

# **The Compelling Case for Stronger and More Effective Leverage Regulation in Banking**

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## 1. Introduction

In economics, we often discuss tradeoffs. Good decisions require balancing the benefits and the costs of possible actions. Regulation is considered potentially beneficial when actions by some private parties have an external impact and impose costs on others. Because regulations constrain what the regulated can do, they often are *privately* costly to the regulated. If a regulation is good, these private costs are more than offset by the benefits accruing to others. A proper assessment of the impact on *society* must aggregate the various costs and benefits.

To evaluate regulation alternatives requires most crucially an understanding of the salient economic forces that give rise to the impact. Such an understanding must be translated into an *economic model* that captures the major determinants of the benefits and costs.

Any quantitative assessment also requires data that match the variables of the model appropriately. Such data may not be available or applicable, particularly if data come from different regulatory or legal regimes and different economic circumstances and industry structures. Using data for estimation or measurement also requires a *statistical model*, which involves more assumptions beyond those made in the economic model. For example, specific assumptions must be made about the statistical relations between variables that go beyond what was specified in the model.. Finally, appropriate statistical techniques are needed to ensure the validity of any inferences and estimates.

Nothing in this list of tasks can be taken lightly, and most of the steps can be challenging. Failure involving any of them can render quantitative estimates meaningless and thus useless. Of course, one can always produce equations, tables and graphs, but their interpretation is only valid if they are derived from well-founded models and rigorous statistical analysis. Decisions based on inappropriate or inadequate models and data can be misguided, leading to flawed and ineffective regulation. In particular, if the initial economic model that purports to capture the impact is flawed, the subsequent empirical analysis is immediately problematic. Misguided policy decisions can harm society.

Capital regulation concerns the funding mix of financial institutions (although this fact is already a source of confusion, as will be discussed). Many papers have been written by academics as well as people in industry or regulatory bodies arguing that there is a tradeoff and that the benefits of more equity are at some point offset by costs. These papers often present theoretical models and then calibrate these models to quantify the purported tradeoffs.

Unfortunately, this work gives us little valid guidance. The reason is that, to varying degrees, the models that have been used ignore first-order forces while making assumptions that appear to have little or no justification.

The result is that, despite clear and overwhelming evidence that the fragility of the financial system can inflict enormous costs on the real economy and that previous regulations have failed to protect the public, policymakers continue to miss an opportunity for highly beneficial reform. The impacts of such reforms on society have been framed in flawed narratives.

It is widely agreed that better capitalized banks that can absorb losses without becoming distressed or failing are more resilient to downturns and less likely to harm others in the financial system and the greater economy. Rhetoric from bankers, regulators and politicians suggests that recently-proposed reforms, such as those agreed upon in the so-called Basel III framework, are tough. Comparisons are often made to previous requirements, with the implication that “doubling or tripling” previous requirements suggests major reforms.

Martin Wolf, the economics editor of *Financial Times*, said on this matter in 2010: “tripling the previous requirements sounds tough until you realize that tripling almost nothing does not give you very much.”<sup>1</sup> Instead of examining the presumptions, approach and structure of the previous regulations, whose failure became so obvious in the financial crisis, the reforms only tweak the regulations. Yet the previous regulations are often treated as a key benchmark.

Entrenched banking myths, combined with the politics of banking, have prevented highly beneficial reform so far. Financial institutions remain dangerous and inefficient, exposing the public to unnecessary risk and distorting the economy. The regulations also rely on a complex, manipulable and distortive system of risk weights that has repeatedly proven to be dysfunctional. From society’s perspective, better-designed regulations would provide significant benefit at virtually no cost. Transition issues can also be handled straightforwardly.

I discuss the benefits of reducing leverage in Section 2. Section 3 outlines examples of flawed claims suggesting “costs” of strengthening the regulations. This discussion continues in Section 4, which focuses on academic narratives about the funding mix of banks. Section 5

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<sup>1</sup> See “Basel III, the Mouse that did not Roar,” by Martin Wolf, *Financial Times*, September 13, 2010.

comments on the dangerous mix of flawed claims and the politics of banking. In Section 6, I summarize and discuss additional agenda issues to consider for policy.<sup>2</sup>

This paper does not provide a quantitative analysis of the impact of different capital requirements on the economy. I will rely on crude benchmarks from other industries and from banking history. I am not aware of a model that captures properly the impacts, and I doubt sufficient and reliable data for estimating the impact with any precision is available. Yet, I am confident that, starting from the status quo, specific highly beneficial steps can be taken.

Imagine a truck loaded with dangerous content driving at 90 miles per hour through a residential neighborhood. One does not need complex models and estimates of the costs and benefits of various speeds to know that 90 miles per hour is not a safe speed and that driving significantly slower would produce great benefits to society at minimal cost.

Similarly, the benefits to society from a healthier and safer financial system are large. They go beyond crisis prevention to the efficiency of banking and to the many distortions it can create under current regulations. Starting from the status quo, the costs to society of significant reduction in leverage (through substantial increases in equity requirements) appear to have been greatly misunderstood and overstated. These costs are actually hard to find.

## **2. The Benefits of Reducing Leverage in Banking**

Financial leverage refers the extent to which the funding mix of a business or a corporation relies on borrowing as opposed to funding from owners or shareholders. By borrowing and promising to make specific payments at specific times, the owners or shareholders create leverage that magnifies risk. Borrowing, however, has a dark side.<sup>3</sup> Financial distress, default, and insolvency can have profound implications for borrowers, their creditors and possibly for third parties. The dark side of borrowing is particularly strong in banking, yet it is not experienced similarly by bankers and by others who are affected.

