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Mr. Dietrich Domanski
Secretariat to the Financial Stability Board
Bank for International Settlements
Centralbahnplatz 2
CH-4002 Basel
Switzerland

Dear Sir:

Thank you for the opportunity to comment on the Board's evaluation of post-crisis financial reforms intended to mitigate the "too big to fail" (TBTF) dilemma presented by the largest global banks.¹

It is first important to note that TBTF is a *symptom* of an underlying problem. Institutions that are believed to cause significant harm to the financial system and the economy in distress or default continue to exist and some even grow primarily because neither markets nor regulations have address adequately the excessive size and complexity and the obvious and more subtle ways in which they engage in reckless conduct that actively adds fragility to themselves and to the system, or abuses their privileged position and the implicit guarantees that enables them to exist in this form. Public information and market forces do not allow us to determine just how unhealthy these institutions are, but their actions suggest that many of them may in fact be highly distressed or insolvent, and at the very least prone to substantial risk of distress and insolvency.

Lawrence Summers and his coauthor have concluded that, based upon market-based measures, there is "little basis for supposing that the risks of major institutions becoming insolvent are substantially lower than they were before the crisis."² A 2018 IMF paper shows that the omission of off-balance sheet items in the standard measures implies a substantial underestimation of bank leverage and that off-balance sheet funding is likely more substantial now than in 2007.³ In a system with properly aligned incentives, market participants would not lend to such highly indebted, complex, and opaque institutions. Banks are excessively fragile and inefficient because

¹ See Financial Stability Board, Evaluation of Too-Big-to-Fail Reforms, May 23, 2019, available at: <https://www.fsb.org/wp-content/uploads/P230519.pdf>.

² Natasha Sarin & Lawrence Summers, *Understanding Bank Risk through Market Measures*, Brookings Papers on Economic Activity 57, 103 (Fall 2016), available at: <https://www.brookings.edu/wp-content/uploads/2017/02/sarintextfall16bpea.pdf>.

³ See Manmohan Singh and Zohair Alam "Leverage: A Broader View" (2018) <https://www.imf.org/en/Publications/WP/Issues/2018/03/19/Leverage-A-Broader-View-45720>

markets forces fail to counter their distorted incentives. The situation continues to be ever present for the largest institutions, which still expose the system, and the global economy, to unnecessary risk and harm.⁴

I attach my 2016 article, “The Missed Opportunity and Challenge of Capital Regulation,” which is still relevant. Whereas the article focuses on capital regulations, the key point it makes are highly relevant to the debate on TBTF. The current capital regulations are inadequate and poorly designed in general, and they do not “solve” the TBTF problem. Neither do resolution plans. In particular, the use of loss-absorbing debt instruments as a substitute of much higher (as well as properly defined and measured) equity buffers is unlikely to work as planned and, moreover, is entirely unnecessary and unjustified from policy perspective. The debate over these issues continues to be mired in flawed arguments and excuses.

To date, financial regulation efforts have focused too much on trying to create complex yet unreliable regimes to manage a potential failure of one institution rather than making the financial system safer and trying to prevent such scenario.⁵ Given the interconnectedness of the system, it is unlikely that we will see the failure of just one institution, as the opacity and the various contagion mechanisms will cause a breakdown of trust in the entire system. Moreover, the “fail” scenario in which we are asked to believe that it would be possible to “resolve” one of these systemic institutions without collateral still contains too much uncertainty. The FSB’s own document on effective resolution, for example, contains 406 instances of what “should” happen,⁶ demonstrating how much wishful thinking is involved in relying upon an untested regime to protect us from such scenarios. In the words of Sir John Vickers, “Given the awfulness of systemic bank failures, ample insurance is needed, and equity is the best form of insurance.”⁷

I remain deeply concerned with the fragility of the financial system and with the persistence of the TBTF problem. Former FDIC vice-chair Thomas Hoenig and a number of others have expressed similar concerns.⁸ I hope that these concerns and the policy recommendations that I and others have made, particularly a focus on substantial and meaningful increase in the use of equity, funded at the appropriate market prices and properly shifting risk and potential harm away from taxpayers, and reduction in the reliance of fragile funding, some of which does not serve useful social purpose, will be considered seriously. To do so would require also examination of some other counterproductive laws in many countries, such as tax and bankruptcy codes that implicitly encourage and enable fragility. I will be happy to elaborate further.⁹

⁴ On the inherent inefficiency in banking, see Admati and Hellwig “Bank Leverage, Welfare, and Regulation,” (2019) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3257957

⁵ See Saule Omarova, *The “Too Big To Fail” Problem*, 103 MINN. L. REV. 2495 (2019).

⁶ See Financial Stability Board, Key Attributes of Effective Resolution Regimes for Financial Institutions (Oct. 2011) available at: https://www.fsb.org/wp-content/uploads/r_111104cc.pdf.


⁷ Sir John Vickers, *The Bank of England Must Think Again on Systemic Risk*, Financial Times, Feb. 14, 2016, available at: <https://www.ft.com/content/674b16b8-d184-11e5-831d-09f7778e7377>.

⁸ See, for example, this recent speech <https://www.fdic.gov/news/news/speeches/spmar2818.html>.

⁹ Many other documents, including presentation slides and academic papers, are available in the “research” and advocacy tabs of my website <https://admati.people.stanford.edu/>, including, for example, recent presentation https://admati.people.stanford.edu/sites/g/files/sbiybj1846/f/cleveland-ofr-print_1.pdf and recent paper that discusses the counterproductive role of tax and bankruptcy laws <https://econfp.org/policy-brief/towards-a-better-financial->

Thank you for considering my views on this important matter.

Sincerely,

A handwritten signature in black ink that reads "Anat Admati". The signature is written in a cursive, slightly slanted style.

