THE "TOO BIG TO FAIL" PROBLEM

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"Too big to fail" – or "TBTF" – is a popular metaphor for a core dysfunction of today's financial system: the recurrent pattern of government bailouts of large, systemically important financial institutions. The financial crisis of 2008 made TBTF a household term, a powerful rhetorical device for expressing the widely shared discontent with the pernicious pattern of "privatizing gains and socializing losses" it came to represent in the public's eye. Ten years after the crisis, TBTF continues to frame much of the public policy debate on financial regulation. Yet, the analytical content of this term remains remarkably unclear.

Taking a fresh look at the nature of the TBTF problem in finance, this article offers a coherent framework for understanding the cluster of closely related, but conceptually distinct, regulatory and policy challenges this label actually denotes. It identifies the fundamental paradox at the heart of the TBTF metaphor: TBTF is an entity-centric, micro-level metaphor for a complex of interrelated systemic, macro-level problems. While largely unacknowledged, this inherent tension between the micro and the macro, the entity and the system, critically shapes the design and implementation of the key post-2008 regulatory reforms in the financial sector.

To trace these dynamics, the article deconstructs the TBTF metaphor into its two basic components: (1) the "F" factor focused on the "failure" of individual financial firms; and (2) the "B" factor focused on their "bigness" (i.e., relative size and structural significance). Analyzing post-crisis legislative and regulatory efforts to solve the TBTF problem through this simplifying lens reveals critical gaps in that process, which consistently favors the inherently micro-level "F" factor solutions over the more explicitly macro-level "B" factor ones. It also suggests potential ways of rebalancing and expanding the TBTF policy toolkit to encompass a wider range of measures targeting the relevant systemic dynamics in a more direct and assertive manner.

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INTRODUCTION

The phrase "too big to fail" – or "TBTF" – is a popular metaphor for one of the core dysfunctions of today's financial system: the recurrent pattern of government bailouts of large, systemically important financial institutions.[1] It is by no means a new phenomenon. The "too big to fail" label became famous in 1984, in connection with the crisis involving Continental Illinois

[1] *See, e.g.*, William Safire, *Too Big To Fail Or To Bail Out?* N.Y. TIMES (Apr. 6, 2008), *available at* https://www.nytimes.com/2008/04/06/opinion/06iht-edsafire.1.11699108.html?_r=1. ("Before *too big to fail* became a nervously practical answer to the worry about *moral hazard*, the word coined to describe the method used to rescue a financial entity from the consequences of risky or irresponsible behavior was *bailout*").

National Bank and Trust Company.[2] The phrase itself, however, is even older than that: in 1975, for example, public commentators and media used it to describe the government rescue of Lockheed Corporation.[3]

The global financial crisis of 2008 brought the TBTF phenomenon into the spotlight and breathed new life into the old metaphor.[4] In 2008-2009, to contain a systemic calamity, the governments in the U.S. and Europe rolled out massive capital and liquidity support programs not only for banks but also for large non-bank financial institutions, including investment banks, money market mutual funds, and insurers.[5] At the time, the sheer scale and visibility of these stabilization efforts created a significant political backlash against government bailouts as a policy tool.

Ironically, however, the crisis containment measures resulted in the creation of fewer and bigger financial institutions.[6] The post-crisis increase in the level of concentration of the U.S. financial industry is difficult to deny. For example, as of the year-end 2017, top five U.S. bank holding companies (BHCs) held 48% of the country's BHC assets.[7] By early 2018, there were four U.S. BHCs with more than $1.9 trillion in assets on their individual balance sheets.[8] Despite the post-crisis passage of the Dodd-Frank Act,[9] the most wide-ranging regulatory reform in the U.S. financial sector since the 1930s, the TBTF remains a "live" issue on the public policy agenda and continues to generate intense academic and political debates.[10]

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[2] *See* FDIC, HISTORY OF THE EIGHTIES: CONTINENTAL ILLINOIS AND "TOO BIG TO FAIL," *available at* https://www.fdic.gov/bank/historical/history/235_258.pdf.

[3] *See* Amy Farber, *Historical Echoes: "Too Big To Fail" Is One Big Phrase*, FRBNY: LIBERTY STREET ECONOMICS (Oct. 5, 2012), *available at* http://libertystreeteconomics.newyorkfed.org/2012/10/historical-echoes-too-big-to-fail-is-one-big-phrase.html.

[4] *See, generally*, Mark Labonte, *Systemically Important or "Too Big To Fail" Financial Institutions,* Congressional Research Service Report R42150 (Sept. 24, 2018), *available at* https://fas.org/sgp/crs/misc/R42150.pdf.

[5] For a comprehensive overview of these programs in the U.S., see Xiaoxi Liu, *The Costs of Bailouts in the 2007-08 Financial Crisis*, 22 FORDHAM J. CORP.& FIN. L. 417 (2017).

[6] *See* Matt Egan, *Too-big-to-fail banks keep getting bigger*, CNN.COM (Nov. 21, 2017), *available at* https://money.cnn.com/2017/11/21/investing/banks-too-big-to-fail-jpmorgan-bank-of-america/index.html; Yaman Onaran, *Too Big To Fail*, BLOOMBERG.COM (Dec. 8, 2017), *available at* https://www.bloomberg.com/quicktake/big-fail ("There are some 6,000 banks in the U.S. The biggest six have $10 trillion in assets, almost twice as much as the next 30 combined. The six biggest banks in the U.S. and Europe have increased their assets more than five-fold since 1997. That's a lot of money in a small number of hands.").

[7] Labonte, *supra* note 4 at 2.

[8] *Id.*

[9] Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (codified in scattered sections of the U.S. Code).

[10] During his Senate confirmation hearings in late 2017, Jerome Powell, now the Chairman of the Federal Reserve, famously proclaimed that the TBTF problem ceased to

Importantly, "TBTF" is a rhetorically potent device, which explains the popularity of multiple variations on the "too big" theme in academic and popular discussions.[11] The phrase is not only extremely capacious but also emotionally charged. It strongly conveys a clear sense of fundamental unfairness, the "wrongfulness" of granting the ultimate privilege of invincibility to the most powerful financial conglomerates. A full decade after the crisis nearly destroyed global financial markets, the TBTF label effectively crystallizes the widely shared discontent with the financial system.[12] Yet, it is surprisingly conceptually imprecise. Despite the significant and rapidly growing scholarly literature discussing various aspects of the TBTF phenomenon, the analytical substance of that term remains remarkably unclear.[13] In many ways, it still functions as the discursive equivalent of the common "you know it when you see it" approach.

The purpose of this article is to take a fresh, deeper and more sustained, look at the nature of the TBTF problem in finance – and to offer a coherent framework for understanding the cluster of closely related, but analytically distinct, regulatory and policy challenges this label actually denotes. To be clear, this article is not intended as a comprehensive technical analysis of the key determinants of, and policy responses to, the TBTF phenomenon. It seeks neither to dissect any particular scholarly argument on this broad topic nor to critique any particular regulatory measure in this area. My approach here is deliberately high-level and taxonomic: this is a broad field-mapping exercise, a thought-organizing and clarifying experiment. Developing this type of a conceptual map is of critical importance. A careful deconstruction – and rediscovery – of the full meaning of the TBTF metaphor elucidates the

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exist. *See* Jeffry Bartash, *Powell says the U.S. no longer has too-big-to-fail banks*, MARKETWATCH.COM (Nov. 29, 2017), *available at* https://www.marketwatch.com/story/powell-says-the-us-no-longer-has-too-big-to-fail-banks-2017-11-28. Many disagree with this assessment, however. *See* Dennis Kelleher, *'Too Big To Fail' is Alive and Kicking*. AM. BANKER (Aug. 1, 2018). For a recent official proposal targeting the TBTF problem, see FEDERAL RESERVE BANK OF MINNEAPOLIS, THE MINNEAPOLIS PLAN TO END TOO BIG TO FAIL (2017), *available at* https://www.minneapolisfed.org/~/media/files/publications/studies/endingtbtf/the-minneapolis-plan/the-minneapolis-plan-to-end-too-big-to-fail-final.pdf?la=en [hereinafter, THE MINNEAPOLIS PLAN].

[11] *See* Amanda Aronczyk, *Too Big To Fail Is Too Hard To Resist,* MARKETPLACE (Apr. 5, 2011), *available at* https://www.marketplace.org/2011/04/05/business/economy-40/too-big-fail-too-hard-resist.

[12] *See* sources cited *supra* note 6*;* Kelleher, *supra* note 10.

[13] For a glimpse of the wide-ranging literature on TBTF as a financial-sector phenomenon, see SIMON JOHNSON & JAMES KWAK, THIRTEEN BANKERS: THE WALL STREET TAKEOVER AND THE NEXT FINANCIAL MELTDOWN (2010); GARY H. STERN & RON FELDMAN, TOO BIG TO FAIL: THE HAZARD OF BANK BAILOUTS (2004).

fundamental reasons for the continuing persistence of the TBTF phenomenon in the financial sector. It also enables us to start envisioning new, potentially more effective and integrated solutions to the TBTF problem.

The article is organized as follows. Part I of the article begins by breaking down the TBTF metaphor into two interrelated but conceptually distinct components – one focused on the *failure* of a large financial firm, and another focused primarily on its *size* – and discussing the fundamental tension between the "micro" and "macro" levels of analysis implicit in this duality. Part II uses this basic framework to make sense of the wide-ranging post-2008 efforts to combat the TBTF problem and demonstrates the predominantly micro-level, entity-centric nature of such efforts. Part III examines the resulting inability of the key post-crisis regulatory reforms to address TBTF as a systemic, macro-level problem. Part IV sketches out potential ways of filling the gaps in the current TBTF policy, by expanding and strengthening the more explicitly macro-level, structural approaches to this complex, multi-faceted problem.

I. DECONSTRUCTING TBTF: A PARADOX INSIDE THE METAPHOR

At the heart of the TBTF problem, there is a fundamental paradox: TBTF is an entity-centric, micro-level metaphor for a cluster of interrelated systemic, macro-level problems. This inherent conceptual tension between the *micro* and the *macro*, the *entity* and the *system*, frames much of the public policy debate on TBTF. It also renders TBTF a uniquely complex and multi-layered phenomenon and explains, on a deeper level, the seemingly intractable and persistent nature of the TBTF problem.[14]

Yet, to date, this critically important internal tension has gone largely unnoticed – and its analytical implications unrecognized – by scholars and policymakers grappling with numerous specific aspects and manifestations of the TBTF phenomenon. Despite the enormous amount of post-crisis learning and experimentation, there remains a significant gap in our collective understanding of the TBTF problem. To fill this gap, it may be helpful to begin by broadening our theoretical lens and exploring the hidden meaning of the TBTF metaphor.

Intuitively, the easiest method of deconstructing TBTF is to break the concept into two principal components, corresponding to the two letters that give the acronym its meaning: the letter "B" and the letter "F." For ease of reference, I call these two components the "B factor" and the "F factor," respectively. Despite its apparent simplicity, this technique yields important new insights into the complex inner dynamics of the all-too-familiar TBTF problem.

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[14] *See infra* Parts II-III.

A. The "F" Factor: "Failure" in Focus

What I call here the "F factor" is by far the more salient and widely discussed component of the TBTF phenomenon.

The letter "F" in the acronym stands for a "failure" of a particular financial institution. The "F" factor, accordingly, denotes bailouts, or various forms of government rescue of financial firms on the brink of insolvency. Historically, the phrase "too big to fail" emerged directly in response to, and in the context of, such government rescue efforts.[15] It is, therefore, hardly surprising that public discussions on the TBTF problem continue to revolve primarily around the ever-present possibility of government bailouts of failing financial institutions.

The continuing discursive and practical emphasis on the "F" factor also reflects the heightened normative salience of large financial institutions' seeming immunity to failure. Because bailouts involve publicly funded assistance to privately owned firms, whose financial woes are a direct result of their own profit-seeking activities, they tend to trigger negative reactions across the political spectrum.[16] At bottom, a bailout is the ultimate manifestation of the infamous dynamics of "privatization of gains, socialization of losses."[17] It exemplifies the fundamental unfairness of the situation in which a firm that fully enjoyed the benefits of being a free market participant when things were going well repudiates the basic rules of the free market when its business decisions bring it to the brink of collapse.

