

ARE BANK FIDUCIARIES SPECIAL?

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I. INTRODUCTION

Two familiar human proclivities are tolerable enough within limits but can cause mischief when we are not wary. The first is the propensity to suppose that, where a particular form of turpitude has been common in the lead-up to some salient catastrophe, the best way to prevent such catastrophes in future is to punish the associated form of turpitude.¹ The second proclivity is the tendency to suppose that the tools or, within the academy, analytic methodologies with which one is most familiar can be effective even in domains with which one is *not* very familiar.²

Both of these tendencies have been in evidence in the wake of the 2008–2009 financial dramas and their continuing aftermath. The first has been manifest in claims to the effect that “what went wrong” in the lead-up to 2008 was simply a matter of unprecedented greed and associated fraud on the part of venal bankers, such that jailing our Dimons and Blankfeins and Lewises will offer the best means of avoiding a replay in future.³ The second tendency has been manifest in associated suggestions, in this case heard more from the scholars than from the activists, that “better governance” of our financial institutions will avoid “excessive risk-taking” in the future and thereby prevent the next crisis.⁴

There is no doubt—none at all—that regulatory violations and outright criminality were rampant in the lead-up to 2008.⁵ There also is little doubt that, as corporate governance scholars would have it, more conscientious attention on the part of firm fiduciaries to the long-term health both of financial firms and of the environments within which they operate is something worth seeking. I am convinced, however, that neither of these species of “reform” can suffice to render the financial system, as distinguished from particular institutions operating within it, safe and sound. And so I am skeptical that jailing more bankers or tweaking the

1. Where prevention involves post hoc punishment, an additional human proclivity might be satisfied—the tendency to seek retribution.

2. A variation, this, on the old saw that when one holds a hammer, everything looks like a nail.

3. See, e.g., Joe Pinsker, *Why Aren't Any Bankers in Prison for Causing the Financial Crisis?*, ATLANTIC (Aug. 17, 2016), <http://www.theatlantic.com/business/archive/2016/08/why-arent-any-bankers-in-prison-for-causing-the-financial-crisis/496232/>.

4. See, e.g., Klaus J. Hopt, *Better Governance of Financial Institutions* (Eur. Corp. Governance Inst., Working Paper No. 207/2013, 2013), <http://personal.lse.ac.uk/schustee/hopt%20governance.pdf>; Hamid Mehran et al., *Corporate Governance and Banks: What Have We Learned from the Financial Crisis?* (Fed. Reserve Bank of N.Y., Staff Report No. 502, 2011), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr502.pdf; see also works cited *infra* Part IV.

5. See, e.g., FIN. CRISIS INQUIRY COMM'N, THE FINANCIAL CRISIS INQUIRY REPORT: FINAL REPORT OF THE NATIONAL COMMISSION ON THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES (2011), <http://www.gpo.gov/fdsys/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf>.

duties of bank fiduciaries will get us where we want to go—however desirable such measures might be on other grounds.

In this Symposium Article I shall attempt to explain and defend my skepticism, then convert it to a new face of optimism. I claim that “what goes wrong”—or at any rate, most consequentially wrong—in episodes of financial dysfunction has little to do with the violation of norms of legality, morality, or even rationality, and hence that crashes like that of 2008 can occur even among societies of angelic Mr. Spocks. I then claim that it follows from this observation that no form of piecemeal tinkering with the duties of financial fiduciaries—that is, agents whom the law requires to act faithfully on behalf of private sector principals who participate in the financial markets—as presently constituted can assist more than marginally in heading off market catastrophe. Rather than operating at the level of persons or firms, in short, we must work at the level of systems—systems that are more than mere sums of their parts.⁶ And that means either wholesale regulatory overhaul, or—what might come to the same thing—wholesale rethinking of whom bank fiduciaries *always*, not just in crisis, are really fiduciaries *for*.

My argument proceeds as follows: The next Part elaborates and defends my claim that financial dysfunction is not primarily a product of defects of legality, morality, or even rationality. I argue that bubbles and busts are instead species of what I call “recursive collective action problems.” These are circumstances in which iterated, mutually responsive, perfectly rational decisions aggregate into calamitous outcomes. Circumstances of this sort, I demonstrate, are particularly rife in financial markets and indeed macroeconomies more broadly. And this means a host of problems that we must address in finance are not addressable by targeting defects of rationality, morality, or even legality on the part of private market participants.

Part III then turns to the “deep structure” of fiduciary relations, pursuant to which one person acts in the stead of another. Because such acts include the same (innocent) behaviors as those discussed in Part II, I argue, private law fiduciary duty offers little, if any, solution to recursive collective action problems of the kind discussed in that Part—at least if private market participants are the beneficiaries of the duty in question. This is because that which renders the decisions that enter into collective action problems unobjectionable when taken by private sector *principals* carries over to the case of such decisions being taken by *fiduciaries* who act

6. For further elaboration of the significance of talk of “parts” and “sums of parts” here, see Robert Hockett, *The Macroprudential Turn: From Institutional “Safety and Soundness” to Systemic “Financial Stability” in Financial Oversight*, 9 VA. L. & BUS. REV. 201 (2015).

on *behalf* of those principals. And this in turn means that bubbles and busts, as species of recursive collective action problems, are simply not amenable to solution by tweaking the duties of private sector fiduciaries.

Part IV then considers whether there is anything unique in the duties of *bank* and other *financial* fiduciaries that might underwrite an exception to the conclusions reached in Part III. It finds that while there is much that is unique—or in bank regulatory parlance, “special”—about banks and other financial institutions, little of what is *ordinarily* identified as such carries over to the duties of their fiduciaries. The reason, I argue, is that what is *most saliently* special about these institutions stems from their systemic relations with the sovereign public, not with the internal relations between themselves and their fiduciaries. Hence, while we *might* well reasonably wish to impose heightened standards on bank and other financial fiduciaries going forward, no such duties will be *private sector* fiduciary duties. They will be either regulations or they will be duties of bank officers and directors reconceived as *public* fiduciaries, not private ones. Part V then concludes.

II. THE STRUCTURE OF SYSTEMIC FINANCIAL DYSFUNCTION

That which renders banks special, vulnerability-wise, is typically said to be the “maturity-transformative” character of their business model. Banks borrow short and lend long. This notoriously leaves them prone to “panics” or “runs.” Runs, in turn, are more or less widely recognized, at least by reasonably sophisticated observers, to be collective action problems—problems in which multiple individually rational actions can aggregate into collectively irrational outcomes.⁷ Until 2008, however, one additional fact seems to have been less widely recognized, while two more important facts seem to be inadequately recognized even now.

The first additional fact is that banks’ maturity-transformative business model has long since spread beyond banking to other sectors of the financial system. Repo and derivative markets, to take two conspicuous examples, had by 2008 become quite as vulnerable to runs as the banks were before federal deposit insurance.⁸ Hence the recognition by some, even before 2008, that the financial system now had a “shadow” banking

7. See generally Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POL. ECON. 401 (1983).

8. See generally the now regularly cited commentary by my colleague Paul McCulley. Paul A. McCulley, *Teton Reflections*, PIMCO (Sept. 2007), <https://www.pimco.com/insights/economic-and-market-commentary/global-central-bank-focus/teton-reflections> (coining the term “shadow banking” in an address to fellow participants in the 2007 Federal Reserve Bank conference at Jackson Hole, Wyoming).

sector operating in parallel with the traditional banking sector.⁹ And hence many of Dodd-Frank's provisions that pertain, not to banks as such, but to derivatives markets and market utilities as well.¹⁰

While the significance of shadow banking has come to be widely recognized, however, two other aspects of bank and shadow bank vulnerability do *not* yet appear to be adequately appreciated. The first is that banks and shadow banks are subject not merely to collective action problems, but to what I call *recursive* such problems, which are much worse in magnitude.¹¹ This means that these problems threaten to bring not merely harm, but calamity.¹²

The second fact is that, to solve a collective action problem, you really need a form of collective *agency to deal* with the problem.¹³ You require agents able to act in the name of *all* members of the collectivity in question—indeed, often, the public as a whole—rather than merely some of them.¹⁴ This means, we'll see, that to look to the duties of private sector fiduciaries is to look in the wrong direction where the worst financial perils are concerned. If we are set on appealing to the notion of fiduciary obligation in this sphere, we are going to have to start thinking in terms of public, not private, fiduciaries.

We will better appreciate the truth of these claims by first looking more carefully at the nature of what I call recursive collective action problems. As noted before, these are vulnerabilities that seem especially pervasive in financial markets and sectors of the macroeconomy that link up significantly with those markets.

A. *Recursive Collective Action Problems*

What I am labeling recursive collective action problems, or “recaps” for short, are pervasive in financial markets and indeed macroeconomies more generally.¹⁵ In fact, many of the most vexing challenges familiar to observers of financial systems and monetary economies are best understood

9. *Id.*

10. See Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, tit. VII–VIII, 124 Stat. 1376, 1641–1822 (2010).

11. See Robert C. Hockett, *Recursive Collective Action Problems: The Structure of Procyclicality in Financial and Monetary Markets, Macroeconomies, and Formally Similar Contexts*, 3 J. FIN. PERSP. 113 (2015).

12. *Id.*

13. *Id.*

14. *Id.*

15. *Id.*

as examples of this general type.¹⁶ It is accordingly somewhat surprising that recaps have been so little studied.

Let's begin with a quick definition.¹⁷ That which I call a recursive collective action problem is a situation in which (1) multiple decisions that are individually rational in the absence of coordination (2) aggregate into collectively irrational outcomes, which outcomes then (3) render it rational for agents to take yet more decisions along the same lines as in (1), which then compounds the irrationality at work in (2), *ad infinitum*.¹⁸ Conditions (1) and (2) are what render these problems "collective action" problems. Condition (3) is what renders them "recursive," possessed of the familiar feedback-fed, self-exacerbating property that deprives some interactions among multiple agents of tolerable equilibria. It will be helpful to say a bit more about each of these three conditions.

1. *Individually Rational*

The form of rationality involved in a recap is familiar to economists and other choice theorists. Per this form of rationality, chosen means are reasonably believed by choosing agents to conduce to desired ends.¹⁹ Typically some form of "maximization" is involved in the choosing, in that the agent's choices are consistent with maximizing the degree to which some antecedent preference or set of preferences is satisfied.²⁰ The shepherds familiar to the commons tragedy, for example, aim to maximize the availability of nutrients to their animals.²¹ The prisoners perplexed by the prisoners' dilemma, for their part, aim to minimize terms of imprisonment, hence to maximize time out of jail.²²

There are, of course, well-known objections to "instrumental," or "means-ends" conceptions of rationality of this general sort. There are

16. *Id.*

17. The remainder of this Part draws heavily on Hockett, *supra* note 11.

18. Or at any rate, *ad sub-optimum*, in a sense to be further elaborated below.

19. The consensus choice for *locus classicus* of this take on rationality appears to be DAVID HUME, A TREATISE OF HUMAN NATURE (L.A. Selby-Biggie ed., Clarendon Press 1896) (1739). Since MAX WEBER, THE PROTESTANT WORK ETHIC AND THE SPIRIT OF CAPITALISM (Talcott Parsons, trans., Charles Scribner's Sons 1958) (1904–1905), it has been common to refer to this form of rationality as instrumental.

20. See, e.g., WEBER, *supra* note 19.

21. The reference is to Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243 (1968), which popularized the notion of commons tragedies first publicly lectured upon by William Forster Lloyd. See W. F. LLOYD, TWO LECTURES ON THE CHECKS TO POPULATION (1833).

22. The "Prisoners' Dilemma" is surely the best known of game-theoretic choice situations, discussed in every text on the subject. The original formulation of the dilemma appears to have been devised by Albert W. Tucker in 1950. See WILLIAM POUNDSTONE, PRISONER'S DILEMMA 117–18 (1992).

complaints that it has no positive explanatory value, for example, in view of the ease with which putative ends can be recharacterized post hoc as to rationalize means and the ends to which they conduce.²³ There also are Aristotelian objections to the effect that ends, too, can be (now normatively) rational or irrational, meaning that instrumentalist accounts of rationality à la Hume are too limiting given the concept of rationality's ineluctably normative valence.²⁴

None of these concerns, important as they are in other contexts, need trouble us here once acknowledged. Our purpose here is to show that in some circumstances, even those in which the applicability of this form of rationality appears to be uncontroversial, everyone's doing the individually rational thing in isolation can issue in everyone's doing the collectively irrational thing in aggregate. And, crucially, this can occur in a manner that not only prevents maximization of what each agent individually prefers, but even can maximize what each individual *dis*prefers.