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George G.C. Parker Professor of Finance and Economics
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Cc: The Honorable Randal K. Quarles, Chair
The Honorable Klaas Knot, Vice Chair

[system/](https://www.gsb.stanford.edu/faculty-research/excessive-leverage) This website on excessive leverage and risk in banking includes a sorting of some of the writings by topic:
<https://www.gsb.stanford.edu/faculty-research/excessive-leverage>.

THE MISSED OPPORTUNITY AND CHALLENGE OF CAPITAL REGULATION

Anat R. Admati*

Capital regulation is critical to address distortions and externalities from intense conflicts of interest in banking and from the failure of markets to counter incentives for recklessness. The approaches to capital regulation in Basel III and related proposals are based on flawed analyses of the relevant tradeoffs. The flaws in the regulations include dangerously low equity levels, a complex and problematic system of risk weights that exacerbates systemic risk and adds distortions, and unnecessary reliance on poor equity substitutes. The underlying problem is a breakdown of governance and lack of accountability to the public throughout the system, including policymakers and economists.

Keywords: Banking regulation; capital regulations; banking; equity in banking; capital structure; leverage; agency costs; leverage ratchet effect; Basel; risk weights; TLAC

JEL Classifications: G21; G28; G32; G38; H81; K23

Introduction

The events of 2007–9 exposed the failure of regulators to prevent the build-up of risk in the financial system and showed that flawed rules and ineffective enforcement of financial regulations can cause significant harm to the rest of the economy. Despite this experience, the effort at regulatory reform has been messy and unfocused. The small adjustments to capital regulations, in particular, are far from sufficient to protect the public, and the regulation is still based on a flawed approach that distorts markets, exacerbates systemic risk, and undermines the purpose of the regulation.

A healthy and stable financial system is essential for enhancing the allocation of resources, risk sharing and economic welfare. If designed and implemented properly, capital regulation can be a powerful tool for correcting market failures, reducing externalities, and ensuring that the financial system serves the economy. The continued failure of this regulation has permitted an unhealthy, opaque, inefficient and excessively fragile system to persist. This system exposes the public to unnecessary risks and distorts the economy.

The causes for the failure of capital regulation seem to reflect, at least in part, confusion about why this regulation is essential and beneficial and about the relevant tradeoffs. Studies purporting to provide guidance

to policy routinely make flawed assumptions and ignore the critical distinction between private and social costs and benefits. The specialised jargon used in banking has obscured the issues and further muddles the debate.

In this essay I explain the key issues and how capital regulations fall short. I start by discussing the economics of funding and the forces that cause banks to use too little equity, which make effective capital regulation essential and beneficial. I then provide an overview of current status of the regulations, point to some key flaws and discuss some of the claims made in the policy debate. I close with remarks that place the debate in a broader governance context.

Are banks special and if so, how?

Capital regulation places restrictions on how banks and other institutions are funded in order to address distortions in their incentives. Well-designed capital regulation ensures that an appropriate part of funding is obtained and maintained from owners and shareholders who provide equity. Because owners and shareholders are not *promised* any specific payments, they automatically absorb losses as long as debts are paid.

A mantra in banking is that ‘equity is expensive’. This view is taken to imply that requiring banks to use more

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equity entails meaningful costs that should be balanced against the benefits of more equity. In fact, the costs of using more equity are entirely private and incurred by a small set of individuals. These private costs arise because when more equity is required these individuals are less able to pass costs and downside risk to creditors and to taxpayers, and they are more than offset by the substantial benefits to the broader society. Policy must be based on social, rather than narrowly private costs and benefits.

Before discussing the economics of funding and how they apply in banking, we must address an insidious confusion that often perverts the discussion. The confusion concerns the meaning of the word ‘capital’ in banking. Many believe that bank capital is analogous to cash reserves or a rainy day fund, and that capital requirements force banks to ‘set aside’ or ‘hold in reserve’ idle cash that cannot be used to make loans or other investments. This suggestion is patently false. Capital requirements do *not* require banks to hold anything; they only concern the source of funding banks use and the extent to which investments are funded by equity (or other forms of ‘loss absorbing capital’, as discussed below). Corporations do not ‘hold’ their own funding; rather, investors hold (own) claims such as common shares that are paid from cash flows the firm generates.

If capital is falsely thought of as idle cash, the discussion of capital regulation is immediately derailed by imaginary tradeoffs. Nonsensical claims that increased capital requirements prevent banks from making loans and ‘keep billions out of the economy’ may resonate with media, politicians and the public just because the jargon is misunderstood.¹ In light of this confusion and its ability to muddle the debate, it is disturbing that regulators and academics, who should know better, routinely collaborate with the industry to obscure the issues by using the misleading language and failing to challenge false statements. If, instead, the language that is used focused attention properly on funding and indebtedness, the debate would be elevated and more people would be able to understand the issues. Instead of saying ‘hold’ or ‘set aside more capital’ one can say, for example, ‘use more equity’, ‘rely less on debt/borrowing’, or ‘borrow less’.

The economics of funding start with the observation that borrowing always creates leverage and magnifies risk. In financial markets, the required return on any security depends on risk because investors are risk averse. A seminal insight, made in 1958 by Franco Modigliani and Merton Miller and taught in basic courses in finance, is that rearranging risk among

different investors does not *by itself* change the overall funding costs of a corporation.

