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Reforming Banks Without Destroying Their Productivity and Value

by Charles W. Calomiris, Columbia University*

Professor Allan Meltzer famously quipped that “capitalism without failure is like religion without sin.” If some firms are protected from failure when they cannot pay their bills, then competition is skewed to favor inefficient, protected firms. Banks whose debts are guaranteed by the state receive an unfair advantage that enables them to allocate funds inefficiently, recklessly pursue risks at the expense of taxpayers, and waste resources that would be better used by firms operating without such protection.

The financial crisis of 2007-2009 wasn't the first to illustrate that protected banking systems tend to blow up, imposing huge losses on taxpayers who are left to foot the bill. In the past three decades alone, there have been over a hundred major banking crises worldwide.¹ Many years of academic research on this unprecedented pandemic of banking crises have consistently identified the protection of banks as one of the primary causes. Indeed, one could even say that there is no topic in financial economics that has achieved such a clear consensus among researchers as the proposition that government protection of banks has been a major contributor to the recent wave of costly bank failures around the world—failures on a scale that has never been witnessed before.²

Anat Admati and Martin Hellwig's recent book, *The Bankers' New Clothes* (Princeton University Press, 2013) provides one of the clearest discussions of the ills of protected banking and makes a very aggressive case for regulatory reform and restructuring of banks.³ It has attracted enormous attention, and many policy makers around the world are using it as the basis to justify a drastic revision of banking regulation. From the perspective of the events and research of the past three decades, the financial ills that are the main subject of *The Bankers' New Clothes* represent an important problem, and the diagnosis the book provides deserves the attention that the authors give to it: Banks—especially the large banks that politicians predictably consider “too big to fail”—abuse taxpayer protection, borrowing at subsidized

interest rates to take risks at taxpayers' expense. Heads they win; tails we lose.

The main cure that the authors propose for this problem is also familiar from previous research: Find a way to force banks to maintain much more of their financing in the form of equity rather than debt, so that bank stockholders rather than taxpayers will bear most or all of the downside risk of bank losses. The second proposed cure is to break up the big banks (the authors argue that there would be little cost to restricting bank asset size to no more than \$100 billion).

The authors of *The Bankers' New Clothes* deserve the praise they have received for explaining the social costs of too-big-to-fail subsidies in a way that is broadly accessible. By raising public consciousness about these costs, their book has contributed to the growing momentum in support of the desperately needed strengthening of the prudential regulation of banks, especially in Europe and the United States. Moreover, it has reignited a debate within academia on these issues; and while considerable disagreement remains about the best solutions, an active debate on such an important policy issue is clearly a good thing.

The authors also succeed in debunking some of the arguments made by bankers who resist any attempt to increase minimum regulatory requirements for equity ratios. In particular, many bankers argue that capital requirements will harm their ability to attract investors because higher equity ratios imply lower cash flows per unit of equity. But, as the authors correctly point out, equity investors also care about the riskiness of equity, and high equity ratios reduce the riskiness of the cash flows equity investors receive.

So far, so good. But Professors Admati and Hellwig are not content just to correct the obvious fallacies propagated by bankers. In their well-intentioned zeal to make the case for how beneficial, simple, and costless it would be to mandate dramatic increases in bank equity ratios, they overstate the benefits and understate the costs associated with their proposed reforms.

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1. Luc Laeven and Fabian Valencia, “Systemic Banking Crises Database: An Update,” International Monetary Fund Working Paper 12/163.

2. Charles W. Calomiris, “Banking Crises and the Rules of the Game,” in *Monetary and Banking History: Essays in Honor of Forrest Capie*, ed., Geoffrey Wood, Terrence Mills, and Nicholas Crafts, Abingdon: Routledge: 88-132.

3. Anat Admati and Martin Hellwig, *The Bankers' New Clothes* (Princeton University Press, 2013).

First, Admati and Hellwig assert that accomplishing a credible increase in the proportion of bank equity capital is a simple matter of increasing minimum regulatory requirements for the ratio of the book value of equity relative to assets. Would that it were so simple, but it is not; increasing the book equity ratio in an accounting sense does not necessarily increase true bank capital ratios, and that difference has been a major theme of the policy literature in banking. As one recent study shows, bank balance sheets do not capture many of the economic losses that banks may incur.⁴ Also, accounting practices can disguise the magnitude of loan losses, and regulators eager to avoid credit crunches are often complicit in doing so. The result is that banks' true equity ratios can be much lower than their book values indicate.⁵

Finally, and perhaps most important, banks' risk choices are not measured accurately by existing regulatory measures, and banks face strong incentives under some circumstances to increase their risks to levels far in excess of their reported risks.⁶ Both the Basel approach to risk weighting of assets and the simpler approach the authors advocate (that would abandon all risk weighting in favor of a simple equity-to-assets requirement) have a common flaw: they encourage banks to pursue hidden increases in asset risk.