Relatedly, government bailouts of private firms evoke an array of explicitly distributional concerns.[18] An actual rescue of a large financial institution is an extraordinary act, a direct grant of explicit and tangible public subsidy not available to smaller entities. Moreover, the sheer expectation that the government will always bail out TBTF financial institutions, internalized by other market participants, generates the specter of *implicit* public subsidy of such institutions' private risk-taking.[19] The well-known notion of "moral hazard" captures the economic inefficiencies associated with this implicit subsidy: large firms shielded from the negative consequences of their risk-

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[15] *See supra* notes 1-3 and accompanying text.

[16] *See* Adam Levitin, *In Defense of Bailouts*, 99 GEO. L. J. 435 (2011).

[17] *See, e.g.,* Joseph Stiglitz, *U.S. Does Not Have Capitalism Now*, CNBC.COM (19 Jan. 2010), *available at* https://www.cnbc.com/id/34921639.

[18] Levitin, *supra* note 16, at 452 ("Concerns about the systemic risk posed by TBTF firms are ultimately distributional anxieties. It is the fear of the broadest macroeconomic impact—that everyone will be affected—that animates discussions of systemic risk. While macroeconomic impacts are broadly felt by everyone, they are not felt equally. Some are harmed more than others, and some might even benefit.").

[19] For a review of the literature on the TBTF subsidy prepared by the staff of the Federal Deposit Insurance Corporation (FDIC), see https://www.fdic.gov/news/news/speeches/literature-review.pdf.

taking have an incentive to take greater risks than they otherwise would.[20] While it is notoriously difficult to quantify the implicit TBTF subsidy, there is hardly any confusion about the fundamental unfairness and uneven distributional consequences of this pattern: the most vulnerable members of society typically end up bearing the disproportionate share of losses caused by TBTF firms' risky behavior.[21]

In this sense, bailouts violate the ideologically enshrined public-private boundary in finance and expose the porous and negotiated nature of that boundary.[22] On a deeper level, therefore, TBTF is a public-private boundary problem and, by extension, a problem of political legitimacy.[23] These political dynamics built into the "F" factor are especially visible during a systemic crisis when bailouts of TBTF firms constitute a concerted government strategy of crisis containment.[24]

To sum up, the interplay of these considerations explains why the focus of the ongoing debate on the TBTF problem remains primarily on the failure of an individual firm, or the "F" factor. Placing the undesirable macro-level effects of certain financial firms' failure at the core of the TBTF problem gives the debate a degree of conceptual and normative clarity, which is critical from the perspective of devising and implementing specific policy responses.

B. The "B" Factor: "Bigness" in the Background

In contrast to the "F" factor, the "B" factor generally remains in the background of the academic and policy discussions of TBTF. There are several reasons for the muted discursive salience of the "B" factor.

To start with, there is a significant ambiguity with respect to what exactly

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[20] *See* Labonte, *supra* note 4, at 4-5 (discussing "moral hazard").

[21] *See, e.g.*, Ben S. Bernanke, Chairman, Fed. Reserve Bd., Community Development in Challenging Times, Address at the Federal Reserve Community Affairs Research Conference (Apr. 29, 2011), *available at* https://www.federalreserve.gov/newsevents/speech/bernanke20110429a.htm (stating that poor communities and individuals have been hit the hardest by the economic problems in the aftermath of the financial crisis).

[22] For in-depth discussions of the public-private balance in modern finance, see Robert C. Hockett & Saule T. Omarova, *Private Wealth and Public Goods: A Case for a National Investment Authority*, 43 J. CORP. L. 437 (2018) [hereinafter, *National Investment Authority*]; Robert C. Hockett & Saule T. Omarova, *The Finance Franchise*, 102 CORNELL L. REV. 1143 (2017) [hereinafter, *Finance Franchise*]; Robert C. Hockett & Saule T. Omarova, *Public Actors in Private Markets: Toward a Developmental Finance State*, 93 WASH. U. L. REV. 103 (2015) [hereinafter, *Public Actors*]; Robert C. Hockett & Saule T. Omarova, *"Private" Means to "Public" Ends: Governments as Market Actors*, 15 THEORETICAL INQUIRIES IN L. 53 (2014).

[23] *See* Levitin, *supra* note 16, at 446-47.

[24] *See* Anna Gelpern, *Financial Crisis Containment*, 41 CONN. L. REV. 1051 (2008-09).

the "B" factor denotes. As used in the acronym TBTF, the letter "B" stands for "big" or "bigness." Thus, on its face, it refers simply to the size of the firms' balance sheets. Size, however, is itself mainly a proxy for an individual firm's structural power and functional significance within the market. From this perspective, it makes sense to interpret the "B" factor as encompassing the much more capacious and multi-faceted notion of individual firms' "systemic importance."[25] Indeed, much of the public discussion of the TBTF phenomenon currently revolves around issues of identifying, regulating, and supervising so-called "systemically important financial institutions," or SIFIs.[26] The TBTF problem, accordingly, is often recast in terms of preventing the failure – and avoiding bailouts – of SIFIs.[27]

This melding of two concepts – TBTF and SIFI – dramatically expands the analytical scope of the "B" factor. The size of an individual firm's balance sheet – its "bigness" in a literal sense – becomes only one key metric of systemic significance; the others include the firm's "interconnectedness," complexity of its operations and structure, and degree of substitutability of its products and services.[28] Isolating, measuring, and balancing these and other related attributes, however, is notoriously difficult.[29] It involves making numerous qualitative judgments lacking the simplicity of a purely size-based scale.[30] In effect, a substantively more capacious definition of the "B" factor opens it to competing interpretations and thus potentially blunts its impact as a policy tool.

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[25] In fact, in a recent study of the TBTF subsidy, the International Monetary Fund (IMF) deliberately used the term "too important to fail," or "TITF," instead of the more familiar TBTF. *See* INT'L MONETARY FUND, GLOBAL FINANCIAL STABILITY REPORT: MOVING FROM LIQUIDITY- TO GROWTH-DRIVEN MARKETS 102 (Apr. 2014), *available at* file:///C:/Users/sto24/Downloads/_c3pdf%20(2).pdf.

[26] The Dodd-Frank Act established the Financial Stability Oversight Council (FSOC) and granted it authority to designate non-bank financial institutions as SIFIs, thereby subjecting them to consolidated prudential oversight by the Federal Reserve. 12 USC § 5323(a)(1).

[27] *See, e.g.*, Labonte, *supra* note 4, at 1 (defining TBTF as merely a "popular" term for SIFIs).

[28] *See* Basel Committee on Banking Supervision, *Globally systemically important banks: Assessment methodology and the additional loss absorbency requirement* 1-2 (Nov. 2011), *available at* https://www.bis.org/publ/bcbs207.pdf.

[29] The bitter fight over designation of MetLife, a large insurance conglomerate, as a SIFI subject to enhanced prudential supervision under the Dodd-Frank Act provides a powerful illustration of these difficulties. *See, e.g.*, John Heltman, *FSOC gives up effort to designate MetLife as SIFI*, AM. BANKER (Jan. 18, 2018), *available at* https://www.americanbanker.com/news/fsoc-gives-up-effort-to-designate-metlife-as-sifi.

[30] *See* Int'l Monetary Fund, Bank for Int'l Settlements, Fin. Stability Bd, *Guidance to Assess the Systemic Importance of Financial Institutions, Markets, and Instruments*: *Report to G-20 Finance Ministers and Governors* (Oct. 2009), *available at* https://www.imf.org/external/np/g20/pdf/100109.pdf.

Even without this complicating interpretive twist, however, the "B" factor lacks the normative clarity and rhetorical appeal of the "F" factor. While a firm's failure is an unambiguously bad thing, it is not necessarily the case with respect to its size. Unlike an actual failure of a big financial firm, the size of the firm, by itself, is not likely to trigger a cascade of other firms' failures. Although a particular firm's size can amplify the impact of its actions on the stability of the market, size is fundamentally an attribute rather than an act. Moreover, the growing size of an individual firm's balance sheet may actually generate beneficial economies of scale.[31] Diversifying the firm's assets – a factor that goes to that firm's broader systemic importance rather than its "bigness" – may also generate potentially beneficial economies of scope.[32] The importance of economies of scale and scope in the provision of financial services makes it much more difficult to define the normative baseline for assessing the effects of the "B" factor.

The inherently relative, or relational, nature of the "B" factor in the TBTF formulation further complicates this task. What makes a particular firm problematic is not simply that it is "big" in some absolute terms but that it is "*too* big" in terms of the macro-economic effects of its failure. In this sense, the "B" factor denotes an explicitly *systemic, macro-level* aspect of the problem. All "B" factor determinations involve dynamic assessments of an individual entity's size, market power, or functional significance in relation to, and as part of, the financial system as a whole – a difficult and context-dependent exercise, often involving counterfactual assumptions and predictive conclusions.

In sum, what I call here the "B" factor is where the fundamental tension within the TBTF metaphor – that between the "micro-" and the "macro-" levels of analysis – manifests itself most clearly. By broadening the inquiry beyond the discrete event of an individual financial firm's failure, the "B" factor potentially points to the deeper, more structurally significant drivers of the TBTF dynamics. At the same time, it is inherently more complex, difficult to define with precision, and thus politically and normatively contestable.

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[31] *See, e.g.,* Inci Otker-Robe *et al., The Too-Important-to-Fail Conundrum*, Int'l Monetary Fund, Staff Discussion Note SGN/11/12 (May 2011), *available at* https://www.imf.org/external/pubs/ft/sdn/2011/sdn1112.pdf (reviewing available evidence on the economies of scale).

[32] *See, e.g.,* Arnoud W. A. Boot, *The Future of Banking: From Scale and Scope Economies to Fintech*, 2 EUR. ECON. 77, 83-87 (2017), *available at* file:///P:/ARTICLES/STRUCTURAL%20REFORM/DRAFTS.NOTES/TBTF%20DRAFTS/Boot.From.Scale.to.Fintech.2017.pdf (reviewing research on the economies of scope in finance).

II. IN THE SHADOW OF A HIDDEN PARADOX: POST-CRISIS SOLUTIONS TO THE TBTF PROBLEM

Breaking the TBTF concept into two principal components – the "F" factor focused on the failure of individual financial firms, and the "B" factor focused on the size and other indicia of such firms' structural power and functional importance – provides a helpful framework for assessing the nature and efficacy of specific solutions to the TBTF problem. In the first instance, it allows for drawing a relatively clear conceptual line between two groups of post-crisis TBTF policy responses: the "F" factor solutions and the "B" factor solutions, respectively.[33]

A. The "F" Factor Solutions: Prioritizing the "Micro"

What I call the "F" factor solutions to the TBTF problem are those policies and regulations that explicitly target the firm failure aspect of the problem.[34] Consistent with the heightened salience of the "F" factor in the TBTF context, this group comprises the vast majority of post-crisis regulatory reforms in this area.

As a general matter, all currently adopted (or seriously discussed) "F" factor solutions to the TBTF problem fall into one, or both, of the two related categories. They seek either (1) to minimize individual financial firms' chances of failing (the "don't let them get too risky" approach); or (2) to minimize the broader fallout from individual firms' failure (the "let them fail without bringing down the system and thus necessitating bailout" approach). While a detailed analysis of all post-crisis reforms is beyond the scope of this discussion, a brief summary of the relevant regulatory changes helps to illustrate the point.

1. Capital and Liquidity Regulation; Stress Tests

The first category of the "F" factor solutions includes a wide variety of familiar *microprudential* regulatory tools – such as, e.g., capital adequacy ratios, liquidity requirements, consolidated oversight – strengthened and repurposed as post-crisis tools of *macroprudential* regulation and supervision.[35]

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[33] Of course, this is only a *relatively* clear line. As discussed below, various post-crisis macroprudential regulatory and supervisory measures attempt to mediate, at least in part, the distinction between the "F" and the "B" components of the TBTF problem. *See infra* note 48 and accompanying text; Part II.C.

[34] It is important to note, however, that there is no officially labeled "TBTF policy" or "TBTF regulatory regime." Reflecting the all-encompassing nature of the TBTF metaphor, these terms are used in public discourse to denote to a complex of regulatory policies that seek to address various aspects of the problem.