2. *Collectively Irrational*

The "collective irrationality" involved in a recap is to be understood by reference to the individual rationality whose end it frustrates. It involves subversion of precisely that end which the agents in question are rationally seeking in their disaggregated, individual capacities. This is precisely why the individually rational decisions that aggregate into an irrational outcome are said to be collectively irrational, or "collectively self-defeating." It is also why the resultant choice situation can be labeled, as I shall label it, "tragic," "ironic," or "paradoxical." The understanding upon which these characterizations are predicated is that the individual decisions are (rationally) aimed at something—some end—and that the particular circumstance in which those decisions are being taken is structured in such a way as renders the end more elusive precisely when all individuals do the rational thing—i.e., when they (rationally) pursue it.

23. This and related concerns are nicely laid out and discussed, for example, in JOSÉ LUIS BERMÚDEZ, *DECISION THEORY AND RATIONALITY* (2009). Among the more searching and pioneering of contemporary investigations of decision theory and rationality are the papers collected in DONALD DAVIDSON, *ESSAYS ON ACTIONS AND EVENTS* (2d ed. 2001).

24. See, for example, PHILIPPA FOOT, *NATURAL GOODNESS* (2001), for a philosophically sophisticated, Aristotelian meditation on the rational critique to which ends can be subject. For a cognate jurisprudential take on the subject, see JOHN FINNIS, *NATURAL LAW AND NATURAL RIGHTS* (1980). For an early expression of skepticism about instrumental rationality by two economists, see George J. Stigler & Gary S. Becker, *De Gustibus Non Est Disputandum*, 67 *AM. ECON. REV.* 76 (1977).

3. *Recursively Self-Amplifying*

What renders a recursive collective action problem recursive is its self-amplification characteristics, which are in turn rooted in part in the maximization behavior associated with instrumental rationality itself as characterized in the previous two Subparts. The recursion at work here, in other words, stems in part from the form of rationality described in Part II.A.1 just as the irrationality described in II.A.2 does. Indeed, the element of recursion stems from the mutual interaction of individually rational decisions themselves when decisions can be iterated.

In essence, the process runs thus: Individuals first act rationally—and separately, without coordination—each to maximize the value of some desired variable, call it x . In so doing they employ means that, absent the presence of other actors, are well adapted to the task of maximization. *Multiple* individuals acting thus individually rationally, however, not only frustrates the maximizing purpose, but actually works to *minimize* that purpose's satisfaction. Individuals have less of what they seek (less x), in other words, after all of them seek more than they would have had if none of them had sought to maximize (rather than, say, "satisfice") in the first place.²⁵

When this happens, however, individuals do not adjust their preferences. Instead they repeat their maximizing actions, since their ends are still unfulfilled and indeed less fulfilled than they would have been had *not* everyone acted individually rationally. Hence the process repeats itself, *ad infinitum*, such that each round of individually rational decision-making paradoxically carries each individually rational agent further from maximal x . No tolerable equilibrium, in other words, characterizes these sets of interactive decisions. They are in this sense procyclical—a fact that bears critically upon their salience for finance-regulatory and macroeconomic purposes as discussed further below.

B. *Some Examples*

I noted above that recaps are pervasive, and that they are particularly common in the guise of many procyclicalities that afflict financial markets

25. In referencing the concept of satisficing, I am of course alluding to the work of Herbert Simon, particularly as encountered in HERBERT A. SIMON, *ADMINISTRATIVE BEHAVIOR* (3d ed. 1976), and Herbert A. Simon, *Rational Choice and the Structure of the Environment*, 63 *PSYCHOL. REV.* 129 (1956). The idea is that cognitive limitations in many circumstances render optimization behavior taking the form of boundless maximization quite futile, such that decision-making often does better to proceed on the basis of some threshold of acceptability rather than some maximandum. Careful philosophic treatment of Simon's idea can be found in MICHAEL SLOTE, *BEYOND OPTIMIZING: A STUDY OF RATIONAL CHOICE* (1989).

and macroeconomies. It will be helpful now to run through a few examples. This will both aid intuition and underwrite understanding of what is required to solve this particularly vexing form of challenge. To help insure that desired outcome, I choose all but the first example with financial market applications in mind.

1. *Arms Races*

Let's begin with a simple example, relative to which subsequent examples constitute only slightly more complex variations. We first consider two parties, each of whom aims to maintain parity with—or perhaps, under conditions of uncertainty, to maintain a certain “margin of safety” relative to—the other by stockpiling an equal or marginally greater number of weapons than the other. The ultimate aim in each party's case is to maximize and maintain something we'll call “security.”²⁶

Given this end, it is instrumentally rational, absent coordination, for Party 1 to define his aim relative to Party 2's stockpile—say, by aiming for rough parity with Party 2's stockpile, or for parity with Party 2's stockpile plus some small increment d to compensate for uncertainty as to just how large Party 2's stockpile actually is. The problem here, of course, is that, as in all collective action problems, what's sauce for the goose is likewise sauce for the gander. It is just as rational for Party 2 to define her aim relative to Party 1's stockpile—say, by aiming for parity with Party 1's stockpile plus increment d —as it is for Party 1 to define his aim relative to Party 2's stockpile. The parties' aims are in this sense mutual—they are mutually regarding—and that is in fact part of the problem. It is the sense in which the problem is group-mediated and internally “interactive,” hence apt to be iterated.

And so, if you'll pardon a pun, we are off to the races. Starting from a position of rough but uncertain parity, Party 1 adds d to his stockpile “just to make sure.” Party 2 responds by adding $2d$ to hers— d to match, another d just to make sure. Party 1 then responds to the response by adding $3d$ to his— $2d$ to match, plus another d 's worth to achieve a buffer. And so on. The race is self-reinforcing and self-exacerbating. It is recursively procyclical.

26. See generally THOMAS C. SCHELLING, *ARMS AND INFLUENCE* (1966); THOMAS C. SCHELLING & MORTON H. HALPERIN, *STRATEGY AND ARMS CONTROL* (1961); THOMAS C. SCHELLING, *THE STRATEGY OF CONFLICT* (1960). Much more, of course, has been written on the structure and dynamics of various species of arms race, much of it for obvious reasons during the period extending from the late 1940s through the late 1980s. Indeed much of the early work in “game theory” itself, a good bit of it sponsored by the RAND Corporation, appears to have been occasioned by the arms race dynamic of the Cold War. And earlier contributions, dating back to the 1930s, themselves of course came along during times of significant international tension.

Arms accordingly accumulate and expenses grow with them, *ad infinitum*. Yet the parties are no better off, security-wise, late in the game than they are early in the game. Indeed they are likely much worse off even on the security front alone, quite irrespective of pecuniary expense, given both (1) the dangers of stockpiled weapons and (2) the temptations to launch preemptive wars during brief intervals of relative advantage, occasioned by all arms races. Hence the race is enormously wasteful and downright destructive—a sheer deadweight loss for both parties both in pecuniary and in security terms. And in this sense it subverts the very ends in terms of which the parties' means-rationality is to be understood.

Of course the example is stylized. Real arms races are more complex and nuanced than this. But the essential idea applicable to all variations on the stylized example is nevertheless clear: The aim of each party is greater security attained cost-effectively; and yet the race, by steadily increasing the quantum of arms and encouraging preemptive aggression during brief intervals when advantages are had, renders all less secure, while also occasioning enormous pecuniary expense. And things only grow worse in these very respects with each iteration.

Critically, moreover—a point that will figure quite prominently below—*neither party can unilaterally quit, let alone stop, the race* without thereby relinquishing its aim of security. That is why unilateral disarmament is nearly universally eschewed and repudiated. It is as individually irrational to stop racing, in other words, as it is individually rational and collectively irrational to continue racing. You're damned if you do, collectively and hence ultimately individually, and damned if you don't, individually. This is precisely the sense in which arms races, like all collective action problems, are tragic (in the original, Attic Greek sense of the word).

2. *Consumer Price Inflations*

Now suppose it is Tuesday, and that you ordinarily purchase your groceries on Fridays. Some of your neighbors typically do likewise, while others typically shop Thursdays and still others shop Wednesdays. All of you now suddenly notice that prices advertised on the grocery store billboards are higher today than they were yesterday. Some of you also had noticed last week that prices then were a bit higher than they were several days earlier. It might begin to look likely, then, that prices will be higher later this week than they are now. This might be so even if, in fact, whatever induced the earlier price rises—e.g., some underlying “fundamental” such as a temporary, accident-induced grain shortage—is no longer at work by this point.

Against this backdrop, it might well appear to be individually rational for you to purchase your groceries today, Tuesday, rather than waiting until Friday. Prices might very well, after all, be higher by then. Matters will look likewise to your neighbors: today, Tuesday, looks better than Wednesday or Thursday to them as well. For again, prices might well be higher by then. So each of you and your neighbors rationally accelerate your purchase of groceries. You buy today rather than later in the week when prices might be higher.

But now note that all of your acting rationally in this manner can bring on or worsen the very eventuality in the contemplation of which you have chosen to shop now. All of you drive prices yet higher than they would otherwise be by accelerating your demand for the products you're buying. But that fact cannot warrant *refraining* from purchasing on the part of any of you acting separately, for none of you can single-handedly prevent prices rising any more than you can stop the most salient losses wrought by an arms race by unilaterally disarming.

You are accordingly once again damned if you do, collectively, and damned if you don't, individually. And matters of course continue to unfold in this manner, and indeed worsen, indefinitely. For your all-inducing price acceleration gives you reason to accelerate purchasing behavior yet further, thereby inducing yet more rapid price acceleration, and so on, procyclically.

Some such dynamic as this is what characterizes any self-reinforcing, procyclical consumer price inflation or "spiral," as they used to be called. On the one hand, it is individually rational, once prices seem likely to rise somewhat in future, to act preemptively by accelerating one's purchasing decisions. Insofar as one's expectations of such price rises are plausible, moreover, it is symmetrically *irrational not* to do so. And yet, everyone's continuing on the treadmill collectively brings on and steadily worsens precisely those losses that stepping onto the treadmill is meant individually to minimize.

3. *Asset Price Bubbles*

Now consider again the immediately preceding example—that of a consumer price inflation—but change the object of purchase from groceries to financial assets of one sort or another. In addition, for at least some cases, add one more element to the story—viz. the availability of credit at low cost to purchase the assets in question, which latter one can sell after appreciation to pay off one's debt while still pocketing a nontrivial

margin.²⁷ In such cases, we shall have told the tale of an asset price bubble, which is merely a price inflation in respect of financial assets rather than groceries.

In the credit-augmented case, for its part, we shall simply have told the tale of a particularly dangerous—because even less amplitude-limited—rendition of such inflation. Indeed, where credit comes into the picture, the asset price bubble can readily become something more than a mere inflation. It can become a full hyperinflation, pursuant to which price rises occurring at, say, velocity v during one iteration directly induce further rises at velocities exceeding v over subsequent iterations.

There are two reasons for financial assets' being particularly vulnerable to this pattern, both of which constitute sides of one coin. First, people often—perhaps typically—purchase financial assets these days less to consume or even to “hold” them than to “flip” or resell them. Hence there is no natural “satiation” point where their purchase is concerned as there is in the case of most consumer goods. Buyers will buy for as long as the prices are rising, and indeed aim to profit by sales after such price rises in ways that they typically do not, save in exceptional circumstances, in the case of consumer price inflations. Second, because, in light of the first point, people will rationally borrow in order to buy for as long as the asset price rises exceed rises in credit costs—something that is, again, much less common in consumer goods markets, even when consumer credit is available—there is no “natural,” consumption-rooted limit to the price levels that might be attained by financial assets. These can rationally rise for as long as credit remains sufficiently cheaply available to purchase them.²⁸

Since a credit-fueled asset price bubble is just a (particularly dangerous) form of inflation, it bears the same rationality structure as an inflation. It is individually rational, instrumentally speaking, for market participants to borrow in order to buy financial assets for as long as their prices rise faster than credit costs—for as long as, that is, there is a “spread” for speculative buyers to arbitrage or “leg.” By the same token, however, it is just as collectively irrational, again instrumentally speaking, for market participants to keep participating. For at some inherently

27. For present purposes, “low cost” credit can be either or both of (a) credit available at low interest rates and (b) credit available on the basis of little down payment or collateral—hence high leverage availability.