For all these reasons, then, increasing required book equity ratios does not necessarily translate into reducing the risk of bank failure. In fact, because of these challenges to measuring equity and risk, most empirical studies of bank failure risk typically find no relationship between the book equity ratios of banks and their risks of insolvency.⁷ That does not mean that equity ratios are irrelevant, only that requiring increased book equity does not, by itself, result in higher true equity. Nor, and more importantly, do higher equity requirements ensure that banks will have higher equity relative to their risk, which is the essential goal of the regulatory reform that Admati and Hellwig envision.

Second, the authors argue that raising the ratio of equity finance in the structure of bank liabilities has few if any social costs. I agree that, given the current low required bank equity ratios, higher ratios likely would entail more social benefits than social costs; but that is not the same as saying that raising equity ratios entails no social costs. In the authors' view, the only private costs to raising equity come from reducing a (socially) undesirable tax subsidy (that comes from the deductibility of interest), and an undesirable safety net subsidy that banks are currently extracting from taxpayers. Eliminating both of those subsidies would be desirable, but that is not the same as saying that it would be costless.

The authors are wrong to dismiss the possibility that higher equity requirements for banks might be socially costly as a "bugbear...as insubstantial as the emperor's new clothes in Andersen's tale." "For society," the authors go on to say, "there are in fact significant benefits and essentially no cost from much higher equity requirements." Such a policy would resolve the "fundamental conflict between what is good for banks and what is good for the broader economy."

Why (Bank) Capital Structure Matters: Theory and Evidence

As a general proposition, the authors' analysis is incomplete and misleading, failing as it does to represent the findings of decades of research encompassing scores of theoretical and empirical contributions in the banking and corporate finance literature. The key academic sleight of hand made by the authors, which is the basis for these statements, is to focus attention solely on the risk-adjusted *returns* expected by investors when discussing the risk-adjusted *costs* to banks of their capital structure choices. Admati and Hellwig incorrectly equate the two. "The cost of equity," the authors claim, "essentially corresponds to the returns that corporations must provide to shareholders to justify the money it has received from them." But for the banks that issue that equity, there are almost certain to be other important costs (and benefits) associated with capital structure choices that are only indirectly related to the returns expected and received by investors. And for this reason, the costs to a bank of issuing equity and the expected return received by equity investors who buy the new offering are not generally the same.

Indeed, one might describe the main subject of the entire literature on capital structure choice in banking, and in corporate finance more generally, as the *difference* between the expected costs a firm experiences from the decision to issue a given security (both when announcing it and later as a result of having issued it) and the expected return to investors who purchase it. The overall costs to banks that are associated with raising and operating with equity are different from investors' expected returns for a number of reasons that I will discuss in more detail below. But let me start by mentioning two potentially important reasons why banks' shareholders would prefer that banks limit their use of equity.

One has to do with the "signaling" costs that accompany most offerings of equity. As Stewart Myers and Nicholas Majluf showed in a 1984 paper, there can be large "adverse selection" costs associated with raising external equity that

4. Charles W. Calomiris and Doron Nissim, "Crisis-Related Shifts in the Market Valuation of Banking Activities," Columbus Business School, June 2013.

5. The recognition of this problem underlies the case for using cash reserve requirements and contingent capital requirements alongside capital requirements as prudential tools. See Charles W. Calomiris, "Identifying the Right Mix of Capital and Cash Requirements in Prudential Bank Regulation," *Journal of Applied Corporate Finance* 24, Winter 2012, 33-41; Charles W. Calomiris and Richard J. Herring, "How to Design a Contin-

gent Convertible Debt Requirement that Solves the Too-Big-To-Fail Problem," *Journal of Applied Corporate Finance* 25, Spring 2013, 21-44.

6. Luc Laeven and Ross Levine, "Bank Governance, Regulation and Risk Taking," *Journal of Financial Economics* 93, 2009, 259-275.

7. James Barth, Gerard Caprio, and Ross Levine, *Rethinking Bank Regulation: Till Angels Govern*, Cambridge University Press, 2006.

