economic opportunities as a minimum governmental goal. And it employs economic dynamic analysis to guide decisions minimizing systemic risks, while providing basic institutional support for economic development. Just as neoclassical law and economics changed law's goals, focus, and methods, so too does the economic dynamic approach.

The Focus on Change Over Time

Economic dynamic theory demands a change in focus that flows directly from the economic dynamic perception of the world articulated above. Law should focus on change over time. Its architects should concern themselves with the direction in which we are headed and with the future. The known costs and benefits of the past should concern policymakers less than they do. As such, the economic dynamic approach makes change, not the tendency toward equilibrium, the primary object of study.

The Goal of Avoiding Significant Systemic Risk

An economic dynamic approach makes avoidance of serious systemic risk a major goal for policymakers. We do not and cannot expect policymakers to ensure our future happiness or make perfectly efficient decisions, but we do expect them to take reasonably effective actions to avoid catastrophes, such as ecological collapse, financial meltdowns, and horribly destructive terrorist attacks. Economic dynamic analysis builds on Douglas North's idea of adaptive efficiency, the idea that when we cannot quantify costs and benefits, we should aim to preserve future options.[6] That is, we should take actions to avoid incurring irreversible consequences that limit future possibilities. This approach fits actions addressing the future, especially when we tread down a self-destructive path requiring alteration.

At the same time, an economic dynamic approach recognizes that not all areas of law have avoidance of systemic risk as a primary concern. This theory views areas of law traditionally thought of as providing stable and basic infrastructure for markets, such as contracts and property, in more dynamic terms as well. It sees these foundational areas as providing a framework establishing the requisites of economic development, rather than as ensuring economic efficiency. Indeed, Chapter 4 argues that economic development frequently requires economically inefficient actions and that a tension exists between enhancing desirable and sustainable economic development and maximizing static allocative efficiency.

The goal of avoiding serious systemic risks while leaving open substantial opportunities for economic development provides a much more important, modest, and realistic role for government than the goal of achieving static allocative efficiency. With respect to importance, this book argues that economic equilibria are temporary and not terribly important phenomena. They come and go as technology changes and the economy grows or shrinks. While nobody should desire massive inefficiency, the most important attributes of economies involve progress toward sustainable development tied more to technological innovation and change than to achievement of equilibria.

I focus here on static efficiency because the Chicago School of Law and Economics has focused on static efficiency even in areas like antitrust law, where most economists find dynamic efficiency – efficiency over long time periods[7] – much more important. Of course, if neoclassical law and economics' static nature constituted its sole problem, then an update to focus more on

[6] See Douglas C. North, *Institutions, Institutional Change, and Economic Performance* 81 (1990).
[7] See David M. Driesen, *The Economic Dynamics of Environmental Law* 71 (2003).

dynamic efficiency would provide a sufficient cure. But the problem goes much deeper.

The neoclassical vision of government as an optimal resource allocator offers an unrealistically ambitious role for government, and a move toward focusing on dynamic efficiency would only exacerbate that problem. One of the major justifications for capitalism involves the inability of governments to process the information needed to make efficient resource allocation decisions. We need capitalism, precisely because it gets around this informational problem by allowing individuals to make fine-grained resource allocation decisions through the market. Yet, the neoclassical model of government decisions posits that government should view every policy decision it makes not as a decision about the type of society we want to live in or about how to prevent the most serious dangers from destabilizing society, but as a resource allocation decision made through comprehensive analysis of costs and benefits. The economic dynamic goals of providing a framework for economic development while heading off serious systemic risks offer government a distinctive and appropriate role that does not require unachievable fine-grained accuracy implicit in the vision of government as optimal resource allocator.

The economic dynamic model is also more realistic in the sense that it tracks what government actually does. While government surely allocates resources when it acts as a market participant, many government regulatory decisions do not allocate resources directly. Instead, they provide a framework for private resource allocation decisions. This means that private companies often have room to adjust for nominally inefficient government decisions. For example, if government establishes a requirement to reduce pollution, companies may have flexibility in choosing the precise means of compliance and will generally choose the least costly compliance method available. The dynamism inherent in government providing a framework influencing allocation, rather than directly determining what gets produced and by whom, means that prediction of regulation's costs and benefits often proves wrong and, anyway, less important than it might otherwise be. The economic dynamic theory's modest and realistic view of government's appropriate role takes into account both the limits of government information generation and processing ability and the capacity of market actors to adjust to inefficient decisions with decisions of their own to reduce or eliminate inefficiencies.

Economic Dynamic Analysis

To achieve these goals of minimizing systemic risks while preserving basic economic opportunities, policymakers need to employ economic dynamic

analysis. Economic dynamic analysis employs systematic analysis of economic incentives to choose courses of actions that effectively avoid serious systemic risks and keep open basic economic opportunities under conditions of uncertainty. Economic dynamic analysis constitutes a form of institutional economic analysis. Perceptive legal analysts frequently employ components of economic dynamic analysis, but have not hitherto explicitly recognized it as an analytical method.

Economic dynamic analysis begins by clarifying possible future consequences of current courses of development. Even when we cannot quantify the magnitude and dollar value of our actions' future consequences, we often can know something about their dynamics, shape, and nature. Even though the federal government had no way of calculating a bank bailout's costs and benefits, it could understand that absent a bailout or some other vigorous intervention, the economic dynamics of the situation could lead to a depression. This book offers many other examples of this sort of situation, where we understand a problem well enough to identify a solution or a limited set of reasonable solutions, but for which CBA would provide limited aid in grappling with a serious problem.

