

**Statement for**  
**Senate Committee on Banking, Housing and Urban Affairs Subcommittee**  
**on Financial Institutions and Consumer Protection**

**by**

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Hearing on

**“Examining the GAO Report on Expectations of  
Government Support for Bank Holding Companies”**

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Chairman Brown, Ranking Member Toomey, and members of this Subcommittee, I commend you for holding this hearing and am grateful for the opportunity to speak to you. I am a Professor of Finance and Economics at Stanford Graduate School of Business and my recent research and writings have focused on issues immediately relevant to today's hearing.

Recent experiences have helped foster the expectations of government support mentioned in the title of this hearing. Since 2008, the Treasury, the Federal Reserve and the FDIC provided through various programs massive and unprecedented support to the financial system. The largest bank holding companies, to varying degrees, have had access to hundreds of billions, even trillions of dollars in relatively cheap loans and guarantees, and they benefitted from bailouts of their counterparties such as AIG. For some, e.g., Citigroup, the support was critical.<sup>1</sup>

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<sup>1</sup> The banks and the Federal Reserve tried to keep information about the extent of Fed loans hidden. The information was released after Bloomberg fought in court. See Phil Kuntz and Bob Ivry, “Fed Once-Secret Loan Crisis Data Compiled by Bloomberg Released to Public,” Bloomberg, December 22, 2011. Citigroup is discussed further below.

Trillions of U.S. taxpayer funds were put at risk. The supports prevented the collapse of the system and helped many financial institutions avoid default, bankruptcy, or resolution in which their shareholders would be wiped out and at least some of their creditors would suffer losses. Yet, the programs did little to solve the housing crisis, failed to improve business lending meaningfully, and at times were excessively generous and inefficient.<sup>2</sup>

Implicit guarantees for which banks do not pay create a subsidy, essentially free insurance for their debts, or at least a partial insurance that lowers the likelihood of losses in some scenarios. Because such subsidies are implicit and invisible, determining their value with any precision is difficult; there is no market in which the implicit guarantees are being valued (although some have tried to use credit insurance contracts to try to estimate their value). Any estimate depends on many variables that change over time, and estimation requires making many assumptions; such assumptions might or might not be true in reality. In fact, many of the variables that affect the size of the subsidy vary across different institution in complex ways. Moreover, actions by the institutions, by investors, and by regulators also have important impacts. Later in this document I will have additional comments on measuring the subsidies.

When implicit-guarantee subsidies are provided to institutions that have significant discretion about their investments and the risks they take, the results can be perverse. Policymakers may hope that the subsidies are passed on to specific investments or people, but the institutions, as they benefit from the guarantees, may well have incentives to make different investments altogether.

For example, guarantees may be provided in the hope that the banks will make certain loans, when in fact, given their compensation structures and the flawed regulations we have in place (e.g., the use of risk weights), the banks may only make the loan if it is very safe or if it is guaranteed by the government. Instead, banks may prefer to invest in derivatives markets with more upside.

The institutions benefiting most from the subsidies often deny the existence of any benefit and claim that they are happy to give up the implicit subsidies. “Please,” they may say, “let

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<sup>2</sup> Cole (2012) shows that TARP did not help improve business lending, which is not surprising since the programs did not reduce the institutions' indebtedness and the resulting debt overhangs (see Admati and Hellwig (2013a, Chapter 3, and Admati et al., 2014). Barofsky (2012) and Bair (2012) describe the bailouts programs. Additional references in the notes to Chapter 9 of Admati and Hellwig (2013a), whose text is attached to this testimony.

banks fail when they should.”<sup>3</sup> The difficulty is that letting systemic institutions – or many institutions at the same time – fail may be disruptive and entail enormous collateral damage. Even if the direct costs of the failure are covered, the disruptions and inefficiencies that result are costly for the economy and the harm is borne by innocent citizens. As I will explain below, we do not have workable options for the failure of systemic institutions; moreover, the harm from their distress and even from the fear of their failure creates instabilities.

Financial crises are sometimes portrayed as if they were unpreventable natural disasters, implying that bailouts are similar to emergency aid after an earthquake. This narrative is misleading. The crisis of 2007-2009 was an implosion of a system that had become too fragile, reckless, and distorted. Regulatory failures, including flawed and ineffectively enforced regulations, must take much of the blame for the excessive fragility and the buildup of risk. These failures can be corrected, and regulators have authority to do so under current laws, but, remarkably, obvious lessons have not been learned, and not enough has been done to make the system as safe as it can and should be. Some counterproductive laws have also remained in place.<sup>4</sup>

The situation in banking is disturbingly similar to allowing heavy trucks with dangerous cargo to drive recklessly at 95 miles per hour in residential neighborhoods. If drivers get a bonus for reaching the destination quickly, and face little risk of injury or death even in an explosion (imagine that they have a special protective mechanism), they will drive recklessly and endanger innocent citizens. Authorities can send firefighters to put out fires and medics to treat the injured if an explosion occurs, but the public would wonder why truck companies reward reckless driving and, most importantly, why a safer speed limit was not set and enforced to prevent harm.

Similar questions must be asked about the failure of financial regulation. We should have a financial system that supports the economy as efficiently and consistently as possible without

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<sup>3</sup> For example, in his letter to shareholders in April 2011, Jamie Dimon, CEO of JPMorgan Chase, denies his bank benefits from implicit subsidies and suggested that the industry pay any expenses associated with the failure of “dumb banks.” For a response to this letter, see Anat Admati, “An Open Letter to JPMorgan Chase Board of Directors,” reprinted in *Huffington Post*, June 14, 2011). This letter, which was sent to at least one person within the bank, did not receive any acknowledgment and did not appear to affect the banks' strategy. Misleading comments by bank executives and bank lobbyists as well as others are discussed in Admati and Hellwig (2013a) and in a number of short pieces, some of which are cited later in this document.

<sup>4</sup> I am referring, for example, to the distortive corporate tax code that penalizes equity funding and encourages borrowing, which can become excessive, and to the sweeping exemptions of repos and derivatives from stay in bankruptcy, which has likely enabled and encourage excessive growth in these markets. These issues will come up briefly below and they are discussed in Admati and Hellwig (2013a, Chapters 5, 9 and 10).

major distortions. The system we have instead is too dangerous, exposing the public to unnecessary risk and distorting the economy. Much can be done – even within existing laws – to improve this situation.

This committee has an important role in helping bring about beneficial changes. In the rest of this document, I will elaborate on the above statements, diagnose the key problems, and outline some recommendations. Additional materials are attached and referenced; I will be happy to provide more at your request.

### **Can/Will Large Bank Holding Companies ever “Fail” and if so, how?**

The Dodd-Frank Act (DFA) intended, among other things, to eliminate bailouts. Yet virtually everyone involved in the financial system – even if some would not admit it – expects that the government, possibly through the Federal Reserve and FDIC, will again provide supports to large bank holding companies and other institutions considered “systemic” if authorities fear that the failure of these institutions would cause significant harm to the economy. If many small institutions become distressed at the same time, they too may be supported.

This assessment is based on the realities of today's system and the state of its regulation.<sup>5</sup> Whereas regulators receive significant authority under DFA (some of which they had all along), the implementation of the law has been messy and uneven. Some of the most critical rules are insufficient and flawed; others appear wasteful, too costly relative to the benefit they provide.

Policymakers who were involved in the bailouts extoll the virtues of their actions while appearing willfully blind to their failure to reduce the fragility of the system before the crisis and to learn the lessons since. If anything, investors may reasonably expect that supports would be forthcoming for fear of another “Lehman moment” even with the alternative to bankruptcy offered through the new and still untested resolution authority by FDIC.

The DFA titles most relevant for this discussion are Titles 1, 2 and 7. I'd like to focus my discussion mainly on Titles 1 and 2, although Title 7, which deals with derivatives markets, is also critical. The still-too-opaque markets in derivatives allow banks to hide enormous amount of risk from investors and regulators. Ineffective implementation of Title 7 and poor disclosures can undermine Titles 1 and 2 and the objective of having a healthier financial system.

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<sup>5</sup> The dynamics of contagion are explained in in Admati and Hellwig (2013a, Chapter 5), White (2014), and testimony of James Thomson before this Subcommittee on July 16, 2014.

Stating the obvious (but see more below for nuances), a business “fails” when it does not fulfill its debt commitments or is feared to be unable to pay the debts. For “normal” companies in the US, failure involves filing for bankruptcy or liquidation under Chapter 11 or Chapter 7.

Title 1 of DFA requires, among other things, that large bank holding companies submit “living wills” to regulators. These documents are meant to play out a scenario in which the holding company goes through bankruptcy process, presumably under Chapter 11. In her testimony before your committee on July 15, 2014, Fed Chair Janet Yellen was asked some pointed questions about the living-wills process by Senator Elizabeth Warren. The exchange brings out some key issues. According to Chair Yellen, the largest bank holding companies have by now submitted three rounds of living-wills documents, and received feedback on the first set of submissions. The parts of these documents that are made public provide little information, often less than is included in standard financial statements. The full submission, according to Chair Yellen, goes into tens of thousands of pages.

Senator Warren asked Chair Yellen a critical question: **“Can you honestly say that JP Morgan could be resolved in a rapid and orderly fashion as described in its plans with no threats to the economy and no need for a taxpayer bailout?”** The Senator pointed out that JPMorgan Chase has \$2.5 trillion in assets and 3,391 subsidiaries, compared to Lehman Brothers, which had \$639 billion in assets and 209 subsidiaries prior to its failure.

The Lehman Brothers bankruptcy, filed on September 15, 2008, caused severe disruption and damage to the global financial system. In its immediate aftermath, stock prices imploded, investors withdrew from money market funds, money market funds refused to renew their loans to banks, and banks stopped lending to each other. Banks furiously tried to sell assets, which further depressed prices. Within two weeks, many banks faced the prospect of default.

To prevent a complete meltdown of the system, governments and central banks all over the world provided massive supports to financial institutions. These interventions stopped the decline, but the downturn in economic activity was still the sharpest since the Great Depression. Anton Valukas, the lawyer appointed by the bankruptcy court to investigate Lehman Brothers, put it succinctly: “Everybody got hurt. The entire economy has suffered from the fall of Lehman Brothers . . . the whole world.” Within twenty-one months, American households lost \$17 trillion; reported unemployment hit 10.1% at its peak in 2009.<sup>6</sup>

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<sup>6</sup> These two paragraphs are adapted from Admati and Hellwig (2013a, p. 11), and the crisis is described in some

Chair Yellen stated that Title 1 of DFA only requires the Fed to give feedback to the companies about their plans. She referred to an “iterative process” of submission and feedback. Title 1 apparently does not *require* that regulators give a pass/fail grade to the living wills nor to determine definitively whether bankruptcy is a viable option. However, the title definitely *authorizes* regulators to take a number of strong actions *if* they find that bankruptcy would entail too much collateral damage. Such actions include increasing capital (equity) requirements, requiring that structures be simplified and assets sold (potentially “breaking up” the banks), etc.

The US bankruptcy code to which Lehman Brothers was subjected has not changed since 2008. Other countries have different processes, which Lehman Brothers' foreign subsidiaries must follow. The tens of thousands of pages of living wills JPMorgan Chase has submitted to regulators might be of some use should it file for bankruptcy, at least under US law (although they may well be dated by the relevant time, because banks' counterparties and businesses can change in a matter of days or months). But the process will not be much faster and simpler than Lehman Brothers bankruptcy. Moreover, should the numerous counterparties of JPMorgan Chase become concerned that bankruptcy might be forthcoming, runs and disruptions similar to those observed in 2007-08 when Bear Stearns and Lehman Brothers became distressed will likely start significantly before any filing.

It defies credibility to suggest that, at the current speed of the “iterative process” that Chair Yellen described regarding the living wills, and without major changes to their structure and funding mix, enormously large and complex institutions like JPMorgan Chase will be able to go through bankruptcy without major harmful effects. Yet, regulators may continue to “iterate” and fail to use their authority to act even knowing that bankruptcy is not viable, refusing to admit to and deal with this reality. I doubt this situation was the intent of Title 1.

DFA authors, perhaps mindful after the Lehman Brothers experience that bankruptcy may not be a realistic option for large financial institutions, included an alternative mechanism in Title 2, which gives the FDIC authority to deal with the failure of any institution deemed “systemic” through a so-called Orderly Liquidation Authority (which actually doesn't intend to liquidate the company). The FDIC has engaged in the last few years in a serious effort to make its plans for this process credible, focusing on an approach called Single Point of Entry (SPOE).

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detail in Chapters 5 and 9 (the latter is attached to this testimony). Mr. Valukas made the statement here quoted in an interview on CBS *60 Minutes*, aired April 22, 2012. The last fact is included in the 2011 report of the Financial Crisis Inquiry Commission (p. 390).

SPOE represents an important and useful development, but, as bankruptcy expert David Skeel (2014, p. 3) assesses, “the technique also has important vulnerabilities, and some of the claims made on its behalf are quite exaggerated.” Among them, SPOE does not work for institutions that are active globally and that have systemically important operations in several countries, unless all the countries that are involved agree to such an approach. A recent coordination effort between US and UK may allow for SPOE of US authorities in US holdings companies without intervention of UK authorities in UK subsidiaries, so the problem of UK authorities entering a Lehman Brothers subsidiary and finding that there is no cash to keep systemically important functions going might not arise.

However, the US-UK coordination is the only attempt of this sort, and it does not seem to be fully symmetric. If Barclays or Deutsche Bank were to run into trouble, US authorities would probably not be willing to accept SPOE resolution by the domestic authorities of these banks, but instead would intervene directly in the holdings companies that organize these banks’ US activities. Multiple-entry resolution, however, destroys operational procedures that have been managed in integrated fashion across jurisdictions, for cash management, as in the case of Lehman Brothers, or, even more importantly, the joint use of Information Technology systems.

From the perspective of the different countries involved, single-entry resolution would involve significant conflicts of interest. If US authorities had been in charge of Lehman Brothers, London, as well as the parent, would they have paid proper attention to London-specific concerns, including the systemically important market-making activities of Lehman Brothers in London? Alternatively, is it acceptable for US authorities to follow the procedure suggested in the living will of Deutsche Bank, which argues that damage from resolution would be minimized if US authorities were willing to trust the German authorities (Bafin, the supervisor, and FMSA, the resolution authority)? In a cross-border setting, SPOE resolution leaves too much room for the authority in charge to shift losses to other countries and it is therefore hardly workable.<sup>7</sup>

Even if we had SPOE resolution for globally systemically important banks, some of these banks would most likely be “too big to fail.” Procedures would be lengthy and cumbersome and, meanwhile, there might be substantial systemic fallout. Regulators would then be reluctant to use the procedure if multiple financial institutions face default at the same time, or if resolution would expose problems at one or more subsidiaries. In sum, Title 2 is useful, but it is certainly

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<sup>7</sup> Even the Nordic countries have not been able to agree on an SPOE procedure for Nordea.

not a silver bullet for addressing the “too-big-to-fail” problem and it does not eliminate expectations of support for large bank holding companies. Moreover and importantly, even under the best scenario, using Title 2 resolution would be costly and entail collateral damage and, as in the case of bankruptcy, the distress of the corporation, and the fear or anticipation that Title 2 resolution might be invoked by its counterparties would likely already cause harm.<sup>8</sup>

The living wills requirements and Title 2 of DFA try to make palatable the notion that, like other companies, financial institutions structured as limited liability corporations should fail if they take risk and become unable to pay their debts, thus wiping out their shareholders and imposing losses on their creditors through an orderly legal process. In a vibrant market economy, innovations involve risk, and failures should be tolerated.

For normal companies, bankruptcy typically follows an actual or imminent default. Restructuring debts may allow the company to continue operating. Bankruptcy laws try to control the actions of managers and shareholders in insolvent companies, who have incentive to benefit themselves at the expense of creditors by taking out cash or gambling for survival. Since such problems and the legal and other costs of bankruptcy are anticipated by creditors, the terms of the debt claims, including both the interest rate and the conditions the contract puts on the borrower, are set by prudent lenders to compensate for the losses in the event of default and bankruptcy, and to control borrowers' actions that go against the lenders' interests.

A source of great inefficiency in banking is that banking institutions can persist in a state of distress or even insolvency without their creditors becoming alarmed and without the institution experiencing the difficulty of most distressed borrowers to raise funds and continue operating. One reason for this anomaly is that banks' creditors include depositors, who are insured and dispersed. Depositors are particularly passive in their role as lenders to the banks (a status most of them do not quite realize they have) and do not behave as normal creditors with standard debt contracts. Depositors rely on insurance and regulators to protect them.

Banks can use depositors' funds to invest in various loans and other assets that can sometimes be used as collateral and enable the bank to borrow even more under attractive terms. Creditors whose debts are secured by collateral care less than unsecured creditors about the borrower's solvency. Lending to financial institutions through so-called repurchase agreements

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<sup>8</sup> See also White (2014) for a discussion of the issues regarding “fail” scenarios in “too big to fail.”

(repos) is even safer than secured lending, because, under safe harbor laws from 2005, repos, as well as derivatives, are exempted from the normal stay in bankruptcy.<sup>9</sup>

For bank holding companies considered too big to fail, even unsecured bond holders feel reasonably sure they will be paid in full. In the financial crisis the creditors of numerous banking institutions, including those whose claims had counted as “regulatory capital” and were meant to absorb losses, were paid in full even as the institutions received large amounts of bailout funds and other supports. As discussed above, even today, and despite DFA, it is quite possible and even likely that the creditors of one of the largest bank holding companies will be paid in full even if the institution is insolvent.

As long as creditors are paid and do not constrain the borrowing bank much, it can continue operating. In that case, only regulators are in a position to intervene even as highly distressed or insolvent borrowers, including banks, are extremely inefficient and their decisions are distorted by conflicts of interest with creditor. In fact, I will argue below that by most standards, the banks are permanently in a state of financial distress, yet they manage to get away with it

### **Essential, yet Flawed and Insufficient Regulation**

In addition to the living-wills requirement, Title 1 of DFA authorizes the Federal Reserve, in collaboration with other regulators, to design prudential regulations meant to maintain the safety and soundness of the system. The Fed is charged with regulating bank holding companies as well as all institutions declared systemic by the Financial Stability Oversight Committee.

As discussed above, the scenarios that involve default and failure of systemic institutions are complicated, disruptive, and harmful. There are no good options. It thus appears particularly important to try to prevent reaching these failure situations through prudent supervision and regulations. Most important among those safety measures are capital requirements meant to control the funding mix of these companies, including to ensure that they fund their investments by appropriate amount equity – money from owners and shareholders – so that they can continue making loans and investments and still pay their debts even if they incur losses. (**Note:** *the*

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<sup>9</sup> Skeel and Jackson (2012), and Mark Roe, another bankruptcy expert, (see, e.g., “Reforming Repo Rules,” Project Syndicate, December 21, 2011), call for re-examining these exemptions. Skeel (2014) also warns with regard to Title 2 resolution that “it reinforces problematic incentives for financial institutions to rely on short-term financing.”

*jargon that refers to capital as something banks “hold” or “set aside” is confusing, suggesting that capital represents idle funds like cash reserves that banks cannot use, which is false.*<sup>10)</sup>

According to its financial statements, on December 31, 2007, the largest the bank holding company at the time, Citigroup, reported that its shareholder equity or net worth (the difference between its reported assets and liabilities) was 5.2% of its total assets. Citigroup's assets were valued at almost \$2.2 trillion. As Lawrence White from New York University Stern School notes, however, this information does not capture some important facts. He writes (White, 2014, p. 7, footnotes omitted): “Citigroup is best understood as a (roughly) \$1.2 trillion depository institution, on top of which was a (roughly) \$1 trillion holding company (including its non-depository subsidiaries). The holding company’s net worth was smaller than the depository’s net worth; in essence, if the net worth of the depository (i.e., the capital of the depository, which also counted as an asset for the holding company) was ignored, the holding company was insolvent.”

Citigroup proceeded to collapse at the end of 2008 and needed a series of bailouts and massive other supports. Remarkably, the government injected of \$25 billion of TARP funds into Citigroup on October, 8, 2008, and, even with the market value Citigroup stock falling below \$25 billion in November, the company was offered tens of billions in additional bailouts and hundreds of billions in cheap loans and guarantees from the Fed. (Citigroup, according to Arthur Wilmarth from George Washington University Law School is “a case study in managerial and regulatory failure.”<sup>11)</sup>

Indeed, regulators often show forbearance and allow insolvent banks to persist and even hide their losses. Insolvent institutions are highly dysfunctional and harm the economy. They do not make new loans and may become reckless, gambling for survival or looting the institutions. Recklessness was pervasive in the Savings and Loan Crisis of the 1980, and the dysfunctionality of weak banks is evident in Europe in recent years. Yet, when banks are supported, their indebtedness is often maintained because the supports are given in the form of *more* loans.<sup>12</sup> Solvent corporations can in fact raise equity at *some* price, although their managers and

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<sup>10</sup> On this insidious confusion, see Admati and Hellwig (2013a, Chapters 1 and 6), Admati et al (2013, Section 3.1), Claims 1 and 2 Admati and Hellwig (2014), which is attached to this testimony, and my Tedx Stanford talk [http://www.youtube.com/watch?v=s\\_I4vx7gHPQ&feature=youtu.be&a](http://www.youtube.com/watch?v=s_I4vx7gHPQ&feature=youtu.be&a)

<sup>11</sup> See Wilmarth (2014). Bair (2012) and Barofsky (2012) include vivid descriptions of the bailouts.

<sup>12</sup> Onaran (2011) argues that both Citigroup and Bank of America were insolvent or “zombies” even in 2010. Admati and Hellwig (2013a, Chapters 3, 4 and 11) emphasize the harm of allowing weak banks to persist.

shareholders are unlikely to do so voluntarily. Creditors or regulators can bring about reduction of indebtedness through covenants or regulation.<sup>13</sup>

A glaring failure of regulatory reform efforts across the globe (not just in the US, indeed, the situation is worse in Europe) is that, even as the largest global financial institutions have grown ever bigger, more complex, more connected and more dangerous, they continue to be allowed to operate with dangerously high levels of indebtedness and much too little equity, and to hide too much risk in opaque markets and off their balance sheets.

The minimal requirements agreed upon in Basel III allow equity to be as low as 3% of the total assets. Even with the harsher US requirements, 95% of the total assets of the largest bank holding companies can be funded with debt. Note that *this requirement would have been satisfied by Citigroup in December, 2007*. Capital regulations also rely on an enormously complex and manipulable system of risk weights that distorts banks' decisions and exacerbates the fragility of the system, among other things making business lending relatively unattractive.