[35] On macroprudential regulation generally, see Robert Hockett, *The Macroprudential Turn: From Institutional 'Safety and Soundness' to Systematic 'Financial Stability' in*

Capital regulation is the central element in this regime. Its purpose is to limit individual banks' and BHCs' leverage, primarily by mandating that they continuously meet certain mandatory ratios of loss-absorbing "regulatory capital" to assets.[36] The modern system of so-called "risk-based" capital regulation emerged in 1988, when the Basel Committee on Bank Supervision (BCBS) published the first common set of risk-based capital standards – known as Basel I – agreed upon by regulators from the leading industrialized countries.[37] In the years leading up to the financial crisis, however, Basel I came under intense criticism for being too blunt and not sufficiently sensitive to the actual risk of banking firms' assets. In 2004, the BCBS published a revised capital accord, Basel II, which effectively allowed large financial institutions' to determine their own risk-based capital requirements.[38] As became clear in the fall of 2008, this "tailored" and "risk-sensitive" approach led to a dangerous decline in the levels of loss-absorbing capital across the banking sector and correspondingly excessive accumulation of leverage and risk in the financial system.[39]

In 2010, the BCBS adopted Basel III, which, among other things, significantly tightened the scope and definition of "regulatory capital" in order to enhance its loss-absorbing capacity; imposed more stringent and varied risk-based capital requirements (including certain additional "buffers" and "surcharges" on top of the core ratios); and introduced a new, non-risk-based "leverage ratio" requirement.[40] These changes generally sought to strengthen banking institutions' safety and soundness by forcing them to maintain a more effective balance-sheet cushion against sudden losses of their assets' value.[41]

Financial Supervision, 9 VA. L. & BUS. REV. 201 (2015); Gabriele Galati & Richhild Moessner, *Macroprudential Policy—A Literature Review (*Bank for Int'l Settlements, Working Paper No. 337, 2011), www.bis.org/publ/work337.pdf; *Int'l Monetary Fund*, *Macroprudential Policy: An Organizing Framework* (2011), https://www.imf.org/external/np/pp/eng/2011/031411.pdf. For an early articulation of the importance of macro- approach to regulation, see *Fixer-Upper*, *infra* note 89.

[36] For an overview of bank capital regulation, see RICHARD SCOTT CARNELL, JONATHAN R. MACEY, GEOFFREY P. MILLER. THE LAW OF FINANCIAL INSTITUTIONS 238-267 (6th ed., 2017); MICHAEL S. BARR, HOWELL E. JACKSON, MARGARET E. TAHYAR, FINANCIAL REGULATION: LAW AND POLICY 291-311 (2nd ed., 2018).

[37] For a brief history of Basel I Accord, see BARR *ET AL*., *supra* note 36 at 291-295.

[38] *See* id., at 296-306.

[39] *See* id., at 306-311. By way of clarification, Basel II merely formalized and exemplified the generally permissive regulatory approach to bank capital – and, more broadly, safety and soundness – in the pre-crisis era. Thus, the fateful erosion of U.S. banks' loss-absorbing capacity happened despite the significant delays in the U.S. implementation of Basel II.

[40] For an official summary table of Basel III requirements, see https://www.bis.org/bcbs/basel3/b3_bank_sup_reforms.pdf.

[41] In the U.S., the new Basel III requirements were adopted into regulation by 2014. *See*

In addition to these traditional solvency-enhancing measures, Basel III also includes new liquidity requirements: a Liquidity Coverage Ratio (LCR) and a Net Stable Funding Ratio (NSFR).[42] The LCR seeks to ensure the short-term resilience of individual banking institutions by mandating that they maintain a sufficient stock of "high-quality liquid assets" (HQLA), which they can easily convert into cash in private markets to meet all of their liquidity needs for 30 calendar days.[43] The NSFR, in turn, seeks to limit banking institutions' reliance on short-term wholesale funding that can quickly dry up under market stress conditions.[44] Specifically, it requires banks to have stable funding to meet net outflows in a stressed environment for a full year.[45] Thus, both LCR and NSFR explicitly aim to improve banks' ability to withstand market-wide shocks.

Post-crisis introduction of mandatory stress tests, in turn, aims to ensure that individual financial institutions are, in fact, sufficiently resilient to shocks and, therefore, more likely to avoid failure. In the U.S., for example, the Federal Reserve conducts annual Comprehensive Capital Analysis and Review (CCAR) of the largest BHCs, which test their capital planning and positions under various severely adverse economic scenarios.[46] In addition, certain large BHCs are also required to conduct periodic internal stress tests.[47]

It is worth noting here that, in a certain sense, the post-crisis regime of enhanced prudential supervision may be viewed as an attempt to synthesize, albeit in a partial and indirect manner, the entity-level and the system-level factors in addressing the TBTF problem.[48] This regime seeks to prevent

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https://www.federalreserve.gov/supervisionreg/basel/USImplementation.htm.

[42] For an overview of Basel III liquidity standards, see BARR *ET AL*., *supra* note 36 at 327-329.

[43] *See* https://www.bis.org/publ/bcbs238.htm.

[44] *See* https://www.bis.org/bcbs/publ/d295.htm.

[45] *Id.*

[46] *See* https://www.federalreserve.gov/supervisionreg/ccar.htm. The Federal Reserve's CCAR includes as one of its components the supervisory stress tests of the largest BHCs mandated by Section 165(i)(1) of the Dodd-Frank Act. 12 USC § 5365(i)(1), as amended.

[47] *See* 12 USC § 5365(i)(2), as amended.

[48] *See infra* Part II.C. The "Minneapolis Plan to End Too Big to Fail," published by the Federal Reserve Bank of Minneapolis in December 2017, provides a clear example of a deliberate effort to reorient some of the traditional "F" factor solutions toward the "B" aspects of the TBTF problem. *See* THE MINNEAPOLIS PLAN, *supra* note 10. Thus, the Minneapolis Plan advocates using significantly heightened capital requirements (up to 38% of the firm's total consolidated assets) as the lever for forcing large banking institutions to reduce, on their own, the size of their balance sheets and their systemic significance. *Id*. Not surprisingly, the Minneapolis Plan was quickly labeled as too radical to be adopted into policy, at least in the foreseeable future. *See* Jeff Cox, *Minneapolis Fed proposes massive regulation change for banks*, CNBC., (10 Jan. 2018), *available at* https://www.cnbc.com/2018/01/10/minneapolis-fed-proposes-massive-regulation-change-for-big-banks.html.

individual firms' failure as a threat to *systemic* stability – and adopts firms' "bigness" as the key metric for gauging that threat. Thus, enhanced prudential standards apply to financial institutions on a consolidated basis.[49] Their applicability and the degree of burdensomeness also explicitly depend on individual firms' asset size. Under the original text of the Dodd-Frank Act, enhanced prudential standards applied to BHCs with over $50 billion in total assets.[50] In 2018, Congress raised this baseline threshold to $250 billion and further conditioned the applicability of various specific provisions of the Act on BHCs exceeding specified size thresholds.[51] Tellingly, however, this push for loosening prudential standards applicable to smaller institutions is driven by a fundamentally *micro*-level rationale: the belief that "the character of regulation should match the character of a firm."[52]

2. Resolution Plans; Orderly Liquidation Authority

A related but conceptually distinct group of "F" factor solutions to the TBTF problem targets the resolvability of large financial institutions. The core idea here is simple: if, despite regulatory limitations on its risk-taking, a large financial firm nevertheless fails, its failure should be contained and managed in a way that ensures uninterrupted functioning of the rest of the financial system. In other words, the goal is to minimize, if not eliminate, the likelihood of government-funded bailouts of private financial firms.

To this end, the Dodd-Frank Act requires all SIFIs and BHCs with at least $250 billion in total consolidated assets to prepare and submit to regulators credible resolutions plans, or "living wills."[53] These plans must contain detailed information about the firms' structure and operations and lay out how they would be resolved in an orderly and timely manner under various failure scenarios.[54] Failure to submit a credible resolution plan triggers regulatory action, including imposition of more stringent capital or liquidity requirements and restrictions on activities or acquisitions.[55]

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[49] This principle is at the core of the post-crisis concept of SIFI supervision.

[50] The original text of the Dodd-Frank Act, as enacted on July 21, 2010, is available at https://www.govinfo.gov/content/pkg/PLAW-111publ203/pdf/PLAW-111publ203.pdf. A brief legislative history of the Dodd-Frank Act is available at https://www.llsdc.org/dodd-frank-legislative-history.

[51] Economic Growth, Regulatory Relief, and Consumer Protection Act, Pub. L. No. 115-174 (05/24/2018).

[52] Bd. Of. Gov. of Fed. Res. Sys., Statement on Proposals to Modify Enhanced Prudential Standards for Large Banking Organizations by Vice Chairman for Supervision Randal K. Quarles (Oct. 31, 2018), *available at* https://www.federalreserve.gov/newsevents/pressreleases/quarles-opening-statement-20181031.htm.

[53] *See* 12 USC § 5365(d), as amended.

[54] *See*, *generally,* 12 CFR Part 243.

[55] 12 CFR § 243.6.

Furthermore, Title II of the Dodd-Frank Act established the Orderly Liquidation Authority (OLA), a special resolution regime for financial firms whose failure would have "serious adverse effects on financial stability."[56] The OLA is generally modeled on the traditional bank resolution regime.[57] Although the statute establishes a multi-agency procedure for initiating the OLA proceedings, the FDIC manages the process and exercises receivership powers similar in scope to its bank receivership powers.[58] This includes, among other things, the power to create and operate a bridge company if necessary to ensure the continuity of operations critical to the economy. This so-called "Single Point of Entry" (SPOE) approach allows the failed firm's functional subsidiaries – banks, broker-dealers, etc. – to operate as usual, while the recapitalization takes place at the level of the parent holding company.[59]

To facilitate SPOE resolutions, the Federal Reserve promulgated rules requiring all G-SIBs[60] – a handful of the largest, globally significant U.S. financial institutions – to meet certain "total loss-absorbing capacity" (TLAC) requirements through equity and long-term debt at the level of the ultimate parent company.[61] The TLAC requirements seek to take advantage of structural subordination of the parent company's debt to mitigate the risk of a run at the level of the operating subsidiaries. Accordingly, the "bail-in" of the failed parent company's TLAC creditors is envisioned as a practical alternative to a publicly funded bailout.[62]

B. The "B" Factor Solutions: Struggling with the "Macro"

The "B" factor solutions to the TBTF problem are those policies and regulations that explicitly address the "bigness" aspect of the problem.[63] Consistent with the muted salience of the "B" factor in the TBTF context, only a small number of post-crisis regulatory reforms are in this group. These reforms, moreover, tend to be highly controversial and difficult to implement.

The "B" factor solutions generally fall into two categories: (1) regulatory measures that directly target financial firms' balance-sheet size: and (2)

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[56] 12 U.S.C. § 5383(b).

[57] For an overview of OLA, see BARR *ET AL.*, *supra* note 36 at 991-996.

[58] *See* id.; Labonte, *supra* note 4 at 29.

[59] *See* FDIC, Resolution of Systemically Important Financial Institutions: The Single Point of Entry Strategy, 78 Fed. Reg. 76,614 (Dec. 18, 2013), *available at* https://www.fdic.gov/news/board/2013/2013-12-10_notice_dis-b_fr.pdf.

[60] The international Financial Stability Board regularly designates certain financial institutions as "global systemically important banks," or G-SIBs, using a specially designed assessment methodology. The 2018 list of G-SIBs included eight U.S. BHCs. *See* http://www.fsb.org/2018/11/2018-list-of-global-systemically-important-banks-g-sibs/.

[61] https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20161215a1.pdf.

[62] *Id.*

[63] *See supra* Part I.B.

structural reforms that inhibit the growth and reduce systemic significance of TBTF firms by subjecting them to various activity-based limitations.[64]

1. Size Limits

Direct limits on financial firms' size – a traditional antitrust tool – are both the most obvious and the least common type of a "B" factor solution. As a practical matter, size limits are relevant only in the context of regulatory approvals of mergers. Thus, Section 622 of the Dodd-Frank Act generally prohibits mergers and acquisitions if they would result in a firm with total liabilities exceeding 10% of the total liabilities of all financial firms.[65] Importantly, however, these concentration limits do not limit or preclude financial institutions' "organic" growth not involving outside acquisitions.

Another potential source of size limits is Section 121 of the Dodd-Frank Act, which gives the Federal Reserve authority to require any BHC with at least $250 billion in assets to terminate any activities and to sell any assets, if such a BHC poses "a grave threat to the financial stability of the United States."[66] The exercise of this authority, however, is subject to stringent procedural requirements and reserved for extraordinary situations: the Federal Reserve cannot order divestment of a firm's assets based simply on its "bigness." To date, the Federal Reserve has not exercised this power in practice.

2. Activity-Based Limits

"Structural reform" is a broad term for measures that limit the universe of legally permissible activities and investments of certain financial firms – mainly, publicly insured deposit-taking institutions. In many ways, structural reform constitutes a deeper, more explicitly system-oriented form of macroprudential regulation.[67] It is also the most politically salient and controversial such form.