More on the Information and Agency Costs of New Equity

Companies with unused debt capacity and profitable uses for more capital but whose managers believe their shares are undervalued will generally issue debt rather than equity to avoid diluting the value of existing stockholders' claims. Conversely, companies whose managers think their companies are overvalued may be tempted to issue equity, even if they have no current profitable uses for the capital. But sophisticated investors understand these motives, as well as the tendency of managers (especially in mature industries) to waste excess capital on low-return investments—and they are accordingly skeptical about announcements of plans to raise outside equity, especially when companies have no clearly profitable uses for the capital. Recognizing their own informational disadvantage and managers' incentives to issue overpriced securities (or at least to avoid issuing undervalued ones), investors usually respond to announcements of new equity offerings by reducing the value of the shares.¹¹

If the average firm announcing a new equity offering goes ahead and issues new equity after the negative adjustment in its price, and the purchasers of the new equity then earn normal rates of return, there's no real cost inflicted on existing shareholders, no real dilution

of value in raising equity at prices after the market has discounted them for managers' inside information. The firm was overvalued before announcing its new offering, and the market adjusted its expectations in response to the signal provided by the announcement.

Studies show considerable variation in the market's reaction to announcements of equity offerings. In cases where companies have clearly profitable growth opportunities and uses for additional capital, the market reaction is close to zero or, in rare instances, even positive. What's more, as a general rule, the larger an issuer's growth opportunities as a percentage of total value (as represented by its price to book ratio), the less negative the market reaction to the announcement of an equity offering.¹² But in cases where mature companies with limited (if any) profitable opportunities announce they are raising equity, the market reaction is likely to be severely negative. Such a reaction will reflect investors' suspicions that (1) managers think the firm's shares may be overvalued or, in the case of a regulatory mandate, that (2) managers will fail to put the new capital to profitable uses, and so reduce the bank's risk-adjusted return on capital and value. And in such cases, the decision to go ahead and raise equity will wipe out much of the value of existing shareholders.

result from information “asymmetries”—that is, the possibility for significant differences between management's and other insiders' view of a company's future earnings prospects, and what outside investors, and hence the market, are able to know.⁸ Such adverse selection costs are reflected, first and foremost, in the significant negative average market reactions to the announcement of equity offerings.⁹ To the extent such price drops force issuers to raise equity at prices that are well below fair value, such offerings end up “diluting” the value of existing shareholders. (For a more detailed explanation of such costs, see the box inset.)

In addition to these costs, high equity ratios can have undesirable effects on managerial efficiency—consequences that are well understood by investors, and almost certainly part of the explanation for their negative reaction to such

offerings under normal circumstances. In the case of banks, although moderate increases in equity requirements are likely to encourage better risk management, a dramatic increase could have the opposite effect. As Anil Kashyap, Raghuram Rajan, and Jeremy Stein argued in a 2008 paper, requiring banks to hold too much equity is likely to create significant agency problems by insulating bank managers from market pressures and thereby blunting the urgency of their push for efficiencies.¹⁰

The various expected consequences of different capital structure choices have the potential to make the cost of issuing equity considerably greater than the expected return earned by equity investors. And, indeed, recognizing the consequences of its financing choices for the overall value of a bank has been the unifying theme of the theory of optimal

8. Stewart C. Myers and Nicholas S. Majluf, “Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have,” *Journal of Financial Economics*, Vol. 13 (1984), pp. 187-221.

9. But such costs are also reflected in the much higher underwriting costs paid by companies to issue equity rather than debt, which reflect attempts by issuers to overcome asymmetric information problems during “road shows” in which their investment bankers meet with institutional investors to explain the issuers' motives for raising capital and attempt to allay any concerns they may have about the prospects of the issuer. See Charles W. Calomiris and Margarita Tsoutsoura, “Underwriting Costs of Seasoned Equity Offerings: Cross-Sectional Determinants and Technological Change, 1980-2008,” Co-

lumbia University Working Paper.

10. Anil Kashyap, Raghuram Rajan and Jeremy Stein, “Rethinking Capital Regulation,” in *Federal Reserve Bank of Kansas City Symposium on Maintaining Stability in a Changing Financial System*, 2008, pp. 431-471, Federal Reserve Bank of Kansas City, Kansas City.

11. By contrast, the average market reaction to new debt offerings, though also negative, is not significantly different from zero.