Bankers and regulators claim that the new capital regulations are tough when in fact these reforms amount to a tweak and they have no valid justification. In the speeding analogy, the reforms are analogous to reducing the speed limit for loaded trucks from 90 miles per hour to 85 miles per hour in residential neighborhoods, with police unable to measure the actual speed. The claims made to justify the regulation or to fight higher equity requirements are fraught with flaws that range from false statements to misleading claims that divert the discussion. These statements are discussed in details in many of my writings, with colleagues, over the last four years; a small sample of which is attached to this testimony.<sup>14</sup>

A key observation for understanding corporate funding decisions is that heavy borrowing creates strong conflicts of interest between borrowers and lenders and potentially distorts the investments and funding decisions made by borrowers once debt is in place. Overhanging debts create inefficiencies when borrowers – or managers in an indebted corporation acting in the interests of shareholders – make decisions in their own interest and do not take into account the impact of their actions on creditors or third parties. For example, borrowers may underinvest in worthy projects if they expect the returns to accrue in part to their creditors or they may make

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<sup>13</sup> Admati et al (2014) discusses in detail how borrower-creditor conflicts affect funding decisions in highly indebted corporations, and the analysis is particularly applicable to banks.

<sup>14</sup> See Admati (2014), Admati and Hellwig (2013a, 2014), and Admati et al (2013, 2014). Admati et al (2013) was first posted in August, 2010. These and additional references are available at <http://bankersnewclothes.com/>: and (for more academic writing) <http://www.gsb.stanford.edu/news/research/admati.etal.html>

excessively risky investments if they expect the downside of the risks to be borne by creditors, or by deposit insurance institutions and taxpayers.<sup>15</sup>

As a result of these distortions and other costs associated with distress or bankruptcy, heavy borrowing can actually reduce the total value of a firm (i.e. the sum of the values of all claims, including debt and equity). Borrower-creditor conflicts also create an “addiction” to debt on the part of heavy borrowers, biasing subsequent funding decisions towards more debt and away from equity that makes existing creditors safer.<sup>16</sup> As mentioned above, the conflicts are particularly intense when corporations are in a state of distress or insolvency, which for most corporations are rare but which in fact are considered normal in banking.

Without any regulation of their funding, and despite a (distortive) tax code that subsidizes borrowing and penalizes the use of equity, most corporations do not borrow heavily.<sup>17</sup> Even those who tend to use more debt, including private equity firms or Real Estate Investment Trusts, rarely have less than 30% equity in their funding mix. As discussed above, prudent creditors write restrictive covenants that constrain dividend payouts and other decisions by the borrower, and adjust the cost of borrowing to reflect anticipated legal costs and delays should the borrower go into bankruptcy, as well as the possibility that the borrower would take additional debt that might dilute their claims.

Banks, however, can persist in distress because they do not experience the “dark side of borrowing,” including the increased costs and harsh terms that naturally prevent other corporations from heavy borrowing. Although they use a lot of debt, much of this debt comes with fewer strings attached than those other borrowers face (and, indeed, the terms the banks often place those to whom they lend). Deposit insurance and implicit guarantees lighten the burden of debt, allowing banks to continue to borrow and take risks without much effect on the terms of their debts. Supports and guarantees enable, encourage, and feed this addiction to debt.<sup>18</sup>

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<sup>15</sup> As discussed in Admati and Hellwig (2013a, Chapter 3), the effects of overhanging debt can be seen in the case of homeowners who would not invest in the house if its value is low relative to the mortgage, or who might take a second mortgage even as this may put the lender of their first mortgage at risk.

<sup>16</sup> This phenomenon is explored in details in Admati et al (2014), which is highly relevant to understanding the rationale for leverage regulation. See also Admati et al (2013) and Admati (2014).

<sup>17</sup> White (2014) provides some comparisons based on book value of equity. The comparisons of banks and nonbanks on the basis of market value are starker. The latter have on average 60% or more equity relative to total assets.

<sup>18</sup> Some claim that debt disciplines managers. In banking, this idea is a myth, as discussed in Admati et al (2013, Section 5), Admati and Hellwig (2013b) and Admati and Hellwig (2014, Claim 22), attached.

Guarantees can also exacerbate the inefficiencies and distortions in banks' investment decisions. If you could use borrowed money in a casino, keep the winnings and continue to borrow when you lose, you would certainly love gambling even if the odds were significantly against you. Chapter 9 of Admati and Hellwig (2013a), whose text is attached to this testimony, provides an accessible explanation.

The fact that banks choose to rely so much on debt does not mean that their indebtedness levels are essential or efficient. These levels are the result of a failure of internal governance and a failure of normal credit markets to constrain the love of borrowing by banks and bankers. Compensation structures that reward return on equity (ROE), which are pervasive in banking, effectively pay bankers to gamble at the expense of creditors or taxpayers who are exposed to greater risks. Even shareholders may be exposed to risks for which they are not properly compensated.<sup>19</sup> Few benefit while the rest are harmed by this situation. When markets fail, effective laws and regulations must correct the distortions. Otherwise laissez faire can become crony capitalism.

The idea of finding ways for banks to fail, discussed above, is obviously meant to bring back market discipline into banking. However, given the collateral damage from the failure of one or more institutions, and the fact that disruptions and harm start even before an actual default, the primary focus should be on prevention. Much more can be done on this front. There is simply no justification for the current inefficient levels of indebtedness in banking. Reducing it will achieve major benefits for society at virtually no relevant costs.

The inefficiencies of heavy borrowing in banking also distort the provision of credit in the economy. Making loans is a critical contribution banks can make to the economy.<sup>20</sup> Heavily indebted banks, however, may make too few worthy (but relatively “boring”) business loans that don't have much upside, while at the same time making too many risky loans, including credit card loans, which may lead others to borrow too much and suffer the consequences. The distortions create cycles of booms, busts and crises. Regulations based on risk weights exacerbate these distortions.

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<sup>19</sup> This is explained in detail in Chapter 8 of Admati and Hellwig (2013a) and in many other writings. See Claim 8 in Admati and Hellwig (2014), attached.

<sup>20</sup> Despite the emphasis often placed on banks as sources of credit for firms, lending is actually a small part of what the largest bank holding companies do (see Admati and Hellwig (2013a, Chapter 6). On the evolution of business of banking in the US, see Omarova (2013).

It is possible and highly beneficial to transition to a system in which banks use significantly more equity, thus reducing the likelihood of costly failures or bailouts and at the same time permitting banks to invest more efficiently on behalf of all its investors, thus supporting the economy better and with fewer distortions.

Whereas many extoll the importance of increasing equity requirements, the status quo seems to be the benchmark against which changes are measured. This benchmark is entirely inappropriate. Banks are as fragile as they are only because those who make decisions in the banks benefit from the status quo and they have so far gotten away with maintaining it, even after the most recent crisis.

Requiring that banks use more equity is not a silver bullet, and much depends on the details of the regulations and its implementation and enforcement, but effective regulation of banks' indebtedness can make other, more costly, regulations less important or necessary.<sup>21</sup> Liquidity breakdowns are less likely if banks can trust each other to be solvent, and the liquidity offered by deposits and other short term debt by banks would only be enhanced if banks have more equity.<sup>22</sup>

Existing laws still allow regulators to revise capital regulation. Title 1, specifically in the context of the living wills requirements, allows significant increases in equity requirements for institutions deemed systemic, if regulators admit that bankruptcy is not a viable option.

### **Comments on Measuring the Value of the Implicit Subsidies**

As discussed at the start of this document, it is very difficult to measure the value of the implicit subsidy associated with guarantees. Because there are no markets for these guarantees, assumptions must be made about the underlying forces and the data being used. One can also try to focus on the cost to taxpayers or in terms of benefits to banking institutions who receive the subsidies. In fact, these two need not be the same because of the collateral impact of the banks' choices of investment and funding, and especially of their distress and failure scenarios.

In assessing the costs to taxpayers, it is important to realize that expenses for supporting financial institutions in a systemic crisis occur at the every moment when the macro-economy is doing poorly, the country's fiscal situation is very tight and money is sorely needed in many

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<sup>21</sup> In Chapter 11 of Admati and Hellwig (2013a) we outline briefly how better regulation can be designed and how to transition to a better system.

<sup>22</sup> These issues are discussed in detail in Admati and Hellwig (2013a, Chapter 10).

places.<sup>23</sup> Similarly, in assessing the benefits to banks, it is important to realize that government guarantees are most useful in times of crisis, when private protection schemes are breaking down and the very survival of the institution is at stake. As discussed above, banks' decisions about lending and investments are most distorted at that time, and bailouts that do not reduce indebtedness and thus do not alleviate banks' distress may keep banks going but be unhelpful to the rest of the economy. (Ineffective banking regulations have caused much harm in Europe in recent years; many problems can be traced to a weak and bloated banking system and the politics of banking.)

With these caveats, I will make a few observations about attempts to estimate the size of the subsidy, but I do not wish to focus on this technical issue. As I will argue below, the size of the subsidy does not actually matter much to the policy recommendation.

1. There is compelling evidence that the government provided a sector-wide collective bailout guarantees to the financial sector in 2007-2009.<sup>24</sup>
2. The value of the subsidy, if thought of as the amount the banks would have to pay to receive perpetual (even partial) insurance for their debts in the private markets, is sensitive to many variables and can change dramatically over time depending on the level of uncertainty, the state of the local and global economy, and various fragilities in the financial system. The value is highest when uncertainty is large and when the economy and/or the financial sector are weak, and especially in a crisis. Boom times, however, when the value of the subsidy might be thought low, can quickly turn to bust. For example, uncertainty indicators were low in 2006 and through summer 2007 only to explode in late 2008 and 2009.)
3. When focusing on the funding costs of the institutions, particularly their borrowing costs, the relevant thought experiment in trying to assess the value of the implicit subsidies to the institutions who receive them from an ex ante perspective, i.e., when institutions fund their investments in light of the expectations of support, is to consider how institutions would have fared in the hypothetical scenario in which they tried to raise funding, such as unsecured,

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<sup>23</sup> For example, in the Swedish crisis of 1992–1994, government support for the banks necessitated cutbacks in other government spending, which greatly contributed to the sharp economic recession. Citizens in Ireland and Iceland are still suffering

<sup>24</sup> In one example, Kelly, et al (2014) document the fact that during the recent financial crisis, (out-of-the-money) index put options that provide protection against large drops in the value of the entire financial sector were surprisingly cheap compared to the individual options of the financial institutions that are part of this index. This finding is consistent with the notion that the government will not tolerate large equity losses for the financial sector as a whole. As a result, the market underprices the cost of insurance against these sector-wide losses for financials.

junior debt, *without any chance of a guarantee*, and specifically in a world in which the full costs of any failure, including bankruptcy costs and the distortions of distress and insolvency, would fall on shareholders and creditors. This counterfactual scenario cannot be observed, thus comparison requires many assumptions. One approach is to use credit ratings uplifts. The approach makes sense if the uplifts actually capture the true distinctions in the context of an individual institution and specific bond issuance.

4. None of the approaches takes into account the extreme opacity of the large banking institutions' and the difficulty in assessing their risks, including those lurking off their balance sheets and in derivatives markets.<sup>25</sup> Many banks use derivatives to get certain risks off their balance sheets. But then the counterparties on these derivatives might fail. If the counterparties have many parallel positions, as was the case when AIG wrote credit default swaps for \$500 billion on mortgage-backed securities, CDOs, and the like, the risk that the counterparty might fail is correlated with the underlying risk, i.e. the attempt to hedge risks through derivatives may end up being ineffective. In the case of AIG, fear of systemic fallout from such a failure was a major reason for the bailout.
5. Correlations of risks, i.e., the risk that the same event affects multiple institutions, are notoriously difficult to measure. This is especially true of the correlations among the risks against which derivative contracts are written and the default risks on these contracts. If these correlations are improperly measured, however, credit ratings and credit ratings uplifts are unlikely to be reliable. If these correlations are neglected, as has been the case in the past (for example the possibility that housing price declines will affect numerous mortgages at the same time), the estimates of the total risk in banks' assets are likely to be too low, and so are all estimated of the value of government guarantees protecting against such risks.
6. In this context, it is also important to appreciate the role played by government guarantees for counterparties of banking institutions. In a financial system with a complex network of inter-institution contracts, the individual institution benefits not only from government guarantees protecting its own creditors but also from government guarantees protecting the counterparties of those in which it invested. For example, the AIG bailout benefited many counterparties of AIG, not the least of these being the many banks that had purchased credit

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<sup>25</sup> On the poor disclosures of the banks and investors' inability to assess their risk, see for example Jesse Eisinger and Frank Partnoy, "What's Inside America's Banks," *The Atlantic*, January 2, 2013.

insurance from AIG. The benefit of such protection for AIG to, say, Goldman Sachs, however, cannot be assessed merely by looking at data for Goldman Sachs and relating the interest Goldman Sachs must pay to the risks they are taking. The embeddedness of their activities in a system to which the government provides comprehensive support can hardly be gathered from data about individual institutions.

7. Even a resolution process such as under Title 2 of DFA may offer guarantees to some of the institutions' debt in order to avoid disruptions or runs, which would transfer some downside risk to the government at least temporarily.<sup>26</sup>
8. Being able to borrow at below-market rates relative to the risk taken with the investments provides a subsidy that affects the institutions' stock price and can favorably affect the terms at which the institution can raise equity. When an insolvent institution is given supports and does not fail, its shareholders are not wiped out. Other things equal, therefore, a systemic institution's stock price is higher in reality than in the hypothetical without support. Indeed, raising equity has been surprisingly cheap for the largest US banks over the past four decades, but expensive for the smallest banks, because large bank stocks are priced under the assumption that they are relative safe while the stocks of small banks are not, despite the fact that large banks tend to be more heavily indebted.<sup>27</sup> The fact that guarantee become an asset, and the fact that commonly used assumptions about the risks banks are subject to may well be inappropriate, may lead the value of the subsidies in some studies to be under-estimated.<sup>28</sup>
9. Comparisons between the interest charged on debt of large and small banks may not be informative because the large banks may well have significant risks that are harder to assess due to their more opaque disclosures. As mentioned earlier, this applies particularly to banks heavily involved in derivatives trading. The larger banks also tend to have more complex structures, more lines of business, and more off-balance sheet exposures than small banks. These factors would affect funding costs in the hypothetical scenario without support and

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<sup>26</sup> DFA directs the FDIC to cover any shortfall by charging the surviving institutions, but doing so might be difficult if they too are experiencing losses.

<sup>27</sup> Gandhi and Lustig (2014) find that over the past four decades the stock returns realized on the largest US commercial banks, after adjusting for risk differences, are abnormally low compared to the stock returns on the smallest US commercial banks. These differences are large (around 6% per year). The authors also provide evidence that large bank stocks are significantly less exposed to losses during recessions and financial crises, even though these large banks are typically much more heavily indebted. These findings are consistent with the notion that government guarantees are perceived by investors to protect shareholders in large banks, but not in small banks, in financial disasters.

<sup>28</sup> See, for example, Stefan Nagel, "Too Big to Fail is Bigger than You Think," Bloomberg, March 2, 2014.

thus the comparison between large and small banks, and they might not be sufficiently observable to correct for. Similar considerations apply to comparisons of large banks with other large corporations, whose disclosures, and business models are often simpler and less opaque.

The challenges in measuring how the banking industry as a whole, and especially the largest institutions, benefit from the possibility of future support do not change my bottom line, that the subsidy is perverse and insidious, rewarding and encouraging recklessness and excessive use of debt which endangers the public while allowing banks to make investments of many kinds to maximize their own profits that may not always benefit society.

Because the public pays for any subsidy, and the result of implicit supports is a dangerous and distorted system, these subsidies are, on net, enormously costly for society. Even if banks were to pay in full for the guarantees, at least collectively – similar to how deposit insurance works – the impact of the implicit support is harmful and distortive. The same institutions whose failure would cause significant collateral damage – individually and when they fail at the same time – have incentives to borrow too much, take too much risk, and become more highly interconnected, so as to increase the likelihood of government support. In responding to these incentives, they can put us at yet more harm, unless these incentives are countered effectively by regulations.<sup>29</sup>

Among the perverse consequences of implicit guarantees is that they encourage and enable the largest institutions to grow even to inefficiently large sizes. There is no valid evidence of true scale economies for banks as they grow to trillions in assets. Such sizes are unseen in the rest of the economy.<sup>30</sup> Indeed, the problem of “empire building” by managers to benefit themselves appears particularly severe in banking.<sup>31</sup> The largest institutions seem to suffer from serious

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<sup>29</sup> See, for example, Brandao et al (2013) for evidence on excessive risk taking as a result of expectations and support. Section 5 in Admati et al (2014) which discusses the why the leverage ratchet effect (addiction to borrowing by heavy borrowers) is particularly relevant in banking and exacerbated by guarantees, and this effect exacerbates other distortions. Admati and Hellwig (2013a, Chapter 9) provide additional references. See also Anat Admati, “Bank Immensity Undermines Responsibility,” *New York Times* Room for Debate, May 16, 2014.

<sup>30</sup> Davis and Tracey (2014) use estimates of the subsidies based on credit rating uplifts and argue that, once the effect of subsidies is controlled for, the largest institutions are “too large to be efficient.”

<sup>31</sup> For example, Mayo (2011) describes excessive growth that appears inefficient, for example in Citigroup. A recent book (Fraser, 2014) describes the recklessness of the Royal Bank of Scotland and its CEO, which led to its spectacular failure and bailout by UK taxpayers.

governance and control problems, as evidenced by repeated scandals and fines.<sup>32</sup> However, because the status of being too big to fail confers significant benefits and better access to funding, the largest institutions are unlikely to shrink naturally (as conglomerates often do).

These perverse effects undermine any notion of market discipline and they breed recklessness, even lawlessness, on the part of those within the largest institutions who benefit the most from the guarantees and subsidies, whose compensation reward gambling, and who rarely pay a personal price when charges for wrongdoings, including crimes, are settled by authorities or when excessive risks that harm the public, and even the shareholders of the corporations, are taken. Both corporate governance and regulations appear to fail. It is essential to take steps to counter these perverse incentives of the implicit subsidies and reduce their impact.

Fortunately, there is a straightforward and cost-effective way to do just that while reaping other critical benefits; that is to reduce banks' excessive use of debt and requiring significantly more equity than banks are currently required to have.<sup>33</sup> There is no reason for banks to live so dangerously. Importantly, *aside from possibly losing subsidies associated with borrowing, the overall funding costs of banks would not increase if they use more equity and less debt.*<sup>34</sup> Since subsidies come from public funds, reducing them does not represent a social cost.

Encouraging and subsidizing banks to fund themselves with as much debt as is currently allowed (up to 95% for the large bank holding companies) as perverse as encouraging and subsidizing reckless speed for trucks or rewarding the captains of large oil tankers to go ever closer to the coast. More equity would force banks to stand more on their own when they take risk, rather than shift some of the risk and cost of bearing it to others. Shareholders who benefit from the upside, and not creditors or taxpayers, should be the ones to bear the downside.

Whatever else is done to reform the financial system so it works better for the rest of the economy, bringing banks' indebtedness to more reasonable levels appears enormously cost-beneficial. With the perverse incentives banks have, and their ability to get away with harmful actions, many of the problems will not be corrected by markets. Making the system safer

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<sup>32</sup> For example, the report by the Senate Committee on Investigation chaired by Senator Carl Levin on “London Whale” scandal, entitled “JPMorgan Chase Whale Trades: A Case History Of Derivatives Risks and Abuses,” reveals serious control problems in our largest banks. Suspicion of fraud and other evasion of laws and regulations appear routinely in the press.

<sup>33</sup> Additional benefits are outlined in Admati et al (2013, Section 2) and Admati (2014).

<sup>34</sup> This is explained in details in Admati et al (2013, see especially Section 4); see Chapter 9 of Admati and Hellwig (2013a) Claim 11 in Admati and Hellwig (2014), both in attached documents. Taxes are public funds, and the tax impact of higher equity requirements can easily be neutralized, as explained in Admati et al, (2013, Section 4.1).

requires focused and effectively enforced regulation. If the size of individual banks, or of the banking industry, shrinks as a result, the resulting size would likely be more appropriate. The size and structure of firms and industries should be determined by undistorted markets, but the markets we have are entirely distorted. Bloated and inefficient, the financial industry may be able to attract talented workforce that may be more productive elsewhere in the economy. This system works for few and harms all the rest. When regulations fail to correct such distortions and harm, the public pays the price. Because the issues are misunderstood and the harm from excessive risk in finance, unlike that from exploding trucks, is abstract, the public may not fully realize the situation, particularly with the extent of lobbying by the industry.

### **Summary: If not Now, When?<sup>35</sup>**

In March, 2013, the Senate voted unanimously to approve an amendment proposed by Senators Brown and Vitter to eliminate the too-big-to-fail subsidies. As discussed above, among the many benefits of forcing the large banks to use more equity and less debt is that any subsidy they benefit from is immediately reduced. This benefit is obtained without having to break up the banks, and is realized in addition to all the other benefits of preventing their failure and reducing the distortions in their lending.

The focus on making the failure option palatable is as misguided as a focus on preparing ambulances for a possible explosion while police allows loaded trucks to drive at 95 miles an hour in residential neighborhoods. Whoever pays for the ambulances, explosions harm innocent people. Requiring that banks fund themselves so that those who benefit from the upside of risk bear more of its downside brings about more safety and corrects distortions.

In the exchange on July 15, 2014 between Senator Warren and Chair Yellen referred to earlier, Senator Warren pointed out that under Title 1 of DFA, the Fed has authority to break up the largest bank holding companies if it finds that bankruptcy is not a viable option if they fail. The Fed certainly has authority to ban dividends and other payouts to shareholders until banks are better prepared to absorb losses from risks they take without failing or becoming distressed.

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<sup>35</sup> This is the title of Chapter 11 in Admati and Hellwig (2013a), whose epigraph is “time has a trick of getting rotten before it gets ripe.” For an excerpt, see Anat Admati and Martin Hellwig, “Must Financial Reform Await Another Crisis?” Bloomberg View, February 6, 2013.