In Europe, the trauma of the latest financial crisis has led to a serious effort to reconsider the traditionally prevalent "universal banking" form of organization in the European financial sector. In the post-crisis era, several jurisdictions, including the U.K., Germany, Belgium, France, and the European Union, sought to address their newly salient TBTF problem by introducing some form of intra-firm structural separation between publicly insured deposit-taking activities and the rest of financial services performed

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[64] The following discussion focuses on the currently existing regulations and does not examine any proposed reforms that, if adopted, would fall into the "B" factor category.

[65] 12 USC § 1852.

[66] 12 USC § 5331.

[67] For a detailed discussion, see Saule T. Omarova, *Central Banks, Systemic Risk, and Financial Sector Structural Reform,* in ROSA LASTRA & PETER CONTI-BROWN (EDS), RESEARCH HANDBOOK ON CENTRAL BANKING 487 (2018) [hereinafter, *Structural Reform*].

by universal banks.[68] In the United Kingdom, this structural reform took form of "ring-fencing" traditional banks' "core activities" – retail deposit-taking and payments, small business lending, etc. – in separately capitalized and managed entities, which were expressly prohibited from engaging in proprietary trading and other risky financial activities.[69] The stated purpose of this approach was twofold: (1) to shield vital retail banking services from external financial shocks (i.e., to minimize contagion); and (2) to make large financial institutions easier to resolve in the event of failure.[70]

The EU Commission pursued a similar strategy of "subsidiarization," initially laid out in the Liikanen Report and later formulated (in a revised form) in the EU Commission's proposed regulation.[71] The Commission's proposal, however, invited intense controversy and was ultimately withdrawn.[72]

The principal piece of post-crisis structural reform in the U.S. is the so-called "Volcker Rule," named after the former Chairman of the Federal Reserve Paul Volcker.[73] It refers to Section 619 of the Dodd-Frank Act, which prohibits federally-insured banks and their affiliates – or "banking entities" – from (1) conducting short-term proprietary trading in financial instruments (including securities and derivatives), and (2) investing in or sponsoring certain "covered funds" (including, principally, hedge funds and private equity funds).[74] The original impetus behind this provision was to erect a strict structural barrier between publicly subsidized banks that offer systemically critical public utility-type products and services, on the one hand, and non-depository financial institutions that trade and deal in risky financial assets, on the other.[75] As enacted, however, the Rule's transformative aspirations are significantly diluted by the numerous exclusions and exemptions from its prohibitions.[76]

In December 2013, after several years of issuing proposed rules and getting thousands of comments, federal bank regulators issued a joint final rule, in which they further defined the scope of the statutory prohibitions and

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[68] *See* id. at 492-495.

[69] The UK reforms were the brainchild of the Vickers Commission, named after Sir John Vickers, a prominent Oxford economist. For an overview of the UK "ring-fencing" reforms, see id. at 492-493.

[70] *Id.* at 493.

[71] For an overview of the EU's structural reform efforts, see id.at 494-495.

[72] *See* https://ec.europa.eu/info/sites/info/files/cwp_2018_annex_iv_en.pdf.

[73] *See Structural Reform*, *supra* note 67, at 496-498.

[74] 12 U.S.C. § 1851 (2012)).

[75] See Jeff Merkeley & Carl Levin, *The Dodd-Frank Act Restrictions on Proprietary Trading and Conflicts of Interest: New Tools to Address Evolving Threats*, 48 HARV. J. ON LEGIS. 515 (2011).

[76] For a list of statutory "permitted activities," see 12 U.S.C. § 1851(d).

exemptions.[77] As implemented by the regulators, the Volcker Rule attempts to draw a myriad of fine lines between transactions and activities that, despite being economically similar, are either (1) prohibited, (2) categorically *excluded* from the prohibitions, or (3) specifically *exempt* from them.[78] This elaborate line drawing, in effect, translates the statute's harshly prohibitive main operative provisions into a far more porous and fluid regime, whose applicability and degree of intrusiveness depend on facts and circumstances surrounding transactions at hand.[79]

In June 2018, federal bank regulators proposed further loosening of the Volcker Rule, expressly seeking to limit the applicability of its structural limitations to the largest U.S. financial conglomerates.[80] The continuing rollback of the Volcker Rule raises serious questions about its future impact.

C. How Clear Is The Line?

The purpose of the preceding discussion was not to provide a detailed analysis of the Volcker Rule or any other specific set of post-crisis reforms but merely to outline the key features that explain the underlying differences between what I call the "B" factor solutions and the "F" factor solutions to the TBTF problem. Even a brief discussion of these ongoing reforms, however, is illuminating.

Thus, it is clear that, compared to the "B" factor solutions, the "F" factor solutions occupy a far more prominent position in the evolving post-crisis regime of macroprudential regulation and supervision. *Failure* of a large financial firm seems to provide a much more easily graspable analytic focus for the TBTF policy-making. The range of regulatory and supervisory tools designed to reduce the chances of a systemically important financial institution's failure and bailout is fairly wide and varied. As the existing methods of identifying and monitoring the key indicators of systemic importance are growing increasingly sophisticated, policy-makers and regulators seek to apply these tools in a more tailored and risk-sensitive

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[77] *See,* 12 C.F.R. Parts 44 (OCC), 248 (Federal Reserve), 351 (FDIC) and 17 C.F.R. Part 255 (SEC). All subsequent references to the Volcker Rule are to the statutory text as interpreted and implemented in the final rule issued by the federal regulatory agencies. For a summary of the tortured history of the rulemaking, as well as a detailed analysis of the final rule's provisions, see Sullivan & Cromwell LLP, *U.S. Agencies Approve Final Volcker Rule, Detailing Prohibitions and Compliance Regimes Applicable to Banking Entities Worldwide* (Jan. 27, 2014).

[78] For an overview of these provisions, see *Structural Reform*, *supra* note 67, at 496-498.

[79] *Id.*, at 496.

[80] For an overview of the proposed changes, see Nathan S. Brownback & V. Gerard Comizio, *Significant Revisions of the Volcker Rule*, Harvard Law School Forum on Corporate Governance and Financial Regulation (June 18, 2018), *available at* https://corpgov.law.harvard.edu/2018/06/18/significant-revisions-of-the-volcker-rule/.

manner.

Yet, despite all of this conceptual and operational refinement, the size of individual financial institutions' balance sheets – their "bigness" in its simplest form – remains a critical determinant of the nature and intensity of the appropriately tailored prudential oversight.[81] It is no coincidence, for example, that the post-crisis regime of enhanced prudential supervision applies only to BHCs above a certain asset size, which now stands at $250 billion.[82] Recent legislative and regulatory efforts to roll back various provisions of the Dodd-Frank Act, moreover, are framed explicitly by reference to easing compliance burden of "small" and "medium-sized" financial institutions.[83] In an important sense, the "B" factor provides conceptual scaffolding that quietly supports the rich array of "F" factor solutions to the TBTF problem.

In fact, the post-crisis regime of enhanced prudential supervision of large BHCs and SIFIs, discussed above, may be viewed as a partial attempt to mediate the conceptual distinction between the "F" and the "B" aspects of the TBTF problem.[84] Thus, the currently evolving macroprudential approach fully embraces the notion that the source of the problem is the capacity of a single firm ("micro") to generate undesirable systemic effects ("macro") – but takes the view that this capacity can be controlled and diminished *without* necessarily shrinking or dismembering the firm.[85]

The "B" factor solutions, in turn, display a different, albeit similarly revealing, internal tension. As described above, policies in this category much more explicitly aim to effect structural changes in the financial sector and, at least in that sense, are inherently systemically oriented. These policies target firms' size and activities in a more intrusive manner, by directly capping their liabilities or determining the composition of their assets. While "F" factor solutions generally aim to shape financial firms' economic incentives to better align them with the public interest, "B" factor solutions operate by directly redrawing the key legal and economic boundaries within financial markets. The bluntness and potentially high-impact character of this type of regulatory intervention render "B" factor solutions inherently more politically salient and controversial than "F" factor solutions.

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[81] *See supra* Part II.A.

[82] *See supra* note 51 and accompanying text.

[83] *Id.*; see also *supra* notes 77-75 and accompanying text.

[84] *See supra* Part II.A.

[85] Even the Minneapolis Plan does not advocate mandatory size limits or activity-based breakups of large banking firms, relying instead on capital requirements to incentivize such firms to reduce their size and systemic importance voluntarily. *See supra* note 48 and accompanying text. Moreover, the proposal's general framing retains its conceptual focus on the need to minimize the likelihood and public costs of bank bailouts – the quintessential feature of the "F" factor approach. *See* THE MINNEAPOLIS PLAN, *supra* note 10.

Yet, despite these differences, post-crisis "B" factor solutions are often framed simply as a variation on the familiar "F" factor ones. Policymakers and regulators routinely justify size limits or activity restrictions as measures targeting the resilience and resolvability of TBTF firms, rather than their "bigness" or structural market power.[86] In this sense, the predominantly *macro*-level "B" factor approach seeks to replicate, and continues to exist within, the primarily *micro*-level "F" factor discourse. This consciously self-limiting interpretation has significant practical implications: it leaves the full potential of the financial sector structural reform largely untapped.

Importantly, this discursive triumph of "micro" over "macro," entity-centric over systemic perspectives creates an appearance of normative and conceptual coherence in the current approaches to the TBTF problem. It accordingly makes the fundamental paradox embedded in the TBTF metaphor more difficult to see and appreciate. The tensions re-emerge, however, as TBTF policies come under pressure in the process of their implementation.

III. FACING THE PARADOX: TBTF IN A SYSTEMIC CONTEXT

As discussed above, the bulk of post-crisis solutions to the TBTF problem operate mainly on a *micro*-level and target primarily individual financial institutions' balance sheets. While the overall orientation and rhetoric of post-crisis financial regulation are self-consciously *macro*-prudential, most regulatory tools are still fundamentally geared toward identifying, monitoring, and influencing individual firms' economic choices.[87] An unspoken assumption behind much of regulatory action in this realm is that fortifying individual financial firms' balance sheets – that is, making them both less prone to failure and easier to resolve if they nevertheless fail – will more or less automatically translate into a stronger, more resilient financial *system*.[88]

This common fallacy of composition becomes difficult to ignore, however, when one widens the lens beyond a single entity's balance sheet – or even *many* individual entities' balance sheets – and examines the efficacy of TBTF solutions in the context of the broader systemic dynamics.[89] This

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[86] *See supra* notes 69-70 and accompanying text. Presumably, this normative framing reflects policymakers' and regulators' desire to downplay the politically contestable aspects of structural reforms.

[87] *See supra* Part II.A.

[88] *See supra* notes 84-85 and accompanying text.

[89] For more on this underlying "fallacy of composition" in financial regulation, see Saule T. Omarova, *Ethical Finance: Risk, Culture, and Structure*, 27 CORNELL J. L. & POL'Y 101; 131-133 (2018); Robert Hockett, *Bretton Woods 1.0: A Constructive Retrieval for Sustainable Finance*, 16 N.Y.U. J. LEG. & PUB. POL'Y 401 (2013); Robert Hockett, *A Fixer-Upper for Finance,* 87 WASH. U. L. REV. 1213 (2010) [hereinafter, *Fixer-Upper*]; Robert

shift in perspective exposes certain important vulnerabilities built into the current regulatory approaches. It also sheds light on potential ways to strengthen or supplement such approaches in order to address the TBTF problem more effectively.[90]

A. Systemic Dynamics and Vulnerability of Current Solutions

Perhaps the most significant truly *systemic* factor, explicitly and prominently incorporated in the existing TBTF policy, is markets' susceptibility to risk contagion. Many regulatory and supervisory requirements expressly seek to minimize or eliminate the risk of one firm's failure spreading throughout the system, via direct counterparty exposures, asset "fire sales," or otherwise.[91] Both the "F" and the "B" factor solutions to the TBTF problem, discussed above, are more or less directly concerned with minimizing contagion and containing the damage from any large financial firm's failure.[92]

Despite its obvious importance, however, contagion is not the only relevant systemic factor in the TBTF context. In today's interconnected and fast-moving financial universe, each individual firm's risk profile is invariably dependent upon a wide variety of system-wide trends and relational dynamics. Incorporating these dynamics into analyses of firms' resilience is, therefore, both necessary and complicated. To put it simply, what seems perfectly workable in the context of a single balance sheet, considered in isolation, may or may not produce intended results when the entity actually interacts with the outside world.

A few examples help to illustrate how certain core systemic dynamics shape the efficacy of the traditional TBTF solutions.

