

# POLICY DESIGN AND EXECUTION IN A COMPLEX WORLD: CAN WE LEARN FROM THE FINANCIAL CRISIS?

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## ABSTRACT

*We repeat the mistakes of history because of the neglect of history, the imperfections of memory, and the complexity of social situations. I begin with a discussion of the first two and then turn to the third. After discussing the meaning and significance of complexity, I discuss the causal ambiguity surrounding economic policies and what this implies for the burden of proof in policy espousal and design. I consider the role of social institutions, their function and origins, and how they are able to facilitate human action in an economic environment of accelerating change. Institutions like markets, monetary systems, systems of common law, languages are all networks. So are groups of believers in the efficacy of certain kinds of economic policy. I consider the role of networks in general and in regard to economic cycles in particular. In the concluding section, I suggest that the implications of complexity for the occurrence of cycles, and the adoption of discretionary policies to deal with them,*

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*are likely not only to exacerbate the effects of the cycles, but also, more fundamentally, to subvert the fundamental institutional structure of our economy, what we may think of as our embedded constitutions, to the great long-term detriment of our economic health.*

**Keywords:** Causal ambiguity; complexity; network effects; institutions

**JEL classifications:** E6; H1; D8

## INTRODUCTION

If life were a seemingly random sequence of unrelated events, it would not be life as we know it, and many of the blessings we now enjoy would be impossible. We see patterns and we categorize. We follow routines day to day. Even over long periods, spanning generations, we are often struck by what we believe are situations that seem similar to what came before. We talk metaphorically of “history repeating itself.”

The Great Recession, from which we are struggling to recover, came as no surprise to many. Nor did the fact that it has been so deep and lingered so long. We see it as a repetition of an old and avoidable folly. We see it as the predictable result of irresponsible monetary and fiscal policies, very reminiscent of the 1920s, and to some extent also of the 1970s. So the question arises: why don't we learn from history?<sup>1</sup>

Among the possible reasons, I offer the following four:

1. the study of history is neglected
2. memory is very imperfectly transmitted across people and especially across generations
3. there is a ratchet effect in politics
4. social situations do not provide controlled experiments.

The first two are relatively straightforward. It is the third that will occupy us most in this paper. Insofar, however, as the four are interrelated, something must be said about them all.

In the next section, I consider the first two points in a little more detail and prepare the way for a discussion of the third in the following section, which considers various aspects of complexity in social contexts. This is the core of the paper. After discussing the meaning and significance of complexity, I turn to a discussion of the causal ambiguity surrounding

economic policies in such an environment and what this implies for the burden of proof in policy espousal and design. But, does not that ambiguity apply also to routine individual action that would render it impossible? In the subsection following, I consider the role of social institutions, their function and origins, and how they indeed are able to facilitate human action in an economic environment of accelerating change. Institutions like markets, monetary systems, systems of common law, languages, industry groups, support groups, religious communities are all networks. So are groups of believers in the efficacy of certain kinds of economic policy. I consider the role of networks in general and in regard to economic cycles in particular. In the concluding section, I suggest that the implications of complexity for the occurrence of cycles, and the adoption of discretionary policies to deal with them, are likely not only to exacerbate the effects of the cycles, but also, more fundamentally, to subvert the fundamental institutional structure of our economy, what we may think of as our embedded constitutions, to the great long-term detriment of our economic health.

## **HISTORY, MEMORY, AND POLITICS**

I shall argue below that, because social science involves complex phenomena, history does not speak to us in one voice. With multiple overlapping and interactive causal connections, disparate plausible interpretations are possible. Everyone thinks he is an historian. We can neither dispense with, nor feel completely confident in, our interpretations. Nevertheless, as ambiguous in its messages as history may be, it is still necessary for the formulation and judging of policy. Though there are plural interpretations of history, their number is not unlimited. And, from time to time, current experience militates strongly in favor of one interpretation and the rejection of others. For example, the simultaneous appearance in the 1970s of inflation and unemployment produced, for a while, a widespread rejection of the implications of the Phillips curve.