As it goes through the “iterative process” of the living wills, and while it is not ready to assert that the failure of the largest bank holding companies will not harm the economy, the Fed must act prudently and protect the public. Corporations routinely retain their profits to fund investments, and banks should do the same. Retained profits would enable banks to make more worthy loans, and may increase their incentives to actually make them. The profits from any investments belong to shareholders as long as debt is paid.<sup>36</sup>

Not only do banks have access to their own profits to become more resilient, they can sell shares to investors at appropriate prices. Other companies may be forced by debt covenants or prohibitive borrowing costs to raise equity when they are distressed. For banks, action must come from regulators. Banks unable to raise equity at any price fail a basic market “stress tests” and might be too opaque or not viable without subsidies. Such banks are unhealthy and must be dealt with promptly.

The Fed justifies allowing banks to make payouts to their shareholders on the basis of “stress tests.” This methodology uses models to predict regulatory capital levels that mean little in actual distress and especially in a crisis. The models are incapable of predicting the within-system dynamics that might follow adverse scenarios because the Fed does not have sufficient information on the many layers of interconnectedness that go beyond single counterparty exposures. Trusting models that should not be trusted has contributed to the causes of the financial crisis. The lesson from the failures of these models must be learned, particularly when there is no scarcity of equity just for banks, and no justification for allowing them to live as dangerously as they do.<sup>37</sup>

If banks deny that they benefit from implicit subsidies, moreover, they cannot at the same time complain that their funding costs would increase significantly if they must use more equity.<sup>38</sup> The fact that banks are anxious to make payouts to their shareholders rather than use their profits for making worthy loans, even at their very low equity levels, calls into question their motives and exposes the disconnect between claims that higher equity requirements would prevent lending and making payout to shareholders instead of using the funds to make loans.

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<sup>36</sup> Warren Buffett’s company Berkshire Hathaway, for example, rarely makes payouts to its shareholders, continuing to invest on their behalf and retained earnings are considered first in the “pecking order” of funding. See Admati et al (2014), for example.

<sup>37</sup> See Claims 13-14 in Admati and Hellwig (2014), attached, for a brief discussion.

<sup>38</sup> In that case, the only private cost is that banks might have to pay more corporate taxes, but, as explained in Admati et al (2013, Section 4.1), this is not a social cost, and the effect can anyway be neutralized.

It is baffling that the Fed finds it appropriate, before it can assert that the largest bank holding companies would not harm the economy if they fail, to allow these institutions to make payouts to shareholders that deplete their most reliable loss-absorbing capacity, namely their equity.<sup>39</sup> A significant increase in equity requirements must be considered the most cost-effective way to make it less likely that we face difficult choices when institutions become weak, as well as to reduce the fragility of the system and many distortions. The Fed has the responsibility and the ability to protect the public, yet as a regulator, it has failed the public. On behalf of the public, I hope you will take my comments into consideration and implore it to do better.<sup>40</sup>

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<sup>39</sup> I have written many commentaries on this issue, see Anat Admati, “Dividends Can Wait Until the Banks are Stronger,” *Financial Times*, January 19, 2011, “Only Recapitalized Banks Should Pay Dividends,” a letter signed by 16 academics, *Financial Times*, February 15, 2011, Anat Admati, “Fed Runs Scared with Boost to Bank Dividends,” Bloomberg View, February 24, 2011, and “Why the Bank Dividends are a Bad Idea,” Reuters, March 14, 2012. Admati and Hellwig (2011, Chapter 11) provide a more detailed explanation.

<sup>40</sup> Other claims are made in response to such recommendations, such as concerns about the so-called shadow banking system or about the competitiveness of our banks. These concerns are invalid excuses, as explained in Admati and Hellwig (2013a, Chapters 12 and 13) and Claims 26-28 in Admati and Hellwig (2014), attached.

## References<sup>41</sup>

- 1) Admati, Anat R. (2014), “The Compelling Case for Stronger and More Effective Leverage Regulation in Banking,” *Journal of Legal Studies*, forthcoming.
- 2) Admati, Anat R., Peter M., DeMarzo, Martin F. Hellwig and Paul Pfleiderer (2013), “Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is Not Socially Expensive,” Working paper.
- 3) Admati, Anat R., Peter M., DeMarzo, Martin F. Hellwig and Paul Pfleiderer (2014), “The Leverage Ratchet Effect,” Working paper.
- 4) Admati, Anat R., and Martin F. Hellwig (2013a), *The Bankers’ New Clothes: What’s Wrong with Banking and What to Do about It*, Princeton University Press. (Excerpts and links available at <http://bankersnewclothes.com/> )
- 5) Admati, Anat R., and Martin F. Hellwig (2013b), “Does Debt Discipline Bankers? An Academic Myth about Bank Indebtedness,” Working paper (based on a chapter omitted from Admati and Hellwig (2013a).
- 6) Admati, Anat R., and Martin F. Hellwig (2014), “The Parade of Bankers’ New Clothes Continues: 28 Flawed Claims Debunked,” available at <http://bankersnewclothes.com/wp-content/uploads/2014/07/Parade-continues-July-2014.pdf>
- 7) Bair, Sheila (2012), *Bull by the Horns: Fighting to Save Main Street from Wall Street and Wall Street*, Free Press
- 8) Barofsky, Neil (2012), *Bailout: An Inside Account of How Washington Abandoned Main Street while Rescuing Wall Street*, Free Press.
- 9) Brandao, Luis Marques, Ricardo Correa, and Horacio Saprizza (2013), “International Evidence on Government Support and Risk Taking in the Banking Sector,” IMF Working Paper WP/13/94.
- 10) Cole, Rebel A. (2013), “How did the Financial Crisis Affect Business Lending in the U.S?” Working paper.
- 11) Davies, Richard and Belinda Tracy (2014), “Too Big to Be Efficient? The Impact of Implicit Subsidies on Estimates of Scale Economies in Banking,” *Journal of Money, Credit and Banking*, 219-253. (Working paper version dated 2012 available online.)

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<sup>41</sup> Most of the references (at least in working paper form) are available online. My own academic papers and other writings on the topic are posted at <http://www.gsb.stanford.edu/news/research/admati.etal.html>

- 12) Fraser, Ian (2014), *Shredded: Inside RBS, the Bank that Broke Britain*, Brinnin. Too Big to Be Efficient? The Impact of Implicit Subsidies on Estimates of Scale Economies in Banking,”
- 13) Gandhi, Priyank, and Hanno Lustig (2014), “Size Anomalies in U.S. Bank Stock Returns,” *Journal of Finance*, Forthcoming. (Working paper dated 2012 available on SSRN.com )
- 14) Kelly, Bryan, Hanno Lustig and Stijn Van Nieuwerburgh (2012), “Too-Systemic-To-Fail: What Option Markets Imply About Sector-Wide Government Guarantees,” Working paper.
- 15) Mayo, Mike (2011), *Exile on Wall Street: One Analyst’s Fight to Save the Big Banks from Themselves*. John Wiley and Sons.
- 16) Omarova, Saula T. (2013), “The Merchants of Wall Street: Banking, Commerce, and Commodities,” *Minnesota Law Review*, 2-78.
- 17) Onaran, Yalman (2011), *Zombie Banks: How Broken Banks and Debtor Nations Are Crippling the Global Economy*, Bloomberg
- 18) Skeel, David A. Jr. (2014) “Single Point of Entry and the Bankruptcy Alternative,” Working paper.
- 19) Skeel, David A. Jr., and Thomas H. Jackson (2012) “Transaction Consistency and the New Finance in Bankruptcy.” *Columbia Law Review*, 152-202.
- 20) White, Lawrence J. (2014), “The Basics of “Too Big to Fail”,” Forthcoming in Paul H. Schultz, ed. *Dodd-Frank and the Future of Finance* MIT Press.

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## Sweet Subsidies

I don't know how you measure that subsidy. . . . That's why they say it's invaluable.

*Mark Zandi, chief economist of Moody's Analytics, part of the credit rating agency Moody's, April 2009*

**Y**OGI BERRA'S SUGGESTION that the content of a pizza might depend on how it is cut is absurd. Yet when banks borrow excessively and economize on equity, the total "pie" available to their investors grows.<sup>1</sup> When banks borrow, they benefit from subsidies that they would not enjoy if they relied more on equity. The more banks borrow, the larger are the subsidies, as if the pizza chef added more cheese when the pizza was cut into more slices.

The main source of subsidies for banks is the support the government provides to protect banks, their depositors, and sometimes their other creditors and their shareholders. Banks and their creditors benefit from explicit and implicit government guarantees. Depositors are protected by deposit insurance, which is guaranteed by the taxpayers. Other creditors, and even the bank's shareholders, benefit if the government provides additional equity to prevent the bank from going bankrupt—for example, in a crisis.

Because depositors and other creditors count on this support, they are willing to lend to banks on more favorable terms than the terms they would require otherwise. In particular, the interest rates banks must pay on their debt are lower than they would have been without government support. This gives banks strong incentives to prefer borrowing over other types of funding they might obtain for their investments. In effect, taxpayers subsidize the use of borrowing by banks. Paradoxically, these subsidies encourage banks to be more fragile. They reinforce the distortions from the bias that heavy borrowers

have toward even more borrowing, the effect of debt overhang discussed in Chapter 3.

Excessive borrowing by banks can expose the public to great risks. A bank exposing the public to risks is similar to an oil tanker going close to the coast or a chemical company exposing the environment to the risk that toxic fluids might contaminate the soil and groundwater or an adjacent river.<sup>2</sup> Like oil tankers or chemical companies that take too much risk, banks that are too fragile endanger and potentially harm the public. Cleaning up coastlines and rivers and bailing out banks are all costly to taxpayers. The risks and costs to the public in all these cases are very real. For society, containing the risks of oil tankers, chemical factories, and banks is therefore important, even if there is a cost involved. In the case of banks, in fact, requiring more equity produces large benefits at virtually no cost to society.

Explicit and implicit government guarantees have perverse effects on the extent of borrowing and risk taking of banks. The preferential tax treatment of debt also encourages borrowing. With the additional borrowing, the incentive to take excessive risks, discussed in Chapter 8, becomes stronger.

Government guarantees and subsidies thus reinforce the effects of bankers' compensation and the focus on ROE, as well as the effects of debt overhang, all of which encourage borrowing and risk. The prospect of becoming systemically important or too big to fail provides banks with incentives to grow and become more complex. The implicit guarantees reduce the funding costs of the too-big-to-fail institutions and give these banks an advantage over other banks and over other companies in the economy. If banks respond to these incentives by growing and becoming more complex, this in turn increases the damage to society should these institutions become distressed or insolvent. It is as if the government subsidized ever larger tankers going ever closer to the coast.

#### *Isn't It Wonderful to Have Such an Aunt?*

To see how guarantees work, let us again consider the example of Kate who takes out a mortgage to buy a \$300,000 house that she sells a year later.<sup>3</sup> In the case discussed in Chapter 8, we assumed that Kate borrows \$270,000 at 4 percent interest and puts down \$30,000 in down payment or initial equity.

If Kate settles her mortgage and pays all the interest after a year, she owes \$280,800, including \$10,800 in interest, to settle the mortgage a year later. If Kate has a nonrecourse mortgage, as we have been assuming, she does not pay her debt in full when the house subsequently declines in value to below the amount of the mortgage debt, \$280,800.<sup>4</sup> We can assume that the 4 percent interest rate that Kate is charged includes some compensation for the risk to the bank of not being paid in full.

Now let us change the example slightly by assuming that Kate's Aunt Claire offers to guarantee Kate's mortgage. If the house subsequently sells for less than Kate owes on her mortgage, Aunt Claire will make up the difference. The local banker knows that Aunt Claire is wealthy. With the mortgage guaranteed by Aunt Claire, the bank faces virtually no risk and therefore allows Kate to borrow at the riskless interest rate of 3 percent.

In borrowing \$270,000 at 3 percent instead of at 4 percent, Kate pays only \$8,100 in interest instead of the \$10,800 she must pay without the guarantee. She saves 1 percent in interest on the loan of \$270,000, which amounts to \$2,700 for the year. This leaves Kate with more money after paying the mortgage debt. For example, if the house subsequently increases in value by 5 percent to \$315,000, we saw in Chapter 8 that Kate will be left with \$34,200, a 14 percent return on her equity investment, if she borrows at 4 percent. If she borrows at 3 percent and owes only \$278,100, she will instead have \$36,900 left, a 23 percent return on her equity investment, after selling the house for \$315,000 and paying her mortgage debt.

The saving of \$2,700 in interest will also soften the blow should Kate lose some of her investment, assuming that she is still "above water" and able to pay her mortgage. For example, if the house sells for \$300,000, Kate will be left with \$19,200 if she borrows at 4 percent, a loss of 36 percent of her investment, but she will have \$21,900 if she borrows at 3 percent, losing only 27 percent of her investment. Similarly, she will lose less if the house declines in value by 5 percent to \$285,000. In the worst-case scenario, if the house ends up below \$278,100 in value, Kate will lose everything whether she borrows at 3 percent or 4 percent; Aunt Claire's guarantee does not benefit Kate in this case.

The situation is summarized in Table 9.1. The top panel reviews the case discussed in Chapter 8, in which Kate pays 4 percent interest, while the bot-

TABLE 9.1 How Kate Benefits from Guarantees When Borrowing

<i>Kate's position with no guarantees (borrowing at 4 percent)</i>				
<i>Year-end house price (dollars)</i>	<i>Percent change in house price</i>	<i>Mortgage debt (dollars)</i>	<i>Final equity (dollars)</i>	<i>Return on equity (percent)</i>
345,000	15	280,800	64,200	114
315,000	5	280,800	34,200	14
300,000	0	280,800	19,200	-36
285,000	-5	280,800	4,200	-86
255,000	-15	280,800	0	-100
<i>Kate's position with guarantees (borrowing at 3 percent)</i>				
<i>Year-end house price (dollars)</i>	<i>Percent change in house price</i>	<i>Mortgage debt (dollars)</i>	<i>Final equity (dollars)</i>	<i>Return on equity (percent)</i>
345,000	15	278,100	66,900	123
315,000	5	278,100	36,900	23
300,000	0	278,100	21,900	-27
285,000	-5	278,100	6,900	-77
255,000	-15	278,100	0	-100

tom panel shows the case in which Kate borrows at 3 percent with the guarantee from her aunt. Kate benefits from the guarantee even when she is able to pay her debt, and this is reflected in her ROE.

We saw in Chapters 2 and 8 that borrowing magnifies risks for the borrower both on the upside and on the downside. With the guarantee from her aunt, the upside for Kate is even better and the downside is either better or no worse. Kate is obviously quite happy with the guarantee, and the bank is getting paid for sure. Aunt Claire, however, must put up money in the one case in the table in which Kate cannot pay. If the house sells for only \$255,000, Aunt Claire will have to add the missing amount of \$23,100 so the bank is paid \$278,100 in full.

If she can, would Kate like to reduce her down payment and borrow more? Suppose Aunt Claire is in fact willing to guarantee Kate's mortgage even if

Kate borrows \$290,000. The bank would allow Kate to take a larger mortgage because it knows that it will get paid in full no matter what happens to the value of the house. The interest rate it would charge Kate would again be 3 percent even for a larger mortgage.

How does the situation in which Kate invests only \$10,000 instead of \$30,000 in the house compare to that in which she invests \$30,000? If Kate borrows \$290,000 for a year at 3 percent, her interest payment is \$8,700, so she owes \$298,700. In this case, Kate will become underwater and will be unable to pay her mortgage debt from selling the house if the house subsequently sells for less than \$298,700. For example, if the house sells for \$285,000, Kate will default on her mortgage debt if she borrows \$290,000. In this scenario, Aunt Claire will have to pay \$13,700 to make sure the bank is paid the full \$298,700 that is owed. By contrast, if Kate borrows only \$270,000 and puts \$30,000 in as a down payment, she will absorb the entire loss without needing the guarantees.

Table 9.2 summarizes the positions of both Kate and her aunt if Kate invests \$30,000 in equity and borrows \$270,000, as shown in the top panel, which is the same as the bottom panel of Table 9.1, and if Kate invests \$10,000 and borrows \$290,000, both loans at 3 percent interest.

Obviously, if Kate borrows more, Aunt Claire will bear much more of the downside risk. For example, if the house subsequently declines to \$255,000 in value, Aunt Claire will have to put in \$23,100 if Kate borrows \$270,000 and owes \$278,100. In the bottom panel of Table 9.2, which represents the situation in which Kate borrows \$290,000 and owes \$298,700, Claire will have to cover a whopping \$43,700 to live by her guarantee. Although Kate will lose all her investment in both cases, the loss will be only \$10,000 if she borrows \$290,000, whereas it will be \$30,000 if she borrows \$270,000.

The guarantees are a gift from Aunt Claire to Kate. The more Kate borrows, the larger is the value of the gift. If Kate borrows more, as represented in the bottom panel of Table 9.2, Aunt Claire will sometimes have to pay more than she will if Kate borrows less. (In the cases in which Kate can pay the mortgage by selling the house, her aunt will pay nothing in both cases.)

If Aunt Claire asks Kate to put more of Kate's own money into her down payment, Kate might claim, "Equity is expensive!" Indeed, once she has the

TABLE 9.2 How Guarantees Make Borrowing More Attractive to Kate

<i>\$30,000 down payment (initial equity)</i>				
<i>Year-end house price (dollars)</i>	<i>Percent change in house price</i>	<i>Mortgage debt (dollars)</i>	<i>Kate's final equity (dollars)</i>	<i>Aunt Claire's position (dollars)</i>
345,000	15	278,100	66,900	0
315,000	5	278,100	36,900	0
300,000	0	278,100	21,900	0
285,000	-5	278,100	6,900	0
255,000	-15	278,100	0	-23,100
<i>\$10,000 down payment (initial equity)</i>				
<i>Year-end house price (dollars)</i>	<i>Percent change in house price</i>	<i>Mortgage debt (dollars)</i>	<i>Kate's final equity (dollars)</i>	<i>Aunt Claire's position (dollars)</i>
345,000	15	298,700	46,300	0
315,000	5	298,700	16,300	0
300,000	0	298,700	1,300	0
285,000	-5	298,700	0	-13,700
255,000	-15	298,700	0	-43,700

guarantees, it will become expensive for Kate to invest more money in the house, because by investing more she puts more of her money at risk of being lost, when instead she can leave more of the downside risk for Aunt Claire, letting her aunt absorb more losses. (We are ignoring, of course, family considerations or hard feelings that might result from Kate's taking advantage of her aunt's generosity.)

Whether Kate actually ends up doing better or worse investing \$30,000 in the house depends on what she does with the \$20,000 that she does not invest in the house if she puts only \$10,000 into the down payment and borrows \$290,000. Kate might take an expensive trip with the money, and very much enjoy the experience.<sup>5</sup> If instead she invests the \$20,000 elsewhere, the question is whether the alternative investment will end up earning more or

less than what Kate can earn by investing the money in the house and saving on interest payments. If Kate can invest the money at 3 percent without risk, she will make the same in those scenarios in which she remains above water, but in the scenarios in which she is underwater and must make use of Aunt Claire's guarantees, she will do better if her money is invested elsewhere, because she will not have to bear the losses. Therefore, Kate wants to put as little equity as possible into the house; without equity in the house, she will enjoy the upside and will lose less on the downside.<sup>6</sup>

In summary, Kate benefits from her aunt's guarantees by being able to pay less on her loan when she borrows. This allows her to save on interest expenses. Kate can increase her gains further by borrowing more and putting less equity into the house. The more Kate borrows, the greater will be the value that Kate will derive from Aunt Claire's gift. Putting her own money into the house seems expensive to Kate because it exposes her to downside risk that she can otherwise leave for Aunt Claire.<sup>7</sup>

Debt guarantees of the type Aunt Claire gives to Kate make borrowing very attractive. The bright side of borrowing—the magnification of the upside—looks even brighter to the borrower, while the dark side, the magnification of losses, affects the person making the guarantees, in Kate's case Aunt Claire. With lower interest on borrowing, it is easier for investments to surpass the low borrowing rate, thereby providing larger magnified returns. The worst of the downside is shared by the guarantor.

Taking this logic a step further, suppose that Aunt Claire agrees to guarantee a mortgage of any size and the bank knows that Aunt Claire is trustworthy and able to pay. Then Kate would actually prefer, and be allowed, to have no equity at all in the house. She would have zero initial equity and borrow the entire \$300,000 at 3 percent interest, promising to pay \$309,000.<sup>8</sup> If the house ends up increasing enough in value to pay the mortgage, Kate will be able to enjoy the full upside. Otherwise, she will lose nothing.<sup>9</sup>

The scenario in which Kate puts in zero initial equity is wonderful for her. With no investment in the house, she is not at all exposed to the risk that the subsequent value of the house might not be enough to pay the mortgage debt; she can never lose, but she will gain if the house appreciates by more

than is needed to pay the mortgage debt. The house will become a kind of money machine for Kate; allowing her to enjoy the full upside while facing no downside. The downside will be fully borne by Aunt Claire.

### *Banks Have Uncle Sam*

The relation between Kate and Aunt Claire in the example is similar to the relation between banks that are too important to fail and taxpayers. Just as Aunt Claire steps in when Kate cannot pay her mortgage debt, governments often support banks when they cannot pay their debts. And banks, like Kate, want to economize on equity and use debt as much as possible. Borrowing is made attractive to them through subsidized guarantees. The banks' creditors are more confident that they will be paid in full than they would have been without the guarantees; because of this, creditors are willing to lend to the banks for lower interest, and creditors care relatively little about the banks' own equity or the risks banks take.

The safety net for banks takes different forms. Some guarantees are given explicitly, and some are implicit, implied by expectations that, in a crunch, the government will most likely step in and help. In the turmoil that occurred after the Lehman Brothers bankruptcy, many of the institutions that received government support had not previously been covered by any explicit guarantees.

Explicit guarantees are limited, and banks must make payments intended to cover their costs, which is similar to paying insurance premiums. For example, in the United States deposit insurance from the FDIC is available for deposits up to \$250,000.<sup>10</sup> The FDIC charges banks a deposit insurance premium, and it is supposed to be self-financing. However, for close to a decade, until 2006, the FDIC did not charge any deposit insurance premium at all because its fund was well-capitalized given the lack of defaults in previous years.

As a result of its calibration of funding to average default rates, the FDIC is short of funds when default rates are unexpectedly high. If it runs out of funds, the FDIC can increase its insurance premium. Increasing the premium in a crisis, however, may itself exacerbate the crisis because the charges

represent a tax on surviving banks to make up for the losses of failing banks. If many banks are in trouble and the industry is not able to cover the losses, taxpayer support may be needed to make up the shortfall.<sup>11</sup>

Under this arrangement, the contributions of any individual bank to the FDIC do not properly reflect the risk that the bank imposes on the deposit insurance system. Once a bank fails, of course, it no longer makes contributions, and any shortfall of funds or other expenses are covered by the FDIC, that is, by the other banks or taxpayers.