12. See K. Jung, Y. Kim, and R. M. Stulz, “Timing, Investment Opportunities, Managerial Discretion, and the Security Issue Decision,” *Journal of Financial Economics*, Vol. 42 (1996), pp. 159-185.

capital structure in banking. In other words, there is an optimal funding choice that maximizes bank value—and deviations from that optimum reduce value.¹³

For example, the deductibility of interest payments implies an optimal combination of debt and equity—one that balances the tax and control advantages of debt against the value preserved by holding more equity and thereby limiting the risk of financial distress that comes with excessive reliance on debt.¹⁴ Another class of signaling models, as discussed in the box inset, considers how equity issuance can have adverse effects on market perceptions of firms' investment opportunities, and lead banks to avoid equity offerings more than they otherwise would.¹⁵ In still another class of models, choosing the right combination of debt and equity can lead to efficient future transfers of the control of the bank to creditors under certain states of the world,¹⁶ which can also encourage diversification of a bank's lending portfolio and truthful revelation of investment outcomes by bankers, all of which reduce bank funding cost.¹⁷ In a fourth class of models, the right combination of equity and debt can provide bankers with incentives to manage risk more efficiently, which also reduces banks' overall funding costs.¹⁸ Finally, other models show that issuing very low-risk, short-term debt instruments in combination with sufficient equity can provide non-pecuniary liquidity benefits to the holders of the debt (especially depositors), which increases demand for the debt and allows bankers to save on funding costs.¹⁹

Effects on Lending

One implication of the various models of optimal capital structure is that an excessively high equity-to-asset ratio requirement will reduce banks' willingness to lend. When a bank is forced either by sudden equity losses or by increased

regulatory requirements to raise its ratio of equity to assets, it may decide to reduce lending rather than raise equity. A large number of studies have shown that, when banks need to raise their equity-to-asset ratios, they often choose to do so by cutting back on new loans, which avoids the need to raise new equity and the high costs associated with it. Other studies have documented cutbacks in bank lending in response to equity losses that result from loan losses.²⁰ Recent studies of the loan supply response to increases in required equity ratios in the United Kingdom report that a one percentage point increase in required equity ratios reduces the supply of lending to domestic nonfinancial borrowers by about seven percent (implying an elasticity of loan supply of roughly negative 0.7), and leads to a reduction in cross-border interbank lending of about five percent (implying an elasticity of roughly negative 0.5).^{21,22} All these estimates imply very large effects on loan supply when banks are required to increase their proportion of equity financing.

Moreover, it is worth emphasizing that the reduction in loan supply that comes from raising equity ratios is not just a one-time cost. A higher required equity ratio will mean that, as the banking system grows, a larger percentage of bank equity will have to be raised externally rather than through the retention of earnings. Because it is costly to raise outside equity (in large part because of the signaling and agency costs mentioned earlier), banks will face permanently higher funding costs, which in turn will permanently reduce the supply of lending relative to a world with lower equity ratio requirements.²³

Of course, this is not to say that all of the reduced lending that results from higher equity ratio requirements is socially undesirable; safety-net distortions almost certainly encourage banks to engage in excessive lending relative to the social optimum. In other words, raising capital and reducing

13. For a review of capital structure theory in banking, see Anjan Thakor, "Bank Capital and Financial Stability: An Economic Tradeoff or a Faustian Bargain," *Annual Review of Financial Economics*, forthcoming. For a recent example of a theory of optimal bank capital structure in which different banks choose different interior optima as their capital structures, see Hamid Mehran and Anjan Thakor, "Bank Capital and value in the Cross-Section", *Review of Financial Studies* 24-4, April 2011, 277-300.

14. Franco Modigliani and Merton Miller, "Corporate Income Taxes and the Cost of Capital: A Correction," *American Economic Review* 53, 1963, 495-538.

15. Stewart Myers and Nicholas Majluf, "Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have," *Journal of Financial Economics* 13, 1984, 187-221.

16. Charles W. Calomiris and Charles M. Kahn, "The Role of Demandable Debt in Structuring Optimal Banking Arrangements," *American Economic Review* 81, 1991, 497-513.

17. Douglas Diamond, "Financial Intermediation and Delegated Monitoring," *Review of Economic Studies* 51, 1984, 393-414. See also Ram Ramakrishnan and Anjan Thakor, "Information reliability and a Theory of Financial intermediation," *Review of Economic Studies* 51-3, 1984, 415-432.

18. Bengt Holmstrom and Jean Tirole, "Financial Intermediation, Loanable Funds, and the Real Sector," *Quarterly Journal of Economics* 112, 1997, 663-691; Charles W. Calomiris, Florian Heider, and Marie Hoerova, "A Theory of Bank Liquidity Requirements," Working Paper, June 2013.