Are banks so special that this basic principle and everything else we know about the economics of funding do not apply to them?² One way banks are special is that some of their funding comes from depositors, who accept lower returns in exchange for services such as ATMs. To the extent that deposits involve provision of these services, deposits are a bit different from other debts, but the logic of Modigliani and Miller and much of what we know about funding still apply to banks and particularly to their funding with equity and borrowing in wholesale markets. In those markets banks interact with the same investors who provide funds to businesses and corporations and who value securities in the context of portfolios using the same criteria for all investments.³

Importantly, like all other firms, banks have owners or shareholders who have some discretion about the mix of debt and equity used to fund the banks’ assets. And like other firms, banks are more likely to become distressed or insolvent when they are highly indebted and take risks in their investments. The distortions and inefficiencies brought about by distress and insolvency are particularly relevant for banks, as discussed below.

The funding mix of non-financial corporations is rarely regulated. Companies can rely on any amount of debt funding if they find willing lenders to provide this funding. Despite the tax advantage of debt over equity for corporations, and without any regulation, most healthy corporations maintain significant equity levels, and some borrow very little. It is rare for corporations to maintain on a regular basis less than 30 per cent equity relative to their total assets. Retained earnings are a popular source of internally-generated equity funding. Many successful companies grow and thrive by routinely using their profits to make additional investments without taking on more debt.

Banks, like other companies, *can* retain their profits or sell additional shares to investors, which would enable more loans and investments. Yet banks often choose to make payouts (such as dividends) to their shareholders and continue to borrow even while their equity levels might be 5 per cent or even less relative to their assets.⁴

Because they operate with little equity and their assets are often opaque and difficult to value, banks are fragile. Even small losses can raise concerns about their insolvency. If depositors or short-term creditors

are concerned they might not be paid, the result can be a run, even if the bank is still solvent. Because banks provide essential services, the collateral harm of their default and failure can be large. If many banks fail or become distressed at the same time, the economy as a whole is disrupted and harmed.⁵

Does the business of banking imply that banks must be heavily indebted and use very little equity? Must we, as a society, tolerate this fragility in order to obtain the benefits banks provide? The answer is a resounding *No*. Nothing about the business of banking makes it essential or beneficial for banks to operate with the very low equity levels they choose to maintain. On the contrary, banks are better and more consistently able to make all worthy loans at appropriate prices and their ability to provide reliable liquidity to depositors and other creditors would be *enhanced* if they were safer by using more equity. A safer bank would be less likely to experience liquidity problems or runs, and because it is more likely to be solvent when experiencing a liquidity problem, the central bank will be better positioned to serve as a lender of last resort.

Why then do banks persist in having such high leverage and why do bankers fight furiously against regulations that would force them to use more equity? To answer these questions, it is useful to consider why nonbanks do not borrow more even though using more debt funding can save on their taxes. A key reason is that borrowing has a dark side.

First, high levels of debt can lead to financial distress and bankruptcy, which in turn create delays, legal costs, and disruptions that deplete the remaining assets of the firm. Second, and more important, borrowing creates fundamental conflicts of interest between borrowers and lenders regarding subsequent investment and funding decisions. The conflicts arise because borrowers benefit fully from the upside of any risk taken while they share the downside risk with creditors. Because of these conflicts of interest, decisions made by the managers and shareholders of an indebted corporation may harm creditors and reduce the combined total value of the firm to all investors. Specifically, decisions on behalf of shareholders when debt is in place reflect a bias in favour of riskier investments and additional borrowing and against relatively safe investments with insufficient upside and any reduction of leverage.

Anticipating the costs of bankruptcy and the potential distortions to decisions made against their interest, lenders typically try to protect themselves

by increasing the interest rate they charge, and they may attach restrictive conditions to debt contracts to constrain shareholders' subsequent actions. Debt covenants, however, cannot cover all contingencies and, because they may restrict the flexibility of the firm to take advantage of beneficial opportunities, may be renegotiated later. Covenants are also costly to enforce, particularly if creditors are dispersed and face a free-rider problem in pursuing them. As a result, heavy borrowing becomes expensive and unattractive for many companies despite the tax advantage of debt. The problem is particularly intense for banks because they are so highly indebted already.

Admati *et al.* (2015) explore the implications of borrower-creditor conflicts on corporate funding. We show that these conflicts of interest create a *leverage ratchet effect* that can have profound impact on the dynamics of corporate leverage. Borrowing and indebtedness can become addictive, excessive and irreversible, because shareholders avoid actions to reduce the amount of debt and increase the equity, such that they take downside risk that would otherwise be borne by creditors. Shareholders may, however, increase leverage to benefit themselves.

The leverage ratchet effect is particularly relevant for banks, because part of banks' business involves taking deposits, which involves borrowing.⁶ Once debt is in place and the conflicts of interest take hold, bankers prefer to increase leverage and 'economise' on equity. If deposits are explicitly or implicitly insured, bankers have little reason to worry about depositors withdrawing funding en masse. Importantly, insured depositors do not generally monitor banks' activities and do not put in place constraints on the risks or additional borrowing that banks take, on the payouts banks make to their managers and shareholders. Since deposits are not secured by collateral, banks can use assets purchased with deposits as collateral to obtain more debt funding from investors under attractive terms.⁷

Thus, bank creditors fail to counter properly the intense leverage ratchet effect that accompanies heavy borrowing and, without regulations, the resulting inefficiencies of distress or insolvency can persist for extended periods of time. As long as the bank meets its commitments and its creditors feel safe, the creditors may not notice if the bank becomes distressed through losses or additional borrowing, or even if it becomes insolvent. The addiction to borrowing in banking thus is tolerated, enabled and encouraged by the passivity of their creditors and by guarantees and subsidies.

The unusual passivity of depositors as creditors can cause bankers to forget that deposits are part of the banks' debts. For example, in criticising rules that would force banks to issue long-term debt that might absorb losses, John Stumpf, CEO of Wells Fargo Bank, made the nonsensical claim that because his bank has a lot of retail deposits, it does not have a lot of debt. Mr. Stumpf was also quoted in the same context saying "The last thing I need is debt".⁸ The story title referred to Wells Fargo Bank as "debt averse".