Implicit guarantees are potentially unlimited, and banks do not pay for them. In the fall of 2008, banks received large amounts of support from their governments in various forms. In the United States, the government put up \$900 billion, \$700 billion for TARP and \$200 billion for Fannie Mae and Freddie Mac, the giant mortgage corporations that had dominated housing finance for decades. In other countries, governments committed comparable amounts—for example, £550 billion in the United Kingdom, €480 billion in Germany, and €360 billion in France.<sup>12</sup> These operations ended up protecting most debt holders, even those with “hybrid” debt that was meant to share in absorbing losses and that banks had been allowed to use to satisfy some of their capital requirements.

Additional support was provided by central banks acquiring assets from many private banks, either directly or as collateral for loans. In the United States, the Federal Reserve increased the money supply by more than \$1.3 trillion, from just below \$900 billion to over \$2.2 trillion. In the process, it acquired assets of lower quality, taking on debts of private companies and individuals that included questionable mortgage-backed securities and related derivatives. Such interventions also affect taxpayers, because any losses on the acquired assets reduce the Fed’s profits and therefore the payments it makes to the Treasury. Altogether, the bailout operations of 2008 put about \$2.2 trillion of U.S. taxpayer money at risk, \$900 billion through the Treasury and \$1.3 trillion through the Federal Reserve.<sup>13</sup>

Another form of subsidy to banks comes through cheap borrowing from central banks. Since 2008, central banks in the United States, the United Kingdom, and Europe have allowed private banks to borrow at interest rates

of 1 percent or less. If this money is invested in safe securities that pay more than 1 percent in interest, the central banks are effectively providing a money machine to the private banks.<sup>14</sup>

In the United States, this kind of support was also provided in 1990, when, in response to information that large commercial banks were in trouble, the Federal Reserve lowered the short-term rate it charged banks that wanted to borrow money.<sup>15</sup> U.S. commercial banks used this cheap borrowing to invest in long-term bonds, earning large profits from 1990 to 1994, rebuilding their equity.

In Europe, since December 2011 the European Central Bank (ECB) has provided more than €1 trillion in cheap loans to banks within the so-called long-term refinancing operations (LTRO), three-year loans at very low rates. Borrowing from the ECB at 1 percent in order to lend to Italy or Spain at 4 or 5 percent may look like an attractive way to rebuild the bank's balance sheet by means of a carry trade. (As discussed in Chapter 8, this practice may involve significant risk.)<sup>16</sup>

In all these examples of central banks' lending at below-market rates or of governments' providing guarantees of banks' debts, the institutions that have access to these loans and guarantees are provided subsidies that other companies in the economy cannot obtain. At the peak of the financial crisis in 2008, money market funds were provided guarantees, and Goldman Sachs and Morgan Stanley, the two remaining pure investment banks in the United States, changed their legal status so as to have access to various supports. They have made use of the supports and have maintained this status.<sup>17</sup>

Since the crisis, many have demanded that there should never be bailouts again. The Dodd-Frank Act in the United States forbids government bailouts and certain forms of support by the Federal Reserve, such as those used in the bailout of AIG.<sup>18</sup> In signing the Act into law, President Obama said, "The American people will never again be asked to foot the bill for Wall Street's mistakes. There will be no more taxpayer-funded bailouts. Period."<sup>19</sup> The Act tries to deliver on that promise by giving authority to the FDIC to take over and resolve any systemically important financial institution and by mandating that no taxpayer money be used. It requires that the costs of the FDIC's taking over and unwinding a financial institution be covered by the

institution's creditors or by contributions from other financial institutions. This requirement corresponds to the principle that the FDIC should be self-financing.

However, the FDIC is guaranteed by taxpayers. If the entire banking industry is in trouble and if imposing additional charges on remaining banks would deepen a crisis, taxpayers would have to step in and support the FDIC, as in the case of the S&L institutions in the late 1980s and early 1990s. As the entire industry was failing, taxpayers paid \$124 billion to support the deposit insurance system.<sup>20</sup> In the face of a looming crisis, most governments and central banks will likely again step in to help the banks and limit the damage. If the law forbids a bailout, lawmakers can quickly change the law again, particularly in a crisis situation. As a result, hardly anyone considers the no-bailout commitments credible. Support is most likely to be given to the largest and most "systemic" banks because winding them down would be highly disruptive and costly. As discussed in the last section of Chapter 5, there are as yet no workable procedures for winding down internationally active banks with branches and subsidiaries in different countries and no agreements on how to share losses among the different countries involved.

If governments are afraid to let systemically important banks fail, these banks enjoy essentially unlimited implicit guarantees that are similar to the blanket guarantees Kate receives from her aunt. It is very difficult for governments to convincingly commit to removing these guarantees. In a crisis it will be even more difficult to maintain this commitment and provide no support to institutions that are deemed critical to economic survival. Once a crisis is present, it may even be undesirable to do so, because letting banks fail in a crisis can be very damaging. Perversely, the prospect of government support in a crisis makes creditors willing to lend to banks at low rates of interest and provides banks with a reason to view equity as expensive.

#### *Tax Subsidies to Borrowing*

In addition to the incentives to economize on equity because of guarantees, borrowing by all corporations is encouraged by the tax systems of most countries. To see how this works, let us go back to Kate's purchase of her house without Aunt Claire's guarantees. Suppose Kate could pay for the house without

borrowing but she considered borrowing anyway. Would it make a difference? In the United States, the answer is generally “Yes,” because the interest paid on mortgages is tax deductible. In determining her taxable income, Kate could deduct the mortgage interest payments as an expense.<sup>21</sup> Borrowing could therefore reduce Kate’s taxes, essentially making Uncle Sam contribute to the purchase of her house.<sup>22</sup>

Corporations can similarly save on taxes by borrowing. In most countries, corporate taxes are paid on a corporation’s “income,” defined in such a way that interest paid on the corporation’s debt is considered a tax-deductible expense.<sup>23</sup> The more debt and the less equity a corporation uses in its funding, the less it pays in taxes. The part of the pie available to investors grows with more borrowing because a smaller part of the earnings goes to the government in taxes. This encourages corporations to borrow more than they might otherwise choose to do.<sup>24</sup>

Some countries (for example, Australia, Germany between 1977 and 2000, and, since 2004, Belgium) have tried to neutralize the tax penalty for equity funding. Many commissions in the United States have also recommended changes to the tax code to eliminate or reduce the tax incentives for corporations to borrow.<sup>25</sup>

Whereas tax legislation is usually driven by considerations and politics different from those that drive banking regulation, it is important to recognize that a corporate tax code that subsidizes debt and penalizes equity works directly against financial stability. By giving corporations tax incentives to use debt, the tax code encourages the excessive borrowing of financial institutions that harms the financial system by increasing its fragility.

#### *Life without Guarantees*

The tax subsidy of debt applies to all corporations. Yet most nonfinancial corporations refrain from borrowing extensively, and some corporations, like Apple, use virtually no debt.<sup>26</sup> How can we explain this? The primary reason has to do with the burden of debt discussed in Chapter 3, which can make high levels of indebtedness costly and undesirable to nonbank corporations.

Borrowing obviously increases the likelihood of distress and bankruptcy. Bankruptcy is costly in the sense that it depletes a corporation’s remaining

assets further than they have already been depleted prior to bankruptcy. For example, lawyers and bankruptcy courts charge fees that must be paid out of the corporation's remaining assets or by its creditors. These costs are entirely due to the use of debt, and the likelihood of incurring them would be lower if the corporation had more equity and less debt. If bankruptcy can be avoided, losses from investments will be a concern for shareholders, but there will be no expenses for bankruptcy lawyers and courts.

In terms of Yogi Berra's pizza, the bankruptcy costs reduce the amount of the total "pie" that is available to investors. Anticipating that a corporation's assets will be depleted in bankruptcy, creditors charge a higher rate of interest than they would absent the bankruptcy costs. This makes using debt more "expensive" for the corporation and acts to discourage too much borrowing.

As discussed in Chapter 3, the costs of bankruptcy go beyond those for lawyers and court fees. For example, the bankruptcy process may freeze a firm's activities. Even before bankruptcy, as distress sets in, the firm's flexibility and its ability to compete in its markets may be impaired. High levels of indebtedness also exacerbate conflicts of interest between owners or managers and creditors. Owners or managers might choose risky investments that can harm creditors, or they might pass up good investments, just as a homeowner who is underwater is less likely to invest in home improvements.

When creditors agree to lend to the corporation, they try to protect themselves in advance by charging higher interest rates or by attaching conditions, generally called "covenants," to the loans they make. Banks do the same when they lend to individuals and businesses. These conditions restrict the borrower's flexibility and can make borrowing less attractive.

For example, creditors may forbid a borrowing corporation from taking additional debts or from making dividend payments to shareholders in certain situations in which such actions would harm the creditors. Creditors may also require that major investment decisions be approved by them. This requirement can prevent the borrower from quickly taking advantage of investment opportunities as they arise.

Without guarantees, the costs and inefficiencies associated with distress and default are reflected in the interest rates and conditions attached to debt contracts, raising overall funding costs. This helps explain why, despite the

tax advantage of debt, most nonfinancial companies avoid becoming highly indebted even if they can borrow more.

With debt guarantees, however, the burdens of debt become lighter. Creditors believe that their debts will most likely be paid in full. Therefore they do not charge as much, and do not impose as many conditions, as they would if the bank made the same investments without guarantees.

For banks, therefore, the costs of added debt are much lower with guarantees, even if they are already highly indebted. They view equity as expensive; borrowing is always attractive. As discussed in the previous chapter, the focus on ROE in banking reinforces the effect by compensating bank managers in ways that encourage risk taking and borrowing.

#### *Perverse Incentives*

When large banks are treated as too big to fail, this status has strong and perverse effects on the banks' behavior. The prospect of benefiting from too-big-to-fail status can give banks strong incentives to grow, merge, borrow, and take risks in ways that take the most advantage of the potential or actual guarantees. Banks may also want to draw advantages from taking risks that are similar in that they are all likely to turn out well or to turn out poorly at the same time. If things go wrong, the entire industry may be affected, which will generate strong pressures for government support. These effects of government guarantees on banks' behavior are counterproductive in that they further increase the likelihood that the economy might suffer harm from the fallout of risks taken in the financial sector.

Some of the perverse incentives banks are given can be seen by going back to Kate and her Aunt Claire. If Aunt Claire guarantees Kate's mortgage to buy only the \$300,000 house, Claire will not lose more than \$309,000, Kate's debt if she puts in no equity; most likely, the house will not become worthless, so the cost to Aunt Claire will be lower. Uncle Sam's exposure to the risks of large, systemically important banks, or to those of the entire banking system, is not so limited, particularly when the banks and the banking sector can keep growing and taking risks.

The banks' situation is as if Aunt Claire gave Kate a guarantee for *any* debt, not just for a particular \$300,000 mortgage. With blanket guarantees, Kate

can buy a bigger house. She can also set up a corporation and make risky investments with borrowed money. If she maintains very little equity, she cannot lose much; yet, as she continues borrowing and investing, her profits can become very large.

How wonderful indeed this would be for Kate. As long as Aunt Claire's guarantees remain good, Kate can borrow cheaply and can try to maintain her equity at near zero. If her investments are profitable, Kate can pay herself a dividend and continue to borrow. And with little equity, risk does not scare Kate. She actually finds risk attractive, because it holds the prospect of large gains on the upside, with hardly any consequences on the downside. At most she might worry that, if her gambles do not succeed and Aunt Claire has to pay for them, her aunt might not be willing to provide more guarantees in the future.

In this fantasy, there are no limits to how much Kate can benefit by growing her business and taking more risk or to the amount Aunt Claire might have to put up. The more Kate borrows, the more she stands to gain on the upside while being protected on the downside. Similarly, there are no limits to the amounts that taxpayers may have to put up if they do not constrain what the banks can do, how large they can grow individually or as an industry, and how much they can borrow. In the most recent crisis, governments provided banks with blanket guarantees to avoid a potential meltdown of the financial system. In a similar crisis in the future, the cost of such guarantees could be higher.

If Kate racked up enough losses, Aunt Claire might have run out of funds. Similarly, banks can overburden taxpayers with their losses. This is essentially what happened in Iceland and Ireland in 2008. Banks in those countries grew and invested so much that their losses were larger than the countries could bear.<sup>27</sup> Spain may be facing a similar experience.

Being considered too big to fail is extremely valuable for a bank, because it lowers its borrowing costs. Just as Kate was able to borrow at a lower rate because of Aunt Claire's guarantees, banks that benefit from implicit guarantees are given higher credit ratings, and thus pay less interest when they borrow. This reduces the banks' overall funding costs and increases the amount of the total pie available to their investors.

There is significant evidence that subsidies associated with being too big to fail can make these banks seem more profitable, when in fact they are not generating more value but simply benefiting from more subsidized funding.<sup>28</sup> Banks do not seem to become more efficient when they grow beyond about \$100 billion in assets, yet growing can allow them to enjoy the subsidized funding that comes with the implicit guarantees.<sup>29</sup> With subsidized funding through guarantees, growth is easy, and building empires can be quite profitable.<sup>30</sup>

Mergers in banking have also been shown to be partly motivated by a desire to attain too-big-to-fail status, which generally lowers costs and makes for easier borrowing terms. A bank is willing to pay more to acquire other banks if the merger will result in a bank that is considered too big to fail.<sup>31</sup>

A recent study estimated that at the peak of the financial crisis, the guarantees to the U.S. financial sector were worth close to \$160 billion.<sup>32</sup> The value of the subsidies associated with guarantees was estimated to be about \$2.3 trillion worldwide in 2009.<sup>33</sup> The banks would have had to pay someone in the private market very large amounts to provide the guarantees the government provided. The magnitude of the implicit subsidies has generally grown since the crisis because the largest banks have grown in size.<sup>34</sup> Of course the value of the guarantees changes with economic conditions and is at its highest when the economy is weak and banks are more distressed.

Even when they do not cause banks to merge, guarantees can have strong and damaging effects on the behavior of banks. In the United States, mortgage giants Fannie Mae and Freddie Mac have always been considered to be protected by the government. They have not benefited from any explicit guarantees, but investors have thought they were too big to fail, and indeed they were bailed out in September 2008. Their too-big-to-fail status allowed the mortgage giants to grow at the tremendous rate of 16 percent per year from 1980 until the crisis, while their involvement in residential mortgages and mortgage guarantees rose from \$85 billion to \$5.2 trillion and their share of the mortgage market rose from 7.1 percent to 41.3 percent.<sup>35</sup>

This growth was facilitated by their being able to borrow at very low rates even though their equity was between 2.5 and 5 percent of their total assets; if

their mortgage guarantees had been put on their balance sheets, their equity would have been even less, between 1 and 2 percent of their total assets. Borrowing cheaply with hardly any equity was possible only because of implicit guarantees. For the year 2000, the Congressional Budget Office estimated that the value of these guarantees amounted to \$13.6 billion. Of this amount, at least one-third was estimated to be a simple wealth transfer from taxpayers to the shareholders and managers of these companies, and no more than two-thirds were estimated to have improved the terms under which home buyers could borrow. By some accounts, the value of the implicit government guarantees accounted for almost the entire market value of these companies.<sup>36</sup>

In an industry in which there is intense competition, particularly for growth, guarantees tend to encourage recklessness.<sup>37</sup> If the banks' creditors expect their investments to be safe because of the guarantees, they do not pay much attention to the risks the banks take. This enables the banks to grow fast by expanding their borrowing without seeing their borrowing rates increase. Fannie Mae and Freddie Mac are examples of this problem. Other examples, from the 1980s, were U.S. S&Ls, which attracted large amounts of funding by offering high rates of interest on federally insured deposits. In each case, the explicit or implicit government guarantees provided a basis for extraordinary growth, which ended up being very costly for taxpayers.<sup>38</sup>

*Excessive Borrowing: Expensive for Aunt Claire,  
Uncle Sam, and the Rest of Us*

The guarantees that allow banks to borrow cheaply and take excessive risk are a burden on taxpayers. As the subsidies become more valuable to banks, they also become more costly to society. In our example involving Kate and Aunt Claire, any equity that Kate puts into her house reduces the payments Aunt Claire may subsequently have to make to honor the guarantee she gave to cover Kate's debt. Equity is expensive *for Kate*, but any cost to her of more equity is fully balanced by lower expenses for Aunt Claire. For Kate and Aunt Claire together, Kate's using more equity and less debt is not expensive; the two of them together always pay the mortgage in full. Any benefit Kate sees

in different arrangements comes at the expense of Aunt Claire. Meanwhile, Kate benefits from the upside, but the best-case scenario for Claire is that she does not have to pay.

The combined cost to Kate and Claire will in fact be lower if Kate becomes motivated to make sounder decisions when she has more equity and thus more “skin in the game.” If Aunt Claire provides Kate with blanket guarantees and Kate cannot be made liable for her debt, there will be nothing to prevent Kate from using borrowed funds to gamble in Las Vegas. Such wasteful investments would be less likely if Kate had more of an equity stake that might be lost by gambling.

Similarly, when considering the costs and benefits of banks’ using different mixes of debt and equity, from the perspective of society, the costs to taxpayers of providing guarantees and subsidies must be considered. Also relevant is the damage to the economy when banks are in distress, even more so when they go into default and bankruptcy; this damage includes the cost of valuable loans’ not being made. A funding mix that relies on a lot of borrowing and little equity and that appears cheap to a bank can in fact be very expensive to society. Conversely, although banks consider equity funding more expensive than borrowing, additional equity funding of banks can actually be significantly *cheaper* for society once we factor in the costs and risks to society of banks’ becoming fragile through borrowing.

The magnitudes of the costs banks impose on society can be large. The recent financial crisis has led to significant loss of output, likely in the trillions of dollars. The losses of the U.S. government from its various rescue operations since 2008 have been between \$200 and \$500 billion.<sup>39</sup> Beyond the costs of the bailouts, the collateral damage to the economy has been enormous.<sup>40</sup> If this money had not been lost but rather invested at 4 percent per year, a typical rate for fairly safe long-term investments, it would provide \$8–20 billion of additional revenue per year. In a federal budget that includes \$129.8 billion for education and \$94.5 billion for transportation in 2012, \$8–20 billion a year could make a noticeable difference in education or transportation.

As noted in Chapter 2, in the nineteenth century and the early twentieth, equity levels in banks were often 25 percent or higher (even as high as 40 percent or 50 percent in the first half of the nineteenth century). The reduction

of bank equity to the present low levels over the past century paralleled the expansion of the government safety net of banks, with equity levels decreasing as the safety net expanded.<sup>41</sup>

If banks were to rely less on subsidized borrowing and use more equity, any increase in their cost of funding would be fully matched by taxpayers' savings on the cost of providing subsidies to the banks. Society would benefit by having healthier and safer banks that are less likely to become distressed and impose additional costs, and the distorted incentives to take advantage of the guarantees would be reduced. Would having more equity interfere with any of the services that banks provide? As the next chapter shows, the answer is a clear "No." In fact, safer banks that use more equity can serve the economy much better.

experience, one of whom was also on the board of AIG before the financial crisis. See Max Abelson, “JPMorgan Gave Risk Oversight to Museum Head Who Sat on AIG Board,” *Bloomberg*, May 25, 2012. The largest institutional investors, however, may be passive and subject to their own governance problems. Allison (2011, loc. 562), for example, states that “many of the large fund family have an obvious, disturbing motive to avoid confronting megabanks about their business practices and governance; they too have conflicts of interest. The funds’ sponsors derive substantial revenues from providing investment services . . . to the megabanks, and many rely on the banks to distribute their funds to the public.” He points to governance problems within the funds themselves.

39. See McLean and Elkind (2004). Similar issues arose in other scandals, such as those surrounding Tyco and WorldCom.

40. Francine McKenna, who often contributes to *American Banker*, has pointed to these issues in many pieces. See, for example, “Auditors Are Asleep at the Switch on Banks’ Risk Controls,” *American Banker*, July 16, 2012, and “Familiar Patterns in Spain’s Banking Crisis,” *American Banker*, June 27, 2012. The problem of conflicted auditors who are reluctant to challenge models used by banks and their accountants or to alert investors and regulators about risks from off-balance-sheet items adds to the opacity of disclosures and accounting-based valuations, all of which call into question how informative the disclosed valuations are. For example, Das (2010, 221) refers to “the looking glass world of Japanese accounting.” In describing it, he states, “This was like giving someone money and then having them give it back to you and calling it income—it did not make any sense.”

#### NINE *Sweet Subsidies*

1. Mr. Zandi’s comment in the epigraph is from Louise Story, “U.S. Program Lends a Hand to Banks, Quietly” (*New York Times*, April 14, 2009), referring to the ability of Goldman Sachs and Morgan Stanley to access loans from the Federal Reserve and guarantees from the FDIC after changing their status from investment banks to bank holding companies in 2008. Mr. Zandi continued by saying, “It’s an infinite subsidy.” See the section “Banks Have Uncle Sam” in this chapter.

2. Incidents such as this abound in recent history. For example, on November 1, 1986, a huge fire broke out in a dye factory on the Rhine near the Swiss city of Basel. The water used to extinguish the fire mixed with the chemicals and flowed into the river, coloring it red and killing all fish over several hundred miles downstream (see Hernan 2010). The *Exxon Valdez* and, more recently, the BP Gulf of Mexico oil spills are other examples.

3. In the entire discussion we continue to ignore the benefit Kate derived from living in the house. Considering it would not change the discussion, because she lived in the house in all scenarios.

4. To simplify the discussion we are ignoring here again the potential losses if the house had been abandoned or lost value because of lack of maintenance.

5. In the United States before 2007 many people took out second mortgages to finance additional consumption (see “Second Mortgage Misery,” *Wall Street Journal*, June 7, 2011).