A highly leveraged or indebted company is like a homeowner who buys a large house with little in down payment. The down payment serves as the owner's initial equity, and the value of the homeowner's equity fluctuates with any changes in the value of the house. If a homeowner

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<sup>2</sup> This section draws heavily from Admati et al (2013a, b), which are revised versions of papers originally posted in August 2010 and March 2012 respectively, Admati and Hellwig (2013a, b, c).

<sup>3</sup> The impact of leverage on risk is explained in Admati and Hellwig (2013a, Chapter 2). The “dark side of leverage” is the topic of Chapter 3.

has little equity, a subsequent decline in the value of the house might lead to the being worth less than the amount owed on the mortgage, a situation similar to distress and insolvency.

Many financial institutions became distressed or insolvent starting in 2007. The bankruptcy of Lehman Brothers in September 2008, which had enormous ripple effects throughout the globe, exposed the fragility of the global financial system. The fragility is due to the high leverage of the institutions, combined with a high level of interconnectedness that generated runs and contagion through the system.<sup>4</sup> To prevent a complete meltdown of the system, central banks and governments in Europe, U.S. and elsewhere provided extraordinary liquidity supports, guarantees and bailouts to the banking system. Nevertheless, hundreds of millions of people are still feeling the impact of the severe downturn and recession that followed.

In the run-up to the financial crisis, and with Basel II capital regulations in place in Europe and for U.S. investment banks supervised by the SEC, the equity of many institutions accounted for less than 3 percent of their total assets, in some cases as low as 1 percent.<sup>5</sup> Many banks failed or were bailed out because of investments that the regulators viewed and regulations classified as perfectly safe. Securities stamped AAA by credit rating agencies, for example, turned out to inflict significant losses. More recently, the French Belgian bank Dexia and banks in Cyprus failed after investing in Greek government bonds that were similarly considered safe by the regulation even though they were actually risky.

Basel III, which supposedly put forth “tough” new standards, allows banks to fund up to 97% of their assets by borrowing, which means that they can have equity as little as 3% to absorb losses. Proposed regulations in the U.S. would set this so-called leverage ratio at 5% for bank holding companies and 6% for depository institutions. Other requirements are based on a complex risk weights. No valid analysis justifies these requirements relative to alternatives.

The benefits of requiring much more equity are substantial. First, with more equity, banks would be able to absorb much larger losses without becoming distressed or insolvent, and without failing or needing bailouts. Healthier banks are more trustworthy, and a system in which banks are stronger is therefore less fragile and more resilient.

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<sup>4</sup> For explanations of the contagion mechanism, see Admati and Hellwig (2013a, especially Chapter 5).

<sup>5</sup> It must be mentioned that measurements of equity ratios are always subject to the caveat that they rely on an accounting system, such as Generally Accepted Accounting Principles (GAAP), the system used in the US. Accounting rules for recognizing losses on loans often lag and thus do not reflect market conditions in a timely manner.

In addition, banks funded with more equity make better, more appropriate, investment decisions. High leverage creates conflicts of interest between borrowers and creditors. Heavy borrowers with overhanging debts may avoid making investments that benefit creditors at their expense, and they are more likely to take excessive risks that benefit them at the creditors' expense. For banks, high leverage can interfere with lending when some worthy loans may appear unattractive, lacking enough "upside" to compensate shareholders for making them. By contrast, risky investments whose upside is fully captured by managers and shareholders may seem more attractive even though they harm creditors, the deposit insurance, and ultimately taxpayers who share in the downside.

Another benefit of banks having more equity in their funding mix is that it reduces the intensity of their response to losses. If a bank has only 3% equity, a loss of even 1% of the assets wipes out a third of its equity and might lead to the sale of a large fraction of the assets in order to pay the debts and continue investing. When many banks experience losses at the same time and all are selling similar assets in a hurry, the distressed sales might further weaken them. If instead banks have, say, 20% equity prior to the loss, a 1% loss in their asset value constitutes a much smaller fraction of the equity, namely 5%, and will not trigger asset sales anywhere near what is triggered when equity is only 3%.

One flawed narrative of the financial crisis and of problems in banking more generally is that banks mainly face "liquidity problems."<sup>6</sup> A liquidity problem arises if you owe someone cash at midnight but forgot to go to the ATM. Banks are prone to liquidity problems because they rely on deposits and other short term debt that can be withdrawn or needs frequent renewal.

Liquidity problems are not difficult to address if the bank is known to be solvent. Central banks can provide the funds to a bank that faces a liquidity challenge by lending to that bank against good collateral. Although deposit insurance has largely solved the problem of inefficient runs by depositors, uninsured creditors may start a run, and they are more likely to do so if a bank is distressed so that its solvency, or ability to pay its debt, is in doubt.<sup>7</sup> Since higher equity requirements reduce the likelihood that banks run into distress and insolvency, they also reduce the likelihood and the severity of liquidity problems.

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<sup>6</sup> See Admati and Hellwig (2013a, Chapter 13). Gorton (2013, p.5) argues that the main function of banks is to "produce debt" in order to provide liquidity, but when banks take on debt (to produce liquidity) and take risk with borrowed money, someone must absorb the losses they might incur.