In criticising proposals for long-term debt, Mr. Stumpf did not advocate more equity, and his bank remains heavily indebted. If Wells Fargo Bank was actually debt averse, it could reduce its indebtedness by retaining its profits or selling new shares. Mr. Stumpf's objection to issuing long-term debt likely stems from the fact that, unlike insured depositors, investors who might suffer losses, even if this event is highly unlikely, are concerned with the risk of investing in Wells Fargo Bank, and might find the bank's financial disclosures poor.

Equity investors would be even harsher with Wells Fargo Bank and similarly large and complex banks given their complexity and poor disclosures. An investigative report that examined the financial statements of Wells Fargo Bank, which is less active in derivatives than other large institutions but has extensive off-balance-sheet exposures, quotes many investors and accounting experts stating that the large banks are so opaque that they are "uninvestible".⁹ Andrew Haldane of the Bank of England has also pointed to the opacity and complexity of these institutions.¹⁰ If regulations forced more equity funding, appropriate valuations based on true value creation and fewer subsidies and better disclosures would restore market discipline that is currently missing.

In summary, banks borrow too much and resist using more equity because their managers and shareholders have strong incentives to do so. These incentives include the already-high leverage in banking and the guarantees and subsidies that feed and reward their strong 'addiction' and which enable leverage to ratchet up.¹¹ Because the result of this leverage ratchet is that costs and downside risks are simply shifted to others while making the financial system fragile and creating further distortions, from society's perspective, and contrary to the mantra 'equity is expensive', it is having too little equity in banking that is expensive and highly inefficient. This situation can be corrected only by effective regulations. Unfortunately, the regulations we have are entirely inadequate and their design adds further distortions.

A critique of capital regulation based on Basel III

The Basel III accord agreed in 2010 and implemented, with some variations, around the world, recommends a modest increase in capital requirements relative to Basel II. Although it strengthens some definitions and rules, Basel III still allows equity levels to be much too low, and it maintains an approach where capital requirements are stated relative to risk-weighted assets (RWA). Among other things the regulation establishes a 'conservation buffer'. Banks have to rebuild their buffers by avoiding payouts to shareholders and bonuses if their equity falls below 7 per cent of RWA, and more interventions take place if the ratio falls to 4.5 per cent. The new leverage ratio introduced in Basel III requires that equity be at least 3 per cent of total assets, allowing assets to be more than 30 times larger than equity as measured by book value.

Banks designated as globally systemic institutions are required to have up to 2.5 per cent additional equity relative to RWA and, in addition, a recent proposal by the Financial Stability Board agreed upon by G20 leaders in 2015 adds a requirement for banks to use long-term debt called TLAC (Total Loss Absorbency Capacity) that is supposed to absorb losses in some situations.

It is important to note that regulatory capital ratios are based primarily on accounting conventions that can be quite arbitrary and vary by jurisdictions. Balance sheet disclosures tend to obscure significant exposures to risk, allowing much risk to lurk 'off balance sheet', and to manipulate the disclosures, particularly since auditors are subject to their own conflicts of interest and are unlikely to challenge managers.¹²

Regulatory capital ratios, especially those based on risk weights, can therefore give misleading reassurances. Through the financial crisis of 2007–9, these ratios still appeared strong even as banks were failing and receiving bailouts and supports. The intense lobbying by banks against any increase in required equity only reinforces the view that the requirements are entirely inadequate.

In addition to the problems related to accounting measures, there are three key flaws in capital regulations based on the Basel III accord. (See Admati and Hellwig (2013a, Chapter 11) for a more detailed discussion.)

- (i) Required equity levels are much too low.

- (ii) The use of complex manipulable risk weights that ignore some risks exacerbates systemic risk and distorts incentives, particularly because equity levels are so low.
- (iii) Debt-like securities are used in the regulations although they are complex, unreliable, and entirely dominated by equity.

Dangerously low equity levels

Bankers and policymakers claim that Basel III capital requirements are much improved, citing the fact that they are ‘multiples’ of those specified under Basel II. The requirements are actually very modest in absolute terms. Multiplying a small number such as 2 per cent equity to risk weighted assets in Basel II by a factor of 2, 3 or even more does not result in a large number. The 3 per cent ‘leverage ratio’ of equity to total value is outrageously low. Whereas some countries such as the US have adopted higher leverage ratios (5 per cent for bank holding companies and 6 per cent for deposit-taking banks), the levels are still too low. (Much of the regulation uses risk weighted assets as denominator. As discussed below this approach is highly problematic.)

Increasing equity requirements substantially brings about numerous benefits beyond increasing loss absorption capacity that allows banks to continue making loans after incurring losses without needing support. With more equity, liquidity problems, runs and all forms of contagion are less likely. Moreover, any loss in the value of the assets is a smaller fraction of the equity, thus fewer assets must be sold under distressed conditions to ‘delever.’ Better yet, distortions in banks’ lending and funding decisions due to overhanging debt are alleviated. As another bonus, more equity is the best way to reduce the implicit guarantees subsidy that distorts markets and rewards recklessness.¹³

All the studies I am aware of that claim to provide scientific guidelines for the design of capital regulations have fundamental flaws that render their conclusions meaningless. The estimates they provide for costs and benefits of specific capital ratios are based on many inappropriate assumptions. None of the models captures properly the relevant costs and benefits and none provides meaningful estimates that should guide policy.