6. If Kate invests \$20,000 in bonds that pay her 3 percent interest for sure instead of investing that amount in the house, she will have \$20,600 from this investment no matter what happens subsequently to the value of the house. On the upside, the guarantees do not matter; Kate will be in the same situation as she would be if she was investing all \$30,000 in the house (the bottom panel of Table 9.1 and the top panel of Table 9.2). But, on the downside, Kate will be protected from losses. For example, if the house declines to \$255,000 in value, Kate will lose only \$10,000, whereas she would have lost the entire \$30,000 if she had put it all in the down payment. In all cases, Kate is better off with the larger mortgage. The example effectively assumes that the interest rate for riskless investments in the economy is 3 percent. However, the conclusion that Kate prefers the larger mortgage does not depend on what Kate does with the money she does not put in the house; it is based only on the observation that investing less in the house takes more advantage of the guarantees. Because the bank is paid for sure, whatever Kate does not pay, her aunt does; the fact that Claire may pay more and never less implies that Kate benefits more. Of course Kate can make poor investments and take a lot of risk for which she is not fully compensated. She might make less than 3 percent on her \$20,000 and therefore possibly lose more than she would by investing it in the house. However, what we have seen is that there is a way for Kate to benefit from the guarantees if she invests the money prudently. As we will see shortly, if Aunt Claire gives Kate blanket guarantees, as long as Claire is not broke, Kate benefits no matter what she does; effectively, blanket guarantees are like money machines.

7. Kate's ROE will be further magnified if she borrows more. First, the gains on her investment in the house will be further magnified in the cases in which she is able to pay her mortgage without the guarantees. For example, if the final house price is \$345,000, Kate's ROE will be 123 percent if she invests \$30,000 in the house, as seen in Table 9.1; with only \$10,000 in equity, the \$46,300 Kate will end up with, seen in Table 9.2, represents a 363 percent ROE, much higher indeed. If the house increases in value by "only" 5 percent, to \$315,000, Kate will end up with 23 percent ROE if she invests \$30,000 in the house, while her final position of \$16,300 represents a 63 percent return on her investment of \$10,000, again higher. In the unfavorable scenarios, however, with a \$10,000 investment Kate's loss per dollar is greater. Comparing Kate's returns from investing \$30,000 in the house versus investing \$10,000 in the house and \$20,000 at a riskless 3 percent, Kate's position is obtained from the bottom panel of Table 9.2 by adding \$20,600 in each scenario. Her return will be the same as shown in the bottom panel of Table 9.1 (123 percent, 23 percent, and a loss of 27 percent, respectively) in the scenarios in which the house increases in value by 15 percent and 5 percent and in that in which it stays the same, whereas Kate will lose only 31 percent of her \$30,000 thanks to the \$20,600 that she will receive on her safe investment even though she will lose the entire \$10,000 down payment in the house.

8. Even without guarantees, if lenders believe that housing prices will always increase, as they seem to have believed in the housing bubble before 2006 (or if they believe that the borrowers will always pay their mortgage debts), they might make, and indeed have made, zero-equity loans, requiring no down payment and counting on equity to build as

the value of the house increases. As we have seen, however, housing prices do not always go up.

9. Again, if Kate puts nothing into the house and invests her entire \$30,000 safely at 3 percent, she will have \$30,900 for sure, plus whatever she might make on the house if its value ends up above \$309,000. She is guaranteed an interest rate of at least 3 percent in this case, and her return will be the same as shown in the bottom panel of Table 9.1 if the house value ends up being \$315,000 or \$345,000. Her return will be 3 percent in the other three scenarios because she does not have to cover the interest or any losses in the value of the house. If Kate makes risky investments with the funds, then of course how she will end up doing depends on how these investments turn out, but clearly, having no money in the house and experiencing only the upside from it is a highly beneficial situation for Kate.

10. This represents a recent increase in the eligible amount. Placing a higher amount under deposit insurance is easy if one divides it across multiple accounts or multiple banks. There are even deposit brokers who would help in this process. Kane (2012b) describes a regulatory arbitrage created by a deposit-swap market in which one can place practically any amount under deposit insurance. Malysheva and Walter (2010) discuss the expansion of the safety net in the United States in recent years.

11. See Acharya et al. (2010) and ASC (2012).

12. For more information on the use of guarantees and recapitalization, see Laeven and Valencia (2010, 2012).

13. On the cost of the bailouts and the recent crisis in the United States, see Better Markets (2012). For detailed descriptions of how bailout funds were used—and sometimes not used, or actually abused—see Bair (2012) and Barofsky (2012).

14. See Phil Kuntz and Bob Ivry, “Fed Once-Secret Loan Crisis Data Compiled by Bloomberg Released to Public,” Bloomberg, December 22, 2011. According to this piece, the amount that the Federal Reserve pledged in order to rescue the financial industry was \$7.77 trillion, and loan rates were below market rates and provided a large subsidy. Bloomberg News had to fight in the courts to be able to obtain the information about loans. Alan Feurer, in “Appeals Court Rules Fed Must Release Loan Reports” (*New York Times*, March 19, 2010), describes the lengthy legal battle over the information. According to this story, the Federal Reserve, helped by The Clearing House, a consortium of the largest banks, fought to keep the information from becoming public. Barofsky (2012, 88) writes regarding one of the Fed support programs, the so-called Term Asset-Backed Securities Loan Facility (TALF), that “under the terms of one TALF-eligible bond issued by Ford’s finance company, an issuer could take out a TALF loan for \$100 million that required him to pay the New York Fed 3.0445 percent interest (about \$3 million) for a bond that paid out 6.07 percent (about \$6 million), allowing the investor to pocket the difference of 3 percent (about \$3 million) each year. That’s the investor’s equivalent of shooting fish in a barrel.” In lending to entities formed in the AIG bailout, the New York Fed used LIBOR to determine the interest rate it charged for loans to the entities, knowing the rate was artificially low at the time. See Mark Gongloff, “Tim Geithner Admits Banks Bailed Out with Rigged Libor, Costing Taxpayers Huge Amount,” *Huffington Post*, July 25, 2012. See more references in the following notes.

15. See Boyd and Gertler (1994).

16. See Burnside (2011) and Acharya and Steffen (2012). As pointed out by Louise Armitstead, in “ECB’s LTRO Plan Flops as Banks Cut Lending” (*The Telegraph*, March 28, 2012), banks seem to have used these funds for lending to their governments rather than private businesses.

17. See Louise Story, “U.S. Program Lends a Hand to Banks, Quietly.” (This is the story referred to in the chapter epigraph and in note 1, where Mr. Zandi is quoted as saying that “it’s an infinite subsidy.”) On Morgan Stanley’s use of the Fed lending facility, see Jonathan Weil, “Morgan Stanley’s Deep Secret Now Is Revealed,” *Bloomberg*, March 23, 2011.

18. The German Bank Restructuring Act of 2010 follows the same logic. Only the United Kingdom’s Banking Act of 2009 acknowledges the possibility that, even though this is undesirable, support from taxpayers may again be needed in a future crisis. For a discussion, see ASC (2012) and Hellwig (2012). See also our discussion and notes at the end of Chapter 5.

19. Victoria McGrane, “Obama Signs Financial Regulation Bill,” *Wall Street Journal*, July 21, 2010.

20. According to Curry and Shibut (2000), the total cost was about \$153 billion, of which \$29 billion was paid by private funds, mostly by means of charges on other institutions in the industry.

21. Rules for interest deductibility on mortgages differ by country. For example, in Switzerland interest on mortgages is deductible up to an “imputed rent” plus 50,000 Swiss francs. In Germany mortgage interest for owner-occupied housing is typically not deductible for individuals.

22. Is there a catch? If instead of investing in a house one invests one’s money elsewhere, one will pay taxes on profits from that investment. But if one makes relatively safe investments (also to prevent having to default on the mortgage), one can choose investments that would be taxed at a lower rate than income, for example, taking advantage of the lower tax rate on capital gains. This can make borrowing to buy a house attractive even to those who have enough money to buy it without borrowing.

23. This is based on the analogy between corporations and individuals. For an individual owning a firm, interest expenses are a cost. In computing the individual’s income, interest expenses are therefore deducted. For a corporation, interest expenses are also a cost, but so are, in a sense, distributions to shareholders. From the perspective of investors—that is, the individuals ultimately affected—the key question is how taxation affects the returns they earn on the different assets that the corporation is issuing.

24. When income taxation of investors is also taken into account, the picture may change somewhat, because capital gains are often taxed at a lower rate (see Miller 1977).

25. On taxes in general, see Slemrod and Bakija (2008); on correcting the tax advantage of debt, see De Mooij (2011) and Fleischer (2011). Panier et al. (2012) focus on an explicit tax subsidy to equity introduced in Belgium in 2006.

26. There are other ways for corporations to try to avoid paying corporate taxes, such as moving funds and entities to areas with lower tax rates. See, for example, Charles

Duhigg and David Kocieniewski, “How Apple Sidesteps Billions in Taxes,” *New York Times*, April 28, 2012.

27. See, for example, Lewis (2011).

28. Allison (2011) argues that the banks are inefficient and have not generated risk-adjusted shareholder value. Clear evidence of subsidized funding through implicit guarantees is the fact that credit rating agencies give large banks “credit bumps” that allow them to borrow on better, cheaper terms. Davies and Tracey (2012), Carbo-Valverde et al. (2011), Noss and Sowerbutts (2012), and Ueda and Weder di Mauro (2012) show that the size of the subsidies for systemically important financial institutions is substantial. Allison (2011), Boot (2011), and Hu (2012) argue that the increasing complexity of banks is problematic for the banks and for regulators and the public. In addition to the complications associated with resolution and bankruptcy, the complexity raises serious concerns about governance and control. Some of these issues were discussed in earlier chapters.

29. Previous authors—for example, Berger et al. (1993)—had suggested that the efficient scale of banks might be quite low, less than \$1 billion in total assets. Hughes and Mester (2011) argue that previous estimates were distorted by not paying attention to economies of scale in banks’ risk choices, diversification of risks, and information processing. When paying attention to risk choices, they find significant benefits to banks’ becoming larger, and the larger the banks, the larger are these benefits. Anderson and Jöeveer (2012) also find significant effects of bank scale; however, these take the form of higher payments to bank managers rather than gains for shareholders. Both Hughes and Mester (2011) and Anderson and Jöeveer (2012) claim that their findings cannot be due to too-big-to-fail policies, but they do not actually take account of the effects of too-big-to-fail status on banks’ borrowing costs and on banks’ behaviors. In response to Hughes and Mester (2011), Davies and Tracey (2012) provide a study that does take account of the effect of implicit guarantees on banks’ funding costs. When adjusting for the value of guarantees, they find that there are no benefits from having banks operate at a larger scale. If anything, they find that large banks are “too big to be efficient”; that is, banks benefiting from government guarantees may well be operating at an inefficiently large scale. In discussing the role of risk choices and the benefits of better diversification of risks in large banks, Hughes and Mester (2011) also fail to allow for the possibility that risk diversification in investors’ portfolios might take the place of risk diversification in banks. One might also wonder about their focusing on data from 2007, when banks were recording large profits. Boyd and Heitz (2011) discuss the issue of efficient scale from a *social* perspective, taking account of risks for the financial system from too-big-to-fail banks; they argue that the socially efficient scale of banks is likely to be quite small. Allison (2011, loc. 437) argues that it is a “fallacy that diversification can protect the megabanks during a downturn. Markets and businesses that seemed to have low correlations during good times all converged during the crisis and compounded the banks’ losses and liquidity problems.”

30. The bank analyst Mike Mayo describes the following incident from 2010 (Mayo 2011, loc. 2677–79): “One of Citigroup’s goals . . . was to increase assets on its Citicorp business by 5 percent.” He goes on to say (2685–89) that “for a company with assets of \$1.4 trillion in the targeted growth area, a 5 percent increase means generating upward of \$70 billion

in new business every year, equivalent to half a percent of total U.S. gross domestic product. Citigroup was aiming at that kind of growth during a slumping global economy. . . . Citi's 5 percent goal was like a hitter in baseball saying he's going to go three for four in a particular game before he even knows who's pitching." When he asked the company about this, he reports (2697–99), "Pandit's approach was to say, That's not a goal. It's not something we're reaching for—we're so well positioned that we're merely going to be the passive recipient of that growth. Nice. Like manna from heaven." This is consistent with our suggestion that unlimited guarantees amount to a money machine.

31. Brewer and Jagtiani (2009).

32. See Kelly et al. (2012). Gandhi and Lustig (2012, 5) discuss the impact of guarantees and implicit subsidies on the returns of large and small banks and estimate that the value of the guarantees to the largest commercial banks has been about \$4.71 billion per year.

33. Haldane (2011b, Table 1) provides estimates of the value of the guarantees to banks in the United Kingdom and globally. The estimates for the value of the subsidy that he obtains using an options pricing approach are \$496 billion in 2007, \$1.8 trillion in 2008, about \$2.3 trillion in 2009, and \$924 billion in 2010, for an average of \$1.3 trillion per year for 2007–2010. Haldane obtains lower estimates using uplifts in credit ratings; these are differences between credit ratings for banks assuming government support relative to unsupported ratings.

34. See Haldane (2011b), Davies and Tracey (2012), Gandhi and Lustig (2012), and Noss and Sowerbutts (2012).

35. All numbers here are taken from Chapter 1 of Acharya et al. (2011a), which gives a systematic account of Fannie Mae and Freddie Mac over several decades. The \$85 billion and \$5.2 trillion in engagements in mortgages and mortgage guarantees in 1980 and 2008 are composed of \$64.8 billion and \$1.7 trillion in residential mortgages in 1980 and 2008 and \$20.6 billion and \$3.5 trillion in mortgage guarantees in 1980 and 2008.

36. Acharya et al. (2011a, 29).

37. If the industry is not very competitive, the effect of government guarantees and subsidies might be different. Subsidies and guarantees increase the value of a bank's license. The fear of losing its license might cause the bank to be more careful about the risks it takes. Keeley (1990) suggests that the increase in banks' risk taking in the 1980s was caused by reductions in banks' franchise values due to increased competition. If the industry is very competitive, the potential positive effect of subsidies and guarantees on the banks' franchise values is usually dissipated by competition. When banks have difficulties earning a profit, their owners and managers may feel that they do not have much to lose, so they gamble—for survival or for resurrection. If depositors and other creditors do not care, the result can be very costly.

38. For an early warning about the S&Ls, see Kareken (1983). An interesting natural experiment was provided by the German Landesbanken. A 2001 agreement between the European Commission and the German government determined that government guarantees to the banks would be discontinued in 2005. Thus the expected benefits from future guarantees were reduced in 2001, but the Landesbanken had four more years to borrow with the help of government guarantees. During those years they engaged in a lot of addi-

tional borrowing and risk taking. The additional risk taking was most pronounced in those Landesbanken that were weakest. See Fischer et al. (2011) and Körner and Schnabel (2012).

39. For TARP, loss estimates now are around \$60 billion. See Mark Gongloff, “TARP Profit a Myth, Claims TARP Inspector General Christy Romero,” *Huffington Post*, April 25, 2012. For Fannie Mae and Freddie Mac, loss estimates lie between \$150 billion and \$350 billion (see Acharya et al. 2011, 2). For the assets acquired by the Federal Reserve, predictions are unclear. See also Better Markets (2012) and the list provided at <http://projects.propublica.org/bailout/list>, accessed October 12, 2012. For some cost estimates in Europe, see Sebastian Dullien, “The Costs of the Financial Crisis 2008–2009: Governments Are Paying the Tab,” *Social Europe Journal*, October 19, 2011. The German cost estimates of Kaserer (2010), amounting to €34–52 billion, have been overtaken by developments since 2010, which have added some €20–30 billion to the bill. As noted in Chapter 1, on the basis of actual (rather than projected future) costs so far, Laeven and Valencia (2012) estimate that Germany’s bailout costs in the recent crisis were 1.8 percent of GDP. The corresponding figures are 1 percent for France, 6 percent for Belgium, 3 percent for Denmark, 27.3 percent for Greece, 12.7 percent for the Netherlands, 3.8 percent for Spain, and 1.1 percent for Switzerland. Whereas Kaserer’s estimates are based on forecasts of future losses that have yet to be confirmed, Laeven and Valencia’s assessments are based on actual outlays and losses already incurred, as recorded in the governments’ books.

40. This issue will be discussed in Chapter 13.

41. See Holtfrerich (1981), Berger et al. (1995), Alessandri and Haldane (2009), and Carbo-Valverde et al. (2011).

#### TEN *Must Banks Borrow So Much?*

1. In fact, as we saw in Chapter 6, loans are quite a small part of the assets of global banks. Smaller banks may also make investments that are not much different from those made by other investors rather than making loans. Although banks are set up to make loans, they are not required by regulation to do so, and they choose which loans and investments to make according to their own preferences. The role of regulation in distorting banks’ incentives is discussed in Chapter 11, and we return to bank lending in Chapter 13.

2. It is derived from the Italian *banca rotta*, which literally means “broken bench” or “broken table” and is said to refer to a practice in the late Middle Ages of breaking the table of a money changer when he defaulted. This explanation of the origins of the term is given for the Italian word *bancarotta* by Pietro Ottorino Pianigiani in *Dizionario etimologico online* (<http://www.etimo.it/?term=bancarotta>, accessed October 28, 2012), and for the French word *banqueroute* by François Noël ([1857] 1993). Kluge (1975) also gives this explanation of the origin of the German *Bankrott* but warns that there is no evidence to show that the practice of breaking the tables of defaulting money changers actually existed. According to Kluge, the term *rotta* should be translated as “in default, insolvent,” a second meaning that both the Italian word and its Latin ancestor, *ruptus*, broken, took on in the high Middle Ages. Hoad (1986) also refers to the medieval meaning of *ruptus* as “insolvent.”

# **The Parade of the Bankers' New Clothes Continues:**

## **28 Flawed Claims Debunked**

Anat Admati and Martin Hellwig\*

Revised July 6, 2014

The debate on banking regulation has been dominated by flawed and misleading claims. The title of our book *The Bankers New Clothes: What's Wrong with Banking and What to Do about It* (Princeton University Press, 2013, see [bankersnewclothes.com](http://bankersnewclothes.com)) refers to flawed claims about banking and banking regulation, and the book discusses and debunks many of them.

Flawed claims are still made in the policy debate, particularly in the context of proposals that banks be funded with more equity and less debt than current or new regulations would allow. Those who make the flawed claims do so without addressing our arguments, even when commenting on the book or on our earlier writings. Because the financial system continues to be dangerous and distorted, however, flawed claims must not win the policy debate.<sup>1</sup>

This document provides a brief account of claims that we have come across since the book was published in February, 2013. We provide brief responses, with references to more detailed discussions in the book and elsewhere.<sup>2</sup> Many claims are asserted without any justification. Some of these claims are simply false or based on fallacious reasoning. Other claims are misleading or irrelevant, for example confusing costs and benefits to banks or bankers with costs and benefits to society, which must be the focus of policy. Still other claims are based on implausible theories that ignore important parts of reality

We first provide a list of the flawed claims that the rest of this document takes on. References to chapter numbers refer to our book. Nothing that we heard or read changes our conclusions or our strong policy recommendations.

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\*This document is a revision of a document posted in June 2013, which debunked 23 flawed claims. Claims 12, 13, Claims 24, 25 (inserted after original Claim 20) and Claim 28 (the last one) are new to this document. We also re-phrased a few of the claims and expanded the text in some cases, specifically Claims 5, 6, 11 15 (in current count).

<sup>1</sup> We are grateful to Peter Conti-Brown and Paul Pfleiderer for comments on an earlier draft. Others who have written to challenge flawed claims include Mark Whitehouse (for example, "Seven Dumb Things Bankers Say," April 5, 2013 and "Too-Big-To-Fail Myths, Goldman Sachs Edition," May 28, 2013, both in Bloomberg View), Bloomberg View Editors (for example, "What's so Radical about a Safer Financial System?" April 9, 2013 and Simon Johnson (e.g., "The Impact of Higher Capital Requirements for Banks," April 18, Economix. Paul Pfleiderer has been active in the debate with academics privately and publicly (see Pfleiderer, 2014). See also the preface of the paperback edition, available at <http://press.princeton.edu/chapters/p10230.pdf>

<sup>2</sup> In some cases, we give specific references to writings where flawed claims are made, but we have not attempted to find all such references. Some of the claims have come up in various discussions of the book that we have had after its publication. Aside from the book, all our other writings are available through the book website, SSRN or the website in which we have posted writings since 2010 <http://www.gsb.stanford.edu/news/research/admati.etal.html>

## List of Flawed Claims

**Claim 1:** Capital is money that banks hold or set aside as a reserve, like a rainy day fund.

**Claim 2:** Requiring banks to hold cash reserves equal to 15% or more of their assets does not make them significantly safer, and therefore even such high capital requirement would not address the key problems in banking.

**Claim 3:** The argument for requiring banks to have substantially more equity is only based on a theoretical result called the Modigliani-Miller theorem, which says that the funding costs of a corporation are independent of the mix of debt and equity it uses. This result does not apply in the real world because its assumptions are unrealistic.

**Claim 4:** The key insights from corporate finance are not relevant for banks because the economics of funding for banks is entirely different from that of other companies.

**Claim 5:** Banks are special because they create money.

**Claim 6:** Increasing equity requirements would reduce banks' ability to take people's deposits and issue short-term claims that are liquid and can be used like money.

**Claim 7:** Increasing equity requirements would increase the funding costs of banks because investors require higher returns when investing in equity than when investing in debt.

**Claim 8:** Increasing equity requirements would lower the banks' return on equity (ROE) and thus make investors unwilling to invest in banks' stocks.

**Claim 9:** Increasing equity requirements would constrain banks so they must reduce lending.

**Claim 10:** Increasing equity requirements would be harmful for the economy because banks would be less willing to make loans.

**Claim 11:** Higher equity requirements are undesirable because they would prevent banks from taking advantage of government subsidies and thus force them to charge higher interest on loans.

**Claim 12:** Historically, banks have never had as much as 30% equity; requiring as much equity would therefore harm the business of banking.

**Claim 13:** There is not enough equity around for banks to be funding with 30% equity.

**Claim 14:** Because banks cannot raise equity, they will have to shrink if equity requirements are increased, and this will be bad for the economy.

**Claim 15:** Increasing equity requirements would harm economic growth.

**Claim 16:** Basel III is already very tough, doubling or tripling previous requirements; banks that comply with Basel III requirements are safe enough.

**Claim 17:** Basel III is based on careful scientific analysis of the cost and benefits of different levels of equity requirements, whereas the rough numbers of those who advocate much higher requirements cannot guide policy because they are not supported by scientific calibration.

**Claim 18:** Because capital requirements should be adjusted to risk, it is essential to rely primarily on requirements that are based on assigning risk weights to assets.

**Claim 19:** Instead of issuing more equity, banks should be required to issue long-term debt or debt that converts to equity when a trigger is hit, so-called “contingent capital” or co-cos.