28. For fuller elaboration of this point, as well as careful comparison and contrast of credit-fueled asset price hyperinflations and more garden variety consumer price inflations, see Robert Hockett, *A Fixer-Upper for Finance*, 87 WASH. U. L. REV. 1213 (2010) [hereinafter Hockett, *A Fixer-Upper for Finance*]. See also Robert Hockett, *Bailouts, Buy-Ins, and Ballyhoo*, CHALLENGE, Mar.–Apr. 2009, at 36; Robert Hockett, *Bubbles, Busts, and Blame*, 37 CORNELL L. FORUM 14 (2011).

uncertain point the credit will run dry; people will begin selling off assets to pay down their debts left from earlier credit-financed purchases; and prices will then commence dropping at least as precipitously as they rose, leaving debt deflation and consequent recessionary spiral in their wake.²⁹ And yet, once again, no individual can unilaterally terminate either process.

It should also be noted, if only in passing, how the individual rationality of decisions to purchase assets during the course of a bubble can in effect radiate outward, rendering other decisions at least temporarily rational as well. It is more rational, for example, at least for a time, to lend to an otherwise less worthy borrower during a credit-fueled asset price hyperinflation, at least if the asset to be purchased with the loaned funds is itself to collateralize the loan, for the expected value of the loan rises with the value of the collateral. It is likewise more rational, for similar reasons, to “extend” oneself further as a borrower under such circumstances, as well as to assign higher credit ratings as a rater to borrowers. And if one is in competition with others, it is not only individually rational to do these things, but individually irrational not to do them—for reasons similar to those that oblige arms race participants to keep racing.

It also bears noting that it is even individually rational under the circumstances here described, for some of the same reasons, for some so-called functional regulators to permit more on the part of borrowers and lenders than they would otherwise do—at least if, like other functional regulators, they are regulating individual persons or institutions for their individual “safety and soundness” rather than entire financial systems for their “systemic stability.”³⁰ That last proviso offers a hint as to what we shall have to conclude below in Parts II.C and II.D in the way of how to *address* recaps. The key is to supplement traditional fiduciary duties and “microprudential” regulatory regimes, whose injunctions can tend toward procyclicality precisely in virtue of the recursive collective action problems to which regulated persons and entities are subject, with system-focused, countercyclically operating “macroprudential” regulatory regimes of the type discussed below in Parts II.C and II.D.³¹

29. See sources cited *supra* note 28.

30. See Hockett, *A Fixer-Upper for Finance*, *supra* note 28, on this point. For yet more on the critical distinction between institutional and systemic focus on the part of financial regulators, see Hockett, *supra* note 6, and Robert C. Hockett & Saule T. Omarova, “Private” Means to “Public” Ends: Governments as Market Actors, 15 THEORETICAL INQUIRIES L. 53 (2014). See also Robert C. Hockett & Saule T. Omarova, *Public Actors in Private Markets: Toward a Developmental Finance State*, 93 WASH. U. L. REV. 103 (2015) [hereinafter Hockett & Omarova, *Public Actors in Private Markets*].

31. See sources cited *supra* note 30.

4. *“Leverage” Arms Races*

Suppose now there is an asset price bubble underway. For the reasons rehearsed in connection with that phenomenon just above, it is rational not only for individual investors to take part but also for financial institutions to do so. After all, much of the income derived by these institutions derives from investment activity. Now recall one more observation made in connection with asset price bubbles—it is individually rational not only to buy in these circumstances but also to borrow in order to buy as much as possible. For one borrows at fixed rates, while asset prices rise at accelerating rates, during bubbles.

When a financial institution borrows in order to invest, we say that it “levers” its purchases of investment assets. It relies on leverage. The alternative to relying on leverage, if I may oversimplify a bit for expository purposes, is reliance upon either the firm’s own money or owner money—shareholder equity. This alternative is of course safer than leverage, inasmuch as the firm owes itself and its shareholders nothing in the event that investments go bust. Reliance on leverage, by contrast, exposes the firm to potential insolvency in the event that investments go bust—after a crash, it can end up owing more than it owns.

So there is a balance to be struck, where financial institutions just as individual investors are concerned, between highly profitable but risky reliance on leverage on the one hand, and much less profitable but also much safer retention of equity—“capital buffers”—on the other hand. But now consider what is apt to happen when multiple financial firms are in competition with one another during an asset price boom. Firm 1’s officers might be inclined to maintain a margin of safety by seeking the equivalent of, say, 10% of its balance sheet in the form of partner or shareholder equity. Firm 2’s officers might be similarly inclined, yet might also see that they can boost profits by knocking the buffer back to, say, 8% and using more borrowings to lever up the balance sheet. The greater profitability that additional leverage brings will attract more clients and thereby lower the firm’s cost of capital, including equity capital itself. It might indeed peel away many of Firm 1’s clients, thereby raising Firm 1’s cost of capital. Firm 1 might accordingly have to respond. It might now lower its buffer from, say, 10% to 6%, undercutting Firm 2. Firm 2 will then find it profitable to respond to Firm 1’s response. And so on.

The structure here is, of course, identical to that in the conventional arms race. Each firm is acting rationally, and yet the “financial system” that these two firms constitute is becoming steadily more risky as capital buffers drop and aggregate leverage rises. This is the case even if all firms—and their investors, and their fiduciaries—would rather maintain higher capital buffers. For the crucial thing is, again as in the arms race,

that *no one participant can end the race*. Unilateral disarmament here, in the midst of a competition, means losing profits, hence losing investors to other firms, hence losing more profits as the firm's cost of capital rises, and so on, in the familiar downward spiral.

This suggests two things we shall have to take up in more detail below. First, capital regulation—and many other forms of macroprudential, i.e. systemic risk regulation—can be likened to enforceable arms control agreements. They can deliver what people wish—safer competition—but are unable to supply acting severally rather than jointly through the state. And second, in the absence of such regulation, financial fiduciaries who take on more risk for their firms are doing what is actually “good” for the firm and its constituents, at least for as long as the un- or inadequately regulated competition endures.

5. *Bank Runs*

Now to an example with which all finance-regulatory scholars are at least passingly familiar. Consider a system of fractional reserve banking without deposit insurance. All depositors in a certain bank know that the bank does not have sufficient liquid assets on hand to accommodate all of them should they all decide to withdraw all of their funds at one instant. This does not ordinarily trouble them, however, because (1) it is in general highly unlikely that all depositors will wish to withdraw all funds at one time, and (2) the bank's investing a large portion of all deposits in assets less liquid than cash enables the bank to earn returns that are passed on in part to depositors in the form of interest borne by their accounts.

But suppose now that some rumor or other piece of information apparently bearing upon the bank's ultimate solvency, which for whatever reason is not implausible even if happening to be false, begins to spread among depositors. Each depositor knows that in the event that the bank's solvency really is shaky, the bank will not be able to pay all of its depositors what it owes them. Hence any depositor who is early in the queue to withdraw funds will be less likely than other depositors to lose anything. At the same time, should the information that has occasioned concern ultimately prove untrue, any such depositor can simply place her funds back in the same or some other bank without loss once the truth is established. So she loses virtually nothing by going ahead and withdrawing early,³² while she risks losing everything if she does not.

What all of this means, of course, is that all depositors can find it individually rational to seek to beat all of the others to the bank to

32. She suffers only the inconvenience of the withdrawal and ultimate redeposit.

withdraw, and indeed individually irrational not to do so. No one depositor can end the run unilaterally, after all. It also means that with each withdrawal by someone other than you, the likelihood grows that you might lose something or everything should your bank fail. In effect, then, a form of recursive “bums rush” much like an arms race can commence, with every individual withdrawal rendering further such withdrawals that much more prudent—more rational—and hence likely. The run is in this sense self-reinforcing. It is recursive.

If a race like this does commence, and the bank is actually solvent at bottom, the depositors will then have brought on the very eventuality in contemplation of which they have acted. The liquidity crisis with which they confront the bank will in such case have transitioned into a full-blown solvency crisis, leaving most depositors empty-handed in the aftermath. And this can be so, again, even where the bank is, absent the run, perfectly solvent at its core. What is more, inasmuch as the “information” that precipitates such a run on one bank often can be as little as “news” to the effect that there have been runs on some other banks, the run phenomenon can bring down an entire banking system—indeed, before deposit insurance, it often did.³³ Such is the sense in which bank runs are often described as “contagious.”³⁴ So contagion itself can be underwritten by what is at bottom a recursive collective action problem.

As with the arms race, then, so with the race to the bank during a run: multiple individually—and at each iteration, increasingly—rational decisions here aggregate into a collectively—and with each iteration, increasingly—irrational, self-defeating outcome for all but a very few depositors. The only exceptions are those who are first in the queue, who might be analogized to arms racers who succeed in launching preemptive strikes against other arms racers. It is perhaps theoretically possible for someone to “win” such races, but by far most parties “lose,” with the likelihood of winning sufficiently low for each racer as to render the race itself worse, in a probabilistic sense, for each racer than would be no race at all. And yet also here, as again in the typical arms racing case, no single racer can stop the race or exit it in any satisfactory manner by unilaterally disarming.

33. See, for example, the colorful instances in past U.S. banking history recounted in GARY B. GORTON, *SLAPPED BY THE INVISIBLE HAND: THE PANIC OF 2007* (2010).

34. For an account of that contagion that marked the Asian financial crisis of the late 1990s, see, for example, Robert Hockett, *From Macro to Micro to “Mission Creep”: Defending the IMF’s Emerging Concern with the Infrastructural Prerequisites to Global Financial Stability*, 41 *COLUM. J. TRANSNAT’L L.* 153 (2002).

6. *Asset Price “Fire Sales” (or “Busts”)*

Now consider the bank run example adduced above and slightly alter the object of the activity in question. Change the asset from which one “runs” from a bank deposit to a financial instrument saleable on the securities markets. In such case we shall have a run on assets, a.k.a. fire sale, which is structurally identical to a run on a bank. A holder of the asset receives plausible information—perhaps no more than rumors—concerning the issuer or asset’s ultimate soundness. She knows that if others receive the same information and begin selling their holdings, the asset will quickly lose value in the market. It is accordingly in her interest—it is individually rational, instrumentally speaking—to sell her holdings before others sell theirs. That way, she minimizes pecuniary loss and salvages value. This is all the more true insofar as she always can purchase the asset back—possibly even at lower, post-panic cost—should the earlier information prove ultimately unfounded.

Once again, however, what is sauce for the goose here is sauce for the gander. It is just as individually rational for most or all other holders of the asset to aim to be quick to shed holdings as it is for the first agent. But lo, everyone’s acting instrumentally rationally in this way brings on the very result that was feared—a precipitous drop of the asset’s value and associated collective calamity. And each such drop induces further such drops at accelerating rates, per the familiar recursive, feedback-fed dynamic. As in the bank run example, moreover, all of this will be so even if the rumors prove ultimately to have been unfounded, and no individual can stop the rumor-fed process from occurring.

At the same time, however, the run on assets example stands to the bank run example rather as the asset price bubble example stands to the consumer price inflation example: losses are magnified here because busts follow bubbles in which agents have incurred significant *debt* in making their bubble-magnified purchases. Those debt obligations do not fall with the prices of assets that the borrowed funds have purchased, meaning that people are left with significant “debt overhang” in the wakes of these busts in a manner they’re not after typical bank runs. They are left “underwater.”

This is precisely why recessionary spirals of the kind considered above are most severe after credit-fueled asset price bubbles and busts—which latter themselves are among the most forceful of “shocks” of the sort mentioned there. Those with debt overhang don’t spend as do those without overhang. They (slowly) pay down debt. Hence Irving Fisher’s profound

diagnosis of the depression of the 1930s as a “debt deflation.”³⁵ Much of the world is living in the aftermath of such a debt deflation even at the time of this writing—a deflation following that asset price hyperinflation that went into reverse, then to bust, between 2007 and 2009.³⁶

It also bears noting here that, just as in the case of the asset price bubble, so here with the bust, that which renders it instrumentally rational for individuals to act in manners that aggregate into collectively dysfunctional outcomes also can render it rational for other agents to act reinforcingly. It is financially rational, for example, for a creditor who sees her debtor’s collateral plummeting in value either to accelerate the debt or to place a “margin call” demanding that the collateral be topped off—all the more so if mark-to-market accounting practices are widely followed or even imposed by regulators.³⁷

It is similarly rational for microprudential regulators, who key liquidity or capital requirements to asset risk, to demand more buffer of regulated entities whose asset values begin dropping during such runs.³⁸ But that in turn further fuels such fire sales—liquidations—of assets as partly constitute the run itself. Creditors and microprudential regulators accordingly act procyclically here just as they do during the price run-ups that are the antecedent bubbles. They do so because they are individually rational while caught in the grip of a recursive collective action problem. The problem is ultimately soluble only by means of the kind sketched below in Parts II.C and II.D.