Even if lawmakers and policymakers still retain knowledge of history from their secondary or higher level education, it may be doubted that this plays any part in the kinds of policies they choose to pursue. Since they are, for the most part, responding to the wishes of the interest-groups who they feel most control their destinies, they focus on that to the exclusion of most else, and tailor their pronouncements, including their view of history, to that. Furthermore, there is a powerful ratchet effect in the adoption of

certain kinds of policies that depend on particular interpretations of economic history in that, once adopted, they lead to the buildup of vested interests in their continuation – the most obvious case in point being the resilience and ubiquity of Keynesian macroeconomic policy. What Milton Friedman called the “tyranny of the status quo” makes it near impossible to completely reverse the buildup in government programs that has occurred.

If there is to be any chance at all for a break from the status quo, it will have to come from a vigorous, wide-ranging and informed dissatisfaction on the part of the public at large who, if sufficiently exercised (as in the 1980s in the United States), can provide the momentum for or against any policy regime. One may argue then that a decisive historical experience that comes to be seen, in retrospect, as the result of bad economic policy will tend not to be repeated if that experience is part of widespread historical “memory.” By contrast, widespread ignorance of history is a formidable obstacle to overcome in the endeavor to prevent the repetition of the mistakes of history.

The study of history used to be a highly valued component of what was regarded as a well-rounded education, indispensable for good citizenship. It was a proving ground for critical thinking, for a sense of perspective about the world in which we live. Sadly, the study of history has been devalued at all levels of education, most significantly, at the college level. And at the graduate level too, in Ph.D. economics programs for example, the history or even just the economic history requirement has been abolished. Today’s high school, college, and even graduate-school graduates are illiterate in historical knowledge.

Education in economics is especially relevant in this regard. Today’s graduates, overwhelmingly, are proficient mostly in quantitative techniques, but ignorant of both history in general and the history of economic thought. As a result they have no sense of historical and institutional context. This is true even of those who rise to the level of prominent policy advisors.

But even if history were more prominent in general education, it would not be a failsafe against repeating its mistakes. This is, in part, because of the difference between history and memory. Knowledge gained from being at an event is indescribably but significantly different from that gained by hearing a description or analysis of it. So it is, in a similar way, with the difference between living through an event in history and learning about it exclusively from the study of history. The former provides an immediacy of access that the latter does not. Those who were not “there” for the 1970s

stagflation — and, indeed, are removed from it by a generation or more — do not feel the same sense of conviction about the policy implications that those who experienced it do. How could they? They have learned about it, if at all, from books, or from their parents, or from their grandparents. No matter how much one tries, the sense of what it was actually like cannot be communicated. In any case, the young tend to discount whatever their parents tell them. It is part of the declaration of independence that accompanies the transition from youth to adulthood. By 2007, not many people actually remembered the excesses of the 1970s and the stagflation that occurred. We appear doomed to have to relearn the lessons of our parents and grandparents by our own experience. Inflation and unemployment can occur together and are the predictable result of fiscal excesses.

### *All Social Science Involves Complexity*

Even those who know both history and economics must deal with the difficulties of interpreting cause and effect in a complex environment.

Social science does not proceed on the basis of controlled experiments that yield unambiguous answers. We are dealing with very complex, multiple cause, multiple effect, multiple-multi-layered-multi-directional interactions. The implications of this for policy espousal, design, and execution are not well-appreciated.

### *What Is Complexity?*

Complex systems are systems (networks, structures) with many elements that relate to one another in limited, but complicated and often numerous, multi-level, ways, that lead to outcomes that are essentially unpredictable (in their details, though the possible “patterns” may be known). Complex *adaptive* systems are complex systems whose multiple interactions lead to outcomes that are in some significant sense “ordered” or “functional” or “organized” (Hayek, 1974, p. 26; also 1955 and 1964). In these systems, complex interaction leads adaptively to outcomes that are coherent and useful according to some scheme of action and evaluation. For example, evolution in nature is a complex adaptive system that works through some sort of selection-replication process (constrained by the physical environment) to produce outcomes that are better adapted to the environment (Hayek, 1964). The evolution framework is very generalizable and has been applied in diverse contexts, including, of course, to human societies

(in which connection it was first conceived). As Hayek discerned very early on, the brain itself is a complex adaptive system (Hayek, 1952, based on work done in the 1920s).