19. Gary Gorton and George Pennacchi, "Financial Intermediaries and Liquidity Creation," *Journal of Finance* 45, 1990, 49-71; Harry DeAngelo and Rene Stulz, "Why High Leverage is Optimal for Banks," NBER Working Paper No. 19139, June 2013.

20. Joe Peek and Eric Rosengren, "The International Transmission of Financial Shocks: The Case of Japan," *American Economic Review* 87, 1997, 496-505; Charles W. Calomiris and Berry Wilson, "Bank Capital and Portfolio Management: The 1930s

'Capital Crunch' and Scramble to Shed Risk," *Journal of Business*, July 2004: 421-56.; Charles W. Calomiris and Joseph R. Mason, "Consequences of Bank Distress During the Great Depression," *American Economic Review* 93, 2003, 939-947.

21. Shekhar Aiyar, Charles W. Calomiris, and Tomasz Wieladek, "Does Macro-pru Leak? Evidence from a UK Policy Experiment," *Journal of Money, Credit and Banking*, forthcoming; Shekhar Aiyar, Charles W. Calomiris, John Hooley, Yevgeniya Korniyenko and Tomasz Wieladek, "The International Transmission of Bank Capital Requirements: Evidence from the UK," *Journal of Financial Economics*, forthcoming.

22. Another study that examines the effect of "loan provisioning" requirements in Spain—which amount to a front loading of required equity rather than a full-fledged, permanent increase in the equity requirement—reports finding an average elasticity of loan supply with respect to provisioning requirements of roughly negative 0.3. See Gabriel Jiménez, Steven Ongena, José-Luis Peydró, and Jesús Saurina, "Macroprudential Policy, Countercyclical Bank Capital Buffers and Credit Supply: Evidence from the Spanish Dynamic Provisioning Experiments," 2012, European Banking Center Discussion Paper No. 2012-011.

23. A simple example illustrates why this is so. Assume that a banking system with initial size of 100 grows at the rate of 3% per year. Assume that banks earn 1.2% of assets per year in interest and fees net of non-interest expenses, and pay 1% to insured depositors. If banks were required to maintain a 10% equity ratio, after their first year of operation they would be able to pay interest of 90 cents and retain 30 cents to meet the 3% growth in required equity. Abstracting from any future loan losses, the banks in this system would never have to go to the public market to raise new equity. If this same banking system were required to meet a 25% equity requirement, it would pay 75 cents in interest in the first year, and not have enough in retained earnings (45 cents) to grow its equity in the first year by the required 75 cents (3% of 25). Thus, in the system with a 25% equity requirement banks need to raise external equity of 30 cents in the first year, and higher amounts in every following year.

lending may lead to net benefits (especially when the existing equity ratio is very low). Nevertheless, the reduced supply of lending is still likely to have net social costs, and to act as a drag on economic growth.

Admati and Hellwig's discussion of bank funding costs and capital structure recognize only two benefits of debt finance: the tax deductibility of interest, and the safety-net distortions stemming from government guarantees that effectively reduce banks' costs of subordinated debt as well as deposits. They argue that eliminating these advantages of debt finance is desirable. But even if these were the only factors favoring debt finance, and even if one could argue from a social cost-benefit analysis that it would be desirable to eliminate both safety-net subsidies and the tax deductibility of interest, it does not follow that doing so is costless. The cost of the resulting credit decline produced by higher equity ratio requirements would be considerable, and must be included in any cost-benefit analysis of bank equity requirement policy.

Furthermore, there is empirical evidence in support of some of the non-tax- and safety-net-related explanations for why forcing banks to raise equity to asset ratios would lead to a contraction in lending. In particular, consider the signaling cost of equity issues. If regulators require banks to increase their equity ratios, investors would reasonably infer that the banks that are willing to issue equity to increase their equity ratios will tend to be those whose prospects are worse than what the market had believed them to be—and that revised belief would be reflected in a reduced bank stock price.²⁴

To avoid the dilution from issuing equity at depressed prices, many banks might choose not to issue equity, and instead attempt to achieve the higher equity ratio mandated by regulators by cutting their lending. Evidence from several studies indicates that such concerns—which have nothing to do with the tax-deductibility of interest payments or safety-net subsidies—have often led banks historically to forgo profitable lending opportunities in order to avoid costly equity offerings.

Third, in support of their view that reducing reliance on debt has no social cost, the authors claim that the use of uninsured short-term debt financing by banks was not effective as a source of market discipline in the recent crisis. They

view this as self-evident because reliance on short-term debt did not prevent the crisis.