C. *How We Solve Them*

Recursive collective action problems, as just characterized, are both formidable and, often enough, devastating. That they are potentially devastating is clear from the brief sampling of particular manifestations provided in Part II.B, all of which involve not merely irony, but indeed tragic irony. That they are formidable is presumably clear from their paradoxical—their “ironic”—characteristics as analyzed in Part II.A: they are collective irrationalities that spring from the aggregation of individual

35. The *locus classicus* is IRVING FISHER, *BOOMS AND DEPRESSIONS: SOME FIRST PRINCIPLES* (1932). For a recent diagnosis of the present period as one of Fisher-style debt deflation, see Daniel Alpert, Robert Hockett & Nouriel Roubini, *The Way Forward: Moving from the Post-Bubble, Post-Bust Economy to Renewed Growth and Competitiveness*, POLICY PAPERS (New Am. Found., Wash., D.C.), Oct. 2011.

36. See sources cited *supra* note 35.

37. See sources cited *supra* note 28.

38. See sources cited *supra* note 28.

rationalities, the latter of which we cannot expect—or even sensibly wish—to extirpate. What then to do?

The key, I suggest, lies in focusing upon two of these problems' three basic features: first, the collective aspect of their collective irrationality; and second, the rational aspect of their individual rationality. To solve our most formidable recursive collective action problems, in short, requires our first assuming collective agency and then collectively acting to render certain individual decisions—those that aggregate into collective calamity in each kind of recap—no longer instrumentally rational. The remainder of this Part briefly elaborates on this fundamental idea.

1. *Collective Rationality via Collective Agency*

For collectively irrational outcomes to be possible, something has to be missing—some prerequisite to collective rationation and resultant action. What is missing, in fact, is a *locus* or *situs* at which collective rationation and associated rationality can operate. In short, what is missing is *collective agency*, at least in the sphere of the activity in question—stockpiling arms, buying goods, purchasing assets, or what have you. To solve a collective action problem in these spheres requires collective action itself in these spheres, hence some form of collective agency. The relevant collectivity must be able to act in concerted fashion, either directly or via some agent duly authorized to act in the name and on behalf of all in the collectivity.

Where the collectivity in question either is or is part of a polity or some other aggregate of persons in whom the attributes of sovereignty vest—that is, a state—the most common form of such agency is a government or government instrumentality. In a state or other polity, government is the collective agent *par excellence*. It is the collective agent under whose ultimate collectivity-vested authority, and with whose supplemental assistance of various kinds, all individual and other, substate collective agents will operate.

Even the most die-hard of libertarians in effect acknowledge this collective agency function of government—when, for instance, they say that the “first duty” or “essential role” of governments is “national defense.” The reason is that collective defense itself poses a classic collective action problem—namely that subspecies typically referred to as the “free rider problem.”³⁹ It is individually rational, the story here runs, for

39. The *locus classicus* in this case is of course MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* (1965), the ubiquity of which is such as to lead the present Author almost to wish that he didn't have to cite it. For a skeptical take on the utility of free-rider problems as explanations or justifications of sundry policy measures, see RICHARD TUCK, *FREE RIDING* (2008).

each member of a collectivity in need of defending to let others do the job or foot the bill where defense is concerned, then to enjoy the positive externalities generated by their doing so. Border defense, after all, is a largely non-excludable public good. But this means that defense will be systematically underprovided if its provision is left to voluntary contributions of effort or funds, for it means that the latter is individually irrational. Hence even in libertarian fantasies, for collective defense at least the collectivity appropriately authorizes an agent—a government—to “provide for the collective defense.”

How governments discharge the appointed function, however, is as instructive for present purposes as the fact *that* they do it. For one way of looking at conscription, mandatory subscription—a.k.a. taxation—or both is as means by which those collective agents known as governments render it no longer individually rational to do that which, when all do it, results in collective and hence individual calamity. Collectivities in these instances, in other words, charge their governments with rendering it no longer instrumentally rational for individuals to attempt to free ride or shirk. Here lies the key to understanding how best to address all other recaps, including those sampled in Part II.B.

2. *Conforming Individual to Collective Rationality by Collectively Changing the Individual Calculus*

Collective agency is necessary but not sufficient to solve a collective action problem.

What else is required? The key to our answer lies in that other constitutive feature of the collective action problem additional to aggregation—viz. the individual rationality of the decisions that aggregate into collectively irrational outcomes in these situations. The duly appointed collective agent must, in short, act in the name of all to change the calculus of each, such that certain erstwhile individually rational decisions that aggregate into collectively irrational outcomes cease to be individually rational.

The idea is easily illustrated. Return for a moment to the collective defense example just considered. The individually rational decision that aggregates, when replicated by multiple actors, into calamity absent a collective agent is the decision to shirk or to free ride. What does a collective agent then do in this circumstance to avert collective calamity? The government simply changes the free rider’s calculus in either or both of two ways. It either (1) conscripts the free rider, in effect forcing him to take up arms on pain of imprisonment or worse; (2) conscripts the free rider’s resources, again on pain of imprisonment or worse, so as to fund the

collective defense; or (3) does both. Either way, it acts to render free riding no longer free, hence no longer individually rational.

In effect, government instrumentalities must do the same thing in solving each of the problem instances considered above in Part II.B. All that differs from case to case is the particular means employed, which of course varies according to those salient particulars which distinguish one recap from another.

In the case of an arms race, for example, parties wishing to stop the operation of the treadmill simply merge into—they jointly constitute—the requisite collective agent via the medium of contract (in this case, an arms control treaty), then mutually authorize subagents to inspect certain sites and verify mutual compliance with the agreement. Insofar as verification then can be reasonably relied upon, it becomes no longer rational to produce or procure more weapons. For doing so will incur significant costs—those occasioned both by the new weapons purchases and by subsequent iterations once the race is renewed—while affording no offsetting benefits, any of which are quickly cancelled out by retaliatory procurements by competitors.⁴⁰

The best-known collective solution to the bank run problem, as well as one such solution to a run on financial assets problem, involves rendering it no longer individually rational to run. In the bank run case, deposit insurance is of course the best known response in question. By assuring each depositor that any loss, up to some reasonable ceiling, occasioned by a bank's failure will be fully compensated, the deposit insurer eliminates the principal factor—possible loss—that renders running individually rational in the first place. It thereby prevents mere liquidity troubles from morphing into full-on insolvencies. While in theory this function can be, and historically has been, played at least imperfectly by privately ordered bank liquidity-pooling collectives like clearinghouses, governments with their monopolies on force and, therefore, taxation authority, hence on the “full faith and credit” that comes with such authority, often prove much more reliable.⁴¹

It should also be noted that deposit insurance, though inherently countercyclical at least in virtue of its run-stemming properties, can be designed in more and in less countercyclical renditions. The U.S. Federal Deposit Insurance system, for example, until 2005, operated procyclically where its method of premium assessment was concerned. For it assessed

40. See generally sources cited *supra* note 26.

41. See, for example, GORTON, *supra* note 33, at 56–57, for more both on the historic role of clearinghouses in addressing runs and on the design of the Federal Reserve System as a form of publicly backstopped, quasi-private clearinghouse arrangement.

premia only when the insurance fund fell below a stipulated floor level, which of course typically occurred only during times of multiple bank failures—meaning assessments were made principally during times of stress in the banking industry.⁴² Happily, the U.S. Congress rectified this in 2005 and 2006, through legislation that effectively renders the assessment system countercyclical.⁴³ In effect, then, this legislation implicitly recognizes deposit insurance’s function as a solution to a recursive collective action problem.

Turning now to the case of a run not on bank deposits but on financial assets, the collective agent now acts to render it no longer individually rational to run in a manner analogous, but not identical, to that afforded by deposit insurance. Here the agent—typically but not necessarily a central bank—announces its willingness to purchase all assets of a particular type at some floor rate which, on the one hand, amounts to a “penalty rate” relative to the asset’s price prior to the run, while on the other hand, constituting a rate well above market rate during the run.⁴⁴

Playing the “market maker of last resort” in this manner, the collective agent operates from “two sides,” as it were, to render it no longer individually rational to dump assets.⁴⁵ From the “down” side, the collective agent renders it no longer worthwhile for the asset holder to sell the asset at a price below the announced threshold, hence effectively prevents the asset’s plummeting below that threshold pursuant to the familiar “self-fulfilling prophecy” dynamic. From the “up” side, in turn, the collective agent affords, via the “penalty” in the penalty rate, incentive for asset holders to hold on to their assets rather than selling them even to the collective agent—at least where there is reason to suppose that the asset is being systematically undervalued by the panic-struck market, such that its value will recover in time once it has weathered the storm via other holders continuing to hold assets in virtue of the collective agent’s guarantee.

It also bears noting that, as in the case of deposit insurance, so here the collective agent who acts in the requisite manner to address an acute recursive collective action problem acts countercyclically and, in that

42. See DARRYL E. GETTER, CONG. RESEARCH SERV., R41718, FEDERAL DEPOSIT INSURANCE FOR BANKS AND CREDIT UNIONS 13–14 (2014).

43. See *id.* at 14.

44. See sources cited *supra* note 30; see also WALTER BAGEHOT, LOMBARD STREET: A DESCRIPTION OF THE MONEY MARKET (Richard D. Irwin, Inc. 1962) (1873) (first articulating the importance of the penalty rate).

45. See sources cited *supra* note 30. The canonical articulation of the vaunted “lender of last resort” role played by central banks is, of course, BAGEHOT, *supra* note 44. The ways in which “market-making” has become the new “lending” for these purposes is discussed in the sources cited *supra* note 30, as well as in PERRY MEHLING, THE NEW LOMBARD STREET: HOW THE FED BECAME THE DEALER OF LAST RESORT (2011).

sense, macroprudentially. The agent acts countercyclically in blunting the recursion, and macroprudentially in acting on behalf of the full collectivity of participants in the “macro-market” in question—the financial system as a whole. Any finance-regulatory regime that would aim to be complete must include at least one such countercyclically acting macroprudential regulator—a regulator both cognizant of this function and able to discharge it along the lines sketched in this Part.⁴⁶

In the case of inflations, deflations, and credit-fueled asset price bubbles, again the key to solving the problem is for the collective agent to render no longer individually rational those decisions that tend to aggregate into the collectively irrational consequences in question. In these cases, however, the means of doing so combine individual-decision targeting with more macro-level action.

Begin with the credit-fueled asset price bubble. The key to this phenomenon, recall, is the spread between low borrowing costs and high capital appreciation rates during the boom, which makes it individually rational for market actors to arbitrage, or leg. One means of rendering participation in the bubble dynamic no longer individually rational, then, is for the collective agent, now acting as a countercyclical macroprudential financial regulator, to close that spread from either or both of the two ends. The authority can thus tax capital gains at gradually higher rates, tax asset-flipping transactions à la Tobin, tax credit-extensions at gradually higher rates, or simply place hard limits on extensions of credit or incurrings of leverage—via lending limits; debt-to-income (DTI) or loan-to-value (LTV) ratio maxima; or reserve minima, capital minima, or both.⁴⁷

Turning from individual-decision targeting to more macro-level action, the collective agent can also rein in credit by blunter means—for example, by raising interest rates via traditional monetary policy instruments.⁴⁸ Alternatively, the regulator might target particular classes of asset that seem to be prey to bubble dynamics at a given time by “shorting” those assets in the markets on which they are traded.⁴⁹ This would lie somewhere between more individual-decision targeting action, like margin requirements, on the one hand, and more macro-level action on the other. In effect, it would be a bubble-side counterpart to run-side last resort market-making.

Now consider a consumer price inflation. Here the more familiar means of collectively addressing the problem is for the collective agent—in

46. See sources cited *supra* note 30.

47. See sources cited *supra* note 30.

48. See sources cited *supra* note 30.

49. See sources cited *supra* note 30.

most jurisdictions, the central bank or monetary authority—to render accelerated purchases no longer individually rational by reining in the credit-money supply via traditional monetary policy measures: more restrictive discounting, interbank rate setting, and open market operations in treasury or other securities. By “tightening money” in this manner, the hope is that the authority will induce market participants into holding off on their purchases longer, thereby draining off price-pushing pressures brought on by excessively high-frequency purchasing activity. In so doing, the authority in question is of course once again acting countercyclically. And in doing that, it is implicitly acting to solve a recursive collective action problem.