A recent paper produced in the Bank of England, Brooke *et al.* (2015), cites earlier flawed studies and provides its own set of flawed estimates. For example, the benefits of higher capital requirements are only

described in terms of crisis prevention, ignoring all the other benefits discussed above, including the fact that more equity reduces the externalities associated with intense asset sales in distress. The authors presume falsely that all lending is valuable and neglect the fact that bad loans are wasteful and too much risky lending can put banks operating with little equity at risk of insolvency, which can create disruptions and reduce lending even if there is no crisis or if losses are absorbed by investors. As recent experience illustrated, credit and growth suffer when banks have *too little* equity. Credit cycles and distortions are evidence of unhealthy financial instability that better laws and regulation can and should contain.

The analysis of the costs of higher equity requirements in Brooke *et al.* (2015) is fundamentally flawed because it fails to make the critical distinction between private and social cost; the authors provide no coherent model for how any *social* costs would come about. The stated policy regarding ‘too big to fail’ institutions is to eliminate bailouts. Current efforts focussing on loss-absorbing debt are said to achieve this objective, but, as discussed below, the arrangement presumes a willingness to let banks go into resolution, which is not credible in a crisis. With equity, this problem does not arise. Equity is the simplest, most reliable and most beneficial way to reduce those subsidies while also enhancing the health and safety of the system.¹⁴

The disturbing fact that debt funding is subsidised and equity is penalised through the tax code is also not discussed in Brooke *et al.* (2015), but it is relevant. There is no economic rationale for the tax subsidies of debt broadly given to corporations. The *Economist* magazine (on 15 May, 2015) called this subsidy ‘a vast distortion in the world economy’. Having a tax code that encourages excessive and harmful indebtedness in banking, which only exacerbates the intense leverage ratchet effect and the impact of explicit and implicit guarantees, is perverse. The tax code must be changed, neutralised or ignored for the discussion of capital regulation. Even if banks pay more taxes, there is no cost to society because taxes are to be used by governments on behalf of the public.¹⁵

When banks have high levels of debt and little equity, the leverage ratchet effect is intense and as a result the choices they make in response to requirements specified in capital *ratios* might entail unintended consequences such as reduction in lending or selling assets in ways that exacerbate price declines for others. To avoid such problems, especially in transition to higher

requirements, regulators must instruct banks to raise specific *amounts* of equity through retained earnings and new issuance. Inability to raise equity must raise concerns about the institution's health. Insolvent banks are dysfunctional and dangerous; they must be dealt with promptly. These issues are discussed in Admati and Hellwig (2013a, Chapter 11) and explored in more depth in Admati *et al.* (2015, Sections 5–6).

How much equity should banks have? Historically, equity levels in banking were much higher than they are today. As partnerships in the 19th century, for example, banks' equity often accounted for 50 per cent of their assets, and bank owners had unlimited liability, so owners' assets could be used to pay depositors. Equity levels in banking were commonly 20 or 30 per cent of total assets early in the 20th century, and owners had double, triple or unlimited liability in the US until after the deposit insurance was established.¹⁶

Admati and Hellwig (2013a) propose that equity requirements be set at 30 per cent of total assets and allowed to decline to 20 per cent, maintaining a conservation buffer between 20 and 30 per cent. Such levels are considered minimal for healthy companies outside banking. They are common for hedge funds and, as noted above, were prevalent in banking before safety nets were put in place. It is important to note that the meaning of any number depends critically on how the ratio is defined and measured and on how assets are valued, which is extremely challenging. One thorny issue is accounting for derivatives and other off-balance-sheet exposures. Another is asset classification, and whether regulators are able to build equity buffers in advance and intervene promptly as needed. The detail of the rules and how they are implemented are critical for their effectiveness. Supervisors play a critical role.

There are more flawed claims made in the discussion of capital regulation and about the 'specialness' of banks. A few are taken later in this essay; others are discussed in writings such as Admati and Hellwig (2013a, b; 2015) and Kay (2015).

Highly problematic risk weighting system

Capital regulations under the 2004 Basel II accord were based on a complex way to calibrate regulatory ratios to risk. They did this by attaching a 'risk weight' to each asset and defining the denominator of the capital ratio as the sum of these 'risk-weighted' assets. This approach was maintained and only tweaked under Basel III. It is abundantly clear that the system of risk weights used in Basel II did an extremely poor

job of assessing how high capital requirements should be. In the period leading up to the crisis, banks had strong incentives to create and invest in highly-rated securities, particularly if the securities were rated AAA, because such securities had a zero risk weight and did not require any equity funding.

Risk weights introduce distortions in multiple ways.

- (i) They allow the use of internal models that often ignore tail risk, thus encourage concentrated tail risks and increase systemic risk;
- (ii) The use of banks' internal models allows manipulation of the requirements in order to increase leverage and risk.
- (iii) Risk weights distort bank lending, often away from business lending and towards government lending and other investments. A recent example is the excessive lending of private banks in Europe to the Greek government in 2001–10. Such lending received zero risk weight and thus the risk was ignored.

Combined with extremely low equity levels, the complex risk weights system provides banks many ways to ratchet up leverage and increase systemic risk while satisfying the requirements.¹⁷ A crude leverage ratio, *at levels significantly higher than any of the levels implemented today*, can go a long way towards making sure that risks taken in banking are borne by investors and not by taxpayers. If a system of risk adjustments is used, it is particularly important that no assets that may entail risk, even when risk is deemed small by banks or rating agencies, receive zero or near zero risk weight. Risk weights should only be used to increase equity requirements when opacity makes any risk estimation difficult. The point of equity requirements is to prepare for the 'unknown unknowns.' Having 'too much' equity must not be a concern in the foreseeable future.