1. Complexity and Arbitrage

It is a well-known fact that today's financial system is growing increasingly complex and difficult to manage. This overarching trend manifests itself not only in the dazzling organizational complexity of large financial conglomerates, but also in the exponential growth of complex

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Hockett, *Bubbles, Busts, and Blame?* CORNELL LAW SCHOOL RES. PAPER NO. 11–09, *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1805930.

[90] *See infra* Part IV.

[91] In fact, the concept of "systemic risk" in the financial sector is often defined by reference to contagion. *See, e.g.*, Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L. J. 193, 204 (2008) (defining systemic risk as "the risk that (i) an economic shock such as market or institutional failure triggers (through a panic or otherwise) either (X) the failure of a chain of markets or institutions or (Y) a chain of significant losses to financial institutions, (ii) resulting in increases in the cost of capital or decreases in its availability, often evidenced by substantial financial-market price volatility.").

[92] *See supra* Part II.

financial instruments – derivatives, asset-backed securities, and other structured products – and correspondingly complex markets in which they trade.[93]

Derivatives and structured products are notoriously difficult to understand and value, even with the help of increasingly sophisticated mathematical modeling.[94] Functionally, they separate and repackage ownership, payment, and other rights and obligations associated with previously largely indivisible financial assets. Institutionally, they trade in globalized, technologically sophisticated, dealer-run markets that connect myriads of institutional actors through an intricate network of direct contractual links and indirect common exposure to risks.[95] These markets are huge, unpredictable, and fundamentally opaque.[96]

Importantly, this complexity, opacity, interconnectedness, and fragmentation make it extremely difficult to measure and analyze not only the overall pattern of risk distribution in the financial system but also the true level of individual financial firms' risk exposure. This is particularly true because the shape-shifting nature of derivatives and other complex financial instruments enables continuous – and dangerously procyclical – flows of risk and leverage across regulatory boundaries.[97] The pre-crisis growth of the infamous "shadow banking" sector is a vivid example of these dynamics.[98] In the post-crisis era, rapid advances in digital technology and computing power – and the increasingly high role of "fintech" – potentially further amplify the underlying patterns of hidden accumulation and dispersion of risk.[99]

These macro-level conditions of market complexity and pervasive

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[93] *See* Saule T. Omarova, *License to Deal: Mandatory Approval of Complex Financial Products*, 90 WASH .U. L. REV. 64; 68-84 (2012) [hereinafter, *License to Deal*].

[94] *See, e.g.,* Henry T.C. Hu, *Misunderstood Derivatives: The Causes of Informational Failure and the Promise of Regulatory Incrementalism*, 102 YALE L.J. 1457, 1463 (1993) (arguing that financial regulators cannot keep up with development of complex derivatives).

[95] *See,* Dan Awrey, *The Mechanisms of Derivatives Market Efficiency*, 91 N.Y.U. L. REV. 1104 (2016).

[96] *Id.*

[97] *See* Charles Goodhart, *Financial Regulation*, HANDBOOK OF CENTRAL BANKING, FINANCIAL REGULATION AND SUPERVISION 326 (EIJFFINGER & MASCIANDARO, EDS., 2011); Marcus Brunnermeier *et al*., *The Fundamental Principles of Financial Regulation*, Geneva Reports on the World Economy 11 (2009). For more on market procyclicality, see *infra* Part III.A.3.

[98] *See, e.g.,* Tobias Adrian & Hyun Song Shin, *The Shadow Banking System: Implications for Financial Regulation,* Fed. Res. Bank of NY Staff Report No. 382 (July 2009); Tobias Adrian, Adam B. Ashcraft, Nicola Cetorelli, *Shadow Bank Monitoring*, Fed. Res. Bank of NY Staff Report No. 638 (Sept. 2013); Gary Gorton & Andrew Metrick, *Regulating the Shadow Banking System*, Brookings Paper on Econ. Activity (2011).

[99] *See* Saule T. Omarova, *New Tech v. New Deal: Fintech as a Systemic Phenomenon*, 36 YALE J. REG. (forthcoming 2019) [hereinafter, *Fintech as a Systemic Phenomenon*].

regulatory arbitrage cast significant doubt on the ability of the primarily micro-level TBTF solutions to deliver the desired results. As risky activities and exposures of large, diversified financial institutions get harder to quantify and contain, keeping these institutions from failing and triggering a cascade of losses becomes an increasingly *system-wide* undertaking. This means that keeping the principal focus of TBTF regulation on individual firms' balance sheets is bound to miss the core *market* dynamics allowing risk move in and out of any individual firm's observable orbit.

2. Interactions with the Real Economy

Another crucial systemic aspect that current TBTF solutions tend to ignore is the functional relationship between the financial sector and the broader economy.

The principal object of the current regime of prudential regulation and supervision of financial institutions is these institutions' safety and soundness. Regulators and supervisors monitor and evaluate the strength of firms' loss-absorbing capital cushions, robustness of their risk underwriting and management procedures, and quality of their asset portfolios primarily with the eye toward preventing these firms' failure. However, regulators do not second-guess private financial firms' substantive business decisions in terms of how well they channel capital to its most productive uses in the non-financial, or "real," economy.[100] Although various tax or regulatory incentives may influence these decisions, individual financial institutions are generally free of governmental interference in their credit-allocation decisions.[101]

In fact, this vesting of substantive control over economy-wide *credit allocation* in private actors' hands is a core element of the U.S. paradigm of financial regulation.[102] The reason for this outsourcing of allocative decisions to private financial firms is rooted fundamentally in their presumed

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[100] To the extent that there are direct legal and regulatory restrictions on the types or concentrations of loans and other assets that banking institutions can hold on their balance sheets, these restrictions are designed to ensure banks' safety and soundness. While these regulations affect financial flows into various segments of the economy, they are not meant to operate as tools of industrial policy.

[101] Thus, specific laws and regulations may deliberately incentivize financial firms to invest in various "preferred" asset classes. This includes, for example, allowing banks to calculate their capital ratios using lower risk weights for certain residential mortgage loans. This is, however, very different from regulators judging the validity of individual commercial loans extended by any particular bank on the basis of their broader macro-structural or socio-economic impact, rather than by reference to the bank's own safety and soundness.

[102] Elsewhere, I refer to this paradigm as the "New Deal settlement in finance." *See Fintech as a Systemic Phenomenon*, *supra* note 99. For a deeper theoretical account, see *Finance Franchise*, *supra* note 22.

informational advantages and individualized economic incentives. Because private market actors are presumably superior decision-makers "on the ground," their judgments on which real-economy projects to fund are not to be substituted by those of the regulators.[103]

In this paradigm, the public explicitly bears the primary responsibility for maintaining the appropriate aggregates of credit in the economy, or system-wide *credit modulation*.[104] As explained in detail elsewhere, this division of roles is characteristic of the public-private *franchise* model of finance.[105] This model is inherently unstable: the private franchisees (private financial institutions) often abuse their allocative powers in pursuit of higher profits. The entire regime of government regulation of financial firms – especially, TBTF firms – is designed to guard against this danger and to minimize the obvious moral hazard built into this system.[106]

In reality, however, allocation and modulation of credit and money in the financial system are intimately connected tasks. Systemically destabilizing asset price booms are the direct effect of socially suboptimal allocative decisions by individual market participants.[107] Forgetting or ignoring this fundamental link undermines both the financial system and the real economy. The former suffers from excessive speculation and instability, while the latter suffers from excessive financialization and erosion of productive capacity. Not only does the financial system grow too large vis-à-vis the rest of the economy, it also becomes too self-referential and even predatory. Instead of serving capital needs of the productive economic enterprise, it systematically diverts financial flows toward socially unproductive financial speculation.[108]

Viewed from this perspective, the familiar methods of combatting TBTF appear fundamentally incomplete. While focusing on the safety and soundness, solvency and liquidity of large financial firms, the post-crisis TBTF solutions remain essentially agnostic with respect to the macro-level structural effects of these firms' credit allocation decisions. Yet, persistent economy-wide misallocation of credit is a critical factor in destabilizing the financial system and exacerbating the moral hazard built into its operation. In this sense, decisively resolving the TBTF problem ultimately requires a serious rebalancing of the currently dysfunctional relationship between the financial system and the broader economy. As long as the financial system remains self-referentially speculative and divorced from the real economy,

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[103] *See* sources cited *supra* note 102.

[104] *Finance Franchise, supra* note 22, at 1150-1157. *See also*, *Fixer-Upper*, *supra* note 89 (advocating "regulation as modulation").

[105] *See Finance Franchise, supra* note 22.

[106] *Id*. at 1158-1164 (explaining these general dynamics in the banking context).

[107] *Id*. at 1213-1214.

[108] *Id.* at 1212-1218 *See also, National Investment Authority*, *supra* note 22, at 448-458.

the TBTF phenomenon is unlikely to disappear.

3. Procyclicality and Collective Agency

A vital attribute of the financial system relevant to the TBTF discussion is the pervasive tendency toward *procyclicality* in the operation of financial markets – and the correspondingly critical market-stabilizing role of certain "big" market actors.

On a fundamental level, the term "procyclicality" denotes a particularly pernicious form of self-reinforcing, or *recursive*, collective action problems.[109] Generally, collective action problems arise in situations in which the multitude of individually rational actions ultimately produce a suboptimal – collectively irrational – outcome.[110] Financial markets, in particular, are rife with collective action problems that have a recursive quality.[111] Financial asset bubbles, fueled by short-term speculation and followed by devastating busts, exemplify this phenomenon. While it is individually rational for each firm to purchase assets during the bubble phase and sell them during the bust phase, these mutually reinforcing, individually rational decisions aggregate into collectively dysfunctional outcomes: i.e., financial crises.[112]

Avoiding this collective irrationality necessarily requires coherent collective agency, exercised counter-cyclically.[113] In simple terms, it requires a different kind of a market actor: one whose actions are not constrained by the same dictates of individual rationality that make everyone else to pile into the same market "bet," and who is both able and willing to take the opposite side of that collectively irrational bet. This *market contrarian* role is essential to the stable functioning of the financial market: it effectively operates as the internal mechanism of dynamic countercyclical self-regulation.

Importantly, to be effective, the relevant collective agent must be not only free of the usual motivational constraints: it also must possess sufficient resources to withstand the inevitable market pressure long enough to generate the desired price correction. In other words, the collective agent must be "big." In the context of today's huge and interconnected financial markets, that agent must be *very* big.

This basic reality casts the familiar TBTF problem in an unexpected light.

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[109] For an in-depth analysis of market procyclicality as a recursive collective action problem, see Robert Hockett, *Recursive Collective Action Problems: The Structure of Procyclicality in Financial and Monetary Markets, Macroeconomies, and Formally Similar Contexts*, 3 J. FIN. PERSP. 1 (2015) [hereinafter, *Recursive Collective Action Problems*].

[110] *Id.* at 3.

[111] *Id*. at 1.

[112] *Id*. at 17-22; Robert Hockett, *Bretton Woods 1.0: A Constructive Retrieval for Sustainable Finance*, 16 N.Y.U. J. LEG. & PUB. POL'Y 401, 420-425 (2013).

[113] *Recursive Collective Action Problems, supra* note 109, at 23-32.

It brings to the fore the fact that, to ensure financial stability, we need to have a certain kind of "big," economically powerful, strategically positioned market actor.[114] From this perspective, "bigness" is not a bug but a necessary institutional feature of the modern financial system. Of course, this fact does not invalidate any of the fundamental public policy concerns associated with the TBTF phenomenon – including, in particular, concerns related to the destabilizing effects of moral hazard.[115] It means, however, that a truly effective solution to the TBTF problem must incorporate a thoughtful approach to strengthening the existing – and creating new – institutional forms of *counter-cyclcical collective agency* in today's large-scale and increasingly complex financial markets.