Though the method of tight money is more broad-brush and blunt than the more carefully targeted macroprudential tools mentioned in the previous paragraph but one, it bears noting that those more narrowly targeted tools could in effect be at least partly approached in the realm of consumer goods and services markets. A central bank or monetary authority could, for example, as noted in the previous paragraph, engage in open market operations that target financial instruments other than treasuries, thereby tamping down inflations that afflict some submarkets more than others. By the same token, it could place a floor under some goods or services while simultaneously pushing back on inflationary pressures in respect of other goods and services. In a sense, innovation of this sort is of course already underway, via a form of the market-maker of last resort function noted just above, in the case of the Federal Reserve’s treatment of housing-associated financial assets.

Solving a recursive collective action problem, such as most of the most poignant challenges faced by banking and financial markets are, then, requires collective agency deployed with a view to rendering no longer individually rational those decisions which, when interacting in iterative fashion, aggregate into collectively irrational outcomes. This, I shall argue, tightly limits the circumstances under which systemic financial dysfunction can be dealt with via *fiduciary duty*. Our only options are to (a) alter the decision calculi of the *beneficiaries* of fiduciary duty—in general, the principals—such as then changes the calculi of fiduciaries themselves, or (b) *change the principal* on whose behalf the fiduciary is operating from a private to a public such principal.

In either case (a) or case (b), it will be noticed, fiduciary duty is not doing the real work. It is at best complementing the real work. What is doing the real work is regulation. But more on this as we turn now to the nature and structure of fiduciary relations and fiduciary obligation.

III. FIDUCIARIES, BENEFICIARIES, AND FIDUCIARY OBLIGATION

Most lawyers are at least passingly familiar with the concepts of fiduciary relation and fiduciary obligation. Yet few of us seem to find time to develop any particular general account of the fiduciary relation and the form of obligation to which it gives rise. We tend to think instead in terms of “laundry lists.” We have a rough idea as to what statuses are considered at law to be more or less fiduciary in character—trustees, corporate officers and directors, business partners, lawyers, accountants, etc.—and of what “the fiduciary duties” are: obedience, care, loyalty, perhaps “good faith.”⁵⁰ But we don’t tend to think all that hard about what underlying principle it is, precisely, that these lists reveal, unfold, or elaborate. I shall start, then, by trying to get a bit of clarity on this point. Doing so will situate us to appreciate more fully why fiduciaries of private sector market participants are not well suited to addressing market-wide challenges such as recursive collective action problems—hence, systemic financial dysfunction.

A. *Duty, not Duties*

The tendency to grasp at canonical manifestations of fiduciary obligation *ad seriatim* while avoiding confrontation with the larger question concerning “what fiduciary obligation is all about,” I think, occasions much avoidable confusion when we are confronted with new situations that seem on the one hand intuitively to implicate fiduciary obligation, while on the other hand not neatly conforming to any of the well-worn “fact patterns.” Thus, the Supreme Court of Delaware, for example, uncertain whether to categorize the novel predicate transactions in *Disney* as garden variety “duty of care” or “duty of loyalty” circumstances, prompted all manner of speculation over whether a “new fiduciary duty”—a “duty of good faith”—was finding its way into Delaware corporate governance law.⁵¹ And thus, earlier, all the consternation, followed by speculation about a “new jurisprudence of corporate takeovers,” when the same court set aside the business judgment rule in a series of decisions, commencing with *Smith v. Van Gorkom*,⁵² that commentators had theretofore assumed to be garden variety duty of care cases.

50. See, e.g., Tamar Frankel, *Fiduciary Duties*, in 2 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 127 (Peter Newman ed., 1998). More on the kerfuffle over a putatively “new” fiduciary duty of good faith immediately below.

51. See *In re Walt Disney Co. Derivative Litig.*, 906 A.2d 27, 52–53, 62–68 (Del. 2006) (recounting the procedural history).

52. 488 A.2d 858, 872–73 (Del. 1985).

My own take on such episodes is that it is a mistake to think of putatively distinct fiduciary duties as though they were well-defined, contoured by separate “cookie cutters,” and categorically different. It is better to think in terms of one primal fiduciary obligation that is differently implicated in different and ever-permutable transactional settings. The so-called duty of care and duty of loyalty, on this understanding, are simply manifestations of general fiduciary obligation that emerge in certain oft-repeated contexts—those involving (a) situations in which heightened attention is necessary to reap reasonable gain or avoid avoidable loss, and (b) conflicted interests between fiduciaries and beneficiaries, respectively. What, then, is the *general* fiduciary obligation?

I suggest that the general fiduciary obligation is, as the Latin radical “*fide*” that lies at the core not only of fiduciary but also of “fidelity,” “confidant,” “infidel,” and a host of other words suggests, to “keep faith” with the beneficiary in whose favor the duty runs. It is to minimize, if not eliminate, what I shall call the “space of interests” between fiduciary and beneficiary within the context in which the fiduciary relation is operative. It is, in effect, to *be* one’s beneficiary within that context, to be her *alter ego*—her “other self.” It is to do as she likely would do were she not to have need of a fiduciary to act in her stead in the first place.

The familiar “cookie cutter” fiduciary duties are readily understood as manifestations of this “Ur”-obligation as brought to bear in particular oft-recurring contexts. If I am less careful with a beneficiary’s assets than that beneficiary herself would have been had she not needed a fiduciary, I have introduced space between myself and my beneficiary. I have allowed other matters to occupy my attention at the expense of my beneficiary—other matters that my beneficiary would *not* have thus “prioritized.” Hence one can say I have “violated a fiduciary duty of care,” but it is more helpful—less misleading in the long run—to say I have violated my fiduciary obligation by being careless. I have failed to act as my beneficiary’s alter ego, and in so doing have “broken faith” with her. I have “violated her trust,” and in so doing have driven a wedge between us of which the fiduciary relation does not admit.

Similarly, if I sell an asset to my fiduciary and attempt to get “top dollar” for it in so doing just as if my beneficiary were a stranger, then again I have introduced space between myself and my beneficiary. Likewise if I take for myself some opportunity I was meant to be on the lookout for on behalf of my beneficiary. Hence one can say I have “violated a fiduciary duty of loyalty,” but it is more helpful—less misleading in the long run—to say I have violated my fiduciary obligation by being disloyal. I have made myself my beneficiary’s competitor rather than her alter ego—once again acting more as my own ego than as her alter ego just as I did when being careless in pursuit of her interests. In so doing

I have violated my beneficiary's trust; I have broken faith with her. This is the essence of the fiduciary relation, hence of fiduciary obligation. And there are far more ways of violating it—even ways we have not yet imagined—than are parceled out under the prefabricated headings of “care” and “loyalty” in law school casebooks.⁵³

B. Fiduciary Obligation as Status Obligation, Implied by Law

Fiduciary obligation, as is well-known, is a status obligation engaged by operation of law even in the absence of deliberate contract,⁵⁴ and this hangs together with the nature of the obligation as just described. One can, in other words, come to be a fiduciary, subject to fiduciary obligation, without forthrightly embracing that status. This will occur quite “automatically,” for example, if one begins to act as an agent for another as defined by the courts and memorialized in the *Restatement (Third) of Agency*.⁵⁵ Likewise if one begins to act as a business partner as defined by the courts and memorialized in the *Uniform Partnership Act*, or if one agrees to serve as a trustee, or as an officer or director of a firm, or becomes a lawyer or accountant and takes on a client, and so on.⁵⁶ In some cases, of course, parties can “contract out” of some of these obligations.⁵⁷ But the interesting thing for present purposes is where the default lies.

Why does our law operate in this manner? Why does it impute, escapably or otherwise, community of interest or “ego-alterity” among some pairs of persons but not others? Why does it saddle persons with

53. My account of the essence of fiduciary obligation as just elaborated is obviously distinct from, but I don't think incompatible with, most of the few other general accounts on offer—e.g., those of Gold, Markovits, and Miller. It is in somewhat greater tension, I think, with accounts that reduce fiduciary obligations to “default” terms of fictitious contracts—notably those of Easterbrook, Fischel, and Sitkoff—but only in the sense that, absent contractual provisions to the contrary, fiduciary defaults on my account are apt to be more stringent than appears to be assumed on contract-based accounts. See, e.g., Andrew S. Gold, *The Loyalties of Fiduciary Law*, in PHILOSOPHICAL FOUNDATIONS OF FIDUCIARY LAW 176 (Andrew S. Gold & Paul B. Miller eds., 2014); Daniel Markovits, *Sharing Ex Ante and Sharing Ex Post: The Non-Contractual Basis of Fiduciary Relations*, in PHILOSOPHICAL FOUNDATIONS OF FIDUCIARY LAW, *supra*, at 209; Paul B. Miller, *The Fiduciary Relationship*, in PHILOSOPHICAL FOUNDATIONS OF FIDUCIARY LAW, *supra*, at 63; see also Robert H. Sitkoff, *An Economic Theory of Fiduciary Law*, in PHILOSOPHICAL FOUNDATIONS OF FIDUCIARY LAW, *supra*, at 197; Frank H. Easterbrook & Daniel R. Fischel, *Contract and Fiduciary Duty*, 36 J.L. & ECON. 425 (1993).

54. See, e.g., Frankel, *supra* note 50; see also Miller, *supra* note 53.

55. See, e.g., RESTATEMENT (THIRD) OF AGENCY § 1.01 (AM. LAW INST. 2006) (“Agency is the fiduciary relationship that arises when one person (a ‘principal’) manifests assent to another person (an ‘agent’) that the agent shall act on the principal’s behalf and subject to the principal’s control, and the agent manifests assent or otherwise consents so to act.”).

56. See generally Legal Info. Inst., *Fiduciary Duty*, WEX LEGAL DICTIONARY, https://www.law.cornell.edu/wex/fiduciary_duty (last updated July 2016).

57. See, e.g., Easterbrook & Fischel, *supra* note 53; see also Roberta Romano, *Comment on Easterbrook and Fischel, “Contract and Fiduciary Duty,”* 36 J.L. & ECON. 447 (1993).

obligations to “close space” between themselves and others when they behave in particular ways or take on particular statuses, even in situations in which they are not fully cognizant of those implications? There appear to be two related reasons, one narrow and the other broader, for the recognition of fiduciary relations in our law.

The narrow reason seems to be that we want there to be certain institutions through which people can deliberately act at a distance in particular ways—even across that “infinite gulf” which separates the living from the dead. The legal trust is, of course, the classic example—the very name of the institution amounting to the English equivalent of *fide* itself. Thus, if I have a descendent unable to care for himself and want to ensure he is cared for even after I’m gone, I may seek a trustee to administer an estate that I leave on his behalf. The trustee will then have discretionary authority over the disposition of the estate assets, which she will be required to exercise in a manner that keeps faith with me, the trust settlor, and benefits the trust beneficiary as I myself would have endeavored to do had I been able. No one need take on this role of trustee, but once she does she’ll be required to administer the estate as would I myself, or as would my beneficiary were he competent. Here the automatic imputation of fiduciary duty is effectively the provision of a “package deal” *institution*—an institution that we as a legal culture have evidently decided to be worth providing, be it in the form of “mandatory” or default rules.

The broader reason for imputing fiduciary obligation by operation of law generalizes the narrower one. We appear as a legal culture to have decided that there are certain forms of temporally extended cooperation or collaboration that we should facilitate, even to the point of requiring, absent deliberately stipulated contractual provisions to the contrary, those who begin to act in the collaborative manners in question to “do it right” once they’ve begun.⁵⁸ Hence the law of agency enables me to establish something reminiscent of a trust on behalf, not of a third-party beneficiary, but even of myself, thereby vindicating, hence enabling, a certain form of reliance. In enabling that form of reliance, in turn, the law facilitates my delegating tasks, as principal to agent, that I would otherwise have to pursue on my own. And hence the law of partnership enables two or more people to be, in effect, simultaneously principals and agents to *each other*, thereby vindicating, hence encouraging, a certain form of reliance and in so doing facilitating temporally extended collaborative effort.

As for why we wish to facilitate *this*, doubtless there are both Smithian and Aristotelian reasons at work. The Smithian reasons would have to do

58. The principle is not unlike that of estoppel more generally—another principle, which, like the institution of the legal trust itself, has its origins in equity jurisprudence.

with the division of labor and associated gains from specialization that collaborative effort enables.⁵⁹ Greater productive efficiency, in other words, is presumably had in virtue of temporally extended collaborative effort, and the imputation of fiduciary obligation between collaborating parties absent contract provisions “opting out” would seem to facilitate such effort itself.