Though it is the subject of an increasing body of research effort, and though it has a clearly common-sense type meaning, there is no readily agreed-upon definition of the concept of “complexity” (Mitchell, 2009, pp. 94–111; Page, 2011, pp. 24–32). For Hayek, complexity is in essence a matter of “too many variables.”

[W]hat we regard as the field of physics may well be the totality of phenomena where the number of significantly connected variables of different kinds is sufficiently small to enable us to study them as if they formed a closed system for which we can observe and control all the determining factors; we may have been led to treat certain phenomena as lying outside physics precisely because this is not the case. (Hayek, 1955, p. 4, footnote removed)

The situation is different, however, where *the number of significantly interdependent variables is very large* and only some of them can in practice be individually observed. The position will here frequently be that if *we already know* the relevant laws, we could predict that if several hundred specified factors had the values  $x_1, x_2, x_3, \dots, x_n$ , then there would always occur  $y_1, y_2, y_3, \dots, y_n$ . But in fact all that our observation suggests may be that if  $x_1, x_2, x_3, \dots, x_n$ , then there will occur [some recognizable subset of  $y_1, y_2, y_3, \dots, y_n$  and there may be a large unknown number of subsets].... There may be no possibility of getting beyond this by means of observation, because it may in practice be impossible to test all the possible combinations of the factors  $x_1, x_2, x_3, \dots, x_n$ . If in the face of the variety and complexity of such a situation our imagination cannot suggest more precise rules than those indicated, no systematic testing will help us over this difficulty. (Hayek, 1955, p. 8, first set of italics added)<sup>2</sup>

It is not a question of *merely* too many variables. The difference in conceptual structures to which Hayek is referring is of a huge magnitude. It is, in the first instance, a practical matter, but it is most likely also more fundamental and elusive in that, in order to successfully model essentially complex structures, we would have to engage in a degree of complex classification that is *intrinsically* beyond the capacity of the human brain to accomplish, being that the brain itself is a classifying mechanism of lower complexity than the observed structures (a point that emerges from his 1952 work on cognitive psychology). In addition, there are some systems that are *intrinsically* non-computable/decidable (see Koppl, 2010).

The implications of complexity in a system are typically that, though intelligible, the outcomes that result from their operation do not provide us with precise value (quantitative) predictions. Instead, they are intelligible in that we are able to understand (comprehend the meaning of) the *types* of outcomes that are possible and are observed. Thus, *patterns* rather than

values are what can be predicted. As Hayek is anxious to point out, and as has perhaps been insufficiently emphasized, this does not preclude the possibility of an important type of (Popperian) falsification or refutation (a criterion taken by many scientists as the hallmark of acceptable “scientific” investigation). Certain resulting patterns *are* ruled out by this type of investigation. The observation of a pattern of results not within the range predicted by a model of complex phenomena would refute the model (Hayek, 1964, pp. 32–33, 1974, pp. 30–32). Confirmed observations of inherited traits acquired in a Lamarckian manner would refute the Darwinian version of evolution. Observations of “stagflation” lent credence to Monetarist and Austrian accounts of macroeconomic structure as opposed to the traditional Keynesian story. The fact that such “refutations” are hard to come by, or, indeed, to sustain, counts no more against the scientific nature of these methods (that lack quantitative predictive capacity) than do the same limitations in more traditional refutations based on deviant quantitative outcomes.

#### *Causal Ambiguity and the Burden of Proof*

The above examines the implications of complexity for research. But complexity has important implications for the conduct of policy as well, including notably monetary-macro policy. Complexity means unpredictability, which means uncertainty in policy implementation – uncertainty both as to the efficacy in achieving the intended consequences and uncertainty regarding unintended, sometimes unimagined and unimaginable, consequences. This is true not only for government policy, but also for all forms of “policy” including the governance of private organizations like business firms. The phenomenon is referred to in the management literature as “causal ambiguity” (e.g., Reed & Defillippi, 1990).

