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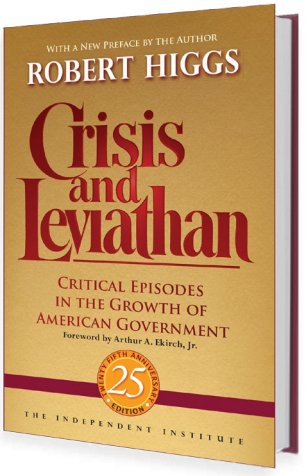

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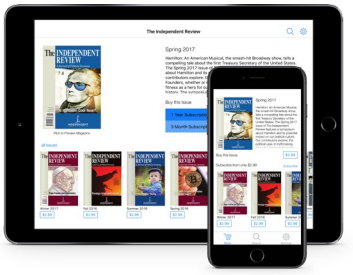

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The Imprudence of Macroprudential Policy

ALEXANDER WILLIAM SALTER

In the aftermath of the 2007–2009 financial crisis, many academic economists have taken stock of existing theories in search of an explanatory framework. Of particular interest is the attention mainstream economists are paying to the business-cycle theories of Ludwig von Mises and Friedrich Hayek. Several studies have argued that Mises's and Hayek's ideas concerning monetary theory and the trade cycle provide a way forward for understanding the crisis (Diamond and Rajan 2009b; Leijonhufvud 2009; Caballero 2010; Borio and Disyatat 2011; Koppl and Luther 2012; Calvo 2013). Others, although less explicit, nonetheless espouse views that fit nicely into the framework of price-theoretic economics more generally (Diamond and Rajan 2009a; Meltzer 2009; Schwartz 2009; Taylor 2009; McKinnon 2010; Ohanian 2010). This development is heartening because it subjects to critical analysis the narrative that the crisis was the result of financial instability that naturally occurs in capitalist systems. It instead puts forth an explanation for the crisis grounded in price-theoretic economics, rooted in the analysis of how the relative prices of consumers' goods and producers' goods change in response to deviations in the market interest rate from its natural (Wicksellian) rate.[1]

However, much of the scholarship since the financial crisis is implicitly at odds with this line of thought. Perhaps the most obvious example is the literature on

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1. By "price-theoretic economics," I mean the corpus of theory that focuses on how individual self-interest is reconciled with social welfare through the market economy's constant relative price adjustments. In contrast, modern macroeconomics and the literature on macroprudential policy to be examined in this paper focus on economy-wide statistical aggregates that bear little relation to the core propositions of microeconomics. See Boettke (2012) for an overview of thinkers and theories that fit within the price-theoretic tradition.

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"macroprudential" financial regulation (Clement 2010; Bernanke 2011; Hanson, Kashyap, and Stein 2011; de la Torre and Ize 2013; Galati and Moessner 2013). According to Ben Bernanke, "Ultimately, the goal of macroprudential supervision and regulation is to minimize the risk of financial disruptions that are sufficiently severe to inflict significant damage on the broader economy. The systemic orientation of the macroprudential approach may be contrasted with that of the traditional, or 'microprudential,' approach to regulation and supervision, which is concerned primarily with the safety and soundness of individual institutions, markets, or infrastructures" (2011, 3). Bernanke's remarks make it clear that macroprudential policy is aimed at stabilizing the financial system as a whole, with special emphasis on the risks and costs associated with systemic crises. Before the crisis, regulators believed the best way to prevent such events was regulation at the level of the individual financial organization—that is, monitoring a firm's capital-to-assets ratio or the degree to which this ratio relies on short-term funding (Bernanke 2011, 4). The "tool kit" of macroprudential policy, in contrast, would involve time-variant countercyclical capital requirements (including capital-quality requirements), regulation of debt maturity, and the extension of already-existing regulation to the shadow-banking system (Hanson, Kashyap, and Stein 2011; Galati and Moessner 2013).[2] Ideally, these tools will be put to use by regulators who judiciously manage systemic risk in the financial systems they oversee in an attempt to minimize the probability of enduring another severe financial crisis.

Why is such regulation necessary? Samuel Hanson, Anil Kashyap, and Jeremy Stein point to external costs associated with firms attempting to divest themselves of assets they believe will lose their value: "[O]ne can characterize the macroprudential approach to financial regulation as an *effort to control the social costs associated with excessive balance-sheet shrinkage on the part of multiple financial institutions hit with a common shock*" (2011, 5, emphasis in original). Because financial firms during times of trouble *(a)* attempt to shrink assets, which might result in fire sales and credit crunches, and *(b)* operate with "too thin capital buffers" to weather the resulting balance-sheet effects, firms' ordinary profit-seeking behavior results in external costs that increase the probability of a financial panic (Hanson, Kashyap, and Stein 2011, 8).