<sup>7</sup> See Admati and Hellwig (2013a, Chapter 3) on the "dark side of borrowing."

Some financial institutions are considered “too big to fail” because investors believe that the default of these institutions would be so costly that policymakers will not allow it to happen. The implicit guarantees associated with this status allow such institutions to borrow at cheaper rates and with fewer conditions than they would have to face otherwise.<sup>8</sup>

Implicit guarantees perversely encourage and reward institutions for inefficient growth, excessive borrowing and excessive risk taking. In addition, these subsidies give the institutions that benefit an unfair advantage over other banks and companies. Requiring that banks rely on more equity reduces their ability to benefit from these distortive and unwarranted subsidies. With reduced “too-big-to-fail” subsidies, there is a greater likelihood that banks that are “too big to manage” would break up due to pressure from investors similar to the breakup of conglomerates in the late 1980s. In any case, reducing the subsidies and the danger to taxpayers is beneficial.

### **3. The Flawed Claims Regarding “Costs” of Leverage Reduction in Banking**

What, if any, are the costs to society of higher equity requirements for banks than the 3% minimal ratio of Basel III or even somewhat higher proposed requirements? Whereas different types of “costs” are mentioned, upon closer examination it turns out that none of the claims that rely on these purported costs is valid in the context of the discussion. The purported “tradeoffs” do not actually exist. Specifically, *there is no basis to claims that society would suffer any harm if banks were required to maintain equity levels between 20% and 30% of their total assets (properly measured); if implemented effectively, such regulation would be highly beneficial.*<sup>9</sup>

Claims about the purported costs of higher equity requirements fall into three broad categories. Some claims are simply false or fallacious. For example, in banking the word “capital” is used to represent unborrowed funds (such as owners or shareholders’ equity).<sup>10</sup> In the banking jargon, banks are said to “hold” or “set aside” capital. The use of the terms “hold” or “set aside” is taken by many to imply that bank capital is an idle cash reserve akin to a rainy day fund. This leads uninformed people to think that the debate concerning bank capital regulation is

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<sup>8</sup> For a detailed discussion, see Chapter 9 in Admati and Hellwig (2013), and Admati et al. (2013b, Section 4.2).

<sup>9</sup> The interpretation of such ratios depends critically on what is included in the asset count (for example how exposures to derivatives and commitments not included on the balance sheets are accounted for, as well as on accounting conventions. See the discussion in Admati and Hellwig (2013a, Chapters 6 and 11.)

<sup>10</sup> As already mentioned, some non-equity securities, such as long-term debt that in principle can be “loss absorbing,” are count as part of the “regulatory capital.” In the financial crisis, however, such securities did not absorb losses even as banks received bailouts and other supports from governments.

about how much banks should set aside in *cash reserves*, when in fact equity requirements do not concern what banks do with their money but only about the type of financial claims those who provide them with funds receive in exchange, e.g., a debt commitment or an equity share.

The confusion between equity and cash reserves is embarrassingly pervasive.<sup>11</sup> It muddles the debate by allowing false claims, such as “higher capital requirements will prevent banks from making loans,” to go unchallenged. Politicians, the media and most of the public are taken in by the misleading language that clouds the debate. The confusion is insidious because those who do not know the terms find statements alluding to “tradeoffs” plausible and do not suspect they are nonsensical and false.

Even when the discussion of capital requirements correctly focuses on funding, fallacies and other flawed claims continue clouding the debate. For example, it is often suggested or implied that banks must reduce some valuable activity if they are required to rely less on borrowing. But like other companies, profitable banks can use their profits as a source of unborrowed funding. They also have access to the same investors that other companies in the economy use to obtain funding and can sell more shares to investors to increase their equity.

Non-bank corporations routinely retain their profits in order to invest.<sup>12</sup> Retained earnings are unborrowed and they are attributable to owners or shareholders as long as debts are paid. It is rare for a healthy business or corporation to be as highly indebted as banks. Indeed, businesses that become as highly indebted and take as much risk as banks would find it difficult to continue borrowing under attractive terms. Yet with equity often accounting for less than 10% of their assets, banks are anxious to make payouts to their shareholders that deplete their equity.

The fallacies in the debate on capital regulation continue with denials of one of the most important insights in corporate finance and the starting point of any coherent analysis of capital structure (the part of financial economics that focuses on how corporations determine their

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<sup>11</sup> See a (partial) list of references in Admati and Hellwig (2013a, Chapter 1 and 6) and Admati and Hellwig (2013c, Claims 1-2). A recent example is “How to solve the bank capital Goldilocks question,” by Cyrus Sanati, CNN Money and *Fortune*, May 6, 2013, where the author falsely claims that capital requirements ask banks to “hold some cash on the sidelines,” and proceeds to criticize the proposal by Senators Brown and Vitter to increase equity requirements for the largest banks. Sanati refers to the proposal as if it concerns cash reserves, when in fact it is about equity funding. As we explain, the tradeoffs are entirely different for the cash reserve and equity, because equity funding does not restrict investments and does not prevent the banks from earning appropriate returns on the funds. Moreover, even with 15% cash reserves, banks can take significant risk with the rest of their funding, and if they only have 3% equity, they run a substantial risk of becoming distressed and failing.

<sup>12</sup> Berkshire Hathaway, for example, whose CEO is Warren Buffett, rarely makes any payouts to its shareholders, retaining almost all profits and continuing to invest on behalf of its shareholders. Apple also did not pay dividends between 1995 and 2012.



funding mix and how funding and investment decisions interact). Modigliani and Miller (1958) debunked the notion that funding with more equity in the mix is “expensive” simply because equity is riskier than debt (and thus shareholders require higher average return than creditors).