Often the successful firm is difficult to imitate because the “secret” of its success is far from transparent, even to its own leadership. The competitive process is, in this sense, a complex process, in which successful ways of doing things are discovered, sometimes serendipitously, to a greater or lesser extent, as rivals strive to innovate and imitate. To the extent that successful strategies emerge, the consumer is the beneficiary (this is the criterion of success). The competitive marketplace thus provides for multiple trials and errors in a process of unconscious social learning.<sup>3</sup>

This is not the case with government policy implementation. In the case of government-implemented governance strategies there is no competition. This makes social learning by market process impossible. And the complexity of the situation means that results do not yield unambiguous lessons, as

already explained. How is one to decide between policies in a complex environment?

All policy discussions are analogous to the conducting of an experiment with (known or unknown) probabilities. As everyone knows, the outcome of any experiment will depend crucially on which errors one seeks to avoid, that is, on which errors one considers to be Type I or Type II. To be more specific, imagine that we are “testing” for the existence or absence of a desired effect from a monetary policy episode – the adoption of a particular set of rules or a sequence of discretionary steps adapted to a complexly evolving situation. Discretionary policies, in comparison to the adoption of general rules, entail particularly demanding knowledge requirements and ongoing incentive problems. And they are more intrusive. From this perspective, they should require a higher burden of justification. Two types of experimental design are possible depending on the choice of the “null hypothesis,” as illustrated in Table 1.<sup>4</sup>

Assume that in order to establish a case for or against the policy it is necessary to disprove the null hypothesis. Policy X, a discretionary monetary policy, is proposed. The alternative designs reflect the presumptions of the experimenter. The essential difference between the two designs is where it places the burden of proof. Design B places it on those who advocate policy interventions, while design A places it on those who presumptively oppose it. It is always difficult to reject the null hypothesis, (it is sometimes not possible under any practical circumstances). The experiment should be designed to make it difficult. Design B is designed to minimize government intervention. Design A is designed to facilitate it. The two designs reflect differences of opinion about the likely benefits and costs of government intervention. But, absent any simple way to determine these benefits and costs in a complex world, the discussion is likely to reflect more than simply the “objective” facts of the matter. Where one puts the burden of proof in this argument is likely to be influenced by one’s “values” and this suggests that *no “scientific research” is completely value-free*, if understood in this sense (Lewin, 2007).

The values that enter are most likely to be specific (instrumental) values rather than fundamental ones. We may presume that “everyone” desires policies that produce “peace and prosperity”; policies that are based on providing abundant opportunity for individual “self-fulfillment”; or the like. The issues that are passionately joined are about how best to achieve this. These values may be the outcome of a particular reading of history, of the facts. But given that the facts never speak for themselves these rival positions will often appear in the guise of irresolvable values.



Table 1. Alternative Policy Design.

Design A	Design B
“if you think you have identified a valid objection to a discretionary policy, <u>prove it.</u> ”	“if you think you have identified an effective, justifiable discretionary policy, <u>prove it.</u> ”
⇒ (the policy should be adopted)	⇒ (the policy should not be adopted)

To see this, let us return to the experimental design in Table 1. Supporters of design B are, in effect, saying, “if you think you have identified an effective discretionary policy, prove it.” What justification do they have for doing so? They would no doubt answer, the same justification that would presume an accused person innocent unless “proven” guilty (using a stringent probability level of significance to minimize Type I errors), namely that all governmental action is essentially coercive, and if we are to err we should do so on the side of minimizing coercion. They are seeking to avoid the costs of incorrectly identifying an effective intrusion, while accepting the costs of failing to identify one.

In clarifying the role of the (mostly implicit) burden of proof presumptions, it becomes clear that apparently value-free economic discussions almost always harbor hidden prejudices (instrumental values) about the desirability or otherwise of state intervention. Bringing this to light forces a discussion of the appropriate location for the burden of proof. Should those who propose central-bank discretionary policy shoulder the burden to show that it would, on balance, be beneficial; or should those opposing it shoulder the burden of showing that it would, on balance, be harmful?

In what follows, I provide additional arguments arising out of the complexity of social settings that militate in favor of choosing Design B as the appropriate policy orientation.

Can Complex Markets Be Adaptive and Ordered?