As a practical matter, only public instrumentalities acting directly within financial markets are fully equipped to perform this critical function.[116] Public instrumentalities' unique built-in advantages—large size, access to public funding, long-term investment horizon, legal and regulatory privileges—enable them to take on greater risk at times when no private market actor is able to do so.[117] Public instrumentalities are the true "natural" market contrarians whose presence is critical in order to resolve financial markets' dysfunctional tendency toward procyclicality. Even the biggest private firms are inherently incapable of performing this role reliably and consistently.[118]

This analysis helps to reframe the "bigness" element of the TBTF metaphor not simply as an issue of individual firms' size or interconnectedness, but as a much broader issue of the relative roles and competencies of the public and private actors in the financial system. It also highlights the deeper sense in which TBTF is ultimately a problem of the public-private balance in finance. Focusing on individual private firms' balance sheets or other characteristics is simply too narrow an approach to

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[114] To some extent, the renewed legislative and regulatory emphasis on the critical stability-enhancing role of clearinghouses and other "financial market utilities" (FMUs) – big, strategically positioned entities acting as collective agents in certain market contexts – reflects the post-crisis realization of this fundamental fact. It is telling, for example, that Title VIII of the Dodd-Frank Act deals specifically with systemically important FMUs. *See* 12 U.S.C. § 5461 *et seq*. However, to the extent that these systemically significant FMUs are profit-seeking private entities, their elevated status in the post-crisis era raises an additional specter of potentially significant TBTF concerns. *See, e.g.,* David Skeel, *What if a clearinghouse fails?* (June 6, 2017), *available at* https://www.brookings.edu/research/what-if-a-clearinghouse-fails/; Steven J. Lubben, *Failure of a Clearinghouse: Dodd-Frank's Fatal Flaw?* 10 VA. L. & BUS. REV. 149 (2015); Mark Roe, *Clearinghouse Overconfidence*, 101 *Cal. L. Rev*. 1641 (2013).

[115] *See supra* Part I.A.

[116] *See Recursive Collective Action Problems, supra* note 109, at 24.

[117] *See Public Actors, supra* note 22, at 138.

[118] *See* id; sources cited *supra* note 114.

this problem.

B. Paradox Resurfaces: The Rhetoric of "Unintended Consequences"

This fundamental inability of the current TBTF solutions to incorporate the broader systemic determinants of the TBTF phenomenon comes into sharp relief in the context of the financial industry's efforts to roll back post-crisis regulatory reforms. In the U.S., these efforts aim primarily at dismantling or weakening the principal elements of the Dodd-Frank Act's regime of macroprudential regulation and supervision of financial institutions.

Rhetorically, this deregulatory campaign is often framed by reference to so-called "unintended consequences" of post-crisis regulation.[119] However disingenuous or self-interested the industry's claims may be, they nevertheless highlight a very real underlying weakness of the current regime: the lack of sufficient attention to the systemic, macro-level aspects of the TBTF problem.

For example, one of the industry's most commonly used deregulatory arguments posits that strict prudential oversight of banks and other regulated financial institutions merely pushes risky activities into the unregulated "shadow" markets. Therefore, the argument goes, the post-crisis attempts at instituting such oversight are inherently futile and harmful.

Regardless of its obviously and deeply flawed logic, this argument hits at the real point of vulnerability in the current regulatory philosophy: its systematic bias toward fundamentally entity-level solutions. As a result of this bias, most post-crisis regulatory reforms do not deal in a sufficiently explicit manner with the broader dynamics of risk creation and transfer across the formal entity and sectoral boundaries. Accordingly, most current TBTF solutions do not directly foreclose opportunities for regulatory arbitrage that dilute or distort their intended effect.

Another reliable – and quite successful – industry argument is that the supposedly excessively burdensome and costly post-crisis regulation unnecessarily constrains availability of credit to individuals and small and medium-sized businesses. The argument is that the higher costs of regulatory compliance – and especially the more stringent regulatory capital requirements – make it prohibitively expensive for banks to make loans to otherwise deserving companies. This, in turn, impedes economic growth and

[119] Of course, proponents of greater oversight of the financial sector also use the rhetoric of "unintended consequences" to show that various provisions of the Dodd-Frank Act, as implemented, failed to deliver the expected public benefits. This discussion, however, purposely focuses on the explicitly anti-regulatory or deregulatory arguments advanced or supported by the financial industry. These arguments use the rhetoric of "unintended consequences" to roll back many of the core post-crisis attempts to eliminate or control the TBTF problem.

job-creation. Therefore, the argument goes, it is necessary to lift or significantly relax post-crisis regulatory constraints on banks' risk-taking for the sake of the real economy and its unimpeded growth.[120]

Substantively, this argument is without merit.[121] There is currently no shortage of capital available for lending in the banking system, so the real problem is not so much banks' lending capacity as the systematic distortions in their credit allocation decisions.[122] In the context of the present discussion, however, this particular line of deregulatory rhetoric is noteworthy for its overt acknowledgment of the fundamental functional link between finance and the broader economy. The industry's deregulatory offensive effectively seizes on the fact that the post-crisis shift to macroprudential oversight is not sufficiently "macro-" in its scope. As long as this remains the case, it will be difficult to rebuke the industry's attacks on the regulatory regime designed to constrain the growth of TBTF firms.

A different, more subtle line of arguments against pursuing aggressive TBTF policies build on the financial markets' need for coherent collective agency, exercised counter-cyclically, as a vital self-correction mechanism.[123] As discussed above, only sufficiently large market participants can perform this critical stabilization role effectively and on the requisite scale: in this sense, "big" is not necessarily "bad."[124] This understanding, however, can be used to argue that "smart" regulatory reforms should view the size of financial mega-firms' balance sheets not so much as a problem – and, in any event, not as the *main* problem – but more as an organic product and an institutional feature of modern finance. Accordingly, instead of seeking to eliminate the TBTF problem through overly restrictive regulations, the

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[120] *See, e.g.*, Joint Letter to Congress from The Mid-Size Bank Coalition of America and the Regional Bank Coalition (Jan. 26, 2017), *available at* http://regionalbanks.org/wp-content/uploads/2017/01/MBCA-RBC-Joint-Letter-to-Congress-1-26-17.pdf ("Many of Dodd-Frank's provisions sap resources that we could instead deploy to extend credit and dynamically serve our communities. We face higher operational costs and are forced to divert capital and funding away from the products we offer and lending that helps businesses expand and create jobs.").

[121] *See, e.g.*, Anat Admati *et al*., *Fallacies and Irrelevant Facts in the Discussion of Capital Regulation*, CENTRAL BANKING AT A CROSSROADS: EUROPE AND BEYOND 33 (CHARLES GOODHART ET AL., EDS. 2014).

[122] *See,* Written Testimony of Saule T. Omarova before the U.S. Senate Committee on Banking, Housing, and Urban Affairs, "Fostering Economic Growth: Midsized, Regional and Large Institution Perspective," (June 15, 2017), *available at* https://www.banking.senate.gov/imo/media/doc/Omarova%20Testimony%206-15-17.pdf. The allocative distortion results from the basic fact that it remains far more profitable for banks and other financial institutions to channel credit into speculative secondary-market trading rather than to fund long-term investments in the real economy. *See National Investment Authority, supra* note 22, at 446-458.

[123] *See supra* notes 109-115 and accompanying text.

[124] *Id*.

argument goes, we should aim *to accommodate and manage* the growth and activities of large, systemically important market actors.

Although this argument is typically framed in technocratic terms, it carries a clear normative message: The government should not waste its limited resources trying to depress the size or market power of individual financial firms – it should "work with" these firms to help them perform their socially beneficial functions. In practical terms, however, this usually means asymmetrically expanding the public's responsibility for backing up these firms' rapidly growing private liabilities and supporting the rapidly growing markets in which they trade. Recent proposals to formalize and enlarge the scope of the government's role as the provider of "last resort" liquidity and solvency support to major dealer-firms and other SIFIs illustrate this trend.[125] They also underscore the deeply political stakes in the TBTF battle over the public-private balance of power in finance.

In sum, many of the familiar criticisms of – and arguments for reversing – post-crisis regulatory reforms derive their strength from playing on various systemic aspects of the TBTF problem, which these reforms do not explicitly or effectively address. By doing so, these deregulatory and anti-regulatory arguments exploit the hidden tensions within the TBTF concept and policy framework.[126]

Of course, rolling back post-crisis regulatory reforms is by no means the only, or the best, possible response to this reappearance of the TBTF paradox. To the contrary, since the problem with the current TBTF solutions is their failure to incorporate certain core macro-level dynamics, the appropriate cure for this problem would be to expand and strengthen the *structural, systemic* focus of the TBTF policy toolkit.

IV. WHAT NOW? REFRAMING THE PROBLEM, REBALANCING SOLUTIONS

Generally, there are two mutually complementary approaches to rendering the TBTF policy more effective and responsive to key systemic dynamics discussed above: (1) to build up the arsenal of more comprehensive and assertive "B" factor solutions; and (2) to supplement traditional regulatory approaches to TBTF by directly targeting specific dysfunctions in the operation of financial *markets*.

A. Reinforcing Existing Tools: Size Caps; Structural Separation

A good starting point for rebalancing post-crisis TBTF policies would be

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[125] *See, e.g.*, Kathryn Judge, *The Guarantor of Last Resort*, 97 TEXAS L. REV. (forthcoming 2019); HAL S. SCOTT, CONNECTEDNESS AND CONTAGION (2016); PERRY MEHRLING, THE NEW LOMBARD STREET: HOW THE FED BECAME THE DEALER OF LAST RESORT (2010).

[126] *See supra* Part II.C.

to expand the range and potential impact of the "B" factor solutions, discussed above.[127] The "B" factor, with its more organic focus on the structural drivers of the TBTF problem, deserves greater prominence in how we understand and mitigate that problem in the interconnected and complex world of modern finance.[128]

The most readily available choice in this respect is to start using the existing regulatory and supervisory tools more assertively and consistently – and for the explicit purpose of shaping the broad structural dynamics in the financial sector. For example, the Federal Reserve could begin exercising its broad statutory powers to reduce the balance sheet size and to limit the scope of activities of any BHC with assets above the $250-billion threshold that poses "a grave threat to the financial stability of the United States."[129] Pursuant to this authority, the Federal Reserve can order these large financial institutions to terminate any activity, divest any assets, or freeze any acquisition plans.[130] Although the exercise of this authority by the Federal Reserve is explicitly conditioned on the requisite "grave threat" determination, it nevertheless represents a potentially powerful tool for breaking up TBTF mega-firms. A similarly potent tool that federal bank regulators could start utilizing is their legal authority to order significant asset divestitures and other restructuring by large financial institutions that repeatedly failed to submit credible "living wills," discussed above.[131]

Of course, the key challenge for the Federal Reserve and other regulators is to signal to the market their resolve to use these extraordinary tools in the appropriate circumstances – and be ready to follow through with this threat in practice. This is a difficult commitment to make credibly, especially in light of federal bank regulators' traditional distaste for taking public enforcement actions – and the financial industry's traditional propensity to fight such inherently complex determinations in courts.

To target the "B" factor in the TBTF problem more consistently and directly, Congress could extend the regulators' authority to break up TBTF

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[127] *See supra* Part II.B.

[128] It should be emphasized here that all of the explicitly systemically oriented, structural solutions discussed below should *supplement*, rather than replace, the current regime of entity-based regulation and supervision. It is crucial to address the TBTF problem on the micro-level and the macro-level as part of a unified and dynamic strategy. For a recent defense of entity-based prudential oversight of non-bank SIFIs, see Jeremy C. Kress, Patricia A. McCoy, Daniel Schwarcz, *Regulating Entities and Activities: Complementary Approaches to Nonbank Systemic Risk*, S. CAL. L. REV. (forthcoming 2019), *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3238059.

[129] 12 USC § 5331. For an earlier discussion of Section 121 of the Dodd-Frank Act that created this authority, see *supra* note 66 and accompanying text.

[130] *Id.*

[131] *See supra* notes 53-55 and accompanying text.

firms by simply mandating such restructuring whenever any firm reaches some specified size threshold. Several academic and legislative proposals have advanced this TBTF-focused variation on the traditional antitrust approach.[132] For example, in October 2018, Senator Bernie Sanders introduced a bill aptly entitled "Too Big To Fail, Too Big To Exist," which would cap the size of the largest financial institutions so that any single company's total exposure would not exceed 3% of the country's GDP.[133]

In addition to, or in lieu of, these antitrust-type measures, policymakers and regulators could also pursue a range of broader structural reforms aiming to control the growth of TBTF firms by restricting their permissible business activities. In fact, one of the fundamental tenets of the U.S. system of banking laws and regulations is the principle of separation of banking from commerce, which seeks to keep deposit-taking institutions structurally separate from non-financial, commercial companies. Thus, U.S. commercial banks generally cannot conduct any activities that fall outside the statutory concept of "the business of banking."[134] Moreover, under the BHC Act, companies that own or "control" U.S. banks – i.e., U.S. BHCs – are generally restricted in their ability to engage in any business activities other than banking, managing banks, or certain activities "closely related" to banking.[135]

Since the 1980s, the scope of banks' and BHCs' permissible activities has been steadily and gradually expanding.[136] Most notably, in 1999, Congress authorized certain qualifying BHCs to become "financial holding companies" (FHCs) and to conduct a wide range of financial and even some commercial activities.[137] One obvious consequence of this activity expansion was a dramatic consolidation of market power in the small number of mega-

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[132] *See* Jonathan R. Macey & James P. Holdcroft, Jr., *Failure is an Option: An Ersatz-Antitrust Approach to Financial Regulation*, 120 YALE L. J. 1368 (2011); SIMON JOHNSON & JAMES KWAK, THIRTEEN BANKERS: THE WALL STREET TAKEOVER AND THE NEXT FINANCIAL MELTDOWN (2010).