The argument is based on a basic conservation principle. If all the risks taken in investments are borne by those who fund the firm, simply rearranging the risk among those investors cannot *by itself* change the overall cost of funding. If the funding mix matters, therefore, it must be for reasons *other than* the fact that some securities are riskier than others, and thus investors require additional compensation for bearing risk (in the form of higher required returns). This result is explained in every textbook on corporate finance and taught in most basic courses.<sup>13</sup>

The Modigliani and Miller (M&M) theorem is sometimes referred to as an “irrelevancy” result, because it can be framed as saying that, under some strong assumptions, the funding mix is irrelevant. Of course, the specific assumptions that lead to irrelevancy are not true in the real world, and the funding mix does matter, for example by affecting the taxes paid by the corporation or its investment decisions.

The battle between bankers and corporate finance experts over the question “Does M&M apply to banks?” goes back decades. The abstract of a 1995 paper with this title by Merton Miller – one of the M’s in M&M – contained (only) the brief answer: “yes and no,” the same answer you would give for every company, namely yes for the general insight, no for irrelevance of the funding mix. Denying the insight is akin to denying the force of gravity because of frictions.<sup>14</sup>

The so-called “tradeoff theory” of capital structure observes that when the tax code allows a tax deduction for interest expenses it gives an advantage to debt funding over equity funding. Against this, heavy borrowing generates increased likelihood of incurring the costs of bankruptcy and increases the distortions due to conflicts of interest between shareholders and debt-holders, referred to as the *agency costs of debt*. Bankruptcy and agency costs make heavy borrowing unattractive to corporations.<sup>15</sup> The tradeoff theory suggests that firms increase debt to a level where at the margin the tax advantage of debt is just offset by these other costs.

Another capital structure theory suggests a “pecking order” of funding, in which internally generated funds, obtained from retained profits, are the easiest and most preferred source of

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<sup>13</sup> See, for example, Berk and DeMarzo (2013).

<sup>14</sup> On this matter, see Admati and Hellwig (2013a, Chapter 7 and 2013c, Claims 3-6), and Pfleiderer (2010).

<sup>15</sup> See Admati and Hellwig (2013a, Chapter 9) and Berk and DeMarzo (2013).

funding. The theory is based on a notion that the managers who make the funding decisions may know more than outside investors about the firm's assets in place.<sup>16</sup>

Neither of these theories seems to describe the behavior of banks. There appear to be no significant tradeoffs in banking – the forces that constrain leverage for other companies do not seem to apply. The pecking order theory is also contradicted, as banks continue borrowing while depleting their equity by paying a large fraction of their profits shareholders. Whereas other companies stay away from leverage anywhere near as high as banks, banks fight even equity requirements of 5%, threatening that constraining their ability to rely on borrowing “will restrict lending and harm the economy.”<sup>17</sup>

Why do banks hate equity so much? One of the reasons is that banks are *already* highly leveraged. The same conflict of interest between borrowers and creditors that creates the distortions in investments can make leverage “addictive” *once debt is in place*. Heavy borrowers, banks and others, resist reducing leverage inefficiently, *even if reducing would increase the combined value of the firm to all its investors* (for example, by reducing leverage saves on deadweight bankruptcy costs that deplete the firm's assets). The reason is that the benefits of leverage reduction accrue only to the creditors while transferring more downside risk to shareholders.<sup>18</sup> Increasing leverage, by contrast, may benefit shareholders (while harming existing creditors). The eagerness of banks – or distressed firms more generally – to make payouts to shareholders is another manifestation of the fundamental borrower-creditor conflict, because money paid out is in the hands of shareholders and no longer available to pay creditors.

The addiction to leverage created by the leverage ratchet effect can lead to excessive and inefficient levels of leverage. This effect is particularly strong in banking, where the ability to keep borrowing at attractive terms feeds and enables the addiction. Banking often involves borrowing from depositors. The borrower-creditor conflict immediately suggests that bankers are tempted to take more risk when investing depositors' money than they would have taken investing their own money. Recognizing this temptation, before deposit insurance was

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<sup>16</sup> The pecking order theory is associated with a paper by Myers and Majluf (1984).

<sup>17</sup> See Admati and Hellwig (2013a, Chapter 1, and 2013c, Claims 9, 10 and 13) for some examples. Connaughton (2012, loc. 2296) quotes Paul Volcker as saying: “You know, just about whatever anyone proposes, no matter what it is, the banks will come out and claim that it will restrict credit and harm the economy..... It's all bullshit.”