The Aristotelian reasons for this form of facilitation would sound in what appear to be certain human propensities to work together for working together’s sake. Most legal scholars write much of their scholarship solo; but many, if not most, also coauthor some, if not much, of their work. One suspects that in many cases, this is not simply because collaborating in this way is “more efficient”—often it isn’t—but because it can be enriching in its own right. Doubtless many a legal, accounting, or investment professional would agree—at least up to a point. And so would many a tech start-up or other small firm, to say nothing of orchestras, clubs, sporting leagues, and the like, in all of which the “product” is necessarily, rather than merely contingently, group-generated or group-provided.⁶⁰

It is worth noting that the “incomplete contracts” explanation that many microeconomically oriented lawyers offer for fiduciary obligation’s presence in our law is quite compatible with the conjectures that I have just offered.⁶¹ *Contracting itself*, after all, can helpfully be viewed as a form of collaboration—even if a decidedly “thinner,” and often less lengthily temporally extended, such form.⁶² As such, contracting itself offers both Smithian efficiency and what I am calling Aristotelian mutuality benefits—even if, again, in more attenuated form than we encounter in a long-term relation between partners in a family or small firm. Hence we might wish to facilitate *contracting* for reasons akin to those that we have for facilitating longer-term fiduciary relations themselves.

And lo, the law actually does this. One way it fills gaps in contracts is with something akin to, even if correspondingly thinner than, fiduciary duty itself—viz., a duty of “good faith in performance.”⁶³ Another related yet “thicker” way that it does so is by imputing something much like full-bodied fiduciary obligation itself into relations we think parties would or justifiably could have described in fiduciary terms had they sat down and

59. See, e.g., Legal Info. Inst., *supra* note 56.

60. See sources cited *supra* notes 53 and 57.

61. See, e.g., Easterbrook & Fischel, *supra* note 53. As observed at note 53, *supra*, I think my account departs from contractual accounts more in respect of what it requires in the absence of contrary contract terms than of anything else.

62. See, e.g., Daniel Markovits, *Contract and Collaboration*, 113 YALE L.J. 1417 (2004).

63. See generally *Kirke La Shelle Co. v. Paul Armstrong Co.*, 188 N.E. 163 (N.Y. 1933); U.C.C. § 1-304 (AM. LAW INST. & UNIF. LAW COMM’N 2014); RESTATEMENT (SECOND) OF CONTRACTS § 205 (AM. LAW INST. 1981).

specifically contracted.⁶⁴ In general, the longer-term or more open-ended a contractual relation, the more reasonable each party's trust in and reliance upon its implied terms, and hence the more willing the courts are to imply certain fiduciary obligations into it absent express terms to the contrary.⁶⁵ And this itself seems to testify to our legal culture's aim of facilitating joint collaborative activity.

C. Financial *Fiduciaries*

Now, I trust you can see where this is all going. In Part II, I emphasized systemic financial dysfunction's status as a set of what I called recursive collective action problems—problems that issue in calamity and are mediated not by defects in private sector market participants' rationality, morality, or legality, but by their rationality and moral and legal neutrality themselves. In this Part, in turn, I have emphasized the nature of fiduciary obligation as essentially an obligation for the fiduciary in effect to *be*, as it were, the beneficiary of her duty—to allow for no space between her own interests and her beneficiary's interests.

But if this is the case, then it would seem impossible to address systemic financial dysfunction by tweaking fiduciary obligation. We would be barking up the wrong tree, so to speak. For the fiduciary is fully as incapable of addressing the problem in this kind of case as her beneficiary would be; and that is because, again, she just *is* her beneficiary, for purposes of the relation, insofar as she is true to her fiduciary status. To put the point another way—from the “other direction,” as it were—we found above that collective action problems require collective agents for their solution. But a private sector fiduciary is not a collective agent; she is an individual agent—an agent for her private sector principal alone.

64. See, e.g., *St. John's Univ. v. Bolton*, 757 F. Supp. 2d 144, 166 (E.D.N.Y. 2010) (“[A] fiduciary relationship embraces not only those the law has long adopted—such as trustee and beneficiary—but also more informal relationships where it can be readily seen that one party reasonably trusted another.”); *Whittle v. Ellis*, 122 So. 2d 237, 239–40 (Fla. Dist. Ct. App. 1960) (“[T]he term ‘fiduciary or confidential relation’ is recognized as being very broad. . . . It embraces both technical fiduciary relations and those informal relations which exist wherever one man trusts in and relies upon another.”); *Daniels v. Army Nat'l Bank*, 822 P.2d 39, 42 (Kan. 1991) (“There are two types of fiduciary relationships, those created by contract and those implied in law from the surrounding facts and the relationship of the parties.”); *Goodyear Tire & Rubber Co. v. Whiteman Tire, Inc.*, 935 P.2d 628, 634 (Wash. Ct. App. 1997) (“Fiduciary relationships include those historically regarded as fiduciary, and also may arise in circumstances in which ‘any person whose relation with another is such that the latter justifiably expects his welfare to be cared for by the former.’” (quoting *Liebergessell v. Evans*, 613 P.2d 1170, 1176 (Wash. 1980))).

65. See, e.g., sources cited *supra* note 64; see also Carmen D. Caruso, *Franchising's Enlightened Compromise: The Implied Covenant of Good Faith and Fair Dealing*, 26 *FRANCHISE L.J.* 207 (2007).

Private sector fiduciaries, then, can no more address systemic financial dysfunction than can private sector market participants themselves. The space-closing nature of fiduciary obligation renders them functionally identical to those participants, who in their individual capacities are quite incapable of solving collective action problems.

The only way around this fundamental defect in the fiduciary duty approach to addressing systemic financial dysfunction, I think, is accordingly either (a) to address the incentives of private sector market participants themselves as described above in Part II.C—i.e., to regulate; (b) to *override* private sector *fiduciaries' obligations* to their private sector principals—i.e., again to regulate, and now in so doing to render them no longer fiduciaries; or (c) to change the status of certain private sector fiduciaries altogether, so as to render them *public* sector fiduciaries.

I'll consider each of these alternatives in due course. First, however, I should address one anticipated objection. This is that fiduciary relations and obligation as I have thus far elaborated them might well be, as I've said, where fiduciaries act on behalf of individual human beings, but are quite different where they act on behalf of organizations—different in ways that open more options for using fiduciary duty to address systemic financial dysfunction than (a) through (c) just above would imply.

D. *Duty to Organizations?*

The discussion of the fiduciary relation and fiduciary obligation above seems intuitively tractable enough when we confine ourselves to relations among small numbers of human persons—e.g., two doctors who start a medical practice, an author and the literary agent whom she retains, or a manufacturer and a raw materials provider who enter into a long-term supply contract. But what of more complex organizational forms, such as business corporations? Given that corporate officers and directors are fiduciaries, who—or what—are the beneficiaries of *their* fiduciary obligation?

Although it seems seldom, if ever, remarked, there is actually something of a categorical “disconnect” between the concept of a fiduciary relation on the one hand and a “corporate person” as a possible term of such a relation on the other hand. The reason is straightforward: If a fiduciary is to be understood as a sort of “alter ego” of the beneficiary, it is hard to make sense of a corporate fiduciary because it is hard to make sense of a “corporate ego.” What *is* it, in other words, to close or minimize the space of interests between a *human agent* and an *inanimate entity*? And for that matter, what can it *be* for an inanimate entity to have “interests”?

Corporate entities do not seem to have, strictly speaking, wishes or desires—they do not even have, it would seem, long-term plans or

ambitions. To impute such motivations to a firm is typically to project onto the firm the wishes, desires, plans, or ambitions of one or more of its human constituents. The problem with doing this in the case of a large, complex firm, however, is, of course, that there will tend to be multiple human constituents, many of whom hold *conflicting* wishes, desires, plans, or ambitions, not to mention differing time horizons. What then to do? Is fiduciary law simply out of place in the case of the complex organization? Has the law been drawn into a category error or overworked analogy in developing in a manner that imputes fiduciary obligation to certain officers and directors of firms?

Maybe. But then again, maybe not. There does appear to be at least one objective that all firm constituents, even *corporate* constituents, will be apt to agree upon in most circumstances. And insofar as that is the case, we can make at least some sense of a corporate fiduciary's being the alter ego of her firm. As we shall see, however, this doesn't in the end help when it comes to the proposal to use private sector fiduciaries to address systemic financial dysfunction. For pursuing *this* objective will, in nearly all cases, render the corporate fiduciary even more like a private sector market participant whose rational pursuit of legally neutral objectives is, thanks to the recap-nature of systemic financial dysfunction, part of the problem itself.

Here's what I mean. The law typically handles the complexity problem that large organizations pose to the fiduciary relation by unpacking fiduciary obligation to the incorporated firm as an obligation (a) at least not to *compete* with the firm, and (b) to exercise plausible "business judgment" in pursuit of *raising the value* of the firm.⁶⁶

With respect to (a), the idea is to impose a version of the traditional loyalty requirement, essentially by ensuring that any transaction between fiduciary and firm, or any appropriation of what might have been a firm's opportunity by the fiduciary, has, as a procedural matter, been approved by fully informed and financially disinterested shareholders or fellow fiduciaries, and as a substantive matter, has not been obviously unfair to the firm.⁶⁷ This seems to be easy enough—that is, sufficiently analogous to what "loyalty" entails in more purely person-to-person fiduciary dyads—if we can make sense of "value" as referenced in (b).

With respect to (b), the idea is that working to maximize the value of the firm is, in most cases, the best way to satisfy all, rather than merely some, of the firm's many human constituents with many potentially

66. See, e.g., *In re Walt Disney Co. Derivative Litig.*, 906 A.2d 27, 52 & n.62, 74 (Del. 2006).

67. See *id.*

conflicting interests.⁶⁸ That is because to maximize value is to maximize the worth of residual claims, while residual claims amount to nothing at all until prior creditors—including lenders, bondholders, employees, transaction counterparties, etc.—are satisfied.⁶⁹

Focusing upon value, then, appears to offer a means of commensurating and reducing to one metric what would otherwise be a host of potentially conflicting claims that no single fiduciary or body of fiduciaries could coherently aim to satisfy. It seems thereby to enable us straightforwardly to carry over to the case of the firm the fiduciary's more familiar obligation to flesh-and-blood human persons.

E. "Value-Maximizing" as Fiduciary Obligation

The matter of exercising business judgment to maximize firm value is not quite as simple as it might initially look, however. And the law's use of the notion of business judgment in articulating this face of fiduciary duty can be helpfully viewed as stemming in part from precisely this lack of simplicity. Part of the problem here is that firms often persist over lengthy spans of time, meaning that maximizing value can be understood over varying temporal durations. We can speak coherently of maximizing value "in the long run," "in the short run," or over anything in between. What, then, is actually *meant* by value-maximizing?

Were knowledge of all possible future contingencies complete, and were markets in firm shares fully efficient in impounding all and only such knowledge into share prices, there would be little space between short-term and long-term where value is concerned.⁷⁰ And so in that case, value-maximization might indeed be a simple, not multivalent, imperative. But there never has been, and never will be, such knowledge, nor are markets strongly efficient in the requisite sense.⁷¹ Partly for this reason, the law affords wide latitude to corporate fiduciaries in choosing between prospective firm projects that offer different payouts over different time

68. See, for example, Chancellor Allen's widely discussed opinion in *Credit Lyonnais Bank Nederland, N.V. v. Pathe Comm'ns Corp.*, Civ. A. No. 12150, 1991 WL 277613 (Del. Ch. Dec. 30, 1991).

69. See Barry E. Adler, *Bankruptcy and Risk Allocation*, 77 CORNELL L. REV. 439, 441 n.8 (1992) ("Common stock represents the residual claim to a corporation's earnings and assets after the corporation satisfies its obligations to creditors and any "preferred" stockholder with a superior claim.").

70. The world would look as envisaged in GERARD DEBREU, *THEORY OF VALUE: AN AXIOMATIC ANALYSIS OF ECONOMIC EQUILIBRIUM* (1959).