But this is not a very convincing test of beneficial market discipline. After all, even in the recent crisis, had it not been for the contractions of uninsured short-term bank debts in 2007-2009—that is, the dramatic declines in interbank loans, asset-backed commercial paper, and repos—regulators would not have acted as quickly to force banks to shore up their positions. Market discipline is not just about crisis prevention; it is also about crisis resolution. Moreover, there is substantial evidence from numerous academic studies of many countries that a reliance on uninsured short-term debt enhances risk management and reduces the probability of banking crises.²⁵

The Case for More Debate—and More Careful Reading of the Evidence

On the basis of three main arguments, then, Admati and Hellwig propose a huge increase in required bank equity ratios (to roughly a quarter of total assets, which is about five times larger than the amount of the equity capital requirements currently envisioned by regulators). By asserting that (1) mandated increases in book capital ratios would be an effective means for raising actual bank equity ratios, (2) the costs of raising equity for banks are largely reflected in and limited to investors' expected return on equity, and (3) the benefits of debt for banks amount to nothing more than (the anti-social activities of) minimizing taxes and exploiting government guarantees, the authors dismiss all major objections to their proposed dramatic increase in minimum regulatory book equity capital requirements for banks. The simple act of dramatically raising book equity ratios is claimed to solve the social problems of banking crises with, in their view, essentially zero social costs. Indeed, such a solution is presented by the authors as a proverbial "no-brainer"; all that remains is to muster the political will to overcome the obfuscations of the too-big-to-fail, subsidy-seeking big bankers (whose addiction to low equity ratios has enabled them to reap ever larger subsidies from taxpayers' protections), and our problems can be solved without any further discussion.

But, as I have tried to show, the view that there are no significant costs to increasing equity requirements for banks

24. It is true that the existence of a regulatory mandate to raise equity (not just the equity ratio) should substantially mitigate the signaling effects of a higher equity requirement, but in theory it would not eliminate the signaling problem, particularly if the public inferred that the new policy of requiring higher nominal equity, not just a higher equity ratio, reflected regulators' concerns about unobservable weakness in banks. It is also true that, under some circumstances—particularly where the circumstances of banks facing higher equity ratio requirements are known to the market—signaling costs from raising equity in response to a higher equity ratio requirement may be substantially mitigated, too. A study of bank equity issues during the 1980s found that equity issues in response to a regulatory requirement resulted in slightly less of a negative reaction in market prices. (See Table 6 of Marcia Cornett and Hassan Tehranian, "An Examination of Voluntary Versus Involuntary Security Issuances by Commercial Banks," *Journal of Financial Economics* 35, 1994, 99-122.) While this study suggests that signaling effects can be smaller when issues are made in reaction to regulatory action, the authors also find that this effect only holds for sufficiently small equity offerings. Also, it is unclear to what extent the mitigation of signaling effects would hold for banks today that would be

issuing equity in response to higher regulatory requirements. U.S. banks in the 1980s were not complex global, universal banks. Their prospects likely were more observable to market participants.

25. The literature is vast. A sampling includes: Maria Soledad Martinez-Peria and Sergio Schmukler, "Do Depositors Punish Bank for Bad Behavior?: Market Discipline, Deposit Insurance, and Banking Crises," *Journal of Finance* 56, 2001, 1029-1052; Charles W. Calomiris and Andrew Powell, "Can Emerging Market Bank Regulators Establish Creditor Discipline? The Case of Argentina, 1992-1999," in F.S. Mishkin, ed., *Prudential Supervision: What Works and What Doesn't*, University of Chicago Press, 2001, 147-191; Asli Demirguc-Kunt and Enrica Detragiache, "Does Deposit Insurance Increase Banking System Stability? An Empirical Investigation" *Journal of Monetary Economics* 49, 2002, 1373-1406; James Barth, Gerard Caprio, and Ross Levine, *Rethinking Bank Regulation: Till Angels Govern*, Cambridge University Press, 2006; Asli Demirguc-Kunt, A. Bertray and Harry Huizinga, "Do We Need Big Banks? Evidence on Performance, Strategy and Market Discipline," forthcoming, *Journal of Financial Intermediation*.

fails to take account of a large body of work in corporate finance and banking that attests to such costs. On the other hand, I would be the first to concede that the existence of such costs does not automatically rule out the case for a substantial increase in equity requirements. Indeed, most economists (including me) would be willing to accept some reduction in the supply of credit in return for the benefits of achieving greater financial stability, particularly given the current low equity ratios that banks maintain.