Poor equity substitutes

Another flaw of existing capital regulations is that they try to 'economise' on equity by requiring the largest banks to issue debt securities designated as 'loss absorbing capital'. The term that is used is TLAC (total loss absorbing capital), and the securities are meant to provide an alternative to bailouts by 'bailing-in' some creditors. A related concept is contingent capital or cocos, which uses various trigger points to convert debt to equity. The idea behind these securities is to create mechanisms other than bankruptcy and, in the case of TLAC closely related to resolution by regulators,

which would impose losses on investors other than shareholders to avoid government bailouts.

In the past, the inclusion of debt as part of capital regulation has not worked. Tier 2 capital included only debt-like securities and even Tier 1 capital allowed many non-equity claims that were held by investors expecting specific returns. Yet, holders of such claims did not suffer losses even when banks ran into trouble and received government bailouts. Nevertheless, and ignoring the lessons and the economic considerations, regulators claim that next time will be different.

Persaud (2014) rightly refers to bail-in securities as ‘fool’s gold’. It is unrealistic to expect that regulators will trigger recovery and resolution processes that are complex, costly and untested so that losses can be imposed on debt-like TLAC securities, and that they would be politically able to follow up with imposing losses on creditors or mandatory conversion to equity. This is particularly true if a potential crisis is looming, since pulling triggers and inflicting haircuts might have unpredictable consequences throughout the opaque financial system. A thorny issue concerns cross-border coordination of any resolution, which bail-in would be part of. The legal challenges are daunting.¹⁸

Since there is no sense in which more equity in banking is ‘expensive’ from society’s perspective, it is baffling that regulators devise such complex and unreliable securities when equity would accomplish the objective of absorbing losses more simply and reliably at no additional relevant cost. When risk is taken, losses must be absorbed by someone. Shareholders who are entitled to the upside and who absorb losses without the need to go through complex and costly triggers, are the most obvious candidates. Especially given the low levels of equity, the better approach would be to focus entirely on increasing equity levels.¹⁹ It makes no sense to plan for scenarios that would be costly and disruptive even in the best case when much more can be achieved by trying to prevent reaching those bad scenarios. Moreover, equity is already on the banks’ balance sheet and often trades in a well-developed and liquid market. None of this holds for the complex and untested alternatives.

By far the most important approach to enhancing financial stability and increasing loss absorbing capacity is a dramatic increase in equity requirements for banks and other financial institutions. Genuine, reliable, credible and cost-effective loss absorption cannot be achieved by any of the other means. The use of debt securities instead of equity ignores both the lessons

from past attempts and the economic considerations. This approach is misguided, poorly motivated, and fraught with problems; it represents a false hope.

Is equity scarce for banks?

A question often asked regarding proposals to increase equity requirements for banks dramatically is ‘where would all this ‘new’ equity come from?’ The concern is misplaced. As explained in Admati *et al.* (2013, Section 7), a change to the funding mix of banks, even a radical change, does not by itself interfere with any of the overall productive activities in the economy and does not involve any radical change in the way risks in the economy are held and shared. All that is involved is a certain ‘reshuffling’ of financial claims.

Higher equity requirements help place risks where they should belong, namely with shareholders, for the purpose of aligning incentives and reducing distortions. Requiring more equity funding ‘privatises’ risks that are otherwise borne by governments and taxpayers. Once risks are privatised and conflicts of interest are reduced, undistorted markets can determine the appropriate allocation of resources and the size of individual banks and of the industry. Currently, markets fail because of the distortions of excessive leverage and subsidies and flawed regulation that further distorts incentives.

The easiest way to implement the transition to higher equity requirements is to ban payments to equity until banks are better capitalised. Avoiding cash payouts to shareholders, and even requiring that some executive compensation comes in the form of new shares rather than cash, can build up equity buffers. It may also be useful for regulators to mandate specific amounts of equity issuance. Banks that cannot raise equity must be viewed as failing a basic market stress test. They may well be too opaque, insolvent, or too big and inefficient. Such institutions should not persist.

Instead of relying on market tests, regulators use annual stress tests to reassure themselves and the public that the banks are safe enough. The premise of the stress tests is the flawed notion that equity is scarce and expensive and that banks should have ‘just enough’ of it. In fact, there is little harm and much benefit in more safety, and the stress tests give false reassurances. The tests rely on many of the same flawed measures used in capital regulations and on numerous unreliable and untested assumptions.²⁰

It is impossible to predict with any precision how an actual crisis, which may come from an unexpected

direction, would play out in the highly interconnected system. The opacity of the system and the existence of many layers of intermediation make it difficult to assess true counterparty risk and the correlation between underlying macro risk and counterparty risk. Risks that are assumed to be transferred and dispersed may instead be concentrated elsewhere, as happened in the case of AIG. Hansen (2013) discusses the difficulty of estimating systemic risk with any precision, and Hellwig (2014) concludes that given the challenge of devising macroprudential regulations, ensuring significant equity buffer for banks must be a key approach to reducing systemic risk.

Flawed excuses

A claim often made against increasing equity requirements is that it would force activities to move to the 'shadow banking system.' This argument is flawed. The shadow banking system actually grew as a direct result of the failed enforcement of previous (light) regulations. Regulated institutions were able to hide risk exposure from regulators in the shadow banking system, and they continue to do so.

The lesson is that we must do better at enforcing regulations. Tracing the exposures of the biggest institutions, which can be viewed as 'shadow hedge funds' given their enormous scope and complexity, would be an important start. Pillar 2 of the Basel agreement gives authority to supervisors to intervene in imprudent practices, and they must use this authority to prevent blatant attempts at regulatory arbitrage. If effective enforcement is deemed impossible, maybe radical solutions, such as those proposed in McMillan (2014), should be considered.