The Existence of Social Institutions

The complexity of social systems, of society as we know it, presents a challenge for the explanation of human action as purposeful, goal-oriented behavior. Purposeful action implies a discernable connection between behavior and outcome. But in a world in which individuals hold diverse

expectations concerning the same future, indeed where that very future depends upon their collective behavior and the expectations they hold, how can such a causal connection be established, or assumed to exist? The complexity of the system and the open-endedness of the future would appear to preclude effective action of the kind we actually observe. Not only that, we also observe individuals acting effectively in the face of the rapid and accelerating change that characterizes our modern digital age.

Perhaps we need to turn the question around. Clearly, individuals are not only able to deal with complexity and change, but the system we live in evidently fosters that ability. We are able to absorb and adapt to change with extraordinary facility and derive great benefits in the process. Our modern society is a society that changes rapidly because its structure facilitates and thrives on that change. Its complexity is adaptive. How so?

The answer usually given is “institutions.” Because of the existence of social institutions, individuals are able to orient their actions to one another (Lachmann, 1971). But how exactly does this happen? It is no answer to say that institutions provide points of orientation that enable action unless we can somehow explain how institutions act to reduce the spread of expectations or render the consequences of that spread harmless. An explanation to both of these emerges from a different way of looking at it.

We need to unpack the concept of “expectations” and ask the question “expectations of what?” Obviously individuals have expectations about many different things. Only some of these are likely to differ much across individuals. Those that form the basis of institutions, expectations about the “rules of game,” are likely to be very uniform across individuals. We may say that these expectations are informed by knowledge of the “social laws” concerning how others will (almost) invariably behave in given situations. They will drive on the right hand side of the road; they will mark time in the same way; they will not resort to violence if their business fails; etc. Those expectations are likely to be very congruent.

By contrast those expectations relating to the outcomes of introducing a new product, a new advertising approach, a new technology, a new competitive strategy are *not* informed by such “hard” knowledge. These expectations are likely to be all over the place. Yet, *such actions will not be deterred on account of the spread of expectations*. The entrepreneur acts precisely because he believes he is different and he knows better than the rest, absent which there would be no profit in it. Thus, somewhat paradoxically, *predictability in one sphere is the necessary ingredient for coping with its absence (novelty) in another sphere* (Lewin, 1997; Loasby 1991, 1994). To invoke

the analogy of a sports game, the fact that the outcome (the score, and the details of the action) cannot be predicted with any degree of certainty does not prevent the game from being played. On the contrary, it is the very unpredictability that adds to its attraction. What is predictable are the consequences of any infringement of the rules of the game: the fact that the losers will probably accept the result peacefully, and so on. And it is this predictability that allows the game to be played. Change, far from being debilitating, is the engine of innovative action. Yet, the existence of this change, its enduring presence, is testimony to the *stability* of the underlying institutional framework within which it occurs.

### *Whence Institutions? Institutions Are Networks<sup>5</sup>*

There is still the question of the origin of these institutional frameworks, within which action can take place. Lachmann (1971) tries to invoke the idea of a process like a market process to explain how functional institutions win out. He was, like Hayek, looking to some kind of evolutionary selection process. He also appeals to individual imitation of successful action. No doubt both forces are at work. But there is much more to it.

An individual walks across the mall full of snow and leaves a trail of footprints. Someone following him finds it helpful to walk in his footsteps. Those who follow do the same and, eventually, they make a path through the snow that is of benefit to all who walk it (Kirzner, 2000: Introduction). The original trailblazer is an *unintentional institutional entrepreneur*. The general principle is the operation of *network effects* – the more people use the network the greater the benefits for *each* (Liebowitz & Margolis, 1994). Social institutions are complex networks. A network of this kind is one in which the individuals who participate benefit from a shared (frequently tacit) understanding of how to proceed by using a common standard (like a telephone technology, a language group, a religious group, a commonly accepted means of payment, a system of commercial laws). These “external benefits” are the network effects that imply that there is *feedback from individual action to other individuals, in the direction of producing uniform expectations regarding each other’s behavior (choices)*. In other words, social institutions are likely to emerge spontaneously from individual action and to grow spontaneously to an optimum size. They produce a convergence of individual expectations. There are many examples of convergent social processes, perhaps the most familiar being the emergence of money (Menger, [1871] 1976).