What is the right equity ratio to target, and what is the basis for the 25% equity-to-asset ratio proposed by Admati and Hellwig? If they really believed their argument that raising the equity ratio can never have a cost, then why not advocate a 100% equity ratio?²⁶

The main basis for Admati and Hellwig's recommendation of a 25% ratio is their view that historical experience shows that, prior to safety net protection, banks maintained that level of equity ratios. I agree that historical evidence is quite relevant here, and that the pre-safety net capital structure choices of banks *relative to the risk of their assets* can, with appropriate caveats and adjustments, be used to help gauge a socially desirable required equity ratio. But Admati and Hellwig are too glib when making these historical comparisons, and they fail to note some important differences between banks then and now.

First of all, bank equity ratios, both in the U.S. and abroad, have varied markedly in the past, and were not generally as high as Admati and Hellwig claim they were. Some of the most stable banking systems—Canada's, for example—have had relatively low equity ratios. The low equity ratios of Canadian nationwide branching banks reflected their greater portfolio diversification and other risk-lowering attributes in contrast to the much riskier single-office (unit) banks in the United States.²⁷ The equity ratios of U.S. banks have varied dramatically over time, and in ways that have clearly reflected changes in their asset risk. The decline in the market equity ratios of New York banks during the 1930s—from about 30% of assets to about 15%—reflected the substantial reduction in the asset risk of such banks that was accomplished through the very large increase in their holdings of cash assets.²⁸

In sum, equity ratios *relative to asset risk* are the key attribute of interest in prudential regulation, not equity ratios per se. Using simple historical equity ratios from some past example as a benchmark, without taking risk into account,

can significantly overstate or understate the extent to which current equity ratios of large, global banks should be increased.

A Better Solution: 10% Equity, with Cash and Cocos

Having said that, I too support substantially raising book equity ratio requirements, albeit by considerably less than proposed by Admati and Hellwig. But I also believe that such an increase in requirements will be effective only if it occurs along with several other changes in prudential regulation that would ensure that banks maintain adequate equity relative to risk.²⁹ In my view, raising equity, although costly, is worth the costs because the benefits of a stable banking system exceed the costs of reduced loan supply that would attend the increase in required equity ratios. My approach to reform would raise required equity to roughly 10% of assets, and would also ensure that banks maintain that ratio in *actual* equity (not just book equity). My approach would also involve providing banks with strong incentives to limit their risks so that a 10% equity ratio would be adequate.

What difference does it make whether one adopts Admati and Hellwig's view that raising banks' book equity ratios to 25% of assets would solve the problem of banking crises with little or no social cost, or my view that it is likely to be socially beneficial to raise banks' true equity ratios to 10% of assets, despite the costs of so doing?

There are three key differences between these two approaches to imposing higher equity ratios. First, recognizing that there are costs—especially contractions of credit supply—associated with raising equity ratios to ensure banking system stability focuses attention on the costs as well as the benefits of higher equity ratios, which should help to avoid the counterproductive effects of draconian increases. Second, by explicitly recognizing in advance that there are costs to raising bank equity ratios, proponents of an increase will not lose credibility when their mistaken theory of costless equity requirements is contradicted by the facts of a credit contraction. Third, the recognition of the difference between book equity and real economic equity has important policy implications with respect to the additional reforms that must be undertaken if higher equity ratios are to be an effective reform. Because simply mandating an increase in book equity requirements does not ensure a commensurate increase in true equity requirements, many scholars, including myself, have argued that higher equity ratio requirements need to be

26. Which is what Professor Laurence Kotlikoff does in his book, *Jimmy Stewart Is Dead: Ending the World's Ongoing Financial Plague with Limited Purpose Banking*, Wiley, 2011. Professor Kotlikoff is right to argue that outlawing debt by banks would make default on debt impossible. At the same time it would almost certainly substantially reduce the services that banks would choose to provide to the economy, as indicated by the various theories of optimal capital structure and the evidence summarized above. The adverse consequences of a 100% equity financing requirement, or even a much lower than 100% equity ratio requirement, might result in substantial exit from banks facing that regulatory requirement.

27. Charles W. Calomiris, *U.S. Bank Deregulation in Historical Perspective*, Cambridge University Press, 2006, Chapter 1; Charles W. Calomiris and Stephen H. Haber, *Fragile By Design: The Political Origins of Banking Panics and Scarce Credit*, Princeton University Press, 2014, Chapter 9.