[133] The original text of the proposed legislation is available at https://www.sanders.senate.gov/download/tbtfleg?inline=file. At the time of its unveiling, the bill's proposed size cap equaled about $584 billion, which would have resulted in the breakup of six largest U.S. BHCs. See, https://www.sanders.senate.gov/newsroom/press-releases/sanders-sherman-introduce-legislation-to-break-up-too-big-to-fail-financial-institutions.

[134] 12 U.S.C. § 24 (Seventh).

[135] 12 U.S.C. §§ 1841-43. In essence, the BHC Act is an *antitrust* legislation tailored to the unique public significance and vulnerabilities of the modern banking system.

[136] *See* Saule T. Omarova, *The Quiet Metamorphosis: How Derivatives Changed the "Business of Banking,"* 63 U. MIAMI L. REV. 1041 (2009); Saule T. Omarova, *The Merchants of Wall Street: Banking, Commerce, and Commodities*, 98 MINN. L. REV. 265 (2013) [hereinafter, *Merchants of Wall Street*].

[137] 12 U.S.C. § 1843(k). *See also* sources cited *supra* note 136.

sized financial conglomerates.[138] Another, perhaps less obvious, systemic consequence was a qualitative increase in the nature and degree of fragility-inducing interconnectedness and complexity in the financial sector. Among other things, the removal of the Glass-Steagall era prohibitions on cross-affiliations created unprecedented opportunities for undetected leakages of the public subsidy from insured banks to their non-bank affiliates engaged in high-risk dealing and trading operations.[139] This direct amplification of the TBTF problem is especially pronounced in the context of large U.S. banking institutions expanding into purely commercial activities that themselves have a heightened systemic significance, such as trading in key physical commodities and energy.[140]

These developments notwithstanding, however, U.S. banks' and BHCs' activities, investments, and organizational affiliations remain subject to significant limitations. In this sense, the existing regime of separating banking from commerce provides a natural platform for federal regulators to maintain and reinforce – rather than weaken or eliminate – certain key structural boundaries in the financial system.[141]

In the post-crisis era, there have been several attempts to legislate further structural separations between depository institutions and other financial market intermediaries. Thus, in July 2013, a bipartisan group of U.S. Senators, led by Elizabeth Warren and John McCain, introduced a bill entitled the "21st Century Glass-Steagall Act of 2013."[142] The proposed bill

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[138] *See* Dafna Avraham, Patricia Selvaggi, and James Vickery, *A Structural View of U.S. Bank Holding Companies*, FRBNY ECON. POL. REV. 65 (July 2012), *available at* https://www.newyorkfed.org/medialibrary/media/research/epr/12v18n2/1207avra.pdf.

[139] For an analysis of these important intra-FHC dynamics, and their systemic stability implications, see Saule T. Omarova, *From Gramm-Leach-Bliley to Dodd-Frank: the Unfulfilled Promise of Section 23A of the Federal Reserve Act*, 89 N. C. L. Rev.1683 (2011).

[140] For a comprehensive analysis of U.S. FHCs' commodities activities in the post-1999 era, see *Merchants of Wall Street, supra* note 136.

[141] Recently, the U.S. regime of separation of banking and commerce came under increasing pressure from the financial industry seeking to expand its presence in the emerging "fintech" sector, among other things, by acquiring or affiliating with various technology firms. Allowing organizational affiliations between banks and technology firms, however, would critically undermine the public policy goals at the heart of the U.S. bank regulation. It would also potentially open the door to the formation of mega-sized finance-technology conglomerates that would take the TBTF problem to a qualitatively new level, both as a political matter and as a matter of economic policy. For a detailed discussion, see, Written Testimony of Saule T. Omarova before the U.S. Senate Committee on Banking, Housing, and Urban Affairs, "Fintech: Examining Digitization, Data, and Technology," (Sept. 18, 2018), *available at* https://www.banking.senate.gov/imo/media/doc/Omarova%20Testimony%20and%20Appendix%209-18-18.pdf.

[142] The original text of the proposed legislation is available at http://www.warren.senate.gov/files/documents/21stCenturyGlassSteagall.pdf. The Glass-

sought to (1) prohibit federally insured deposit-taking institutions from affiliating or having interlocking management with securities firms, insurance companies, and derivatives dealers; and (2) tighten the scope of banks' permissible activities, among other things, by prohibiting investments in structured or synthetic products.[143]

In a somewhat different vein, the post-crisis proponents of so-called "narrow" banking advocate separating banks' deposit-taking function from their lending function, thus restricting or even taking away banks' power to create credit and money and effectively turning them into "safe" money-market mutual funds.[144] While some of these proposals would allow "narrow banks" to engage in some forms of low-risk lending, others would restrict their activities to providing basic payments and safekeeping services and investing in government debt and other short-term money instruments.

All of these proposed approaches – imposition of mandatory size caps, revival of the Glass-Steagall regime, and creation of "narrow banks" – raise potentially significant design and implementation issues and, accordingly, invite both serious conceptual criticism and politically motivated attacks.[145] Whether, and under what conditions, any of these specific measures could – or even should – become law is a complicated question beyond the scope of this discussion. For present purposes, the key point is that these ideas define the current range of potential "B" factor solutions to the TBTF problem that are far more radical than the Volcker Rule or "ring-fencing" reforms, discussed above.[146]

Ironically, the radicalism of these proposed structural reforms comes fundamentally from recreating ideas born out of the Great Depression. Of course, that fact does not automatically invalidate these proposals.

Steagall Act of 1933 prohibited organizational affiliations between commercial banks and securities firms. Banking Act of 1933 (Glass-Steagall Act), Pub. L. No. 73-66, 48 Stat. 162 (codified as amended in scattered sections of 12 U.S.C.), *repealed in part by* Financial Services Modernization Act of 1999 (Gramm-Leach-Bliley Act), Pub. L. No. 106-102, 113 Stat. 1338 (codified in scattered sections of 12 and 15 U.S.C.).

[143] *Id.* Sec.3.

[144] *See, e.g.,* LAWRENCE KOTLIKOFF, JIMMY STEWART IS DEAD: ENDING THE WORLD'S ONGOING FINANCIAL PLAGUE WITH LIMITED PURPOSE BANKING (2011)*;* Adam Levitin, *Safe Banking*, 83 U. CHI. L. REV. 357 (2016); George Pennacchi, *Narrow Banking*, 4 ANN. REV. OF FIN. ECON. 1 (2012); Arthur J. Wilmarth, *Narrow Banking: An Overdue Reform that Could Solve the Too-Big-to-Fail Problem and Align U.S. and U.K. Regulation of Financial Conglomerates*, 31 BANKING & FIN. SERV. POL'Y REP. 1 (2012). In principle, these proposals build on the idea of "100% reserve banking," advanced in the wake of the Great Depression by economists Irving Fisher and Henry Simons and later developed by the Austrian and Chicago school economists.

[145] For a discussion of these proposals, see *Structural Reform*, *supra* note 67, at 498-500.

[146] *See supra* Part II.B.2.

Nevertheless, it raises concerns about the extent to which they take into account – and are able to reshape or counteract – the systemic dynamics that continue to impede effective resolution of the TBTF problem.[147] Achieving that lofty goal is likely to require a bolder and more comprehensive approach to structural reform than the "neo-Glass-Steagall" regime or "narrow banking" are able to offer.

This new kind of an enhanced structural reform should incorporate an explicitly systemic view of finance and draw the legal and regulatory boundaries not simply with an eye to individual firms' balance sheets, but with an eye to the functional dynamics of the financial market as a whole. Accordingly, these reforms would have to pursue a deliberately diverse and ambitious set of policy objectives, well beyond the familiar goals of insulating deposit-taking banks from excessive risk-taking and minimizing the likelihood and public cost of their failure. Thus, these reforms should explicitly seek to reduce the levels of complexity and opacity of the financial system. They should also seek to minimize the incentives – or create structural disincentives – for individual firms to engage in regulatory arbitrage, especially in the usual procyclical fashion. Finally, and perhaps most importantly, these reforms should target the systemic problem of continuous credit misallocation and growth of speculative secondary-market trading.

To achieve these goals, it might make sense, for example, to redefine the key structural boundary in the financial sector as that separating financial institutions whose principal function is to assist companies' and individuals' capital-raising in *primary* markets, on the one hand, from institutions engaged predominantly in facilitating trading and transfer of financial risk in *secondary* markets, on the other.[148] Among other things, this supra-functional approach to structural reform would refocus regulatory attention on the core sources of systemic financial instability: the built-in propensity of secondary markets for financial instruments to over-generate tradable risk.[149]

Needless to say, developing a blueprint for this type of a comprehensive and bold structural reform is no easy task. It requires a fundamental attitudinal shift in the debate on the proper scope and tools of financial

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[147] *See supra* Part III.

[148] For an early effort to articulate this supra-functional approach to structural reform, see Saule T. Omarova, *Wall Street as Community of Fate: Toward Financial Industry Self-Regulation*, 159 U. PENN. L. REV. 411, 475-482 (2011) (proposing separate licensing and regulatory regimes for (1) financial institutions facilitating "risk transfer" through the creation and trading of complex financial products, and (2) financial institutions facilitating more traditional "capital formation" in primary markets).

[149] For a detailed explanation and a taxonomy of the core meta-transactional techniques for such over-generation of tradable financial risks in secondary markets, see *Fintech as a Systemic Phenomenon, supra* note 99.

regulation: a shift that involves re-examining underlying assumptions, redefining key problems, resetting normative priorities, and recognizing new possibilities.[150]

B. Expanding the Reform Agenda: Prices, Products, Public Options

Even the most thoughtfully designed and comprehensive structural reform, however, is vulnerable to private market actors' attempts to circumvent regulatory boundaries.[151] It is, therefore, important to expand the reform agenda beyond the traditional "B" factor solutions and to start devising policy tools that would target undesirable market dynamics directly. In a deliberate shift from financial firms' "bigness" or systemic significance to financial markets' functional mechanisms, these next-generation "B" factor solutions would seek to reduce and control systemic complexity, regulatory arbitrage, and over-generation and misallocation of credit.

Systemically Significant Prices

Among other things, that may mean expanding the conceptual framework to incorporate a focus on what has been termed "systemically important prices and indices," or SIPIs.[152] SIPIs are prices and indices that take on particular market-wide importance, because they are (1) associated with ubiquitous inputs to production, (2) associated with highly popular asset classes, or (3) used as benchmarks in determining other prices. Examples of SIPIs include prevailing wage and salary rates, certain energy and commodity prices, the S&P500 index, the federal funds rate, and the leading interbank borrowing rates.[153] SIPIs play a critical role in the growth, complexification, and volatility of financial markets.[154] Accordingly, the malfunctioning of the mechanisms used to determine individual SIPIs is an important potential source of systemic instability. Thus, the process for setting certain SIPIs gives

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[150] I intend to develop the basic framework for such an explicitly systemically oriented approach to structural reform in a separate research project.

[151] *See Structural Reform*, *supra* note 67, at 501-502 (discussing the "boundary problem").

[152] *See* Robert C. Hockett & Saule T. Omarova, *Systemically Significant Prices*, 2 J. FIN. REG. 1 (2016) [hereinafter, *Systemically Significant Prices*] (introducing and discussing the concept of SIPIs, market vulnerabilities they create, and regulatory strategies for addressing such vulnerabilities).