**Claim 20:** The Dodd-Frank Act in the US, or the newly adopted Banking Recovery and Resolution Directive (BRRD) and Single Resolution Mechanism in the European Union, have done away with the need to bail out banks; if a bank gets into trouble, the authority in charge of resolution will be able to resolve it without cost to taxpayers; there is therefore no need to increase equity requirements.

**Claim 21:** If equity requirements are increased, banks will increase their “risk appetite,” which will make the system more dangerous.

**Claim 22:** If equity requirements are increased, bank managers will be less disciplined.

**Claim 23:** The best way to make banking safer is to require banks to put funds from deposits into reserves of central bank money or Treasury Bills (so-called narrow banking, also known as the Chicago Plan for 100% reserve banking). Such a shift will give us a stable financial system, and there would be less need to impose equity requirements.

**Claim 24:** The financial system would be safe if banks are subject to a 100% reserve requirement so they can take no risk with depositors' money, while non-bank financial institutions are entirely prohibited from borrowing.

**Claim 25:** Tighter regulation of banks, and in particular higher equity requirements, are undesirable because they would cause activities to move to the unregulated shadow banking system.

**Claim 26:** Since banking is a global business, it is important to maintain a “level playing field”. Therefore, banking regulation must be coordinated and harmonized worldwide.

**Claim 27:** Stricter national regulation would harm “our” banks; instead we should be supporting them in global competition.

**Claim 28:** The politics of banking makes effective regulation impossible, and therefore debating the merits of specific regulations such as equity requirement is “beside the point.”

## Flawed Claims Debunked

**Flawed Claim 1:** Capital is money that banks hold or set aside as cash reserve, like a rainy day fund.<sup>3</sup>

**What's wrong with this claim?** This statement is plainly false. As discussed in Chapters 1 and 6, capital in banking is a source of funding that can be used to make loans and other investments. This source of funding, elsewhere called equity, must be distinguished from debt, i.e., funds obtained by borrowing. Whereas banks typically fund less than 10% of their investments by equity, it is rare for any healthy non-financial company to have less than 25% in equity, and many successful companies borrow little or nothing, although there is no regulation that prevents them from borrowing as much as they would like (if they can find lenders).

**Flawed Claim 2:** Requiring banks to hold cash reserves equal to 15% or more of their assets does not make them significantly safer, and therefore even such high capital requirement would not address the key problems in banking.<sup>4</sup>

**What's wrong with this claim?** This claim rests on the same confusion between bank capital (equity) and cash reserves as Claim 1. Bank capital is *not* a cash reserve but a way of funding the bank. *Capital requirements do not impose any restriction on what assets banks hold.* They do not require banks to hold cash reserve. Since current requirements, and even the proposed Basel III reform, allow banks to have as little as 3% equity relative to their total assets, requiring 15%, or even 30% would make banks *significantly* safer. With equity levels considered minimal for healthy companies in the rest of the economy, banks would be able to absorb significantly more losses without becoming distressed or insolvent and without needing support, and, as we discuss in many writings, many distortions in the economy would be alleviated.<sup>5</sup>

Unlike equity requirements, reserve requirements are not as useful for maintaining the safety of banks unless they are very high. For example, if a bank has \$97 billion in deposits and \$3 billion in equity funding, cash reserve of \$15 billion will not help it to survive if it loses \$4 billion on its loans and other investments. After the loss, it has \$96 billion in assets and is insolvent, just as a homeowner is “under water” if the mortgage is larger than the value of the house. If instead the bank had \$85 billion in deposits and \$15 billion in equity, it would easily withstand the \$4 billion

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<sup>3</sup> For example, in “How to solve the bank capital Goldilocks question,” CNN Money and *Fortune*, May 6, 2013, Cyrus Sanati falsely claims that capital requirements ask banks to “hold some cash on the sidelines.” The comparison of capital to “a rainy day fund” has also been used in Andrew Ross Sorkin, “Easing of Rules for Banks Acknowledges Reality” *New York Times*, January 7, 2013, and in Gretchen Morgenson, “Trying to Slam the Bailout Door,” *New York Times*, April 27, 2013.

<sup>4</sup> See for example, Cyrus Sanati, cited in footnote 3, who criticizes the higher capital requirements proposed by Senators Brown and Vitter and who, throughout the piece, falsely refers to the proposal as if it concerns cash reserves.

<sup>5</sup> See Chapter 6, Admati et al (2013, Section 2) and Admati (2014).

loss and even a much larger loss without becoming distressed or insolvent. (However, see the discussion of Claims 23-24 regarding 100% reserve requirements.)

**Flawed Claim 3:** The argument for requiring banks to have substantially more equity is only based on a theoretical result called the Modigliani-Miller theorem. This result does not apply in the real world because its assumptions are unrealistic.<sup>6</sup>

**What's wrong with this claim?** Chapter 7 discusses the Modigliani-Miller theorem, which says that under some special conditions, a company's mix of equity and debt funding does not affect the company's overall value and funding costs, just like cutting a pizza into six slices instead of eight does not change the size of the pizza. The key insight of Modigliani and Miller, which holds universally, is that purely re-arranging how the risk taken by a corporation is divided among investor does not by itself change its funding costs.<sup>7</sup> Other considerations may affect the funding costs, but they do not change our conclusions, as discussed in the context of Claims 4-11 below.

Our argument for requiring much more equity is *not in any way* based on the presumption that the funding mix, in banking or elsewhere, is irrelevant. Our argument is based, as it should be, on a comparison of the costs and benefits to society of different funding mixes for banks. We argue, in particular, that there is a large cost, and no benefit to society, from having banks funded with as much debt as they can under current and proposed regulations allow.

**Flawed Claim 4:** The key insights from corporate finance are not relevant for banks because the economics of funding for banks is entirely different from that of other companies.<sup>8</sup>

**What's wrong with this claim?** Chapter 7 contains a section (pages 110-112) entitled: "The Big Question: Are Banks Special?" that directly takes on the claim "Modigliani-Miller does not apply to banks." What is meant by this claim depends on whether "Modigliani-Miller" is considered as the "irrelevance" result or as an analytical approach. Whereas, as discussed in the context of Flawed Claim 3 above, the irrelevance result holds only under special assumptions, the analytical approach applies to all firms, including banks. Denying the relevance of the key insight of Modigliani and Miller is akin to denying the universal relevance of the laws of gravity in the presence of air frictions.

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<sup>6</sup> For example, Barclays Credit Research, "The Costs of a Safer Financial System," March 25, 2013, Clearing House, "Vanquishing TBTF," March 26, 2013, Oxford Economics, "Analyzing the impact of bank capital and liquidity regulations on US economic growth (A report prepared for The Clearing House), April 2013.

<sup>7</sup> See also other references we give, and specifically Paul Pfliderer (2010)

<sup>8</sup> See, for example, Oxford Economics and Barclays Credit Research, both referenced in footnote 5, and "Safety in Numbers," *The Economist*, April 11, 2013. DeAngelo and Stulz (2013), 2013, mis-characterize our arguments as relying only on Modigliani and Miller and proceed to develop a model of liquidity benefits from deposits in a model that assumes no uncertainty, which is hardly suited for discussing the notion of "liquidity." (See the discussion of Claims 4 and 6 below.)

The logic of Modigliani and Miller applies, in particular, to bank equity and to banks' borrowing in wholesale markets and bond markets. Banks interact with the same investors that buy shares and bonds of other corporations. These investors value banks' shares and bonds in the context of their overall portfolio and using the same criteria for all investments. The logic of how funding costs and the risks borne by different investors depend on the banks' funding mix applies also to the borrowing by banks from other financial institutions.<sup>9</sup>

Importantly, like all other firms, banks have owners or shareholders and they can choose how much equity to use for funding and how much to borrow. And, like other firms, banks are more likely to become distressed or insolvent when they are highly indebted and have little equity. Moreover, the issues discussed in Chapter 3, entitled "The dark side of borrowing," including the strong conflicts of interest between borrowers and creditors, and the distortions and inefficiencies of high indebtedness and particularly of distress and insolvency, apply to banks. Those who argue that banks are different and seek to justify the banks' choice of funding mix as inevitable or efficient often neglect these distortions and inefficiencies, which can spill over to taxpayers and the public.<sup>10</sup>

**Flawed Claim 5:** Banks are special because they create money.<sup>11</sup>

**What's wrong with this claim?** This claim rests on an abuse of the word "money."<sup>12</sup> The notion that banks "produce" or "create" money is based on the observation that people can easily transform deposits into cash and that they regard the funds they have in a bank deposit as being similar to cash and are able to use those funds for payments, such as by checks and credit cards.<sup>13</sup> Monetary economists therefore refer to people's total holdings of cash and of deposits in the economy as the amount of "money" in the economy.<sup>14</sup>

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<sup>9</sup> 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, which we discuss in Chapters 3, 6, 8 and 9. See also Pfleiderer (2010) and Admati and Hellwig (2013).

<sup>10</sup> On the inefficiency of high leverage even from the private perspective of all banks' investors, see Admati et al (2014).

<sup>11</sup> We have been confronted with this statement in various discussions of the book.

<sup>12</sup> For a forceful criticism of this abuse of language, see Tobin (1967).

<sup>13</sup> Some (for example, Gorton, 2010) have suggested that the use of short-term borrowing, for example through so-called repos, is a modern-day form of deposits. (See also Cyrus Sanati, referenced in footnote 3.) Repos share with deposits the very short-term nature of the lenders' claims. Unlike deposits, however, repo borrowing is not accompanied by provision of payment services. The repo lender, e.g., a money market mutual fund, might provide payment services to its own investors, but those services have nothing to do with the bank that acts as repo borrower. Repo borrowing takes place in wholesale markets with financial institutions acting as lenders. In these markets, as discussed in the context of Claim 6, the insights about the economics of funding that apply to all firms are fully relevant. The so-called shadow banking system, with money market mutual funds offering money-like claims and investing the funds they get in short-term claims on banks as well as other institutions, poses problems for monetary policy as well as prudential regulation and supervision. On the former, see Pozsar (2014), on the latter Gorton and Metrick (2010).

<sup>14</sup> The value of this amount depends on how one draws the line between claims that are "money like" and claims that are not, for example whether one considers savings deposits or term deposits to be sufficiently similar to demand

“Money creation” in the sense described above is related to banks’ holding so-called fractional reserves, i.e. keeping a fraction of the funds deposited with them as cash reserves and using the remainder for loans. As the banks’ borrowers use the funds they get to make payments, the recipients will keep parts of these payments in bank deposits. In this way, fractional reserve banking causes total deposits to be larger than the amount of central bank money deposited with the banks. The amount of “money” measured as the sum of deposits and cash in the economy is thus bigger than the amount of money that the central bank has issued.

Putting demand deposits and cash into the same macroeconomic aggregate does not mean that they are literally the same. A critical difference is that *deposits are a form of debt*.<sup>15</sup> Banks are obliged to pay the depositor when he or she wants the money back. If a bank cannot repay depositors, there is clearly a problem. By contrast, cash, issued by a central bank, is nobody’s debt.<sup>16</sup> (For a detailed discussion, see Chapter 10.)

Some argue that deposits differ from other kinds of debt because the banks themselves create deposits by their lending. Moreover, this “money creation through lending” is said to be the way money from the central bank gets into the economy.<sup>17</sup> Indeed, if a commercial bank borrows from the central bank and then makes a loan to a nonfinancial firm or to a private household it provides its borrowers with a claim on a deposit account. The bank’s borrowers, however, will generally use these deposits for payments to third parties. The recipients of these payments may want to put some of the money they get into deposits, but they may instead prefer to move the money out of the banking system altogether, e.g., to a money market fund or a stock investment fund.<sup>18</sup>

From the perspective of the individual bank, the fact that lending goes along with deposit creation does not change the fact that *the bank owes its depositors the full amount they deposited*. The key difference between deposits and other kinds of debt is not that deposits are “like money” or that deposits may be created by lending, but rather that the bank provides depositors with

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deposits to be included. Pozsar (2014) suggests that the amount of “money like” claims in non-bank institutions such as money market mutual funds should also be taken in.

<sup>15</sup> One of the strangest statements in this context comes from John Stumpf, the CEO of Wells Fargo Bank, who reportedly said in an interview: “Because we have this substantial self-funding with consumer deposits we don’t have a lot of Debt.” (See Tom Braithwaite, “Wells Chief warns Fed over Debt proposal,” *Financial Times*, June 2, 2013. “Self-funding” ordinarily refers to equity and retained earnings. Deposits, by contrast, are a form of debt. It is false, indeed a contradiction in terms, to say that a bank that relies primarily on deposit funding does not have a lot of debt.

<sup>16</sup> Deposits with the central bank usually are claims to receive cash. Since the central bank can itself create this cash, these deposits do not involve serious obligations for the central bank

<sup>17</sup> See, for example, Thomas Mayer, “Lasst Bankpleiten zu!” (Allow banks to fail!), *Frankfurter Allgemeine Sonntagszeitung*, January 5, 2014, Martin Wolf, “Only the Ignorant Live in Fear of Inflation,” *Financial Times* April 10, 2014, and “Strip Private Banks of Their Power to Create Money”, *Financial Times* April 24, 2014.

<sup>18</sup> Nor is it the case that lending by commercial banks is necessary for central bank money to get into the economy. Central bank lending to commercial banks and the latter’s lending and deposit creation represent only one channel by which the central bank can inject money into the economy. Another way is for the central bank to buy securities such as government bonds or even shares of private companies in the open market. The sellers of such shares might be private investors rather than banks, in which case bank lending plays no role in the central bank’s money creation at all.

services such as payments through checks and credit cards or ATM machines that make funds available continuously. The demand for deposits depends on these services, as well as the interest that the bank may offer, and it may also depend on the risk of the bank becoming insolvent or defaulting.<sup>19</sup>

**Flawed Claim 6:** Increasing equity requirements would reduce banks' ability to take people's deposits and issue short-term claims that are liquid and can be used like money.<sup>20</sup>

**What's wrong with this claim?** The claim falsely assumes that the amount of a bank's equity is fixed and limited, and that none of the banks' debt can be replaced with equity without interfering with "liquidity provision." In fact, a bank can raise the amount of equity by retaining and reinvesting its earnings, or by issuing new shares, either in addition or instead of some of its debt. By increasing its equity, the bank could actually raise the amount of deposits it can take; if equity requirements are increased, adding equity would allow the bank to keep its deposits and other "liquid" debts unchanged.

Relying on more equity would actually *enhance* a bank's ability to provide useful liquidity because, with more equity, the bank's debt is more trustworthy. Thus, contrary to the claim, the "liquidity" or "money-like" nature of deposits and other short-term bank debt is actually improved when the bank is less highly indebted and has more equity. By making the banks' deposits and other short-term debt safer, additional equity actually enhances the banks' ability to provide benefits to depositors without needing support from central banks or governments.

In this context, however, the banks have flawed incentives, which lead them to borrow excessively. If the banks' owners and managers could firmly commit all their future funding decisions, they would take account of the fact that additional equity enhances the safety and the liquidity of their debt and makes the creditors willing to accept lower interest rates. As a matter of fact, however, such commitment is impossible. Over time, banks repeatedly take new funding decisions. In these decisions, the interest rates on previously-contracted debt are taken as given. Banks have no reason to take into account the fact that additional equity makes their previously-contracted debt safer whereas additional debt and the risky investments funded with this new debt make it less safe.

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<sup>19</sup> Because depositors get returns through services just as well as, or instead of interest payments, the key insight of Modigliani and Miller is less important for deposits. As discussed in the context of Claim 4 and as explained in Chapter 7 of the book, however, this insight is essential for the other borrowing banks do, such as short-term borrowing from money market funds or hedge funds, and to their equity. This is discussed in Chapters 4 and 7.

<sup>20</sup> Barclays Credit Research, referenced in footnote 5, DeAngelo and Stulz (2013), *The Economist*, referenced in footnote 7, and Kling, "What Do Banks Do?" *The American*, February 26, 2013 warn of the reduction in bank deposits that, in their view, would be implied by higher equity requirements. Gorton (2012) refers to banks as "producers of debt" in the form of deposits and other short-term claims that people want because these debts are similar to money. Gorton views equity and investments as "inputs" for this debt "production." There is actually no sense in which the bank's equity is an input to its debt when both debt and equity entitle investors to payments from the bank, both being on the same side of the bank's balance sheet. Indeed, it makes little sense to refer to debt promises the bank makes to its creditors as something that is "produced."

Debt overhang, i.e., the existence of previously-contracted debts, may generate a ratchet effect that makes the bank's leverage increase whenever new needs or opportunities call for additional borrowing, whereas there is an aversion (on the part of the bank's owners, shareholders and managers) to decreasing leverage because such a decrease would benefit incumbent debt holders. Because of this effect, the mix of debt and equity funding of banks that we see is likely to take insufficient account of the beneficial effects of additional equity for the safety and liquidity of deposits and other reforms of "money-like debt" of banks, in addition to not taking account of the effects of the risks to which their actions expose the rest of the financial system and the overall economy.

The discussion above also suggests that the increased reliance of banks on short-term debt that we have seen in the past decade cannot be presumed to be beneficial for society or even privately for the banks. More likely, as we explain in our book and in other writings, this increase reflects the flawed incentives that banks' managers and shareholders have as a result of debt overhang.<sup>21</sup>

**Flawed Claim 7:** Increasing equity requirements would increase the funding costs of banks because investors require higher returns when investing in equity than when investing in debt.<sup>22</sup>

**What's wrong with this claim?** First, as discussed in Chapter 7, it is fallacious to suggest that using more equity in the funding mix is more costly on the basis of the mere observation that the required return on equity is higher than the required return on debt. The required return on equity, debt, or any other security depends on the entire funding mix, and the required return on equity (as well as generally on other securities, including debt) will go down if the bank has more equity. As discussed in Chapter 9, and below in the context of Claim 11, a reason that total funding costs of banks might increase as a result of higher equity requirements is that with more equity banks would be less able to benefit from guarantees and subsidies, which come at the expense of taxpayers. For the policy debate, the relevant concern must be the cost and benefits *to society* of banks using different mixes of funding with different levels of equity. Because the fragility of the financial system is costly and harmful to society, a correct statement, contrary to the claim, is: "Increasing equity requirements would reduce the cost to society of having a fragile and inefficient financial system where banks and other financial institutions borrow excessively, and thus it would be highly beneficial."

**Flawed Claim 8:** Increasing equity requirements would lower the banks' return on equity (ROE) and thus make investors unwilling to invest in banks' stocks.

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<sup>21</sup> For more detail, see Admati et al (2013, Sections 4.2 and 4.3) and Admati et al (2014). The latter contains a detailed analysis of this effect as well as the method by which banks would choose to reduce leverage in response to leverage ratios requirements. This analysis and our recommendations in Chapter 11 of the book are relevant for making leverage regulation work.

<sup>22</sup> See, for example, Oxford Economics, and Barclays Credit Research, (referenced in footnote 5), *The Economist* (referenced in footnote 7), and Douglas Elliott "Higher Bank Capital Requirements Would Come at a Price," Brookings paper, February 20, 2013.

**What's wrong with this claim?** As explained in Chapter 8, the first statement is false; when asset returns are low, the ROE is actually higher with more equity. Investors' willingness to invest in banks' stocks, or in the stocks of other firms, depends on whether they are properly compensated for the risk they take, not just on the stocks' expected returns. If managers target specific ROE levels, they may actually harm shareholders by exposing them to risk without proper compensation. Moreover, when managers borrow excessively or take excessive risks, they harm creditors and taxpayers and endanger the public, which includes most of their shareholders.

**Flawed Claim 9:** Increasing equity requirements would constrain banks so they must reduce lending.<sup>23</sup>

**What's wrong with this claim?** As explained in Chapters 6 and 11, to comply with higher equity requirements, healthy banks can increase their equity levels by retaining their earnings or by selling new shares to investors. In either case, with more equity banks would have *more* funds, which can in turn be used to increase their lending. If increased equity requirements cause banks to reduce their lending, the reason is that they do not *want* to increase their equity. As explained in Chapters 3, 8, and 10 and in other writings, this phenomenon is due to the effect of overhanging debt and the conflicts of interest created by indebtedness which create a sort of addiction to borrowing that is reinforced and encouraged by government guarantees and by compensation structures in banking.<sup>24</sup> Banks that are unable to raise equity at any price may well be insolvent and should be unwound, as discussed in Chapter 11.

Banks' lending decisions also depend on how attractive loans are relative to other investments. Many banks, including most of the large banks in the United States, are not even using all the funding they obtain from depositors to make loans.<sup>25</sup> If banks do not make loans, therefore, the problem is *not* a lack of funds *nor* an inability to raise more funds for profitable loans, but rather the banks' choices to focus on other investments instead.<sup>26</sup> The risk-weighting system used in capital regulation, which we discuss in some detail in Chapter 11, also creates incentives for banks to invest in securities in the market rather than, for example, make business loans.

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<sup>23</sup> See, for example, S&P, "Brown Vitter Bill: Game-Changing Regulation for U.S. banks, April 25, 2013. Elliott (referred to in footnote 17) stresses that frictions in capital markets make it difficult or impossible for banks to raise new equity. As we discuss in Chapter 11, the arguments he gives that allude to information asymmetries are not applicable to new equity issues through rights offerings.

<sup>24</sup> Admati et al. (2014) explores in detail the leverage ratchet effect and explains why the effect is so important in banking.

<sup>25</sup> See, for example, Elizabeth Dexheimer, "JPMorgan Leads U.S. Banks Lending Least Deposits in 5 Years," Bloomberg, February 20, 2013. In the same story quotes a principal at Deloitte & Touche LLP, saying that new regulations that include "holding more capital to cushion losses" would impede lending. Quite obviously, especially in the context of the story (about the low ratio of loans to deposits), this statement is fallacious and misleading. This fact may not be as obvious because of the pervasive confusion between capital and cash reserves discussed in Claim 1 above).

<sup>26</sup> Under-investment is among the distortions and inefficiencies associated with heavy borrowing, again due to a "debt overhang" effect. This problem is explained in Chapter 3.

**Flawed Claim 10:** Increasing equity requirements would be harmful for the economy because banks would be less willing to make loans.<sup>27</sup>

**What’s wrong with this claim?** This claim obscures the fact that credit crunches are primarily due to heavy indebtedness and financial distress, not from “too much equity.” More equity generally enables banks to *increase* their lending and to be able to continue to lend in downturns.<sup>28</sup> As discussed in our response to the preceding claim and in Chapter 11, if banks choose to make fewer loans, the reason would most likely be because their overhanging debt makes issuing new shares unattractive or because they intensify their efforts at “risk weight management,” which, under the current system of capital regulation, induces a bias against lending and in favor of other investments. Controlling the transition to more equity by banning payouts to shareholders and specifying target levels of equity rather than ratios would mitigate any such effect.