Another argument against higher equity requirements is that the requirements must be coordinated internationally to maintain a 'level playing field,' or that it is a policy priority to help 'our' banks succeed in global competition. Such flawed policy concerns explicitly interfere with financial stability, as admitted in Brooke *et al.* (2015). In fact, banks are in competition not only in markets for financial services but also in markets for inputs, including scarce talent. The people that they have drawn into the financial sector have not been available to other industries. Extolling the competitive success of the financial sector ignores the opportunity costs of these successes.

For the economy as a whole, the question is not whether banks are successful but where resources are most usefully employed. We usually rely on the market

system to guide resources to their best uses. Absent distortions, a firm's ability to compete successfully in input and output markets is *prima facie* evidence that its use of the resources is economically desirable. But this assessment is unwarranted if market functioning is distorted by externalities and/or government taxes and subsidies.²¹

Policymakers must focus on protecting their citizens, not 'their' banks. Implicit guarantee subsidies distort competition and impair the ability of the market system to provide proper allocation of resources. More generally, the economy may be putting too many resources into the financial sector. In that case, eliminating these distortions through higher equity requirements will improve the market system and enhance economic welfare, even as financial-sector activities are reduced. The global success of banks in Ireland, Iceland and Cyprus has brought disaster on their citizens, and nations with large banking sectors should be particularly concerned with protecting their citizens from reckless, excessively leveraged banks.

Concluding remarks

Our fragile and unhealthy financial system would be much better able to support credit and growth if capital regulation were better designed and implemented. The view that equity levels in Basel III are much too low is shared by many. For example, in 2010 a short letter signed by twenty academics (Admati *et al.*, 2010) pointed to the key flaws discussed here and urged more radical reform.²² Hoenig (2013) [from FDIC] called Basel III 'a well-meaning illusion.'

Despite the extremely strong case for requiring much more equity and for improving the design of the regulation, recent statements from regulators suggest that the debate over capital regulation is largely over, with virtually no major improvements over the flawed Basel III.²³ A story on 1 December, 2015 with the headline 'Bank of England draws the line on bank bashing' quotes Governor Mark Carney saying "there is no Basel IV". Bankers were of course quite pleased.²⁴

Instead of questioning their assumptions, re-examining the issues, and acting in the public interest, policymakers and many others, including academics, have maintained flawed narratives and displayed wilful blindness. Instead of simple and cost-effective regulations to counter distorted incentives that harm the economy, regulators have devised extremely complex regulations that may not bring enough benefit to justify the costs but which allow the pretence of action.²⁵

The quest for high equity requirements should not be viewed as ‘bank bashing’ but as a common sense approach that is based on a proper costs and benefit analysis. Individuals who work in banks respond in predictable ways to their incentives to benefit themselves. The rules must recognise and account for these incentives. Where possible laws and regulations should be designed to reduce the conflict between what is good for banks and those who work for them and what is good for the broader public. When laws, regulations, enforcement, and overall governance fail, it is policymakers and watchdogs who deserve criticism for creating flawed rules that tolerate recklessness and exacerbate distortions, and for betraying the public trust.

Martin Wolf, who served on the UK Independent Commission on Banking, wrote an excellent summary of the issues related to capital regulations: “Allowing such important businesses to operate with almost no equity cushions encourages dangerous conduct. Banks are not special, except for what they are allowed to get away with. The problem is bigger than that banks are ‘too big’ or ‘too interconnected’ to fail. It is that they are so complex and so grossly undercapitalised. The model is intellectually bankrupt. The reason that this is not more widely accepted is that bankers are so influential and the economics are so widely misunderstood.” He concluded by asserting that “we have failed to remove the causes of the crisis. Further such crises will come”.²⁶ Many have reached the same conclusion, including among regulators and the industry.²⁷

Why are bankers so influential, and why are the economics so widely misunderstood? The problem appears to be rooted again in people’s incentives and the lack of accountability. It is easier and more convenient to believe that free markets achieve efficient outcomes, and to avoid challenging those with power. The ‘other people’ whose money and welfare are at stake are either unaware that they are harmed or unable to do much about it. Governance and control appears broken at all levels. When the public is confused about the issues, there is no accountability for flawed claims and bad policy.

It is both sobering and alarming to contemplate the failure to learn key lessons from a crisis as harmful as that of 2007–9. A developed financial system meant to allocate risk and resources efficiently continues to distort the economy and endanger the public. My fear is that this system persists because it benefits powerful people, and that even if we experience more major

crises in the future, convenient narratives and narrow interests will again prevail to prevent effective reform. My hope is that more people engage on these issues, gain better understanding, and do what they can to change this situation. The issues go beyond crisis prevention; our banking system is inefficient, distorted and harmful every day. Collectively, we must find ways to improve it.