Convergence and permanence are relative phenomena. Nevertheless they are necessary for the existence of and for the understanding of dynamic

economic processes. The hectic procession of new products and productive processes – the result of the activities of a multitude of individuals organized as firms, operating within the constraints of contract and property law, some of whom succeed in their endeavors, many of whom do not – is dependent on underlying social institutions. Experience suggests that while we cannot predict who will succeed and who will not, or which products will emerge and be popular, or foresee the nature of future technologies, *we strongly believe that the process will be peaceful and will be orderly*. We confidently expect those who are unsuccessful to accept their losses peacefully and perhaps try something else, those who lose their jobs to move on in the hope of greener pastures, and those who do succeed to continue to try to do so. *The fruits of this dynamic process depend crucially on our (predictable) willingness to accept the consequences of its unpredictability*. That willingness is the vital predictable part. Indeed, as with other complex adaptive orders, we have the emergence of “order” and we are able to explain the process in a readily accessible and intuitive way as deriving from human action.

In fact, we are dealing with complex networks involving networks of networks. Social networks refer to “groups” of people who can be counted on to follow certain rules, or patterns of behavior. They do this essentially because it benefits them to do so, even though they may be barely conscious of the benefits. We may express this very generally as follows:

$$V_j = (M_{ki}); k = 1...n, j = 1...M$$

There are  $n$  groups and  $M$  individuals.

$$V_{M_k} > 0; V_{M_k M_k} \begin{matrix} > \\ < \end{matrix} 0$$

where  $V_i$  is the individual benefit (utility, value) derived from group (network) membership of group  $M_k$ . The greater the size of the network, at least up to a limiting point, the greater the benefits to *each individual*, and the additional benefits may increase, remain constant, or (at least eventually) decrease with the size of membership. A large literature exists on the question of the relationship between the marginal individual benefit and network size. Metcalfe’s law, first formulated by [Gilder \(1993\)](#), states that the value of a telecommunications network is proportional to the square of the number of connected users of the system ( $M^2$ ). Reed’s law asserts that

the benefits of large networks, particularly social networks, can scale exponentially with the size of the network. To see this note that number of possible sub-groups of network participants is  $2^M - M - 1$ , where  $M$  is the number of members. This grows much more rapidly than either the number of participants,  $M$ , or the number of possible pair connections,  $M(M - 1)/2$  (which follows Metcalfe's law), so that even if the initial utility of groups available to be joined is very small on a peer-group basis, eventually the network effect of potential group membership can increase to become a dominating force (Reed, n.d.).

For our purposes it is unnecessary to discover the specific relationship holding between the size of the group and the individual benefits derived. Call this relationship the *benefit function*.<sup>6</sup> It seems very likely that no single invariant benefit function exists for all possible networks. This seems even more likely upon noting that benefit functions are likely to be interrelated across groups, so that the benefits of membership in one group may depend upon membership in a related group and to the fact that networks vary widely in nature. Social networks, like religious groups, are categorically different from electronic networks, like telephone networks, or the Internet. What matters is that network effects operate spontaneously to form groups and regulate its size and its operation. These are dynamic effects. The momentum comes from the perception by individuals of the benefits involved in membership. There are no guarantees. Such perceptions are obviously subject to cognitive limitations and much of the learning is tacit in nature. But once the network reaches a critical mass of members, the marginal individual benefits are likely to be large enough for membership to snowball.

The specific process will vary dramatically with the nature of the network. Some networks are likely to be very small – reach a limiting size very soon. Consider support groups, for example, which are typically comprised of just a few members. Others, like Facebook, are likely to be huge, perhaps with no discernable limit.

### *Networks and Cycles*

Macroeconomic cycles embody and depend upon networks of various kinds, the most obvious being networks of beliefs, leading to actions based on these shared beliefs, also known as herding behavior. One's propensity to believe, for example, in a particular theory of macroeconomics (however informally) depends positively on how many others do so, which is termed a reassurance effect. And because, as explained above, it is difficult to “test” alternative theories, and decisively refute alternative interpretations

of events, false beliefs can and do proliferate. In a complex social context, beliefs are more likely determined by the attractiveness of their implications, than by their soundness. Networks of illusion wax and wane. There is no automatically correct theory around which to form rational expectations.