<sup>18</sup> The leverage ratchet effect is explored in Admati et al (2013a). The analysis assumes that it is not possible for shareholders to renegotiate the terms of debt with dispersed creditors, an assumption that is certainly true for banks, whose creditors include depositors.

established, depositors demanded that banks have more equity, and equity levels were routinely above 20%, or even 40%. In addition, bank shareholders did not always have limited liability.<sup>19</sup>

If deposits are insured, standard moral hazard problems associated with insurance arise. Taking risk in investments and avoiding equity in favor of borrowing allow banks to benefit from the magnified upside of risks while imposing the downside on the deposit insurance corporation or taxpayers. Implicit guarantees enjoyed in particular by institutions considered “too big to fail” allow them to borrow excessively without their creditors becoming as concerned as they would be without the guarantees about the banks’ risks and repeated borrowing.<sup>20</sup>

Who benefits from banks’ high leverage? The key beneficiaries are bankers themselves, and individuals whose fortunes are tied closely to the banks. The banks’ diversified shareholders, who are also taxpayers and members of the public, suffer from the fragility of the system, from inefficient lending, and from the collateral damage of financial crises (including on their investments in other companies).<sup>21</sup> *None of the private costs of equity relative to debt, as seen from the perspective of bank managers or shareholders, represent costs to society.*

Those who repeat the mantra that “equity is expensive” are often erroneously attempting to suggest that the private costs of bankers and their shareholders with concentrated holdings in the bank having to give up subsidies and other benefits they receive from high leverage are actually social costs to society. This confusion between private and social costs presumes that what is good for the banks is good for society when, in fact, there is a fundamental conflict of interest between bankers and the public regarding the level of leverage. Excessive leverage is inefficient even from the perspective of the combined value of the banks to their investors, all of us here.<sup>22</sup>

Quite clearly, therefore, and contrary to the suggestion that “equity is expensive,” *having banks funded with too much debt is expensive for society*. The large benefits discussed earlier come only at the “cost” of reducing banks’ ability to benefit at the expense of others. In other words, they come at no relevant social cost.

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<sup>19</sup> See the discussion in Admati and Hellwig (2013, Chapter 2) and references there.

<sup>20</sup> See Admati et al (2013b, Section 4.2) and Admati and Hellwig (2013a, Chapter 9) for discussions of the effect of guarantees and subsidies.

<sup>21</sup> See Admati and Hellwig (2013a, Chapter 8) and “The Great Bank Escape,” by Anat Admati, Project Syndicate, December 31, 2012.

<sup>22</sup> This claim is explained in more detail in Admati et al (2013a, b).

#### 4. Academic Banking and the “Specialness” of Banks

A pervasive myth is that banks are special and different from all other companies and businesses. The “specialness” is taken by many to mean that much of what we know about the economics of funding does not apply to banks. A 2013 edition of a textbook written by a prominent academic who also served as a central banker and regulator includes fallacious statements that contradict basic material taught in corporate finance courses.<sup>23</sup>

The fact that banks choose a fragile funding mix and choose to have so little equity suggests to some, inclined perhaps to believe that what we see must be efficient, that banks must be as fragile as they are for a “good” reason.

As we have seen, however, banks’ funding choices are easily explained as a result of having deposits and the leverage ratchet effect, combined with guarantees and subsidies.<sup>24</sup> Managerial compensation in banking, often pegged to return on equity (ROE) contributes to the incentives to borrow excessively.<sup>25</sup> Just because the bankers, acting on behalf of themselves and their shareholders, choose this funding mix does not make it efficient or optimal for society.

The fascination with banking may be related to the notion that banks “create money.” The fact that deposits are used as if they are cash, and that measures of monetary aggregates count deposits as “money” mask the fact that deposits are a form of debt funding for banks, albeit one bundled with services to depositors (such as ATMs). Deposits and other “money-like” claims are not *literally* the same as cash because *they are someone’s debt*. If the issuer takes risk and has too little equity, solvency and liquidity problems arise. Cash, by contrast, is nobody’s debt.<sup>26</sup>

Many models in academic banking assume that banks’ equity is fixed and unchangeable. In many models banks are assumed to be fully owned by its managers with no external equity, an assumption obviously inconsistent with the reality for the banks we care about. The large banks

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<sup>23</sup> The reference is to Mishkin (2013), as discussed in Admati et al. (2013b, Section 3.3), and Admati and Hellwig (2013a, Chapter 8). See also “The Case Against Banking’s Case for Less Capital,” Anat Admati and Martin Hellwig, Bloomberg View, February 4, 2013.

<sup>24</sup> Brunnermeier and Oehmke (2013) show how lack of ability to commit creates a “maturity rat race” where banks repeatedly shorten the maturity of their debt as a way to take advantage of previous creditors and reassure new creditors that they would be paid. See also Admati et al (2013a) and Admati and Hellwig (2013a, Chapter 10).

<sup>25</sup> See Admati and Hellwig (2013a, Chapter 8).

<sup>26</sup> In recent years, money market funds and markets for various forms of short-term borrowing and lending, such as so-called repo markets (where borrowing involves “selling” an asset and promising to “repurchase” it) have grown dramatically. Admati and Hellwig (2013a, Chapter 10) discuss the issues around money and liquidity provision by banks, and argue that liquidity provision is harmed by high leverage and would be helped by higher equity requirements. See also Admati and Hellwig (2013c, Claims 5-6).

are corporations, whose shares are traded on stock exchanges and which have millions of shareholders. Banks have the same access to equity investors as other companies. Yet the observed fragility of banks is often treated in the academic literature as if it is inherent or inevitable because banks only have inside equity. A large number of academic papers accept and explore this fragility taking it as given, or make arbitrary assumptions about a cost of using more equity, without making the – crucial for policy – distinction between private and social cost.<sup>27</sup>

Some academics go further and build models to “explain” the high leverage and the fragility of banks as beneficial or even efficient. A particularly flawed recent paper purports to show that, because banks provide “liquidity,” they should have “high leverage.”<sup>28</sup> The paper provides formal analysis that results in banks holding only *riskless* assets – there is no risk! – and funding entirely with deposits. With any uncertainty there is a chance that the bank will not be able to fulfill its obligations, and the liquidity provided by these claims is harmed unless the bank has sufficient equity to absorb losses. More equity enhances the “liquidity” of the claims.