It is also false to presume that all lending is useful. Banks help the economy by making *appropriate* loans at *appropriate* interest rates that reflect the borrowers’ risks and the cost of funds. Some loans (such as, quite clearly some subprime mortgages prior to 2008) might actually be wasteful and inappropriate; such loans are usually the result of banks counting on someone else to bear the losses. Excessive lending can also result when there are too many banks with too much capacity; in this case, banks’ “gambling for survival” may offer cheap loans for a while, but their actions may expose the economy to increased risk of a major crisis later on. In fact, as already noted, credit crunch and reduced lending are due to the effect of debt overhang, which comes from excessive borrowing, not from having “too much equity.”

**Flawed Claim 11:** Higher equity requirements are undesirable because they would prevent banks from taking advantage of government subsidies and thus force them to charge higher interest on loans.<sup>29</sup>

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<sup>27</sup> In addition to Barclays Credit Research, Oxford Economics, referenced in footnotes 5, and Elliott, referenced in footnote 17. The Clearing House, referenced in footnote 5, and S&P, referenced in footnote 18, also warn that higher equity requirements would reduce the supply of credit.

<sup>28</sup> In the same spirit, Mervyn King, the outgoing governor of the Bank of England, recently said: “Those who argue that requiring higher levels of capital will necessarily restrict lending are wrong. The reverse is true. It is insufficient capital that restricts lending. That is why some of our weaker banks are shrinking their balance sheets. Capital supports lending and provides resilience. And, without a resilient banking system, it will be difficult to sustain a recovery.” (See “A Governor looks back – and forward,” speech given at the Lord Mayor’s Banquet for Bankers and Merchants of the City of London, June 19, 2013.) Kapan and Minoiu (2013) show that “banks with strong balance sheets were better able to maintain lending during the crisis,” and suggest that “strong bank balance sheets are key for the recovery of credit following crises.” Cole (2013) shows that bank lending to businesses suffered when banks incurred losses and that the Troubled Asset Relief Program (TARP), which did not alleviate the banks’ indebtedness, did not result in improved lending.

<sup>29</sup> See, for example, Oxford Economics, referenced in footnotes 5, Tucker, referenced in footnote 16 and Elliott, referenced in footnote 17. William Isaac, in “Better than Brown-Vitter: Make Banks Issue Long-Term Debt,” *American Banker*, June 4, 2013 warns that higher equity requirements on the largest banks would cause them “to decrease their lending dramatically and/or increase significantly the price of loans.”

**What's wrong with this claim?** Whereas deposit insurance is useful for preventing inefficient bank runs, it is often underpriced for individual banks, and it has the undesirable impact of enabling and encouraging banks to take risk and to “economize” on equity. Underpriced explicit or implicit guarantees to any form of bank borrowing make bank funding artificially cheap and create a distortion in the economy. By rewarding debt and penalizing equity funding the subsidies are socially harmful, especially at the very high levels of debt the banks choose. Even if all the subsidies are passed to banks' customers in the form of cheaper loans, they contribute to the financial system's being inefficient, bloated and fragile, and they distort competition and the allocation of resources in the economy.

There are two types of subsidies banks receive when they borrow but not when they use equity funding. First, the tax code in most countries gives debt a tax advantage relative to equity for all corporations. Despite this tax treatment, and even with no regulation of their funding, no healthy corporation maintains as little equity as banks. The tax effect can be neutralized, but there is no social cost if banks pay more taxes.

Second, explicit guarantees through deposit insurance for which banks often do not pay the appropriate economic costs, and implicit guarantees that allow banks to borrow at terms that are more favorable than their indebtedness and the risks they take would normally imply, encourage and subsidize excessive borrowing.<sup>30</sup> Measuring the size of subsidy is difficult because it amounts to an underpriced insurance contract whose value changes with the likelihood and extent to which it will be needed. In fact, there is reason to believe even many academic studies under-estimate the subsidies.<sup>31</sup> Despite the overwhelming evidence that the subsidies are

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<sup>30</sup> There is broad agreement that the subsidies are substantial. For example, see Chapter 3 of IMF 2014 Financial Stability Report, yet in documents such as, “Measuring the TBTF effect on bond pricing,” by Goldman Sachs Global Markets Institute, May 22, 2013, large banks argue that large banks do not benefit from a too-big-to-fail effect on their funding costs. There are a number of critical flaws in the Goldman Sachs analysis, and most are discussed in Mark Whitehouse “Too-Big-To-Fail Myths, Goldman Sachs Edition,” Bloomberg View, May 28, 2013. (See also Christopher Cole, “Goldman's TBTF Study Used Flawed Data to Reach Flawed Conclusions,” *American Banker*, May 30, 2013.) First, it compares interest rates on bonds of large banks and small banks without adjusting for differences in the risk creditors are supposedly exposed to. As discussed by Brando et al (2013), however, too-big-to-fail banks tend to take more risks in their investments than smaller banks; unless the implicit guarantee is perfect, this would raise the interest TBTF banks have to pay. (Frank Partnoy and Jesse Eisinger, in “What is Inside America's Banks,” *The Atlantic*, January 3, 2013 also shows banks' disclosures make it difficult for investors to assess the risk.) Second, the observation that creditors suffer more in failures of small banks relative to those of large banks itself reflects too-big-to-fail policies, including support from the Federal Reserve that has provided ample and cheap funding to banks since 2008. The GS paper dismisses findings of a large literature (some of which is also cited in Chapter 9) without engaging on substance, including academic studies that conclude that the value of the subsidies is in the tens of billions of dollars and particularly large in downturns. Many other industry-sponsored studies also fail to correct properly for the funding mix and other parameters of the bank borrowing that would affect the risks that their long term creditors would be exposed to, relative to those of other companies that do not have access to safety nets.

<sup>31</sup> See Stefan Nagel, “Too Big to Fail is Larger than You Think,” Bloomberg View, March 2, 2014. Given the opacity and complex structure of the liabilities of the largest banks, it is possible that without any guarantees, the cost of unsecured borrowing to these banks would be prohibitive. Of course, among the reasons banks are able to borrow as much using collaterals is that deposits are unsecured, and at least some assets purchased with deposits can be used as collateral for additional borrowing.

substantial, large banks deny the existence of subsidies, while claiming that their cost of funding would increase with more equity. These claims are inconsistent with one another.

Requirements that banks use much more equity do not impose a cost to society; rather, they attempt to correct distortions and reduce excessive subsidies. If it is deemed desirable to subsidize specific loans or any other activities, subsidies should be given directly to the intended recipient, for example by attaching the subsidies to specific loans. Blanket subsidies to bank borrowing, by contrast, provide banks with below-market funding that they can use at their discretion. The cheap funds may not actually go to the loans that the economy needs, and instead the borrowing itself makes banks more fragile, exposes the economy to substantial risks, and distorts banks' investment decisions, giving them incentives to take excessive risk in their investments or to under-invest in relatively safe but worthy loans because bankers do not find them to have enough upside.<sup>32</sup>

For more on these issues, see Chapter 9, entitled “Sweet Subsidies,” which discusses harmful effect of guarantees and subsidies, and Chapters 12 and 13. The critical distinction between private costs to the banks and social costs to society is discussed in more detail in Admati et al, (2013, Section 4). If banks' funding costs (or any costs to banks' shareholders) are increased as a result of them being less able to take advantage of subsidies, the impact is entirely private. The cost and the harm of excessive indebtedness in banking is borne by the broader public without producing any corresponding benefit. Nevertheless, subsidizing banks through implicit guarantees is attractive for policymakers, because it does not show on budgets as it is given, thus appearing costless. In fact, the costs to society of providing banks with outsized and highly distortive subsidies are large, and equity requirements that reduce these subsidies and correct the distortions are thus highly beneficial.

**Flawed Claim 12:** Historically, banks have never had as much as 30% equity; requiring as much equity would therefore harm the business of banking.<sup>33</sup>

**What’s wrong with this claim?** The statement is false. First, references provided in our book (particularly in notes 20-27, pp. 242-243) support the claim that going back more than a century to the period before bank owners and shareholders could rely on creditors, central banks, or governments to pay their creditors, it was common for banks to have as much as 50% equity.

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<sup>32</sup> Paul Tucker, referenced in Footnote 14, takes the tax code as given and states that the cost advantage of debt “cost “should be largely passed on to customers,” failing to recognize that blanket subsidies to banks’ debt are highly inefficient and distortive. Levitin (2014) also questions our statements that there is no social cost in reducing distortive subsidies, missing the distinction between social and private costs that is explained in detail in Admati et al (2013, Section 4). Matt Yglesias, in “Banks Borrow Too Much,” Slate, March 7, 2013, expresses concerns regarding the potential cost of withdrawing the banks’ subsidies. However, in his subsequent blog post entitled “How I Learned to Stop Worrying and Love Higher Capital Requirements,” March 8, 2013, he states that in our book we “in many ways end up underselling the power of [our] idea,” emphasizing that, as we explain in Admati et al (2013, Sections 2 and 9), not only would more equity make banks safer, but it will also make their lending and investment decisions more appropriate and better for society.

<sup>33</sup> Calomiris (2013) and Levitin (2014)

Second, arguments based on history presume that circumstances are similar. However, since the 1970s (uninsurable) macroeconomic risks have become much larger than they had been in the preceding decades. More importantly, financial institutions worldwide have become much more interconnected; this has greatly increased systemic from contagion. In some parts of the business also competition has become much more intense; this has reduced the ability of banks to rely on margins to provide buffers against shocks.

Our proposed leverage ratios *do not stand* on any historical figures, but are rather based on the economic arguments and observations of leverage in other, unregulated industries and on considerations of the social cost of banks' leverage. As indicated in Claims 4 and 5 above, the economics of high leverage is not fundamentally different for banks even if some of banks' debt is useful for providing liquidity.<sup>34</sup> Quite clearly, the bankruptcy of Lehman Brothers had significant collateral damage. As Admati et al (2013, 2014) explain, markets may allow leverage to get socially, and even privately, excessive. Requiring investment banks, which can scale up risk and become systemic, to have 30% equity corrects this situation and produces substantial social benefits with minimal if any relevant cost.

We are sometimes asked why we do not go to 100% equity. The reason is precisely that deposits do provide benefits that are not captured by standard corporate finance arguments. However, for most large banks today, deposits amount to less than half of their funding.<sup>35</sup> The 30% ratio we propose is roughly what banks themselves impose on financial institutions, such as hedge funds or REITs, to which they lend.

**Flawed Claim 13:** There is not enough equity around for banks to be funding with 30% equity.

**What's wrong with this claim?** As explained in the context of Claim 1, equity is not a cash reserve but a financial claim that banks can issue to obtain funding for their investments. Contrary to this claim, higher equity funding for banks does *not* require new savings and new inflows into capital markets. If a bank issues more equity and uses the funds it obtains to buy listed securities, capital markets will adjust so that investors who have sold the other securities will hold additional bank shares because the bank's returns would partly reflect the returns on those other securities. No new savings and no new inflows of funds into capital markets are required. To the extent that all assets in the economy are held by, and all risks are borne ultimately by end investors and taxpayers, the effect of a reshuffling of financial claims to make

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<sup>34</sup> Levitin (2014) also argues that the market does not demand 20% or 30% of small banks that can fail or of investment banks. But small banks have insured deposits who don't bear deadweight bankruptcy costs, and Lehman Brothers' creditors may have well believed that they would be paid in full, as were the creditors of Bear Stearns even though they were not explicitly insured.

<sup>35</sup> See Advisory Scientific Committee (2014), as well as Chapter 6.

sure more equity funds banks' investments would generate less distorted, more appropriately priced investments in the economy.<sup>36</sup>

**Flawed Claim 14:** Because banks cannot raise equity, they will have to shrink if equity requirements are increased, and this will be bad for the economy.

**What's wrong with this claim?** As we discuss in Chapter 11, solvent banks can always raise equity by selling additional shares, to existing shareholders through rights offerings or to new shareholders in the market.

If a bank cannot raise equity at any price, the bank is likely to be insolvent.<sup>37</sup> The existence of nonviable banks that cannot raise equity may reflect excess capacity in banking. (Excess capacity appears to be a serious problem in some countries and maybe globally at this time.) In this case, some downsizing of the industry would benefit the economy, contrary to the claim. The remaining banks would be viable and would have fewer incentives to gamble at the expense of their creditors, the taxpayers and the economy.

**Flawed Claim 15:** Increasing equity requirements would harm economic growth.<sup>38</sup>

**What's wrong with this claim?** Those who make this sweeping assertion do not typically provide a coherent explanation for why increased equity requirements, which amount to a reshuffling of financial claims in the economy, would have a harmful effect on growth. They also neglect the fact that the worst downturn in economic growth occurred as a result of the actions taken by highly indebted banks and other financial institutions, which led to the financial crisis in the last quarter of 2008. One reason for the severity of this crisis was the lack of equity in banks, which made banks vulnerable to the decline in US real estate markets, defaults on subprime mortgages and the collapse of the markets for asset-backed securities.

Reference to the impact of higher equity requirements on bank lending ignores the fact that it is overhanging debt, and not excessive equity that lead to credit crunches, as discussed above in the context of Claim 10. In fact, banks with more equity to absorb losses without becoming distressed would be more able to sustain lending in a subsequent economic downturn, which would have positive effects for investment and the economy. Growth, as seen for example in Iceland and Ireland, can be temporary and illusionary when it reflects a boom that is followed by bust. As we discuss in Chapter 11, if the transition to a system with more equity funding for

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<sup>36</sup> A more detailed discussion of this argument is offered in Section 7 of Admati et al (2013). At current levels of indebtedness, individual institutions, and the banking sector as a whole, are likely to be inefficiently bloated due to excessive subsidies. See also the discussion of Claim 14.

<sup>37</sup> For details of the argument, see Admati et al. (2013, 2014)

<sup>38</sup> See for example Oxford Economics, referenced in footnote 5. Levitin (2014, p. 2036) complains that we have not dealt with this claim in the book even as he does not explain why the claim should be true (except that bankers such as Josef Ackermann have asserted it to be true). In the book and elsewhere (including in the current document) we have argued that whatever justification (if any) is given to this claim, it is invalid or misleading.

banks and other institutions is handled properly, there would be no negative consequences to making the financial system less indebted and thus safer and less distorted.

**Flawed Claim 16:** Basel III is already very tough, doubling or tripling previous requirements; banks that comply with Basel III requirements are safe enough.<sup>39</sup>

**What's wrong with this claim?** As we discuss in Chapter 11 (on the basis of the arguments of previous chapters), these statements use a false benchmark for the desired and feasible equity levels. Basel III still allows banks to fund up to 97% of the assets on their balance sheets by borrowing, just as Lehman Brothers did. As discussed below, the numbers in Basel III are not based on sound analysis, and the papers justifying them are fundamentally flawed. Stress tests have also been based on flawed and incomplete approaches involving biased scenarios and unreliable data; they have been much derided when banks that the stress tests said were safe became insolvent only a few months afterwards.<sup>40</sup> Moreover, the measurements of so-called bank capital often refer to accounting ratios of accounting measures of equity relative to risk-weighted assets, which has proven very poor for predicting banks' ability to withstand losses. Moreover, the regulations often rely on debt-like alternatives to equity, which have significant disadvantages relative to equity. (See the discussion of Claims 17-20 below.)

**Flawed Claim 17:** Basel III is based on careful scientific analysis of the cost and benefits of different levels of equity requirements, whereas the rough numbers of those who advocate much higher requirements cannot guide policy because they are not supported by scientific calibration.<sup>41</sup>

**What's wrong with this claim?** Basel III appears to be the result of a political process much more than of valid scientific analysis. As we discuss in Chapter 11 and elsewhere, the studies that support the Basel III rules are based on flawed models and their quantitative results are meaningless. For example, they assume that the required return on equity is independent of risk; one paper purports to derive the “optimality” of Basel III without even considering the costs that bank failures can impose on the rest of the financial system and the economy.<sup>42</sup>

In a subsequent paper we compare the use of flawed theoretical models as a basis for quantitative analysis to the use of the distorted “map of the world as seen from New York's 9th Avenue” for

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<sup>39</sup> Claims that the requirements are tough and that banks are stronger now are frequently made by regulators, bankers and others. For example, Tom Braithwaite, in “Quest for Profits can Make Banks Safer,” *Financial Times*, February 18, 2013, suggests that the “lust for improved ROE” is a helpful, ignoring the possibility that a lust for return often involves taking risks and borrowing inefficiently, including to get around regulations based on risk weights.

<sup>40</sup> We discuss stress tests in Chapter 11. See also Vestergaard and Retana (2013).

<sup>41</sup> Claims that the requirements are tough and based on “science” are frequently made by regulators, bankers and others. For example, in a November 19, 2013 interview to *Die Welt* Lloyd Blankfein, CEO of Goldman Sachs, said: “The new capital adequacy regulations under Basel III are the results of a long and meticulous process.”

<sup>42</sup> See “An Assessment of the Long-term Economic Impact of Stronger Capital and Liquidity Requirements” and “Calibrating Regulatory Minimum Capital Requirements.” and “Capital Buffers – A Top-Down Approach,” Basel Committee on Banking Supervision Discussion Papers 173 and 180, Bank for International Settlements, 2010.

orientation in traveling through the American Midwest.<sup>43</sup> The fact that studies end up with precise numbers for “optimal” capital regulation is irrelevant if the foundations of the studies are shaky.

We are not aware of any theory or model that would provide appropriate estimates of the costs and benefits to society associated with different funding mixes for banks. Despite this, we are confident in asserting that equity levels of three percent of total assets, as admitted by Basel III, are unsafe, and that a significant increase will substantially improve the health and safety of the financial system. Low levels of equity expose the banks and the economy to unnecessary risk. And allowing banks to rely as much on subsidized borrowing distorts the economy. Countering the banks’ tendency to choose unsafe levels by effective regulation is essential.

**Flawed Claim 18:** Because capital requirements should be adjusted to risk, it is essential to rely primarily on requirements that are based on assigning risk weights to assets.<sup>44</sup>

**What’s wrong with this claim?** As we discuss in Chapter 11, the system of risk weights that we currently have has more to do with politics and tradition than with science. In fact, the Basel rules negate important sources of risk altogether: Risks from sovereign debt that is funded in the currency of the country in question, risks of changes in funding conditions for medium or long-term loans, risks from the possibility that borrowers might default simultaneously because their default risks are correlated. Risk from sovereign debt that is funded in the currency of the country was in evidence in the Greek default in 2012. Funding risk for long-term loans was a key factor in the S&L crisis in the 1980s. Correlated borrower defaults were a major factor in the subprime mortgage crisis of 2006-2009. Even if the politics of the regulation could be dealt with, attempts to improve risk weighting are limited by a lack of data and by the never-ending changes in the risks and correlations.

In practice, the system of risk weights allows banks to be extremely highly indebted, masks important risks, and adds to the interconnectedness of the system. Whereas proponents of the system argue that it is important to require banks to have more equity funding when their assets are more risky, in fact the system allows banks to get away with *much less* equity funding when they say that their assets are less risky. A uniform ratio of required equity to total assets would provide a bound on the banks’ leverage. By contrast, because some risk weights are (near) zero, the risk-weighting system allows very high leverage. Thus, banks could take large positions in assets with (close to) zero risk weights, such as Greek sovereign debt or AAA-rated toxic securities, and fund them almost entirely with debt and with hardly any equity. The system also

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<sup>43</sup> See “Does Debt Discipline Bankers? An Academic Myth about Bank Indebtedness,” referred to in footnote 9.

<sup>44</sup> For example, Tom Braithwaite (referenced in footnote 25) praises the Basel risk weights system for controlling banks’ risks. Most regulators appear to take it for granted that risk weights are essential, and the Federal Reserve has proposed to adopt Basel III, including the use of risk weights, for all US banks.

distorts banks investment decisions, typically against business lending, and is highly manipulable by the banks.<sup>45</sup>

**Flawed Claim 19:** Instead of issuing more equity, banks should be required to issue long-term debt or debt that converts to equity when a trigger is hit, so-called “contingent capital” or co-cos.<sup>46</sup>

**What’s wrong with this claim?** As we explain in Chapter 11 (pp. 187-188), in a section entitled “Anything but Equity,” and in Admati et al (2013, Section 8), the various proposals to use hybrids between debt and equity as a way of forcing investors rather than taxpayers to bear losses offer no advantages, and in fact have important disadvantages, relative to equity. First, like other debt, they raise the specter of domino effects or near the triggers where debt converts to equity (or is written down, depending on what the contract says). If the institutions that hold the co-cos are systemic, the consequences of a conversion to equity can be dramatic, and fear of these consequences might motivate a bailout. Indeed, in 2008-2009, holders of long-term debt and other hybrid securities meant to absorb losses as Tier 2 capital were paid even as banks were bailed out with taxpayer funds. Second, when conversion is imminent, the strategic behavior of market participants can induce dramatic changes in prices of equity and/or co-cos. Thus, co-cos do not provide reliable loss absorption and can create instability in a crisis. Third, as long as they have not been converted to equity, co-cos and other debt-like claims add distortions to banks’ lending decisions by exacerbating the effect of debt overhang and contributing to credit reductions in downturns.

There is no sense in which having banks rely on these hybrid securities is “cheaper” or better for society than relying on equity. For the purpose of regulation, using equity simply dominates these alternatives. Those who propose such alternatives as a substitute for equity have yet to give a valid reason for their proposal that is relevant for policy considerations.<sup>47</sup>

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<sup>45</sup> See further discussion in Chapter 11. The report on JP Morgan Chase “London Whale” loss by the Senate Committee on Investigation specifically refers to attempts to manipulate models, and points to poor risk controls. See, for example, David Henry and Lauren Tara LaCapra, “JPMorgan and other banks tinker with risk models,” Reuters, March 18, 2013, and Floyd Norris, “Masked by Gibberish, the Risks Run Amok,” *New York Times*, March 21, 2013. On the flaws in the Basel approach, see also Thomas Hoenig, “Basel III, a Well Intentioned Illusion,” Speech in Basel, Switzerland, April 9, 2013, Andrew Haldane, “Constraining discretion in bank regulation,” speech at the Federal Reserve Bank of Atlanta Conference, April 9, 2013, Joe Rizzi, “Risk-Based Capital: The Good, the Bad and Mostly the Ugly,” *American Banker*, May 20, 2013, William Isaac, referenced in Footnote 24, and Robert T. Taylor, “Basel Rules Echo Missteps of S&L Era,” *American Banker*, June 19, 2013.