71. Empirically, the form of informational efficiency that the most familiar financial markets can boast appears to be the "semi-strong" variety. See Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383 (1970).

horizons. This it does under the rubric of the so-called business judgment rule (BJR).⁷²

The fact that a project with a deferred payout might offer the same (or even a higher) “net present value” (NPV) as another project with an immediate payout is one reason for the BJR. Another is that different projects with *different likelihoods of succeeding* also can offer the same NPVs—in this case, the same “risk-adjusted” NPVs. A coin toss offering \$200 or nothing is worth the same as a \$100 sure bet just as surely as \$210 a year from now is worth \$200 now if the prevailing interest rate is 5%. The BJR accordingly also offers corporate fiduciaries latitude in choosing between projects offering similar risk-adjusted NPVs.

In effect, the law views the firm as a well-diversified individual endowed with a perpetual lifespan, and hence considers the firm qua firm to be rationally indifferent both as between more and less risky projects and as between longer and shorter term payouts, so long as risk-adjusted NPVs are the same. The BJR accordingly aims to eliminate “space” between firm and fiduciary by rendering the latter just as time- and risk-indifferent as the firm itself would rationally be were it an immortal human being holding a well-diversified investment portfolio. In this sense, the BJR can be viewed as an essential element of fiduciary obligation itself when the beneficiary of the obligation is not a mortal human being with a possibly idiosyncratic portfolio or idiosyncratic preferences, but a perpetually existent firm with many distinct human beings as constituents.

F. Value Maximization and Financial Dysfunction: What’s Rational for the Corporate Beneficiary Also is Rational for the Fiduciary

But now note that here too, then, fiduciary duty, if owed to private sector market-participating firms, offers no cure for systemic financial dysfunction. If asset price bubbles and busts are in the nature of recursive collective action problems as argued above, then there is no more defect in a firm’s decision to buy as a bubble inflates and to sell as the bubble deflates than there is in a human being’s decision to do so. Indeed it is irrational for the firm *not* to do so if it is capable of holding a diversified portfolio and has an indefinite lifespan. And a fiduciary for this firm will be more or less obligated to act likewise on the firm’s behalf, lest there be space between fiduciary and firm.

The BJR, it is true, will afford her some latitude to temper her firm’s participation in a bubble or bust, essentially by recognizing that she might reasonably decide it best to lengthen the time horizon over which she is

72. See Legal Info. Inst., *supra* note 56.

maximizing or to assign different probability weightings to various possible investment outcomes. But this is in keeping with the nature of her fiduciary status itself where the beneficiary is a complex firm. *Requiring* her *not* to do as the rational human decision maker might well do during a bubble or bust, by contrast, would not be to tinker with her fiduciary status and obligation. It would be to sever it—at least as a private law relation between private sector fiduciary and private sector firm.

The private sector fiduciary qua private sector fiduciary, then, is caught up in the “tragedy” that is the recursive collective action problem that is the bubble or bust just as surely as is any individual who trades on her own account. And that is the case, we can see, whether her beneficiary be such a person or a complex, incorporated firm. There is no plausible case to be made, on the basis of her buying during a boom or selling during a bust, to the effect that she’s “careless,” “disloyal,” or in any other way breaking faith with anyone. How, then, if at all, is fiduciary duty to assist us in addressing systemic financial dysfunction?

IV. ARE BANK FIDUCIARIES DIFFERENT?

It might be argued that I am still being too quick to dismiss private law fiduciary duties as means of getting at systemic financial dysfunction. One might propose, for example, that under certain extreme circumstances, fiduciary duties can be made to “shift” or in some other way change. And these circumstances might be characterized in a manner that seems especially to implicate bank and other financial fiduciaries. Perhaps, then, bank (and shadow bank) fiduciaries are special, just as banks themselves are said to be special—in ways that alter the fiduciary calculus.

I shall argue that bank fiduciaries are indeed special in a manner that tracks the ways in which banks are special. I shall also argue, however, that the *way* in which banks are special has thus far been inadequately elaborated. And the way in which banks really are special, I’ll argue, is a way that renders them not really private sector institutions at all. This in turn means their fiduciaries cannot really be private law *fiduciaries*. In the end, then, ironically, I am going to agree that fiduciary obligation can, in a sense unintended by advocates of fiduciary solutions to financial fragility, serve as a tool for addressing systemic financial dysfunction. But this is simply because financial firms are best viewed as primarily public institutions and their fiduciaries correspondingly as public fiduciaries.

I’ll start with previous proposals that rely on fiduciary duty to deal with financial dysfunction. Then I shall come to my own claim by highlighting both what is sound and what is unsound in those proposals.

A. Creditors as Special Beneficiaries: Proposals

Because, as noted before, financial firms rely heavily on debt to fund their investment activity and accordingly bring considerable insolvency risk into the financial system, it is perhaps unsurprising that the closest analogues from earlier times to latter-day proposals to “redirect” fiduciary duty themselves focus on insolvency risk and creditor interests. Thus, for example, Chancellor Allen suggested from the bench decades back that in “the vicinity of insolvency,”⁷³ corporate fiduciaries’ duties should run to the benefit of firm creditors rather than shareholders since, at that point, it is more important to salvage what is left of the firm than to try going “double or nothing.”⁷⁴ Perhaps something similar could be said of firms whose principal constituents *always* are creditors rather than equity investors—namely, banks and shadow banks?

As if to act on that hint, Macey and O’Hara have more recently suggested that, since banks fund themselves primarily with short-term debt (in the form of depositor accounts) rather than equity, bank fiduciaries’ obligations should run either to the debt suppliers or to whoever takes on the risk borne by the same—in the United States, for example, the Federal Deposit Insurance Corporation.⁷⁵ Concentrating on this proposal’s resemblance to Chancellor Allen’s, we might conclude that the shared idea here is that the firm should be viewed as possessed of the same risk tastes as its principal funders, who, in the case of the generic firm in hard times and the bank at all times, are creditors rather than equity investors. And since creditors are by definition more risk averse than equity investors, a corollary would seem to be that firm fiduciaries in these cases should be more cautious and less entrepreneurial.

Radiating out further, Armour and Gordon more recently still have suggested that, at least in the case of large, systemically important financial institutions (SIFIs), fiduciaries’ obligation to shareholders themselves should be understood in something other than share-price-maximizing terms, since for a firm to be systemically important is precisely for it to be capable of imperiling that portion of shareholder portfolio risk that cannot be diversified away—viz., that portion known as “market risk.”⁷⁶ Here it is as if the SIFI fiduciary had a duty to maximize not the value of the *SIFI* for its shareholders (and therefore others) but the value of the *full portfolios* of

73. *Credit Lyonnais*, 1991 WL 277613, at *34.

74. *See id.*

75. Jonathan R. Macey & Maureen O’Hara, *The Corporate Governance of Banks*, 9 FRBNY ECON. POL’Y REV. 91, 91 (2003).

76. *See* John Armour & Jeffrey N. Gordon, *Systemic Harms and Shareholder Value*, 6 J. LEGAL ANALYSIS 35 (2014).

these shareholders—including those portions that are not issued by the SIFI.

B. Why These Proposals Don't Work as Fiduciary Reforms

There is something intuitively plausible, even attractive, about all of these suggestions. I myself am drawn to them. In the final analysis, however, I think it probably an abuse of doctrine, language, and ultimately programmatic coherence itself to claim that these suggestions have much, if anything, to do with bona fide *fiduciary* obligation.

These are proposals, not to interpret fiduciary obligation more faithfully, nor even to tweak fiduciary obligation as it presently stands, but rather to displace fiduciary duty with something else altogether—namely, with regulation. We are proposing, in effect, to override what fiduciary duty would ordinarily require in the case of the complex organization—viz., value maximization—in the name of requiring something else. And we are doing so because we have decided the “something else” to be more important than the ordinary beneficiary’s—the firm’s—interest.

The only exception to this claim will be that which will be presented if we decide that the officers or directors of some firms are never, in fact, fiduciaries of those firms, but are fiduciaries of the public instead. That is not as far-fetched as it might initially sound, so I shall come back to it. But first I must explain why there is no other option that actually keeps faith with the notion of fiduciary relation or obligation.

In the case of the firm, we have noted, the only way to make sense of the fiduciary imperative is to interpret it as attempting to maximize firm value over some time horizon in a risk-indifferent manner. But now note what this means in the form of a hypothetical scenario: We’ll suppose that a firm is hovering near insolvency, but still is worth \$100 million—precisely enough to leave all of its creditors whole in liquidation. One possible “project” that the firm’s fiduciaries might undertake, then, is that of making no further investments, but instead standing pat or perhaps even liquidating the firm. Let’s suppose likewise, however, that there also are other prospective projects before the firm offering various risk-weighted NPVs, and that the option offering the *highest* such risk-weighted NPV is the one offering, say, a 1% chance of yielding \$1 trillion. In this case it is quite clear that this latter option is that which is best “for the firm”—by far—and hence is the one most apt to be entailed by any “fiduciary duty to the firm.”

If, then, we decide with Chancellor Allen that in the vicinity of insolvency, the firm’s fiduciary ought to concentrate instead upon

preserving what is left of the firm for its creditors⁷⁷—as I, for one, would certainly be tempted to advocate—then what we are saying is that now all bets, quite literally, are off. But this means the erstwhile firm fiduciary now is no longer a firm fiduciary at all. She is scarcely a fiduciary even for the firm’s creditors, inasmuch as she has been divested of discretionary authority and been made something more like a custodian, charged simply with ensuring that no more of the soon-to-be bankrupt estate is lost. A lock, in effect, has been put on the assets, and the erstwhile fiduciary is now just a watchman. This might well be very good policy, but the point is we’re no longer *relying* on fiduciary duty but *overriding* it.

Much the same holds of Macey and O’Hara’s proposal to hold bank fiduciaries to a higher standard of care than we do other firm fiduciaries in view of the risk tastes of the banks’ primary funders—creditor/depositors.⁷⁸ If we hold that a bank’s fiduciary duties run to the firm’s creditors—its depositors—rather than to the firm as a whole simply because the depositors are the primary suppliers of funds to the firm, and we do so notwithstanding that these depositors have contracted for a fixed rate of return, then we are effectively saying that the bank’s officers and directors are mere custodians of depositor funds rather than fiduciaries of banking *firms*. That is to drain the concept of a fiduciary of nearly all of its discretionary content, much as does Chancellor Allen’s proposal.

Finally, Armour and Gordon’s proposal drains the concept of a fiduciary of content “in the opposite direction,” so to speak, to that in which Allen, Macey, and O’Hara do. Whereas the latter *narrow* the duty once owed the firm to a quite minimal duty now owed solely to the class of firm constituents who would prefer that the fiduciary have virtually no discretion at all in the management of assets, Armour and Gordon *broaden* the duty, to the point that the SIFI fiduciary must avoid acting in manners that might adversely affect even the *non-SIFI-issued* instruments in the SIFI-shareholders’ portfolios.⁷⁹

We can call these proposals “proposals to alter financial fiduciaries’ fiduciary duties” if we like, but then we shall simply be playing on words. What we are actually doing in all of these cases is *overriding* fiduciary obligation as long understood. We are saying that there are circumstances in which some imperatives are more important than those that fiduciaries ordinarily pursue on behalf of their beneficiaries. To say that the fiduciary duties themselves shift in these cases, I suggest, only muddies the waters. It clouds understanding and gradually drains the concept of a fiduciary of its

77. See *Credit Lyonnais*, 1991 WL 277613, at *34 & n.55.

78. See Macey & O’Hara, *supra* note 75, at 102.

79. See Armour & Gordon, *supra* note 76, at 76–77.

distinctive content. “Fiduciary obligation” becomes little more than “legal requirement.”

It seems to me there are but two ways of avoiding this undesirable result, even while recognizing and vindicating the overriding imperatives that prompt the proposals here noted. And only *one* of them actually involves a change to fiduciary obligation.

The first way is simply and forthrightly to regulate—and to do so in a manner that enters into the ordinary fiduciary’s value calculations themselves just as they would a human beneficiary’s value calculations. If, for example, heavy—truly heavy—fines attach to firm actions that violate some macroprudentially imposed capital requirement during a boom, violation of this requirement will significantly affect firm value itself. The value-conscious fiduciary will accordingly act in conformity with the requirement. Note that in this case, there has been no “fiduciary reform,” nor is fiduciary duty really doing the primary work. *Regulation* is doing the primary work, and fiduciary duty is here parasitic upon it.

The only other way to address systemic financial dysfunction through fiduciary duty without doing violence to the concept of fiduciary obligation itself, I suggest, is radically, comprehensively, and permanently to re-identify the beneficiary of fiduciary obligation in the case of banks and other financial firms. A strong case can be made, I shall now argue in closing, for naming the public, as represented by its central bank or cognate instrumentality, as the actual principal and the actual beneficiary of all fiduciary obligations owed by the directors and officers of banks and other financial firms. In order to make this case out, I must now say a bit about the “public–private franchise view” of finance that my frequent collaborator and I have developed over the last several years.