In this essay, I argue that the macroprudential policy literature does not consider whether their policy recommendations are information and incentive compatible. As such, it is unlikely to deliver on its promises. To be more specific, the literature on macroprudential policy has not made any reference to or shown in any way that it has

2. "Shadow banking" refers to bankinglike activities that do not fall under the purview of traditional commercial banking. In general, banking consists of taking on short-term debt to finance long-term asset portfolios; shadow banking does this but frequently utilizes exotic assets and financial contracts, as with short-term repurchase agreements ("repos") involving perceived "safe" securities as collateral. Mortgage-backed securities are such an asset and bear obvious relevance to the recent crisis. For a fuller explanation of shadow banking in the context of the recent crisis, see Gorton (2010), Espinosa (2012), and Hummel (2012).

addressed the issues raised by the knowledge problems associated with nonmarket resource allocation. In a similar vein, it has not addressed the problem of how regulators armed with macroprudential tools can be trusted to use those tools in the limited sense ascribed to them. And even if these objections are brushed aside, an argument can be made that the macroprudential policy literature has failed to meet its prima facie case of demonstrating the instability of advanced capitalist financial systems. The admirable goals of macroprudential policy are unlikely to be achieved by enlightened discretionary regulation. Instead, I argue that future research should focus on potential improvements to the institutional framework within which economic agents act.

No Knowledge of Knowledge Problems

The macroprudential policy literature has not addressed the positive statements regarding the information-generating role of the unhampered market economy developed by Mises ([1949] 2008) and Hayek ([1948] 1980) and refined by Israel Kirzner (1973) and Murray Rothbard ([1962] 2009). I do not mean that the literature has merely neglected to cite these works. Beyond occasional tangential references to the necessities of developing more "complex analytic frameworks" (e.g., Bernanke 2011, 3), the works in the literature have not attempted to cope with the problems inherent in centrally managing a significant portion of the capital market. Lest the reader suspect I exaggerate the imagined scope of macroprudential policies, Bernanke spells out the expansiveness of their perceived mission: "[B]ecause of the highly interconnected nature of our financial system, macroprudential oversight must be concerned with all major segments of the financial sector, including financial institutions, markets, and infrastructures; it must also place particular emphasis on understanding the complex linkages and interdependencies among institutions and markets, as these linkages determine how instability may be propagated throughout the system" (2011, 3). He goes on to describe the various regulatory agencies that will operate in the United States (the Financial Stability Oversight Council, created by Dodd-Frank, and the Office of Financial Research, which operates within the Treasury Department) and the European Union (the European Systemic Risk Board) to manage systemic risk, primarily through the analysis of data that purport to show the degree of systemic risk and the ability to curb excessive risk taking (1–4).[3] Moreover, the Federal Reserve will be taking on additional roles, including "the supervision of thrift holding companies as well as oversight of nonbank financial firms and certain

3. Systemic risk is defined as the risk posed to the financial system when key financial institutions become insolvent. For example, if AIG fails, the market value of its stocks and bonds would fall precipitously, which in turn would lower the market value of assets held by other financial institutions, negatively impacting their solvency. Thus, the failure of a key institution has repercussions for the solvency of the system as a whole—resulting, for example, in a bank run or in a run of the shadow-banking system, as in the recent crisis. However, it is important to note that systemic risk is conceptually distinct from the risks associated with traditional bank runs, despite the fact that they can be related in practice.

payment, clearing, and settlement utilities that the [Financial Stability Oversight] [C]ouncil designates as systemically important," and mandating capital and liquidity requirements for large financial organizations deemed "systemically important" (9).

Putting macroprudential policy into operation necessarily entails a significantly larger share of market activity being decided by nonmarket actors. It is important to note that the knowledge and information burdens facing regulators are not the same as in the classic statement of the knowledge problem, which refers to the impossibility of rational resource allocation absent private property in the factors of production (Mises [1922] 1951). However, there are several parallels to the problem first pointed out by Mises, and they are thematically similar enough collectively to deserve the label *knowledge problems.*