<sup>46</sup> See, for example, Calomiris (2014). Proposals to use co-cos instead of equity have been implemented in Switzerland and have been discussed in the UK (see UK Independent Commission on Banking) and the European Union (see Liikanen Report). A variation on the concept is Equity Recourse Notes (ERNs) proposed by Bulow and Klemperer (2014), which amount to debt whose coupon payments are made in equity when a trigger is hit.

<sup>47</sup> As discussed in the context of Claim 9, compromising financial stability in order to give tax subsidies to inefficient funding by banks makes no sense. (Because they can force conversion to equity and do not confer creditors’ rights on their holders, co-cos do not qualify as debt under the US tax code, and thus do not have the tax advantage over equity in the US that they appear to have in Europe.) On the claim that long-term debt provides better discipline than equity, see the discussion of Claim 22 below. Co-cos and ERNs that they are meant to convert

**Flawed Claim 20:** The Dodd-Frank Act in the US, or the newly adopted Banking Recovery and Resolution Directive (BRRD) and Single Resolution Mechanism in the European Union, have done away with the need to bail out banks; if a bank gets into trouble, the authority in charge of resolution will be able to resolve it without cost to taxpayers; there is therefore no need to increase equity requirements.<sup>48</sup>

**What’s wrong with this claim?** As we discuss at the end of Chapter 5 and in Chapter 9, this claim ignores a number of critical points and is not credible.<sup>49</sup> First, to minimize the economic disruptions from having banks go into resolution, it may be necessary to maintain some important operations at least temporarily. This requires funding. Under the Dodd-Frank Act, such funding might be obtained by borrowing from the government; such borrowing puts the taxpayer at risk.<sup>50</sup> Second, whereas both the Dodd-Frank Act in the US and the BRRD in the EU rely on industry levies and on creditor bail-ins to absorb losses, in a crisis, when many banks may be weak at the same time and the financial system is at risk, the industry as a whole or the banks’ creditors (which may be other financial institutions) may be too weak to perform this role. Even if the charges are spread over time, the burden of obligations they impose may be so great that the institutions involved become incapable of functioning. These concerns arise even if the debt in question is long-term or, as in Claim 19, subject to contingent conversion clauses. If the banks were required to rely on equity levels much higher than the low levels current regulations allow, loss absorption would be obtained without any of these disruptions.

Third, cross-border issues in the resolution of global banks, which played an important role in the Lehman Brothers bankruptcy, have hardly been addressed. If a bank with systemically important operations in different countries goes into a resolution procedure, the procedure will be handled by different authorities in the different countries in which the bank has legally independent subsidiaries; because the different authorities act independently and each authority takes care of problems in its domain, integrated operations in areas such as cash management and

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some debt to equity ahead of insolvency and failure are better than debt claims that can only suffer losses within a “bail-in” process or in a resolution or bankruptcy (which are discussed in the context of Flawed Claim 21 below). And they are obviously a less fragile funding source than short-term debt that is subject to runs.

<sup>48</sup> See, for example, presentation by the Clearing House to the Board of Governors of the Federal Reserve regarding Title II of Dodd Frank Act on February 13, 2013, and their March 26, 2013 “Vanquishing TBTF.” See also Paul Tucker, referenced in Footnote 16, and William Isaac, referenced in Footnote 24. This claim is the basis for proposals by the Federal Reserve to force bank holding companies to use more long-term debt (see, e.g., Governor Daniel Tarullo testimony to Senate Committee on Banking, Housing and Urban Affairs, February 6, 2014), and similar discussions by the Financial Stability Board about so-called GLAC “Gone Concern Capital Absorbing Capacity” (e.g., “Progress and Next Steps Towards Ending Too-Big-to-Fail,” Report to G-20, September 2, 2013).

<sup>49</sup> See also Simon Johnson, “The Myth of a Perfect Orderly Liquidation Authority for Big Banks,” *New York Times* Economix, May 16, 2013, and Simon Johnson and Marc Jarsulic, “How a Big Bank Failure Could Unfold,” *New York Times* Economix, May 23, 2013. See also Anat Admati, “Too Much Equity? If Anything, Brown-Vitter Asks Too Little,” *American Banker*, June 24, 2013.

<sup>50</sup> The Bank Recovery and Resolution Directive in the European Union ignores the problem altogether.

IT systems are no longer feasible. It may therefore be impossible to maintain, even temporarily, some of the functions which are essential for the rest of the financial system.<sup>51</sup>

**Flawed Claim 21:** If equity requirements are increased, banks will increase their “risk appetite,” which will make the system more dangerous.<sup>52</sup>

**What’s wrong with this claim?** As we discuss in Chapter 8, such a claim was made by Bob Diamond when he was CEO of Barclays. Statements like these may be empty threats, but if they are not, the claim raises serious concerns about governance that should trouble banks’ shareholders and boards of directors. If risks are worth taking on behalf of the banks’ investors, why aren’t the banks already taking them? If the risks are not worth taking, why would the banks take them when they are funded with more equity? The claims appear related to the flawed focus on ROE in banking that we discuss in Chapter 8.<sup>53</sup>

**Flawed Claim 22:** If equity requirements are increased, bank managers will be less disciplined.<sup>54</sup>

**What’s wrong with this claim?** The claim rests on the false notion that bank creditors can “discipline” bankers, or provide better governance, than shareholders, and that bankers are more disciplined when investing borrowed money than when they invest shareholders’ money.

The academic literature includes theoretical models that claim to capture the idea that “debt disciplines managers.” Some such theories are specific to banks, arguing that by threatening to withdraw their funding, depositors and short-term creditors can provide “discipline.” As we have argued in various writings, including Chapter 10, these models are a poor basis for policy advice because they lack empirical support and ignore critical elements of the real world which, if included, would reverse their conclusions.<sup>55</sup> The fact that assertions about the real world are

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<sup>51</sup> See Advisory Scientific Committee (2012).

<sup>52</sup> See, for example, Bill Black, “Brown-Vitter Will not and Cannot Work but it is Criminogenic,” Naked Capitalism blog, May 11, 2013.

<sup>53</sup> See also Anat Admati, “Beware of Banks’ Flawed Focus on Return on Equity,” *New York Times Dealbook*, July 25, 2011, and Anat Admati and Martin Hellwig, “The Case Against Banking’s Case for Less Capital,” Bloomberg View, February 5, 2013.

<sup>54</sup> A recent example is Raghuram Rajan, “Love the Bank, Hate the Banker,” Project Syndicate, March 27, 2013, which refers to the Washington Mutual (WaMu) bank failure, claiming that it is an illustration that the threat of runs helps provide “discipline” to bank managers. In fact, the timing of the events in the WaMu case is at odds with the argument Rajan seems to be trying to make. Significant withdrawals from WaMu started after the Lehman Brothers bankruptcy on September 15, 2008, and the bank was closed on September 24, 2008. By that time, it was too late to “discipline” the bank’s managers. William Isaac, referenced in Footnote 24, and Paul Tucker, referenced in Footnote 16, argue that long-term debt provides better discipline than equity. Seemingly echoing such claims, Jamie Dimon, CEO of JP Morgan Chase, warned in 2011 that bankers might do “stupid things” if they had “too much capital.” (See Alistair Barr, “J.P. Morgan’s Dimon concerned about too much capital: Surfeit of capital may make people do ‘stupid things,’ CEO says,” *Wall Street Journal MarketWatch*, February 15, 2011.) His statement raises the concern of why bankers would do stupid things with shareholder money, and why they would expect to get away with it.

<sup>55</sup> We have discussed this problem in earlier writings, particularly Admati et al (2013, Section 5), which first appeared in 2010. In Admati and Hellwig (2013), we explain that fragility in banking is more likely to reflect a *lack*

made on the basis of theoretical models without justifying the appropriateness of the models or addressing the critical issues we raise about their inadequacy is highly disturbing.

The suggestion that long-term debt provides better discipline to managers than equity is flawed in the context of banking. First, whereas long-term debt does not cause a risk of runs, it may still generate systemic risk. As discussed in the context of Claims 19 and 20, if debt holders are sufficiently important for the financial system, for example large insurance companies, it may be deemed undesirable to impose losses on them in resolution or insolvency. Moreover, the too-big-to-fail problem is relevant for long-term debt as well as short-term debt in that the collateral damage associated with distress or insolvency may lead to bailouts. If debt holders believe they can count on being bailed out, they will not impose any discipline on the bank.

Second, even if long-term creditors want to impose discipline, the scope for doing so is limited. For example, with a ten-year bond, on average one tenth of the debt is rolled over each year. But discipline can only be imposed when the debt must be renewed and investors negotiate with the bank for the conditions under which a renewal would be granted. As we have argued in the context of the possibility that deposit and short-term debt provide “discipline,” long-term debt may in fact provide the precise *opposite* of discipline: Negotiating with new short-term creditors, or offering them collateral can make incumbent long-term creditors worse off (should they expect to bear losses), yet these creditors are unable to withdraw their claims until the debt expires.

**Flawed Claim 23:** The best way to make banking safer is to require banks to put funds from deposits into reserves of central bank money or Treasury Bills (so-called narrow banking or the Chicago Plan for 100% reserve banking). Narrow banking will give us a stable financial system, and there would be less need to impose equity requirements.

**What’s wrong with this claim?** Requiring banks to put all funds into cash or Treasury Bills will make these banks safer but the financial system as a whole may become less efficient and/or less safe. If final investors maintain current funding patterns, banks will provide a lot of funding to the government; which may well come at the expense of funding of nonfinancial firms. The experience of southern European countries in the decades before 1990 shows such crowding out of private borrowing by government borrowing can have substantial negative effects on economic growth.<sup>56</sup>

More likely, narrow banking would lead investors to put substantially more of their money in other institutions, for example money market funds which are “bank-like” without being subjected to the same regulation as banks. As we have seen in the weeks after the Lehman bankruptcy, such institutions can also be subject to runs and can be a major source of systemic risk. Financial instability would merely shift from banks to those “bank-like” institutions. In this

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of discipline, which allows bankers to continue to borrow and thus prevents debt from providing any discipline. See also Admati et al (2014, Section 5), and Pfleiderer (2014).

<sup>56</sup> See, for example, the essays by Bruni, Caminal et al., and Borges in Dermine (1990)

context, it is useful to recall that Lehman Brothers was an investment bank, AIG was and is an insurance company and, in Europe, Dexia and Hypo Real Estate were in the covered-bond business; none of the institutions had any deposits.

**Flawed Claim 24:** The financial system would be safe if banks are subject to a 100% reserve requirement so they can take no risk with depositors' money, while non-bank financial institutions are entirely prohibited from borrowing.<sup>57</sup>

**What is wrong with this claim?** This ignores the benefits of using some debt to fund difficult-to-value investments such as loans. Moreover, having no debt in financial intermediation would not necessarily eliminate fragility and possible harm to small investors. Investors want much of their money to earn some interest and yet to be liquid so they can get it fairly reliably when they need it. If banks must operate as open-end mutual funds with no debt, investors who need cash would return (or sell) their shares and get whatever the shares were worth. Determining share values would be easy if the assets held by a fund (of the fund itself) were traded daily on a public exchange, but otherwise would be problematic, and the mutual fund could suffer something similar to runs if shareholders fear significant asset price declines returned their shares and the fund had to sell assets in a hurry.<sup>58</sup>

Trading in stock markets exposes individuals who need to trade for liquidity reasons to losses from better-informed investors. The opacity of assets consisting of many mortgages and other loans would give rise incentives to those with access to better information to engage in such trading if the shares of banks with 100% equity were traded on stock exchanges. The information-insensitivity of banks' debt is valuable for liquidity provision and the idea of requiring significant equity (such as 30% or even more) but not as much as 100% is intended to preserve this function and strike a balance between liquidity provision and the stability of the banking system.

**Flawed Claim 25: Claim 25:** Tighter regulation of banks, and in particular higher equity requirements, are undesirable because they would cause activities to move to the unregulated shadow banking system.<sup>59</sup>

**What's wrong with this claim?** As we discuss, particularly in Chapter 13, the development of the shadow banking system and the risks it poses point to the past weakness of enforcement. The most dangerous parts of the shadow banking system developed primarily to avoid existing regulation. Examples include the so called off-balance-sheet special purpose vehicles and money market funds, both of which played in infamous role in the 2007-2009 financial crisis. The

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<sup>57</sup> See Kotlikoff (2010) and Cochrane (2014) for such proposals.

<sup>58</sup> Gordon and Gandia (2013), for example, show that money market funds with floating value were also quite unstable at the same time that those that promised fixed net asset value were experiencing runs in 2008. Because Germany has had such experiences with open-end mutual funds for real estate investments, the German Federal Ministry of Finance proposed in July 2012 to outlaw open-end mutual funds for real estate investments.

<sup>59</sup> See, for example Elliott, referenced in footnote 17.

lessons should be that we need better rules and better enforcement, not that we should give up on rules. Dealing with regulatory arbitrage is challenging, but the challenge can be met, and it must be met if the regulation is important and beneficial.<sup>60</sup>

**Flawed Claim 26:** Since banking is a global business, it is important to maintain a “level playing field”. Therefore, banking regulation must be coordinated and harmonized worldwide.<sup>61</sup>

**What’s wrong with this claim?** The claim, discussed in Chapter 12, is false. If some countries foolishly allow their banks to pursue very risky strategies and to borrow excessively, this is not a reason why other countries should do the same. Each country should be concerned with how much of a risk from its banks it is willing to accept, just as each country has its own building codes, consumer safety standards, environmental regulation and energy policy. We would not allow chemical companies to pollute rivers and lakes simply because the industry maintains that somewhere in the world another country is allowing these things. The search for “level playing fields” in global competition is highly damaging if it leads to a race to the bottom, where each country ends up fighting stricter regulation on behalf of its members of the industry.<sup>62</sup>

**Flawed Claim 27:** Stricter national regulation would harm “our” banks; instead we should be supporting them in global competition.

**What’s wrong with this claim?** Like the preceding claim, this claim is false, as discussed in detail in Chapter 12.<sup>63</sup> The success of a nation’s banks in global competition is not an appropriate objective for policy. The global economy is not a sports event where a country might win medals in all disciplines. Rather, it is a system in which people and firms from different countries trade with each other, and a country necessarily “loses” in the markets for those goods which it imports. For the country, and for the people living in it, it is efficient to specialize on goods they are good at and to import the others. Government subsidies to banks, or indeed any firms, in international competition is undesirable; such subsidies creates distortions in favor of these firms at the expense of others in the economy, and it may direct too many resources, including talent, inefficiently to one industry over others. Weak regulation that allows banks or other firms to take

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<sup>60</sup> Levitin (2014, p. 2037) asserts that “Admati and Hellwig think that [dealing with the shadow banking system] is easy.” In fact, we have not claimed it is easy to enforce the regulation effectively, only that it is important and possible. In “We are Still Hostages to the Big Banks,” *New York Times*, August 26, 2013, Anat Admati summarized the response: past failures to make sure that banks could not hide risks using various tricks in opaque markets is hardly reason to give up on essential new regulations. We must face the challenge of drawing up appropriate rules and enforcing them, or pay dearly for failing to do so.”

<sup>61</sup> This argument is made frequently. See, for example, The Clearing House, referenced in footnote 5, and S&P, referenced in footnote 18.

<sup>62</sup> See also Anat Admati and Martin Hellwig, “Global Level Playing Field Arguments are Invalid,” a version of which appeared as a comment in *Financial Times*, June 3, 2011. (The text is available at <http://www.gsb.stanford.edu/news/research/admati-battle-begun.html>) The Federal Reserve has effectively rejected this notion in other aspects of U.S. financial regulation by mandating the creation of intermediate holding companies to focus all the assets and liabilities of foreign banks operating in the United States to make it harder for these banks to evade national regulation. This model can be extended and applied to other aspects of international banking in a way to reduce the consequences of a failure of international financial regulatory harmony.

<sup>63</sup> See also the article referred to in the previous footnote.

risks at the expense of others is also very distorting. It is also legitimate for national regulators to protect their citizens by regulating foreign banks' subsidiaries if they deem regulations in the banks' home country to be insufficient or ineffective.

**Flawed Claim 28:** The politics of banking makes effective regulation impossible, and therefore debating the merits of specific regulations such as equity requirement is “beside the point.”<sup>64</sup>

**What's wrong with this claim?** This claim, typically made without a suggestion as to how to overcome the political challenge, suggests that there is no choice but to allow flawed claims and dangerous policies to persist. The claim is analogous to saying that “politics makes corruption unavoidable; thus debating the merits of specific anti-corruption strategies is beside the point,” or: “the politics of organized crime makes effective criminal enforcement impossible; thus debating specific strategies for fighting organized crime is beside the point.” Whereas the politics of financial reform (including the outsized influence that banks have on the political process and the symbiotic relations of banks and governments) certainly makes quick progress unlikely, the eventual success of many reform movements has shown that change is possible. Reform, however, requires public awareness and debate, and sensible debate requires understanding of the issues. Clarifying the issues and empowering more people to participate can create public pressure on those who refuse to engage or to take action, and can eventually bring about the necessary political will for better regulation.<sup>65</sup>

In reviewing our book, Martin Wolf concluded that our views are not more widely accepted because “bankers are so influential and the economics are so widely misunderstood.” His final assessment is that: “we have failed to remove the cause of the crisis. Further such crises will come.”<sup>66</sup> Because risk from banking is more abstract than risk from plane crashes or shoddy bridge construction, flawed claims about banking may have more staying power. However, the harm from a distorted and dangerous financial system is large and affects many people. The current regulations can be greatly improved, bringing large benefits to society. And understanding the issues does not require advanced training. If more people understand the issues, we have a chance of getting serious reform.

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<sup>64</sup> This claim is made in Levitin (2014, p. 2067), who reviews our book together with others. A few of these books describe the writers' experiences in politics and regulation. The books by Sheila Bair, Neil Barofsky and Jeff Connaughton, in particular, highlight the political challenge and aim to increase political pressure for reform, but they do not explain the underlying economics in as much detail as we do in our book.

<sup>65</sup> We discuss the problem of willful blindness in the preface of the book and of the paperback edition, both of which are available on the book website.

<sup>66</sup> See Martin Wolf, “Why Bankers are Intellectually Naked,” *Financial Times*, March 17, 2013.

## References

- 1) Admati, Anat R. (2014), “The Compelling Case for Stronger and More Effective Leverage Regulation in Banking,” *Journal of Legal Studies*, forthcoming.
- 2) Admati, Anat R., Peter M., DeMarzo, Martin F. Hellwig and Paul Pfleiderer (2013), “Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is Not Socially Expensive,” Working paper (first draft August 2010).
- 3) Admati, Anat R., Peter M., DeMarzo, Martin F. Hellwig and Paul Pfleiderer (2014), “The Leverage Ratchet Effect,” Working paper (first draft March, 2011).
- 4) Admati, Anat R., and Martin F. Hellwig (2011), “Comments to the UK Independent Commission on Banking,” Submitted July 4.
- 5) Admati, Anat R., and Martin F. Hellwig (2013), “Does Debt Discipline Bankers? An Academic Myth about Bank Indebtedness,” Working paper.
- 6) Advisory Scientific Committee (2012), “Forbearance, Resolution, and Deposit Insurance”, Report 01 of the Advisory Scientific Committee of the European Systemic Risk Board, Frankfurt, July 2012.
- 7) Advisory Scientific Committee (2014), “Is Europe Overbanked?” Report 04 of the Advisory Scientific Committee of the European Systemic Risk Board, Frankfurt, June 2014.
- 8) Brandao, Luis Marques, Ricardo Correa, and Horacio Sapriza (2013), “International Evidence on Government Support and Risk Taking in the Banking Sector,” IMF Working Paper WP/13/94.
- 9) Bulow, Jeremy and Paul Klemperer (2013), “Market-Based Capital Regulation,” Working Paper.
- 10) Calomiris, Charles W. (2013), “Reforming Banks Without Destroying Their Productivity and Value,” *Journal of Applied Corporate Finance*, Vol. 25 (4), 14-20.
- 11) Cochrane, John H. (2014), “Towards a Run-Free Financial System,” working paper.
- 12) Cole, Rebel A. (2013), “How did the Financial Crisis Affect Business Lending in the U.S?” Working paper.
- 13) Dermine, Jean (ed.) (1990), *European Banking in the 1990s*, Blackwell, Oxford.
- 14) Gordon, Jeffery N. and Christopher Gandia (2013), “Money Market Funds Run Risk: Will Floating Net Asset Value Fix the Problem?” Working paper.
- 15) Gorton, Gary (2010), *Slapped by the Invisible Hand: The Panic of 2007*, Oxford University Press.
- 16) Gorton, Gary, and Andrew Metrick (2010), “Regulating the Shadow Banking System”, *Brookings Papers on Economic Activity* 41(2), 261–312.

- 17) Gorton, Gary (2012), *Misunderstanding Crises: Why We Don't See them Coming*, Oxford University Press.
- 18) Kapan, Tümer and Camelia Minoiu (2013), "Balance Sheet Strength and Bank Lending During the Global Financial Crisis," IMF working paper 13/102.
- 19) Kotlikoff, Laurence J. (2010), *Jimmy Stewart Is Dead: Ending the World's Ongoing Financial Plague with Limited Purpose Banking*, Wiley.
- 20) Levitin, Adam J. (2014), "The Politics of Financial Regulation and the Regulation of Financial Politics: A Review Essay," Harvard Law Review, 1991-2068.
- 21) Pfleiderer, Paul (2010), "On the Relevancy of Modigliani and Miller to Banking: A Parable and Some Observations," working paper.
- 22) Pfleiderer, Paul (2014), "Cameleons: The Misuse of Theoretical Models in Finance and Economics," working paper.
- 23) Pozsar, Zoltan (2014), "Shadow Banking: The Money View," Office of Financial Research, Working Paper 14-04, July 2004,
- 24) Tobin, James (1967), "Commercial Banks as Creators of 'Money'", in: *Financial Markets and Economic Activity*, ed. Donald Hester and James Tobin, Cowles Foundation Monograph 21, Yale University Press, New Haven, CT.
- 25) Vestergaard, Jakob and María Retana (2013) "Behind Smoke and Mirrors On The Alleged Recapitalization of Europe's Banks," DIIS Report.