In the absence of cycle-augmenting discretionary policy, cycles would still exist. It is hard to resist this conclusion. The market is a complex network of networks of trials and errors. Fashions and fads are only the most obvious and superficial manifestation of this. New technologies propel processes of implicit experimentation and learning during which individuals are likely to make mistakes, collectively. The new general-purpose technologies of the digital age started with a [dot.com](#) boom in which rival network standards competed for dominance. The learning process necessarily involved the shake-out of all but the most successful of the rivals. During the process, rival entrepreneurs harbored different and incompatible expectations of the same future, and the book-values of their companies often reflected the values of a successful future for them, which, in the event, turned out to be falsified, along with those of most of their co-rivals. This is a form of boom and bust.

The Federal Reserve arguably exaggerated this cycle significantly by attempting to perpetuate the boom with low borrowing rates that failed to account for the accelerating risk, thus encouraging the extended duration of unsustainable interest-risk-sensitive ventures. The result was a bigger boom and bust.

It is worth noting that, although most people understood that the bust was inevitable, this did not provide protection against the overshooting that occurred. When so many people were reaping the capital gains of the boom, how was one to know when the bust would arrive? And if one sat on the sidelines waiting for it, one might be leaving fortunes on the table. So, this kind of risky behavior, trading off the losses of non-participation in the boom against the dangers of being caught in the bust, was also encouraged by the Fed's low interest rate policy. The propagation of the idea that a "new economy" capable of sustaining the gains, was all too appealing and difficult to refute for the reasons discussed above.

If cycles are inevitable, as they appear in some sense to be, then the promise by policymakers to eradicate or mitigate them is likely to be attractive to those who cannot help repeating history's mistakes. Opportunistic politicians thrive on the attractiveness of "calls to action." And career civil servants likewise shrink from the difficult task of selling a no-action agenda, so we are back to Type I and Type II errors. The policymakers like

the power and the admiration of successful policy action and fear the opprobrium likely to arise from perceived inaction in the face of contagious economic losses. The public has in its mind a Design A type story (see Table 1).

### *Are Our Embedded Tacit Constitutions in Danger?*

The social institutions that facilitate exchange, production and entrepreneurship can be affected in various ways by the actions of policymakers. The possible consequences of bad policy are not confined to the imposition of short-term costs from the inhibition of trade, production, and entrepreneurship. Moreover, they could permanently affect the fundamental institutional structure within which these activities occur.

At the most fundamental level, we find the networks that form the frameworks of routine individual behavior – the norms, customs, social rituals, etc. Beliefs concerning the sanctity of private property are part of this. These fundamental network institutions, these shared ways of doing things, resting on shared fundamental beliefs, could be thought of as a type of embedded (tacit) constitution (Vanberg, 1994). Embedded constitutions, the result of long processes of social evolution, are more durable and, very plausibly, much more valuable than written constitutions, which are highly dependent on the exigencies of the moment. Written constitutions are more visible, better understood, more easily changed (whether by amendment or, more likely, by fluctuating interpretations) and, in an important sense, are also less valuable than embedded constitutions because they are less reliable. Embedded constitutions are deep-seated, all but invisible to the individuals who rely on them for successful actions. They change slowly (if they are to be reliable) and adaptively, and anything that threatens to compromise them threatens the very fabric of successful action in society.

The institutional practices that comprise embedded social institutions work by guiding individual expectations to uniformity. As discussed above, they provide the uniform backdrop of rules and practices against which a diversity of expectations of economic outcomes can be judged and accommodated. Private property is the most obvious. It provides for peaceful reconciliation of diverse opinions about the values and uses of products and resources in a universally predictable way.