NOTES

- 1 Such claims are made routinely by lobbyists. A recent example is Tim Pawlenty of the Financial Services Roundtable (see ‘Fed lifts capital requirements for banks’, Ryan Tracy, Victoria McGrane and Justin Baer, *Wall Street Journal* on 20 July, 2015. For more discussion, see Admati et al. (2013, Sec 3.1), Admati and Hellwig (2013a, Chapters 1, 6) and Admati and Hellwig (2015, Claims 1–2).
- 2 This question is addressed in Admati et al. (2013, 2015), Admati and Hellwig (2013a, Chapters 4 and 7–10; 2015), Pfleiderer (2015), and Kay (2015).
- 3 In some of the academic literature on banking, the statement ‘MM does not apply to banks’ is used to postulate frictions that, under the assumptions of the models, might be addressed by borrowing, while conveniently ignoring the enormous frictions and collateral damage on the system that borrowing creates. See Admati and Hellwig (2013a, Chapters 3, 6, 8 and 9; 2013b), and Pfleiderer (2014; 2015).
- 4 These ratios may depend on accounting convention and they might be poor measurements of indebtedness or solvency. The so-called distance to default depends on the market value of the assets relative to the amount it would take to settle all the debt.
- 5 See Admati and Hellwig (2013a, Chapter 5) for a discussion of contagion effects in banking.
- 6 It is sometimes argued that debt helps resolve governance problems between managers and shareholders. These considerations, however, do not apply to the funding considerations of banks that are the main focus of this chapter. For discussions of debt as a ‘disciplining’ device for managers, see Admati et al. (2013, Section 5) and Admati and Hellwig (2013b), which represents an ‘omitted chapter’ from Admati and Hellwig (2013a).
- 7 In the case of repo and derivatives, there is also a bankruptcy exemption that further reassures creditors and lowers their concern with the overall risk, thus adding fragility. See, for example, Skeel and Jackson (2012). Brunnermeier and Ohemke (2013) discuss the shortening of maturity as another distortion in funding that is due to conflicts of interest and relevant in banking.
- 8 The first quote is from ‘Wells Chief warns Fed over debt proposal’, Tom Braithwaite, *Financial Times*, 2 June, 2013. The second from ‘Fed disaster plan is a bitter pill for debt-averse Wells Fargo,’ Jesse Hamilton and Ian Katz, *Bloomberg*, 30 October, 2015.
- 9 ‘What’s inside America’s banks’, Jesse Eisinger and Frank Partnoy, *The Atlantic*, January 2013. On the huge complexity of the structure of the largest banks, see Blundell-Wignall et al. (2009), Advisory Scientific committee (2014) and Carmassi and Herring (2014).
- 10 See ‘We should go further unbundling banks’, Andrew

- Haldane, *Financial Times*, 2 October, 2012. Kerr (2011) shows how banks can artificially inflate reported profits and capital levels and mislead investors and regulators. There has been no meaningful change in this situation. Accounting properly for risk in derivatives markets and exposures off balance sheet remain major challenges to investors and regulators.
- 11 Admati and Hellwig (2013a, Chapters 7–10), Admati et al. (2013; 2015) and Kay (2015) discuss the incentives in more detail. On distinctions among shareholders, see ‘The great bank escape’, Anat Admati, *Project Syndicate*, 31 December, 2012.
 - 12 Huizinga and Laeven (2012) show that distressed banks are prone to manipulating their financial statements. Kerr (2011) explains how banks can manipulate reported profits and regulatory capital. On conflicts of interest in auditing firms, see, e.g., Shah (2015). On this and related governance issues, see, e.g., ‘Investigate KPMG’s audit of HBOS, urges Tyrie’, Tim Wallace, *Telegraph*, 14 December, 2015.
 - 13 Admati et al. (2013, Section 2) and Admati and Hellwig (2013a, Chapters 6 and 13) discuss the benefits of higher equity requirements in some detail.
 - 14 Implicit subsidies are discussed in detail in Admati and Hellwig (2013a, Chapter 9) and in Admati (2014). Admati et al. (2013, Section 9) discusses capital regulation and lending.
 - 15 On tax and other subsidies, see Admati et al. (2013, Section 4), Admati and Hellwig (2013a, Chapters 6 and 9) and Admati (2014).
 - 16 See Admati and Hellwig (2013a, Chapter 2) and references there, as well as Turner (2014).
 - 17 Hellwig (2010), Admati and Hellwig (2013a), Bair (2012), and Haldane (2011, 2012) discuss the issues in some detail.
 - 18 For more on the legal challenges associated with TLAC debt, the bail-in concept, and cross-border resolution, see, for example, Wilmarth (2015). In Europe, the implementation of a banking union with deposit insurance and resolution is mired in legal and political complications as of this writing.
 - 19 Admati and Hellwig (2013a, pp. 187–8) and Admati et al. (2013, Sec. 8) elaborate. Similar considerations apply to so-called contingent capital.
 - 20 Dowd (2015) provides an extensive discussion of the weaknesses in stress tests.
 - 21 See Admati and Hellwig (2013a, Chapter 12) for more discussion.
 - 22 The full text and signatories’ names and titles are available at <https://www.gsb.stanford.edu/faculty-research/excessive-leverage/healthy-banking-system-goal>. The 15 per cent figure was meant to illustrate that the 3 per cent figure in Basel III is entirely in the wrong range. As discussed above, exact numerical ratios are not meaningful until an appropriate measures of the total assets is specified, which involves thorny accounting issues. Links to two other letters from many academics published in 2011 and many other writings are provided at <https://www.gsb.stanford.edu/faculty-research/excessive-leverage>.
 - 23 ‘Bank regulators see mood shift as rule-making phase nears end’, Huw Jones and Steve Slater, *Reuters*, 22 October, 2015 quotes Andrea Enria, chair of European Banking Authority: “The rule-making phase in banking is coming to an end. We will then move to consistency and implementation issues”. William Coen, secretary general of Basel Committee on Bank Supervision stated: “there’s not a prevailing view among the Basel Committee that we need more and more capital, I think we’ve got a good handle on the amount of capital”.
 - 24 *Financial Times* headline, report by Chris Giles, Caroline Binham and Martin Arnold.
 - 25 On wilful blindness, see Heffernan (2012). *Other People’s Money* is both the title of Kay (2015), a chapter title in Luyendijk (2015) and the final chapter title of Admati and Hellwig (2013a). Regarding the academics, Admati et al. (2013, Section 5–7), Admati and Hellwig (2013a, b; 2015) and Pfliederer (2014) point to flawed models and analyses and their misuse in policy.
 - 26 ‘Why bankers are intellectually naked’, *Financial Times*, 17 March, 2013.
 - 27 See, e.g., Luyendijk (2015), which is based on many interviews and concludes that the system has “an empty cockpit”.

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