The first problem in this macroprudential approach to promoting financial stability is its conflation of risk with uncertainty. Ever since Frank Knight (1921), economists have paid lip service to the distinction, but the understanding has scarcely gone deeper than that,[4] especially among economists who purport to use neoclassical theory to argue in favor of nonmarket resource control. In short, risk is quantifiable and based on an objective probability distribution, whereas uncertainty is inherently unquantifiable and subjective.[5] Adherents of macroprudential policy implicitly treat systemic risk as a variable whose distribution and associated moments can be known. This treatment ignores the role that individual expectations and beliefs, which are inherently subjective phenomena, play in driving market outcomes (Lachmann 1977), including the generation of a financial panic. For example, Gary Gorton (2010) characterizes the most recent financial crisis as a traditional banking panic, albeit in the shadow-banking system, driven by the transition of bank debt from information insensitive to information sensitive. However, this process depends on the individual expectations of the agents evaluating asset quality and on their expectations of being able to secure additional financing. It is well known that an individual's choice to withdraw his assets or seek a flight to liquidity can precipitate the same in other individuals, which leads to the drying up of liquidity that characterizes panics (Diamond and Dybvig 1983).[6] This choice is made based on the individual's subjective perception of objective market data, and this subjective element renders it noncommensurate in any sort of a quantifiable framework.[7] When viewed systemically, the factor influencing this choice is properly understood not as risk, but as

4. O'Driscoll and Rizzo (1985) is a notable exception.

5. Secretary of Defense Donald Rumsfeld concisely summarized the key distinction between risk and uncertainty: risk consists of the "known unknowns," and uncertainty consists of the "unknown unknowns."

6. Of course, financial organizations can do much to reassure market actors in order to prevent such activity.

7. This does not imply that panics are completely irrational "sunspot" events (Gorton 1988) or that financial systems are inherently unstable (Calomiris and Gorton 1991). It merely emphasizes the subjective element to risk perceptions that regulators cannot penetrate.

genuine uncertainty, which in and of itself makes any attempt to centrally manage systemic risk dubious.[8]

But even if one were to assume away the distinction between risk and uncertainty, the central management of systemic risk is procedurally misguided. The macroprudential policy approach implicitly treats systemic risk as a stable function of several quantifiable variables, such as system-wide capital stocks, system-wide capital quality, and system-wide debt maturity profiles (Hanson, Kayshap, and Stein 2011, 8–16). If systemic risk becomes unacceptably high (and it is not clear how high is *unacceptably high*), regulators influence one or more of the independent variables—based on models and forecasts derived from constantly updated market data—in such a manner that systemic risk returns to acceptable levels. This view, which treats systemic risk as a phenomenon of the same order of complexity as its constituent variables, fails to capture an essential feature of systemic risk. Systemic risk undoubtedly depends in some manner on the variables previously mentioned, but to classify it as a controllable outcome of a functional relationship overlooks its emergent characteristics. Systemic risk is an emergent phenomenon, taking form as the result of many market participants' decentralized actions. It is the outcome of purposive individual action but is not a magnitude that can be tinkered with in the familiar comparative static manner (Wagner 2010, 2012). Treating it as a variable that can be directly acted upon, through its constituents or not, will result in a host of unintended consequences because the relationship between the variable of interest and its constituents has not been (and cannot be) correctly identified. Such treatment will also rob the variable of its epistemic content, meaning that the insights that previously could be derived from analyzing the variable will no longer be valid (Hayek [1948] 1980). Readers familiar with the literature on monetary policy and control will note the similarity of this problem to the one stated by Charles Goodhart in 1975: statistical regularities between a target variable and desired outcomes break down when the relationship is manipulated for the purposes of control. Goodhart originally formulated his statement in the context of investors' behavior changes in response to regulation of financial assets, but the point is much more general. In this case, attempting to influence the level of systemic risk changes the nature of the process by which systemic risk emerges. The process can no longer be interpreted in the same manner that it could be in a counterfactual scenario where no influence was exerted.

A defender of macroprudential policy would insist that regulatory action can lessen the risk of financial crises. There is no need to approach macroprudential policy with the "fine-tuning" mindset; because the goal is the minimization of systemic risk, implementing the regulation in such a manner as to minimize its costs—namely, the

8. The inherently subjective and unquantifiable nature of decisions regarding systemic risk introduces uncertainty among private actors regarding how the regulatory authorities will come to their decisions. An example is the U.S. government's orchestration of the Bear Stearns bailout even while allowing Lehman to fail. In this sense, the very existence of an agency mandated to manage systemic risk introduces an element of "regime uncertainty" (Higgs 1997) in financial markets.

deadweight loss of reduced economic activity—is a secondary concern. With regulators' objective function defined as a single variable, regulators can err on the side of excess. They can make capital requirements high enough, capital quality sound enough, and time-financing structures balanced enough that systemic events are extremely unlikely. To this, I can only agree. Just as regulators could drastically reduce automobile accidents by imposing a twenty-five-mile-per-hour speed limit, they can make investment so costly that the capital allocation sector will limp along without any stumbling. Of course, nobody—regulators included—lexically prefers risk minimization to such an extent that the market process and hence economic growth grind to a screeching halt. Regulators would insist on being reasonable, as Bernanke himself demonstrated:

> [N]o one's interests are served by the imposition of ineffective or burdensome rules that lead to excessive increases in costs or unnecessary restrictions in the supply of credit. Increased coordination and cooperation among regulators, under the auspices of the council where appropriate, should serve not only to improve our management of systemic risk, but also [to] reduce the extent of duplicative, inconsistent, or ineffective rulemakings. More generally, in evaluating alternative approaches to mitigating systemic risks, regulators must aim to avoid stifling reasonable risk-taking and innovation in financial markets, as these factors play an important role in fostering broader productivity gains, economic growth, and job creation. (2011, 8–9)

But now regulators have to face the following uncomfortable question: What trade-offs are they willing to bear? How are they to evaluate the exchange of economic growth—which, disaggregated, involves ascertaining the changing trade patterns resulting in expanding and contracting markets across the economy—for increased safety? They might try to approximate this trade-off by free riding on the market-price system, an option Rothbard ([1962] 2009)[9] noted was the best available means for limited nonmarket allocation. But this approach would make little sense given regulators' insistence that market prices are incorrect in this instance because they do not incorporate the social costs associated with systemic risk. In short, proponents of macroprudential policy have not proposed a coherent framework for navigating these trade-offs. Until they grapple with this issue, their proposals amount to little more than speculation and wishful thinking.

An Incentive to Care about Incentive Problems

Proponents of macroprudential policy have not addressed the possibility that regulators will not automatically adopt the (perhaps constrained) minimization of systemic

9. See also Boettke and Coyne (2004).

risk as their goal to the exclusion of all other concerns. That this possibility, which has been well known since the public-choice revolution precipitated by James Buchanan and Gordon Tullock (1962), has been overlooked is deeply troubling.[10]

The behavior of modern central banks, which have played a significant role in regulating the financial system, shows this concern to be more than just theoretical. Since the 1970s, European central banks have exceeded the last-resort lending blueprint provided by Walter Bagehot ([1873] 1896), which suggests lending freely to illiquid but solvent banks at penalty rates. Instead, European central banks have rescued banks of questionable solvency (Bordo 1990, 26). The record is of even more concern in the United States. The Fed has never limited itself to any sort of policy rule when it comes to dealing with troubled financial firms. Its bailout of Franklin International in 1974 and then Continental Illinois in 1984 created and solidified the "too big to fail" mentality and resulted in moral hazard pervading the financial system (Bordo 1990, 26; Hetzel 2008, chap. 4, and 2012, 154). The extraordinary actions the Fed took in the most recent financial crisis and the passage of Dodd-Frank have only continued this dynamic (Hummel 2012; Selgin 2012; Hogan, Le, and Salter forthcoming; Salter forthcoming).

Proponents of macroprudential policy would no doubt object that the increased powers that will be exercised over various nations' financial sectors are a response to the problems listed earlier. New regulation will cope with moral hazard by preventing the risky portfolio-construction strategies, which financial firms rationally choose in response to an implied "too big to fail" approach by regulators, by preventing those kinds of portfolios from being constructed in the first place. This objection completely misses the point, however. The issue is not the specific manifestation of regulatory incentive misalignment that generated "too big to fail." The issue is the general difficulty of aligning regulators' incentives with those of the regulatory agencies' stated goals. Already since the crisis we have seen an increasing amount of activity, conducted under the banner of established monetary or regulatory policy, that amounts to little more than nonmarket allocation of credit (Hummel 2012). With proponents of macroprudential policy explicitly calling for increased nonmarket control over resource allocation, especially the allocation of credit, why should we expect anything other than the same, when macroprudential theorists have not proposed any mechanisms to align regulators' incentives? Going forward, new regulatory agencies empowered to act macroprudentially will be at risk of being captured by the interests that they were intended to control (Stigler 1971; more specifically see Selgin 2010 and Boettke and Smith 2013a, 2013b).

Instead of acknowledging incentive alignment as a problem that requires attention, the macroprudential policy literature assumes it away. In narrowly focusing on

10. I describe the oversight as "deeply troubling" because, as Roger Backhouse and Steven Medema (2012) show, the potential limitations and inefficiencies of the political process were once well known to those working in the Cambridge market-failure tradition.

the tools at regulators' disposal to impact systemic risk, calls for macroprudential management overlook one of the most basic aspects of economic analysis. Foundational issues regarding regulators' incentives have been replaced by technical discussions on implementation strategies that can safely be put into operation only once incentive issues have been addressed (Boettke and Luther 2010).