The policies (macro and micro) associated with the Great Recession since 2008 have been subversive of both the written and the embedded constitutions of our society. In the place of predictable, trusted, rules,

regulations, and practices, one “discretionary” change after another has been foisted upon the capital market. The very nature of the Federal Reserve Bank itself, as an institution whose actions were confined to the banking sector, has been changed as it has greatly expanded its sphere of action from monetary policy to credit policy more broadly, targeting specific financial institutions and financial instruments in an ad hoc, unpredictable, way (White, 2010). The effective wholesale scrapping of its constitution, in turn, threatens to compromise the established practices and understandings in all sectors of the money and capital markets, as practitioners can no longer rely on the age-old, well understood, ways of doing things (Tatom, 2014). The Big Player is the Fed and the uncertainty of its future actions tends to dominate the landscape (Koppl, 2002). Is this crisis/recession an indicator of a long-term erosion of the embedded constitutions underlying our markets in general? Or will they be resilient enough to survive until the arrival of a more enlightened policy regime?

One possible silver lining is globalization and the digital economy, which militates very much in favor of freedom of action and against regulation. A particularly obvious manifestation of this phenomenon is the sharing economy.

## CONCLUSION

For a variety of reasons, designing and executing policy in a complex environment is even more difficult and more perilous than might have been previously thought. Hayek’s knowledge problem arising from the nature of dispersed and emergent knowledge together with the usual public-choice issues apply as much to central-bank discretionary policy as any economic policy (Caballero, 2010). Add to this the declining attention paid to and understanding of history, causal ambiguity, the misplacement of the burden of proof, and the intrusion of a big player into the mix and we find that our most valuable social institutions may be in danger of suffering long-term damage. We seem doomed to repeat the mistakes of history, and the costs of the mistakes accumulate over time.

## NOTES

1. This is not to deny that each event in history is unique. Strictly speaking, there are no repeatable events. The degree of similarity of essentially unique events



lies in the extent of components that are recognized as typical, as part of categories of similar components in other historical events (O'Driscoll & Rizzo, 2014 [1996]).

2. “[S]ocial sciences, like much of biology, but unlike most fields of the physical sciences, have to deal with structures of *essential* complexity, i.e. with structures whose characteristic properties can be exhibited only by models made up of *relatively large numbers of variables*” (Hayek, 1974, p. 26, italics added). It is illuminating to view this problem in the context of statistical modeling and the well-known difficulty of inferring from the estimated reduced-form parameters the fundamental structural parameters of the model. The model is supposedly an “accurate” depiction of reality. This is the “Lucas critique” leveled at econometric practice. The response has been to try to find better (more easily identifiable) models. But, in the context of the discussion in the text, it may be seriously doubted that such a strategy is ever likely to be viable. The structural parameters of real-world complex processes are the result of multi-level interaction an order of magnitude far beyond the capacity of any statistical modeler to specify.

3. I owe this idea to the late Don Lavoie who was the director of the *Program on Social and Organizational Learning* at George Mason University and to his path-breaking work on market processes and the creation of knowledge.

4. I have struggled with how to present this in the usual  $H_0$  format of modern econometric practice. The problem lies in the fact that econometric models are “closed-end” fully specified models in which all the alternatives are known and unknown counterfactuals, which by definition cannot be modeled or measured. For example, in the adoption of alternative standards for operating systems or computer protocols, the benefits from a government-imposed standard can be easily modeled and tested (and have been), but the counterfactual of market innovation and adoption of alternative standards cannot.

5. Institutions are networks, but not all networks are institutions.

6. Beckstrom’s law (2008) is perhaps the most generally conceptually helpful closed-end formulation. This law applies to the net value of any network as a whole. It states that one way to contemplate the value the network adds to each transaction is to *imagine the network being shut off and what the additional transactions costs or loss would be*. Beckstrom’s Law differs from Metcalfe’s law, Reed’s law and other concepts that proposed that the value of a network was based purely on the size of the network. The net present value  $V$  of any network  $k$  to any individual  $j$  is equal to the sum of the net present value of the benefit of all transactions less the net present value of the costs of all transactions on the network over any given period of time  $t$ . The value of the entire network is the sum of the value to all users, who are defined as all parties doing transactions on that network.

$$\sum V_{i,j,k} = \sum_{i=1}^T \sum_{j=1}^n \sum_{k=1}^M = \frac{B_{i,j,k} - C_{i,j,k}}{(1+r_k)^k}$$

where

$B_{i,j,k}$ ,  $C_{i,j,k}$  = the benefit and cost of transaction  $i$  to individual  $j$  with respect to network  $k$ , respectively.

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