C. *The “Finance Franchise”—and the Role of Fiduciaries Therein*

Banks are indeed special in the ways that bank regulators have long recited. They engage in valuable maturity transformation that affords liquidity to the financial markets and broader economy; they are, in consequence, vulnerable to runs; they serve as critical nodes of the payments system, and of course, furnish the oft-cited “transmission belt” of central bank monetary policy. Much the same now can be said of the “shadow banking” sector as well. None of these features render bank *fiduciaries* special, however, save in the trivial sense that they, through the banks that they work for or oversee, must comply with a broader array of regulatory requirements than must the fiduciaries of less special firms.

There is another way of characterizing what is truly special about banks and the broader financial system, however, pursuant to which financial *fiduciaries* can be viewed as (nontrivially) special as well. This is

as public or quasi-public instrumentalities. I allude to the franchise view of finance that my frequent coauthor and I have been developing over the past several years.⁸⁰

Pursuant to the franchise view of finance, banks and other financial institutions are best viewed as franchisees that distribute a vital public resource—viz., the monetized full faith and credit of the sovereign public.⁸¹ If one attends carefully at how bank and other financial institutions' lending and deposit-opening transactions actually occur, it becomes quickly apparent that the bulk of deposits are not constituted by pre-accumulated private capital brought in by virtuous savers who then make lending activity possible, but rather by bank credit itself.⁸² Banks and other institutions make loans, in other words, and do so by opening or crediting borrower accounts *ex nihilo*.⁸³ To reduce this to a slogan, “loans make deposits” more than “deposits make loans.”

What makes this possible are the acts of Federal Reserve “accommodation” and “monetization.”⁸⁴ In essence, our central bank, acting in the name of the public, recognizes and redeems drafts drawn upon bank loan-created accounts, and these drafts are accordingly spendable as money.⁸⁵ But what this means, in turn, is that the Fed is actually substituting its own creditworthiness—hence the public full faith and credit—for that of individual borrowers whose accounts are lending banks credit. In effect, it is authorizing the private banking institutions whose loans and associated borrower deposits it accommodates to distribute a vital financial resource—the monetized full faith and credit of the United States.⁸⁶

Insofar as this is the case, banks and other financial institutions are, in effect, licensed distributors for the United States itself. They distribute its credit money. In this sense they are public instrumentalities. They can be likened to franchisees who distribute a franchisor's product and earn profits—in effect, privatized seigniorage—for doing so. At its best, the arrangement capitalizes upon each party's comparative advantage. The franchisor has macro-informational advantages in determining credit aggregates in the financial system and can accordingly act to modulate

80. See Robert C. Hockett & Saule T. Omarova, *The Finance Franchise*, 102 CORNELL L. REV. (forthcoming 2017); see also Robert C. Hockett & Saule T. Omarova, “Special,” *Vestigial, or Visionary? What Bank Regulation Tells Us About the Corporation—and Vice Versa*, 39 SEATTLE U. L. REV. 453 (2016) [hereinafter Hockett & Omarova, “Special,” *Vestigial, or Visionary?*].

81. See sources cited *supra* note 80.

82. See sources cited *supra* note 80.

83. See sources cited *supra* note 80.

84. See sources cited *supra* note 80.

85. See sources cited *supra* note 80.

86. See sources cited *supra* note 80.

these aggregates so as to head off bubble-fueling overissuance and bust-causing underissuance of credit money.⁸⁷ The franchisees have some—though not absolute—micro-informational advantages in determining the real risks and prospective rewards associated with various lending and other investment opportunities.⁸⁸ Ideally, then, the franchisor and franchisee get monetized public full faith and credit out into the economy in the right amounts and in the right directions.⁸⁹

Of course, the system as we currently find it does not function quite in keeping with the ideal. Part of the reason, I think, is that the system's true nature is not fully appreciated by the franchisor or the franchisee. Owing to the pervasive influence of the false "intermediated scarce private capital" myth of finance, pursuant to which financial institutions are claimed actually to channel pre-accumulated scarce private capital from private suppliers to end users and government instrumentalities simply "regulate" from the "outside,"⁹⁰ the state takes a rather more passive role in the financial system than its true role both justifies and requires. For the same reason, financial institutions themselves feel entitled, and lobby accordingly, to roles and privileges that are not properly theirs. And news media and many academics, themselves in the grip of the false picture, help to keep the myth alive.

What is needed before all else, then, is to re-educate ourselves on the true functioning of the financial system—a desideratum my coauthor, Professor Omarova, and I are now attempting to meet in other work.⁹¹ But what does all of this imply, if anything, for the obligations of financial fiduciaries?

It might be thought initially, in view of the franchise metaphor I am employing here, that the law governing franchisor–franchisee relations might offer a clue. As it happens, however, that isn't the case. There are two reasons. The first is that, in most jurisdictions, the franchise relation is not cognized as a strictly fiduciary one. It is treated as something more like a long-term relational contract.⁹² That entails obligations of good faith, to be sure, but these are thin obligations, essentially duties not to exploit vulnerabilities or otherwise behave opportunistically.⁹³

87. See sources cited *supra* note 80; see also Hockett & Omarova, *Public Actors in Private Markets*, *supra* note 30.

88. See sources cited *supra* note 87.

89. See sources cited *supra* note 80.

90. See sources cited *supra* note 80.

91. See sources cited *supra* note 80.

92. See, e.g., Zachary D. Schorr, *Fading Fiduciary Duties Between Franchisors and Franchisees*, *BUS. TORTS J.*, Winter 2010, at 13; see also Caruso, *supra* note 65.

93. See Caruso, *supra* note 65, at 208–09.

The second reason is that, in the few jurisdictions that have found full-blown fiduciary characteristics in the franchise relation, these have run primarily in favor of the franchisee rather than the franchisor—owing to the greater ease, it seems, with which petroleum companies like Sunoco or fast food firms like McDonald’s have been able to exploit single station or store proprietors than vice versa.⁹⁴ Where understanding the proper obligations of financial firms in the finance franchise is concerned, then, the franchise metaphor might not actually be all that helpful. How, then, to make use of fiduciary concepts in better managing systemically significant finance?

I think there are probably only two routes to go, both of which Professor Omarova and I are exploring in other work.⁹⁵ The first route is to think of banks and other financial institutions as, in effect, straightforward agents of the public or of the central bank that acts in the name of the public. These institutions’ officers and directors might then be cast, derivatively, as themselves agents of the same. And insofar as that is the case, they would in effect be under fiduciary obligations to the public, or to the central bank that acts in the name of the public.

Of course, it is not clear whether this itself would be much more than a metaphorical way of speaking or thinking. What sense can we make, for example, of the notion of a fiduciary duty of loyalty when the state does not pursue profits and hence cannot be “competed with” by its fiduciaries? The notions of fiduciary relation and associated obligation ultimately derive from, and in that sense are perhaps truly at home in, “private” law—the norms governing relations between members of civil society. And though there appears to be something of a flowering of writing right now about whether and how public officials might have fiduciary obligations,⁹⁶ it is not immediately obvious that such conceptual extension can do any work that regulation and criminal law—in short, public law—cannot itself already do. (When you wrong me, *I* sue you, citing some bit of private law—contract, tort, fiduciary law, etc. When you wrong the public, “*the people*” sue you, citing some bit of public law—regulatory provisions, the criminal code, etc.)

94. See Schorr, *supra* note 92, at 13–15.

95. See Hockett & Omarova, sources cited *supra* notes 30 and 80. See also Robert C. Hockett & Saule T. Omarova, *Private Wealth and Public Goods: A Case for a National Investment Authority*, 43 J. CORP. L. (forthcoming 2017) [hereinafter Hockett & Omarova, *National Investment Authority*].

96. See, e.g., EVAN FOX-DECENT, SOVEREIGNTY’S PROMISE: THE STATE AS FIDUCIARY (2011); Evan J. Criddle, *Fiduciary Foundations of Administrative Law*, 54 UCLA L. REV. 117 (2006); Sung Hui Kim, *The Last Temptation of Congress: Legislator Insider Trading and the Fiduciary Norm Against Corruption*, 98 CORNELL L. REV. 845 (2013); Ethan J. Leib et al., *A Fiduciary Theory of Judging*, 101 CALIF. L. REV. 699 (2013); D. Theodore Rave, *Politicians as Fiduciaries*, 126 HARV. L. REV. 671 (2013).

Perhaps, however, there is at least something to be said for the *tonal* value that thinking and speaking in fiduciary terms here might offer. After all, when someone is fined for a regulatory infraction, the matter seems to be seen almost as a kind of transaction—the fine is “part of the cost of doing business,” and once it is paid, no residue of opprobrium usually lingers. If one is thought and said to violate the public trust or “break faith with the people,” by contrast, there is an air of high moral seriousness about the thing, and one can well imagine a bank executive who is successfully sued for such an offense being viewed askance in the future in consequence.

It might, then, make sense to legislate to the effect that officers and directors of banks and many other financial institutions are indeed fiduciaries of the public, owing their government overseers duties of care, candor, and other obligations sounding in the public trust in and reliance upon them as managers of a vital public resource—the monetized full faith and credit of the United States. If nothing else, the “*Gestalt*” carried by this framing could not but be salutary, particularly given the pervasiveness of the utterly false intermediated scarce private capital myth.

The other way in which something at least *akin* to fiduciary obligation might be employed to address systemic financial dysfunction and justified by reference to the franchise view of finance is a bit less “total” than that just suggested. It might be thought of in this sense as a more “incrementalist” step to experiment with. Here I allude to the “golden share” idea that Professor Omarova and I have been thinking through in other work,⁹⁷ and that Professor Omarova discusses in comprehensive detail in her contribution to this symposium.⁹⁸

The idea in this case, in brief, is to recognize the public role in the financial system by making the government, through an entity constituted for this and perhaps also cognate purposes, the holder of a kind of share in all significant financial institutions. This share would not need to entitle the government to dividends or any other kind of cash flow. Rather, it would carry control rights, triggered by certain systemically portentous events requiring the state’s temporarily taking a more active role in managing financial institutions. The golden share would, of course, entitle the holder to board representation, and the board member(s) in question would have at least as much book and record access as any other board member. This in turn would be used partly for continuous monitoring with a view ultimately

97. See Hockett & Omarova, *Public Actors in Private Markets*, *supra* note 30; see also Hockett & Omarova, “*Special, Vestigial, or Visionary?*,” *supra* note 80; Hockett & Omarova, *National Investment Authority*, *supra* note 95.

98. See Saule T. Omarova, *Bank Governance and Systemic Stability: The “Golden Share” Approach*, 68 ALA. L. REV. 1029 (2017).

to the compatibility of bank decisions with public purposes. But it would also be used, of course, to facilitate rapid determination of what must be done in the event of systemic tremors.

This “manager of last resort” function, as we see it, would not quite amount to the wholesale conversion of private sector bank fiduciaries into public fiduciaries. But it would place a public fiduciary into the same boardroom with those who have thus far exclusively been private fiduciaries. And it would give that public fiduciary pride of place—a sort of “super chairmanship”—during particularly tumultuous times, such as those of the autumn of 2008. This is the only other sense, I suspect, in which something like fiduciary obligation on the part of bank officers or directors can offer us anything of value in dealing with systemic financial dysfunction—which is, again, in the final analysis, *qua* recursive collective action problem, something that is only addressable via collective, not individual, agency.

V. CONCLUSION

I have covered a sizable piece of ground here, and have done so in order to reach what some might take for a negative, even pessimistic, conclusion. Private law fiduciary obligation, I have argued, offers us little to no help in addressing systemic financial dysfunction. That is owing to the latter’s stemming from what I have described as recursive collective action problems, and to the former’s binding fiduciaries to the very parties whose individual rationality is what fuels the characteristic dynamic of such problems in the first place.

What I have done here might also be taken for positive, even optimistic, however. For I have argued that the only way out is to recognize banks and other financial institutions for the *de facto public* instrumentalities that they are, and then treat their governance as a matter of public, not private, fiduciary relation and obligation.

This should not, in the final analysis, be viewed as anything but good news. Nor should it be found all that surprising. Recursive collective action problems, like other collective action problems, require collective agency for their solution; individual agency is no help at all—it is the problem. Scarce wonder, then, that the agents required to solve the *financial* renditions of such problems should be collective agents. Scarce wonder, that is, that they should be public fiduciaries.