Making Sense of Stability

As significant as the omissions described earlier are, the macroprudential policy literature's central assumption is even more fundamentally misguided. This literature assumes that capitalist financial systems are inherently unstable and that wisely crafted regulations are necessary to curb these systems' excesses. The recent crisis has highlighted the appeal of a transition from a microprudential to a macroprudential regulatory framework, but it in no way speaks to the fundamental desirability of bureaucratic control of market outcomes. This is a rather substantial case of question begging. There is no discussion of the Fed's role in keeping the interest rate below its natural (Wicksellian) rate (e.g., Ahrend, Cournede, and Price 2008; White 2008, 2009, 2012; Schwartz 2009; Taylor 2009; Horwitz and Luther 2010; Beckworth 2012; Ravier and Lewin 2012). As mentioned earlier, there is no mention of moral hazard in inducing financial organizations to build riskier-than-optimal portfolios. And there is no recognition of the role of the price system in coordinating producers' plans with those of consumers, even in the context of aligning the structure of financial capital with the structure of physical capital (Lachmann [1956] 1978; Hayek 2008).

Of course, economic history is replete with events not commensurate with the "instability of capitalism" hypothesis. In the context of banking, "panics are not inherent in banking contracts—institutional structure matters" (Calomiris and Gorton 1991, 110). Modern banking, which emerged circa 1200 and spread throughout the world, not only survived, but flourished. Safety nets, deposit insurance, and other regulation did not appear in their familiar form until circa 1900. Neither the "instability of capitalism" hypothesis nor the more narrow "instability of financial systems" hypothesis can explain how these systems worked and expanded for *seven centuries* before the state felt the need to curb their perceived excesses (White 2013, 473). In fact, the evidence against these hypotheses is stronger: banking systems were most stable in cases where regulations and political control were kept to a minimum. Prominent cases include Scotland in the eighteenth century, Sweden in the nineteenth century, and Canada up until the Great Depression (Dowd 1992).

To the extent that modern financial systems are unstable, we must look to political rather than market causes (e.g. Calomiris 2013). In particular, the wedge between natural and market rates of interest caused by central banks as an ordinary part of monetary policy carries much of the blame. These actions typically take place

through monetary injections in credit markets—the market for time, cleared by the relevant interest rate—and result in the price system sending faulty signals concerning real relative resource scarcities (Garrison 2000; Horwitz 2000). Thus, credit misallocations result in real resource misallocations, but the fundamental cause is monetary instability brought about by an increased quantity of fiduciary media without corresponding higher real savings. The noise added to the price system (the "signal extraction problem" described in Lucas 1972) is the source of production and investment projects that are ultimately unsustainable. Since the fundamental cause is unsound monetary policy, the culprit cannot be unstable financial markets.

Institutions, Not Interventions

To be sure, the goal of macroprudential policy—minimizing systemic risk to make financial systems less crisis prone—is a worthy one. Unfortunately, by overlooking fundamental questions of information and incentive compatibility and by basing their justification on an ad hoc theory of market instability, those working in the macroprudential policy literature have arrived at a set of means that are essentially unsuitable for achieving their desired ends. Central management of systemic risk runs up against a host of knowledge problems; regulatory control over financial systems opens up significant incentive problems; and it is unclear why there is any need for this kind of regulation in the first place. The "solution" presented by macroprudential policy is inherently unrobust (Pennington 2011) in the sense that it cannot be expected to deliver on its promises.

Market stability is ultimately to be found in institutions, not in interventions. Institutions that are robust to information and incentive imperfections must be at the heart of the search for stable and well-functioning markets (Pennington 2011, chaps. 1–3). Robust monetary institutions (Salter 2013, 2014, forthcoming; Boettke and Smith 2013c) depend on adherence to the rule of law and the protection of private-property rights, which are the cornerstone of any well-functioning market order. Because macroprudential policy relies on unjustifiably heroic assumptions concerning the information and incentives facing private and public agents, its solutions are fragile by construction.

The macroprudential policy literature, as a symptom of an unfortunate Keynesian resurgence (Boettke, Smith, and Snow 2011) in economic theory and applied economics, is but one current economic practice that sound economics can show to rest on untenable assumptions. However, it is among the most dangerous concerning the future of financial markets and their contribution to economic growth. Instead of making financial systems safer, it will make them more sluggish and more prone to control by political elites. Until and unless the macroprudential policy literature engages the core arguments concerning knowledge and incentive problems, it must be regarded as intellectually vacuous. Its scientific language and presentation style aside, its refusal to engage the foundational questions of applied economics suggests

it is primarily an attempt to substitute the value judgments of regulators for those of market actors.

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