With the provocative title “Why High Leverage is Optimal for Banks,” the paper was cited in bank lobbying documents, by some regulators, and even in a column in the *Economist*. In fact, the paper has nothing to say about the issue and it does not clarify what “high” actually means in a world with uncertainty. The analogy would be concluding that it is optimal to have “high speed” because speed should be positive and in a model that ignores all the harm from reckless driving. Having 75% of the assets funded with debt would generally be considered “high leverage.” Nothing in this paper justifies the dangerous levels we see.

Other academics claim that debt “disciplines” bank managers, i.e., that it addresses a conflict of interest between managers and investors. These claims are based on theoretical models whose plausibility is highly questionable and which do not have any empirical evidence to support them, thus amounting to a myth.<sup>29</sup> Yet, a group of prominent academics states, in a book that

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<sup>27</sup> The tax code, in particular, is always taken as fixed. It appears highly perverse that the tax code would encourage debt that, in banking at least, creates significant negative externalities. But taxes are still public money and if banks pay more taxes, this does not create a social cost. The situation is akin to subsidizing a polluting way to produce a die when there is a clean process equally costly except for the subsidy. See Admati et al (2013b, Section 4).

<sup>28</sup> Some of the flaws in DeAngelo and Stulz (2013) are discussed in Admati et al (2013b, Sections 5 and 7), and Admati and Hellwig (2013c, footnotes 7, 14 and 15). Hellwig (2013, forthcoming) provides a model to support the claims in Admati et al. (2013b, Section 7) and Admati and Hellwig (2013a, Chapter 10) that liquidity provision is enhanced with more equity, contradicting the conclusions in DeAngelo and Stulz (2013).

<sup>29</sup> See Admati and Hellwig (2013b) and Admati et al (2013b, Section 5). As we report in Admati and Hellwig (2013b), a 30 year veteran from the banking industry, upon reading the long section devoted to “debt discipline” an earlier version of Admati et al (2013b), asked: “Why did you write so much about this topic? Is this some academic

provides policy guidance, *and as a matter of fact about the real world*: “Capital requirements are not free. The disciplining effect of short-term debt, for example, makes management more productive. Capital requirements that lean against short-term debt push banks toward other forms of financing that may allow managers to be more lax.”<sup>30</sup>

Quite clearly, the purported “disciplining mechanism” did not prevent the financial institutions that used a lot of short-term funding (and were presumably subject to runs) from taking excessive risks in the subprime mortgage market prior to 2007 that led to the financial crisis. The fact that runs happen does not prove the discipline theory just like seeing people smoke does not prove the theory that smoking is good for our health. In fact, depositors and short term creditors cannot and do not provide discipline if they are insured and have little incentives or ability to collect information, and if managers can keep borrowing repeatedly. The repeated and excessive borrowing by bankers and the shortening of maturity is consistent with leverage ratchet and “maturity rat race,” which shows the *opposite* of discipline.<sup>31</sup> Applying flawed models that ignore important forces in the real world (such as the distortions of high leverage and the leverage ratchet effects) in a policy context is as inappropriate as using the distorted “map of the world as seen from New York’s 9<sup>th</sup> Avenue” for guiding travel.

Interestingly, the liquidity and the “discipline” narratives about bank debt give entirely different and *incompatible* roles to depositors and short-term creditors, and these narratives lead to entirely different policy conclusions. In the liquidity narrative, depositors specifically *do not* monitor bankers; they only want to use the bank’s debt to make payments, counting on it as safe and liquid “money.” Those who adhere to the liquidity narrative suggest the deposit insurance and expanding guarantees are useful for financial stability. The discipline narrative extols the virtues of fragility, presuming that depositors spend time and money to monitor managers. Deposit insurance or guarantees, put in place because of the enormous cost to society of the runs

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thing?” It should be noted that debt contracts are sometimes useful because the “hardness” of the commitment forces the borrower to pay. Banks typically make loans to small businesses rather than taking an equity position. And it is sometimes argued that managers tend to abuse or waste shareholders’ money and that having to pay debt helps “discipline” them. Despite the purported advantages debt might have in solving conflicts of interest between managers and investors, and despite the tax advantage of debt that applies to all corporations, it is rare for any company to maintain leverage levels as high as those in banking. Presumably, any benefits that might come from additional borrowing are more than offset by the high costs and inefficiencies associated with high leverage.

<sup>30</sup> See French et al. (2010, 69). In “Love the Bank, Hate the Banker,” by Raghuram Rajan, Project Syndicate, March 27, 2013 it is asserted that “the need to repay or roll over debt imposes discipline, giving the banker a stronger incentive to manage risk carefully.” How this purported discipline actually comes about is unexplained.