Economic dynamic analysis embraces neoclassical law and economics' emphasis on economic incentives' importance, but aims to make analysis of economic incentives broader and more systematic than the analysis legal scholars typically employ. Almost all legal scholars now consider the law's creation of economic incentives, but most "analysis" consists of a few observations about the incentives law creates, with no serious consideration of whether these incentives actually change conduct. This failing arises even more frequently in policymakers' analysis and observations. A good example of this primitivism comes from the debate about the "tax on marriage," the U.S. law's creation of tax rates for married taxpayers that frequently exceed the tax rates two single people with identical incomes would pay if they lived together and filed separate tax returns. Many policymakers and some academics note that this "tax on marriage" creates a disincentive to marry. But they usually fail to consider whether the tax differential actually influences decisions about whether to marry or not.

Evaluating Incentives' Influence Through Bounded Rationality

Economic dynamic analysis requires consideration of the question of whether an incentive nominally present in the law actually influences behavior. In analyzing this question, economic dynamic analysis assumes that individuals and institutions ignore some incentives and pay attention to others. Institutional economics provides key insights that shape economic dynamic inquiry

into how incentives actually influence behavior. Actors do not have perfect information about everything objectively relevant to their behavior, because nobody has enough time to pay attention to all relevant incentives. People and institutions exhibit "bounded rationality," paying attention to information that their habits, routines, and identity make them pay attention to, while ignoring everything else.[8] Thus, a policymaker trying to analyze the question of whether a repeal of the tax on marriage would encourage more marriages must analyze the question of whether people pay attention to tax law in deciding whether to marry.

Evaluating Countervailing Incentives

Economic dynamic analysis also rejects the assumption that actors will always respond to the economic incentives that law creates and that they know about. Analysis intended to play a large role in policy formation must consider whether countervailing incentives exist that may mitigate, or even nullify, a law's effect. For example, even if it turns out that engaged couples study tax law carefully before marrying, one would want to know if they have noneconomic motivations for marrying. It is possible that love and sexual desire may cancel out tax law's tendency to entice people to remain single.

Scenario Analysis

Since we cannot know the future, policymakers and analysts should, at least in making very important decisions, apply economic dynamic analysis to multiple scenarios. Accordingly, this book devotes some attention to the literature on scenario analysis and the role it played (or more precisely, did not play) in planning for the Iraq war and in other situations. Scenario analysis can usefully force us to confront and think through potential uncertainties and identify the most effective actions to address especially serious or especially likely consequences. Economic dynamic analysis frequently can employ scenario analysis.

The Public Choice Component: Empowerment Analysis

Economic dynamic analysis incorporates and extends public choice theory. Public choice theory posits that policymakers tend to respond to well-organized interest groups.[9] Thus, it offers a description of the world that tends to reinforce

[8] See generally Herbert A. Simon, "Rational Choice and the Structure of the Environment," in *Models of Man: Social and Rational* 261, 270–271 (1957).

[9] See generally Daniel A. Farber and Philip P. Frickey, "The Jurisprudence of Public Choice," 65 *Texas L. Rev.* 873 (1987); Amartya K. Sen, *Collective Choice and Social Welfare* (1970);

a skeptical view of government.[10] It provides no account of how groups become powerful and well organized. Any such account would recognize that law plays a role in empowering some groups and disempowering others.

Economic dynamic analysis includes noticing whom new laws might empower and disempower. This empowerment analysis can help predict implementation difficulties, as one can expect powerful groups to influence implementation of laws tending to frustrate their ambitions. Too often, legal analysis of law's effects ignores power differentials. Empowerment analysis can also help us understand potential opportunities. For example, it may make sense to make disempowerment of fossil fuel industries and empowerment of renewable energy companies and utilities keen on nuclear power a conscious goal of climate disruption policy. In this way, insights derived from public choice theory, hitherto used primarily to describe influences on policy, can help us analyze new laws' effects and craft policies changing our future direction.

Because economies produce new winners and losers as some businesses disappear and others prosper, the nature and identity of powerful groups can change over time. For that reason, we should not treat losing out to today's powerful special interests as inevitable. Instead, policymakers should disempower or work around the moment's special interest obstacles.

Other Economic Tools to Support Economic Dynamic Analysis

Economics employs fairly sophisticated tools (such as game theory) to think about economic incentives, and law and economics scholarship has begun to follow economists' lead in this. This book addresses the potential role of these more sophisticated tools in contributing to economic dynamic analysis. But a tension arises between tools designed to reduce a problem to a form amenable to mathematical modeling and the need for realism that the economic dynamic theory demands. Some forms of economic analysis that illuminate academic problems may prove useless or worse if policymakers take them too seriously, but some forms of economic analysis may prove helpful.

Economic dynamic analysis provides a method for characterizing the future and the likely effects of possible policy options by studying the shape and nature of change over time. It primarily seeks to describe the nature of future consequences qualitatively, employing quantitative analysis either not at all

Kenneth Arrow, *Social Choice and Individual Values* (1963); James M. Buchanan and Gordon Tullock, *The Calculus of Consent: Logical Foundations of Constitutional Democracy* (1962).

[10] *See* Jerry L. Mashaw and David L. Harfst, *The Struggle for Auto Safety* (1990); Mark Kelman, "On Democracy-Bashing: A Skeptical Look at the Theoretical and 'Empirical' Practice of the Social Choice Movement," 74 *Va. L. Rev.* 199 (1988).