28. Charles W. Calomiris and Berry Wilson, "Bank Capital and Portfolio Management: The 1930s 'Capital Crunch' and Scramble to Shed Risk," *Journal of Business*, July 2004: 421-56.

29. See Charles W. Calomiris, "An Incentive-Robust Programme for Financial Reform," *The Manchester School* 79, 2011, 39-72; Charles W. Calomiris, "How To Regulate Bank Capital," *National Affairs*, Winter 2012, 41-57.

accompanied by several other measures—in particular, by a market-value-triggered convertible contingent debt (CoCo) requirement, which would help to ensure that *actual* equity ratios of banks remain high. Although it is beyond our scope here to explain the logic behind this proposed requirement, the point of requiring a substantial amount of these CoCos is to create strong incentives for banks to maintain true equity, not just book equity, and to limit their risks.³⁰

Finally, Admati and Hellwig's case for breaking up global universal banks is based on a misreading of the empirical evidence on bank scale. The studies on which they base their conclusion are simply not useful for evaluating the scale advantages of today's global universal banks because the data used in those studies come mainly from smaller, traditional banks with very narrow ranges of products, services, and locations. Using those studies to assess the efficiency of global universal banks amounts to an "apples-and-oranges" confusion of two very different types of banking enterprises. What those studies really demonstrate is that there is no need to become very large if a bank plans to pursue only traditional deposit taking and lending functions. On the other hand, it is physically impossible to operate a global universal bank, with multiple product lines and locations in scores of countries, with an asset base of under \$100 billion, and there is substantial evidence that global universal banks possess unique abilities and enjoy substantial scale economies in their operations.³¹

By virtue of their size and geographic reach, global universal banks play a crucial role as market makers in global markets, including the sovereign debt and foreign exchange markets, which explains why so many emerging market central bankers have complained about regulatory proposals that might jeopardize their ability to play that role.³² Their unique combination of highly skilled human capital and involvement in virtually all financial instruments and countries allows them to form valuable relationships with global clients. These banks help to devise corporate

finance strategies and to execute complex arrangements that manage payments, hedging, acquisitions, and securities offerings around the globe. Global universal banks also play an important role in emerging market countries by providing an alternative arms-length source of financing in countries that have historically been dominated by relatively inefficient domestic banks that channel credit to politically favored borrowers.

Closing Thoughts

In conclusion, despite my criticisms, I would repeat that *The Bankers' New Clothes* is an important book—one that identifies correctly the central problem of government protection of banks. That problem must be confronted if there is any hope of stabilizing the banking systems of the world. And I agree with Admati and Hellwig that a substantial increase in banks' required equity ratios must be part of any solution to that problem, as do virtually all scholars I know who are working in the field of banking.

Nevertheless, I emphasize that the criticisms I raise about the analysis and policy recommendations in the book are not technical minutiae. Regulators or politicians who follow the authors' policy advice run the risk of going too far and too fast in a single-minded focus on very high book equity requirements or on breaking up global banks, while failing to consider the costs of those actions and the potential benefits of alternative actions. Policy makers might find themselves as naked as the emperor in Andersen's story when those prescriptions prove to be costly and inadequate solutions for the challenging problem of reducing banking instability.

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30. See Charles W. Calomiris and Richard J. Herring, "How to Design a Contingent Convertible Debt Requirement that Solves the Too-Big-To-Fail Problem," *Journal of Applied Corporate Finance* 25, Spring 2013, 21-44.

31. See Joseph P. Hughes and Loretta Mester, "Who Said Large Banks Don't Experience Scale Economies? Evidence from a Risk-Return-Driven Cost Function," Federal Reserve Bank of Philadelphia Working Paper 13-13, April 2013; David C. Wheelock and Paul Wilson, "Do Large Banks have Lower Costs? New Estimates of Returns to Scale for U.S. Banks," *Journal of Money, Credit, and Banking*, February 2012, 44, pp. 171-99;

Ronald Anderson and Karin Joeveer, "Bankers and Bank Investors: Reconsidering the Economies of Scale in Banking," FMG DP712 and CEPR DP9146, September 2012.

32. See, for example, the February 14, 2012 letter from Agustin Carstens, Governor of the Bank of Mexico, to Chairman Ben Bernanke: http://www.federalreserve.gov/SE-CRS/2012/March/20120309/R-1432/R-1432_030512_105861_508765807767_1.pdf See also, Arnoud Boot and Lev Ratnovski, "Banking and Trading," Amsterdam Center for Law and Economics Working Paper No. 2012-08.

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