<sup>31</sup> See Admati and Hellwig (2013b) and Admati et al (2013b, Section 5) for a detailed discussion, as well as Brunnermeier and Oehmke (2013) on “maturity rat race” due to inability to commit not to harm previous creditors.

that are required for “discipline” remove incentives to gather information and counter the realism of the narrative. Should deposit insurance be abolished because depositors purportedly “solve” a governance problem in banks?<sup>32</sup>

Another flawed academic claim about bank leverage is based on the observation that managers may avoid issuing new equity when they believe it is underpriced. “Asymmetric information” is invoked as a reason that “equity is costly.”<sup>33</sup> But the effect of asymmetric information only applies to equity *issuance* and not to retained earnings, which are the most preferred funding in the pecking order, ahead of borrowing, and which add equity funding.<sup>34</sup>

In sum, much of the academic literature has accepted banks’ fragility as inherent or inevitable and some have attempted to “explain” it as useful. Before using a theoretical model for policy, however, it is essential to make sure that it is relevant, particularly if it ignores more plausible alternative explanations. Instead, the academic culture appears to treat all models as “relevant until rejected by a fancy empirical test,” even when some models can be rejected on the basis of simple robustness or smell tests.

## 5. Mixing Politics and Flawed Claims

Good policy requires that policymakers know what they can and should do. Then they must *act* to implement the policy effectively. They must first *want* to know and to act. The same applies to regulators and supervisors. In banking, too many policymakers and others don’t want to know and/or don’t want to act.<sup>35</sup> In such a setting, flawed claims can win the policy debate.

In addition to various claims directly related to leverage many other flawed claims supported by flawed analyses are made and seem to be successful at least clouding the discussion. They include, for example, flawed concerns about the competitiveness of “our” banks, or claims that turn the failure to enforce prior regulations, which led to dangerous activities in the so-called “shadow banking system,” into an argument against regulation.<sup>36</sup>

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<sup>32</sup> Gorton (2012) alludes to the “quiet period” brought about by deposit insurance and believes guarantees protect the valuable liquidity of bank debts. By contrast, Diamond and Rajan (2012) state in the abstract, as a matter of fact about the real world: “Banks finance illiquid assets with demandable deposits, which discipline bankers but expose them to damaging runs” and suggest that deposit insurance interferes with this benefit of having deposits.

<sup>33</sup> Such a claim is made, for example, in Bolton and Freixas (2006).

<sup>34</sup> For a detailed discussion see Admati et al. (2013a, 2013b, Section 6).

<sup>35</sup> On the phenomenon of willful blindness, refusing to know what might be inconvenient, see Hefernan (2012).

<sup>36</sup> Academics have also made such flawed claims, e.g., French et al. (2010) are concerned with the competitiveness of US Banks. On the politics of banking, including arguments about competitiveness and “level playing field,” see

Allowing banks to endanger the public just because other countries are foolishly allowing their banks to do so is bad policy, because “successful” banks can harm the economy. And past regulatory failures are not a reason to give up on beneficial regulations. To achieve their goals, regulations must be enforced effectively. The lesson from previous failures is that we must do better. In particular, supervisors must watch for guarantees and backstops given by regulated banks to entities in the shadow banking system that might come back to bite.

The politics of banking involves bankers who lobby extensively and make large political contributions, politicians who have many reasons to avoid challenging bankers, and revolving doors that allow the regulators, the regulated, the politicians and their staffers to frequently switch places in a way that advances their interests but not necessarily the public’s interest. Narratives that financial crises are like natural disasters that must be accepted also work against regulatory reform and the status quo. Without more pressure on this system, we may be stuck with a dangerous and distorted financial system for quite some time.

An example of the “political economy of flawed claims” was the debate in the mid-1990s regarding a change in U.S. accounting rules to require that an expense be deducted from earnings when executive stock options were awarded. The debate included many flawed claims of the types we find in the debate on bank leverage – fallacies, irrelevant facts and myths – yet extensive lobbying in which claims were made that “innovation would suffer” worked; the proposed accounting change was not implemented. A decade later, after accounting scandals in Enron, WorldCom and elsewhere, with different politics, the change was put in place and none of the dire predictions made in the earlier lobbying materialized. Just because people say something does not make it true.<sup>37</sup>

## **6. Summary: What’s Wrong with banking and What Must be Done**

When it comes to risk and borrowing, banking is fraught with conflicts of interests. Those who take risk do not always bear the full responsibility and liability for the consequences, and those who are harmed have too little control. The public must be protected from harmful risks.

Policymakers can design effective regulation but for them as well, accountability appears to be lacking. The financial crisis of 2007-2009 was in large part due to flawed and ineffective

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Admati and Hellwig (2013, Chapter 12). On shadow banking, see Admati and Hellwig (2013a, Chapter 13). See also Admati and Hellwig (2013c, claims 21-23).

<sup>37</sup> For a discussion and some references see the concluding remarks of Admati et al (2013b).



policies and regulations that allowed risks to build up in the financial system. Those responsible for the failure have not learned all the lessons. The Dodd Frank Act in the U.S. gives plenty of authority to regulators, but does not guarantee that regulators will use the authority effectively.<sup>38</sup> Indeed, pressure from politicians and bankers often makes it harder for regulators to be effective.

Capital regulation represents an enormous missed opportunity. The approach to the regulation appears to be based on the flawed notion that there are significant tradeoffs for society in having more equity funding in banks and that these tradeoffs are relevant at the current or proposed levels. The status quo is the result of banks' decisions and the flawed regulations that allowed them. *The status quo is not a useful benchmark for what we can and must do.*

Regulators have tools to manage the transition to a safer banking system and to enforce regulations more effectively. Banning payouts to shareholders until the system becomes much safer is an obvious step. Profits from investments made with retained earnings still belong to shareholders as long as debts are paid. Banks can also sell more shares to investors to increase equity and provide a bigger margin for error. The ultimate stress test for a bank is whether it is able to raise equity. Inability to do so at any price may indicate insolvency. Zombie banks do not make new loans and are a drag on the economy.