[153] *Id.*

[154] For example, until very recently, the London Interbank Offered Rate (LIBOR), a reference rate at which large banks borrowed short-term wholesale funds from one another on an unsecured basis, served as the principal benchmark for the vast majority of variable-rate loans, mortgage-backed securities, and derivatives traded in global financial markets. As of 2013, LIBOR underpinned more than $300 trillion in derivatives contracts alone. *See* David Hou & David Skeie, *LIBOR: Origins, Economics, Crisis, Scandal, and Reform*, FRBNY Staff Report No. 667 (Mar. 2014),

rise to concerns about large-scale market manipulation and conflicts of interest likely to have widely distortive effects on financial markets.[155] Moreover, excessive speculation in assets whose prices are systemically important poses a heightened danger of triggering self-reinforcing fire sale spirals across numerous markets.[156]

Regulatory measures that minimize market vulnerabilities arising in connection with the operation of various SIPIs are, therefore, important supplements to the more traditional entity-focused TBTF solutions.[157] Such measures could include the creation of a special regime for designating particular asset prices and indices as SIPIs and subjecting their derivation and maintenance to specially developed regulatory standards. Among other things, this regime could require licensing of private firms that create or maintain specific indices or benchmarks designated as SIPIs, impose supervisory controls on the process of deriving SIPIs, mandate enhanced antitrust and antifraud oversight of the relevant markets and activities, or even establish some form of utility-style regulation with respect to certain SIPIs.[158]

Financial Product Approval

Another potential regulatory reform along the same, more explicitly macro-structural, lines would introduce a system of mandatory pre-approval of financial products, explicitly aimed at reducing the complexity and opacity of financial markets.[159] As explained more fully in my prior work, the idea of product approval operationalizes a simple but powerful intuition: if we cannot effectively regulate and control systemic risk associated with the increasing complexity and interconnectedness in financial markets, we need to reduce and control the overall level of complexity in the system.[160] Because much of that risk-generating complexity is a result of strategic efforts of financial firms that structure, market, and deal in complex financial instruments, the

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[155] Recent price-rigging scandals involving LIBOR and foreign exchange benchmark rates demonstrate the far-reaching global impact of dysfunctional SIPI dynamics. As a result of these scandals, LIBOR is currently being phased out. *See* Jill Treanor, *Libor interest rate to be phased out after string of scandals*, THE GUARDIAN (Jul 28, 2017), *available at* https://www.theguardian.com/business/2017/jul/27/libor-interest-rate-phased-out-scandals.

[156] For a detailed discussion of market vulnerabilities associated with SIPIs, see *Systemically Significant Prices, supra* note 152, at 9-13.

[157] For a more detailed discussion of the relevant regulatory measures, see id. at 14-20.

[158] *Id.*

[159] *See License to Deal*, *supra* note 93 (advancing a proposal for designing a financial product approval scheme).

[160] *Id.* at 66. It is worth emphasizing that, in the context of this discussion, complexity – of financial instruments, institutions, and markets – is viewed merely as a key functional variable driving and explaining an entire complex of socially undesirable dynamics in the financial system, and not as some intrinsic social "evil." *See* id. at 68-75 (discussing the concept of strategic complexity and its role in increasing systemic risk).

most radical and direct method of reducing systemic risk would be to insert regulatory controls at the point of product development, before the risk is introduced into the financial system.[161]

A properly designed product approval regime would provide a procedural mechanism for ensuring that financial innovation and the creation of complex financial instruments, in fact, advance productive economic enterprise and offer real public benefits – as opposed to merely fueling financial speculation and regulatory arbitrage.[162] Under this regime, financial institutions would have to demonstrate to the regulators that each complex financial product they intend to market meets three statutory tests: (1) an "economic purpose" test, which would place the burden of proving the social and commercial utility of each proposed financial instrument on the financial institutions seeking its approval; (2) an "institutional capacity" test, which would require a review of the applicant firm's ability to effectively manage the risks and monitor the market dynamics of the proposed product; and (3) a broad "systemic effects" test, which would require a finding that approval of the proposed product would not pose an unacceptable risk of increasing systemic vulnerability and otherwise will not raise significant public policy concerns.[163]

In essence, this approach would function as a simple burden-shifting device: instead of prohibiting any specific activities, it would impose the duty to provide information necessary for evaluating potential risks and benefits of a specific financial product on the party that has the best access to such information – and the greatest incentives not to disclose it voluntarily.[164] By eliminating socially counterproductive complexity, this approach would also potentially enhance the reliability of traditional mechanisms of private market discipline.[165]

Credit Modulation and Allocation

Another set of unorthodox policy tools may be combined under the general heading of "public options:" i.e., various institutional forms of direct public participation in financial market activities. As elaborated elsewhere, public instrumentalities already play an indispensable role in making,

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[161] *Id.* at 66.

[162] For a discussion of how systemic complexity, financial speculation, and regulatory arbitrage continue to hinder the effective operation of post-crisis TBTF policies, see *supra* Part III.

[163] *License to Deal*, *supra* note 93, at 67.

[164] Of course, designing a workable regime of financial product approval is a complex undertaking bound to raise multiple legal, economic, and political questions. For an in-depth discussion of these issues, see id. at 113-140.

[165] *Id.* at 68-69.

facilitating, and preserving putatively private financial markets.[166] They act as collective agents, uniquely capable of counteracting and thus solving recursive collective action problems permeating the operation of decentralized markets in which they operate.[167] Crucially, they act *within*, not *without*, the markets – a factor that fundamentally changes the way we are conditioned to understand public-private dynamics in finance. As market actors, public instrumentalities are able to affect asset prices and shape private firms' behavior in a more nimble and direct way than can be done through traditional regulation or supervision. Expanding these participatory capacities of public actors would accordingly amplify this self-correction market mechanism crucial for safeguarding systemic financial stability.

One potential example of such proactive and systematic exercise of collective agency would be an expansion of the Federal Reserve's so-called "open market operations" (OMO) beyond their current focus on interest rate-setting via trading in U.S. government bonds, to encompass trading in a wide range of financial assets.[168] This more comprehensive OMO strategy – or OMO Plus – would aim explicitly to prevent destabilizing asset price bubbles and busts, by executing counter-cyclical trades in the relevant asset markets.[169] In parallel to its existing Treasury bond-trading, the Federal Reserve Bank of New York (FRBNY) would establish a separate trading portfolio replicating the market portfolio: effectively, an index fund reflecting the proportional values of all financial asset classes constituting the financial market as a whole.[170] If, for example, a particular asset class—such as mortgage-backed securities or technology stocks—rises in market value at rates suggestive of a bubble trend, the FRBNY trading desk would short these securities, in order to put downward pressure on their prices.[171] Acting in this manner would tend to tighten the flow of speculative credit to the asset class in question, both because (1) speculative profit prospects would be diminished by the price drop; and (2) the Federal Reserve's actions would signal to the market its determination that current prices of the asset in question are artificially inflated. Conversely, the FRBNY trading desk would go long on particular asset classes when they appear to be artificially undervalued. The same process would apply with respect to broader market price fluctuations.[172]

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[166] *See* sources cited *supra* note 22.

[167] *See supra* Part III.A.3.

[168] For a basic description of the mechanism of Open Market Operations, see ANN-MARIE MEULENDYKE, U.S. MONETARY POLICY AND FINANCIAL MARKETS 163–88 (1998).

[169] For a more detailed proposal, see *Public Actors*, *supra* note 22 at 141-144.

[170] This portfolio could be constituted synthetically, rather than through the purchase of actual assets – an option with fewer upfront costs. *See* id. at 141.

[171] *Id.* at 142.

[172] *Id.*

Another example of a policy directly targeting broad financial market dynamics would involve an establishment of a new federal instrumentality – dubbed elsewhere the National Investment Authority (NIA) – charged with developing and implementing a comprehensive strategy of national economic development.[173] This new instrumentality would operate as a true hybrid public-private market actor, enabling private investors to overcome currently insurmountable collective action problems that render investment in long-term public infrastructure projects individually irrational.[174]

In highly simplified and abbreviated terms, the NIA would function much like a typical Wall Street asset manager: it would set up a series of collective investment funds (structured similarly to traditional private equity funds), actively solicit private investors to purchase passive equity stakes in its funds, and then select and manage individual funds' portfolios of public infrastructure assets.[175] Reversing the fundamental logic of a traditional "public-private partnership" model, this new entity would channel the enormous amounts of private capital held by pension funds, insurance companies, university endowments, banks, foreign sovereign wealth funds, and other institutional investors into the coordinated construction and maintenance of large-scale, economic growth-boosting infrastructures.[176] Examples of such transformative public infrastructures would include nationwide networks of clean energy provision and state-of-the-art transportation, regional air and water cleaning and preservation programs, systems of ongoing adult education and technical training, networks of mixed public-private "startup" finance funds, and so on.[177]

At present, private investors are often unwilling to finance such socially beneficial projects, primarily because of the longer time horizons and higher private risks associated with the provision of public goods.[178] The NIA would act directly and proactively to alleviate these risks. By deliberately exploiting the unique advantages of the federal government – its vast scale, high risk tolerance, lengthy investment horizons, and direct backing by the full faith and credit of the United States – it would enable private investors to capture reasonable gains from the provision of currently under-provided, transformative collective goods.[179]

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[173] For a detailed proposal, see *National Investment Authority*, *supra* note 22.

[174] *See* id. at 444-454 (identifying and analyzing such collective action problems).

[175] *See* id. at 475-480 (outlining the general structure and functions of the NIA as an asset manager).

[176] Under the traditional "public-private partnership" model, profit-seeking private firms are typically paid to manage – or *mis-manage* – public money. *See* id. at 439-440.

[177] For a detailed discussion of the specific methods and techniques of financial and legal engineering the NIA could adapt to this end, see id.at 469-490.

[178] *See* id. at 448-451; 454-455.

[179] *See* id. at 446-458. The key to achieving this goal is the NIA'a ability to *synthesize*

If thoughtfully designed and implemented, this innovative reform would open new opportunities for a more effective channeling of financial capital into productive economic enterprise, as opposed to socially harmful speculation in financial instruments.[180] In this sense, it would significantly enhance the long-term stability and resilience of the U.S. financial system – and blunt some of the key underlying systemic factors that currently hinder the ability of traditional TBTF solutions to deliver their intended results in practice.[181] In a truly organic fashion, an effective *structural* rebalancing of the nation's real economy would also help to rebalance, both structurally and functionally, its financial system.

To be clear, the purpose of this brief overview is not to elaborate any specific proposal in any significant detail but to provide some examples of potential avenues for introducing an explicitly systemic, market-wide perspective in the TBTF policy. Supplementing the familiar range of TBTF solutions with these types of bolder, broader measures is a critical – and presently largely missing – element in the process of eliminating the TBTF problem.[182] Of course, such unorthodox "public options" as those sketched out above are bound to meet with fierce criticism and resistance on the part of the financial industry. Even the well-meaning observers and experts might be hesitant to venture quite so far outside the established policy perimeter. Yet, simply articulating these innovative options as potential additions to the financial sector reform agenda would mark a significant step toward a more coherent and integrated strategy of eliminating the TBTF phenomenon. Hopefully, for good.

CONCLUSION

"Too big to fail," or TBTF, is a complex, capacious, and rhetorically powerful metaphor. It functions as an "umbrella" term, a discursive mirror reflecting the full spectrum of interrelated *systemic, macro-level* problems in today's finance. At the same time, however, TBTF is a fundamentally *micro-level, entity-centric* concept. While largely unacknowledged, this inherent tension between the *micro* and the *macro*, the *entity* and the *system,* continues to frame the ongoing public policy debate on TBTF. It also decisively shaped the design and implementation of the key post-2008 regulatory reforms in the financial sector.

Deconstructing the TBTF metaphor into its two basic components – the

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privately payable "equity strips" that reflect otherwise non-capturable public gains from the provision of collective goods. *Id.* at 451-454.

[180] For a thorough discussion of the institutional design and implementation issues in connection with this proposal, see id. at 480-490.

[181] *See supra* Part III.

[182] To re-emphasize, these measures should *supplement*, not supplant, the current regime of entity-based prudential regulation and supervision. *See supra* note 128.

"F" factor focused on the "failure" of individual financial firms and the "B" factor focused on their relative size and structural significance – provides a helpful framework for analyzing post-crisis legislative and regulatory efforts to solve the TBTF problem. This analysis reveals critical gaps in the post-crisis reform process, which consistently favors the inherently *micro*-level "F" factor solutions over the more explicitly *macro*-level "B" factor ones. It also suggests potential ways of rebalancing and expanding the current TBTF policy toolkit to encompass a wider range of measures targeting the relevant market-wide, or systemic, dynamics in a more direct and assertive manner.

Pushing the boundaries of our collective understanding of, and efforts to eradicate, the TBTF phenomenon by reinstituting the importance of self-consciously structural, systemic policy responses is bound to invite numerous questions and criticisms, both constructive and otherwise. There may not be simple answers or bullet-proof defenses to all of them. Yet, the TBTF problem is not going to disappear unless and until we find better, more comprehensive and effective, ways of solving it. By mapping out the conceptual terrain on which such solutions may be found, this article is taking a meaningful step toward that goal.