The goal of the regulation must be to reduce the risks of distress and failure that can harm. Regulation must counter the distortive impact of the guarantees and subsidies of debt, which feeds the inefficient ratcheting of leverage. With more equity funding, banks may behave more like normal corporations, and they would have better incentives to manage their risk. John Cochrane captured the ultimate objective in this statement: "How much capital should banks issue? Enough so that it doesn't matter! Enough so that we never, ever hear again the cry that "banks need to be recapitalized" (at taxpayer expense)!"<sup>39</sup>

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<sup>38</sup> For example, under Title I of the Act, large banks are required to submit "living wills" meant to convince regulators that they can go through bankruptcy without disrupting the economy. With some of these banks (bank holding companies, to be precise), which are much larger and more complex than Lehman Brothers are unlikely to satisfy this condition. The law allows the regulators to take any number of actions to reduce the risk to the public from banks whose bankruptcy will be disruptive, including forcing them to shed assets and simplify their operations. Yet, the Federal Reserve is yet to act. Instead, it allows most banks to make payouts to their shareholders, repeating its mistake of allowed \$131 billion to be paid out by the largest 19 banks just in 2006-2008 only to have taxpayers effectively make loans of \$160 billion to these same banks, which the banks rushed to pay back so they can continue making payouts to their executives and shareholders. The "stress tests" used to justify these action are a charade. See Admati and Hellwig (2013a, Chapter 11) for further discussion.

<sup>39</sup> See "Running on Empty," John Cochrane, Wall Street Journal, March 1, 2013, posted on Cochrane's blogpost.

While the holy grail of the well-calibrated mathematical model and reliable estimates that tells us what capital requirements should be with great precision is beyond our reach, it doesn't follow that we should be paralyzed with indecision and stay near a status quo that we know still exposes our economy to needless risks for the benefit of a few.

Consider again the speeding analogy. Imagine that trucks were allowed to drive faster than all other cars on the road even though they are the most dangerous. Further suppose that the trucking companies and the drivers are rewarded the faster they are able to make a delivery, benefit from subsidized insurance, and have a special safety system that protects the driver in case of accidents and explosions. The companies might produce narratives suggesting that their deliveries are essential and that the fast delivery is important for economic growth. They and others might produce models suggesting possible "tradeoffs" associated with a lower speed limit for the trucks. Whereas there probably are tradeoffs associated with trucks driving too slowly, it is clear that they are irrelevant, and there are no tradeoffs, when choosing between 90 miles per hour and 50 miles per hour for a truck carrying dangerous cargo in a residential neighborhood.<sup>40</sup>

Similarly, there are essentially no tradeoffs for society when moving from the status quo to a situation in which important financial institutions are required to operate with significantly more equity, including at levels between 20% and 30% of their total assets, levels considered low for healthy companies elsewhere and which were observed in banking before guarantees enabled so much more borrowing. In addition, the reliance of regulation on the highly problematic risk weights system must be re-examined, and the regulation should not rely on debt-like securities that are poor substitute to equity (such as debt that converts to equity "just in time").<sup>41</sup>

Among the other issues that should receive urgent consideration by policymakers to reduce the counterproductive conflict of interest between banks and society are to (i) improve the disclosures made the banks to reduce their opacity;<sup>42</sup> (ii) reform the tax code so it does not penalize equity funding, or at least forbidding interest tax deductions of interest for highly leveraged corporations; (iii) Reconsider the wide exemptions from stay in bankruptcy given to

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<sup>40</sup> The speeding analogy appears in Admati and Hellwig (2013a, Chapter 11). See also "Don't Trust These Bankers Who Want to Lower the Speed Limit," Anat Admati and Robert Jenkins, *The Independent*, March 15, 2013.

<sup>41</sup> Admati and Hellwig (2013a, Chapter 11) recommend specific actions and discuss how to make capital regulations work. Hybrid securities that involve elements of both debt and equity (such as contingent capital and debt subject to "bail-in" procedures) are poor substitutes to equity in the context of the regulation. On this topic see also Admati et al. (2013b, Section 8) and Admati and Hellwig (2013c, Claim 17).

<sup>42</sup> See, for example, "What's Inside the America's Banks?" by Jesse Eisinger and Frank Partnoy, *The Atlantic*, January-February 2013.

derivatives and repos, which may have encouraged excessive growth in these markets;<sup>43</sup> (iv) Consider moving most derivatives trading into exchanges with publicly observable prices and restricting over-the-counter derivatives trading by “systemic” banks.<sup>44</sup>

Risk in banking can harm the economy. The financial system can get too inefficiently large. The current system is too distorted to know how large the banking industry should be to support the economy effectively without subjecting the public to so much risk. But it requires effective regulation. Unfortunately, too many flawed claims are still mixing with the politics of banking to prevent effective reform. Unless more is done, we continue to live dangerously and suffer the consequences of the inefficiency of the system every day.

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<sup>43</sup> See Skeel and Jackson (2012) and “Reforming Repo Rules,” Mark Roe, Project Syndicate, December 21, 2011.

<sup>44</sup> The London Whale episode showed that risks taken out of sight of management and regulators in these markets can be substantial. Because the bank benefits from the upside when risks are taken, it may not have enough incentives to manage the risks, and leverage ratios do not provide enough information. See also Omarova (2009).

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