

## DOES ASYMMETRIC INFORMATION JUSTIFY BANK CAPITAL ADEQUACY REGULATION?

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One of the more important developments in 20th-century central banking is the rise of capital adequacy regulation—the imposition by regulators of minimum capital standards on financial institutions. Most bank regulators see capital adequacy regulation as a means of strengthening the safety and soundness of the banking system, and many see it as a useful—perhaps even necessary—response to the moral hazard problems created by deposit insurance and the existence of a lender of last resort to assist banks in difficulties. If deposit insurance and a lender of last resort encourage banks to take excessive risks and run down their capital, then forcing banks to strengthen their capital positions is a fairly obvious regulatory response. As a result, the regulation of bank capital adequacy has come to be one of the most important concerns of any modern central bank. Indeed, much of the case for modern central banking now depends on the justification (or otherwise) for capital adequacy regulation.

Yet arguments for capital adequacy regulation are relatively sparse and not particularly convincing.<sup>1</sup> Perhaps the most important argument

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<sup>1</sup>Traditionally, there are three main arguments for capital adequacy regulation. The first is that capital adequacy regulation is needed for prudential reasons, but most advocates of this position take the argument no further to explain why the prudential “need” is there in the first place. The second argument is one already alluded to in the text, namely, that capital adequacy regulation is needed to counter moral hazard problems created by the regulators themselves (see, e.g., Benston and Kaufman 1996). However, this argument—whatever its merits—gives us no reason to prefer capital adequacy regulation to *laissez faire*. The final argument, more popular in Europe than in the United States, is that capital adequacy regulation is needed to protect small depositors. This argument boils down to pure paternalism but is also open to other objections (e.g., the objection that protecting depositors undermines the market discipline that would otherwise force banks to be strong). In any case, even if one were sympathetic to paternalistic considerations, it is still unclear why the “small” depositor should benefit at the expense of the taxpayer, since the typical taxpayer is just as “small” as the typical depositor.

is one recently put forward by David Miles (1995). He suggested that an information asymmetry between bank managers and depositors could produce a market failure that provides a rationale for government (or central bank) intervention in the financial system. This intervention would take the form of capital adequacy regulation to force banks to maintain a stronger capital position than they otherwise would. The essence of the argument is that, if depositors cannot assess the financial soundness of individual banks, then banks will maintain lower than optimal capital ratios, where the optimal capital ratios are those banks would have observed if depositors could have assessed their financial positions properly. Intuitively, if depositors can assess a bank's capital strength, a bank will maintain a relatively strong capital position because greater capital induces depositors to accept lower interest rates on their deposits. However, if depositors cannot assess a bank's capital strength, then a bank can no longer induce depositors to accept lower interest rates in return for higher capital, and the bank's privately optimal capital ratio is lower than is socially optimal. Information asymmetry therefore leads to a bank capital adequacy problem. Miles' solution is for a regulator to assess the level of capital the bank would have maintained in the absence of the information asymmetry, and then force it to maintain this level of capital.

Miles' work is significant because it appears to be the first rigorous attempt to justify capital adequacy regulation by reference to the (alleged) failure of the free market. By contrast, standard justifications are either incomplete (such as the usual prudential or paternalistic arguments for capital adequacy regulation), or else argue that capital adequacy regulation is required to counter the effects of other given interventions (such as deposit insurance) (see Benston and Kaufman 1996). This latter argument thus defends capital adequacy regulation given the presence of other interventions, but cannot defend it in their absence (i.e., from first principles, by reference to a failure of *laissez-faire*). Miles therefore attempts to fill an important gap in the central banker's intellectual armory, and in so doing he throws down the gauntlet to free bankers who have argued that capital adequacy regulation is unnecessary under *laissez faire*.

My purpose here is to pick up the gauntlet and defend the free-banking position. In so doing, I wish to make three main points:<sup>2</sup>

<sup>2</sup>It is important to work within standard neoclassical methodology. Miles sets out to provide a rigorous theoretical justification for capital adequacy regulation, which, in neoclassical terms, requires him to set out a formal model, demonstrate a market failure in the context of this model, and show how capital adequacy regulation corrects for this market failure in the context of this same model. If he is judged to have succeeded, then he can reasonably claim to have established a firm neoclassical justification for capital adequacy regulation. If I am to challenge this claim on its own grounds, I must therefore work within the same

(1) Miles fails to provide a convincing rationale for the distinctive regulation of banks: he fails to explain why banks (or financial institutions more generally) should be regulated, but nonfinancial firms should not be. This is a problem for Miles, since he readily concedes that nonfinancial firms should not be subject to capital adequacy regulation. If nonfinancial firms should not be subject to such regulation, why should financial firms be treated any differently? (2) The premise of his argument—that depositors cannot assess banks' capital positions—is both implausible and empirically falsified. And (3), Miles' solution (of capital adequacy regulation) is inconsistent with this premise, even if the premise is granted. Put another way, there are no plausible circumstances in which the free market “fails” and Miles' capital adequacy rule improves upon the free-market outcome. Either way, regulation cannot improve upon *laissez faire*.

## The Distinctive Regulation of Banks

Miles (1995: 1366) readily acknowledges the need to justify why there should be “restrictions on the lending and financing activities of deposit taking financial intermediaries when there are no limits on the balance sheet structure of car companies, hotel chains or computer manufacturers.” So the question naturally arises: What is “special” about banks that might justify regulating their capital adequacy, given that we agree that nonfinancial firms should not be subject to such regulation?

Yet, having accepted the need to base a theory of bank regulation on factors that are specific to banks, Miles then has very little to say on what those factors might be. His formal analysis is too general, and his model has nothing in it to make his firm specifically a bank rather than some more general type of firm. There is little on the liability side of his firm's balance sheet that makes his firm a bank as such, and simply labelling the firm's debt as “deposits” clearly does not restrict the model to apply to banks alone. Nor does the Miles firm have any distinctive banklike features on the asset side of its balance sheet. While Miles' discussion of his firm's assets is couched in language suggestive of a bank, he actually identifies no specific factors that would make it difficult to interpret his firm more generally. Most firms have many imperfectly marketable assets, for example, so his assumption that the firm's assets are imperfectly marketable is still not enough to narrow it down to a bank. There is therefore

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neoclassical methodological framework as he does.

nothing here that applies to banks that does not also apply to many nonfinancial firms as well.

In fact, the only explicit difference between banks and other firms identified by Miles (1995: 1376, n. 2) is that the average size of bank debt contracts (relative to the balance sheet) is small. Even so, he still does not show how this factor makes banks sufficiently different from other firms to motivate bank-specific regulation. Instead, he merely suggests that this lower relative size gives bank debtholders (i.e., depositors) less incentive to overcome information problems than debtholders at other firms. Yet problems of monitoring incentives are not unique to banking, but apply more generally (e.g., with large public firms) whenever there is a large number of investors each of whom bears the cost of their monitoring activity, but recovers only a fraction of the gain it creates (see Dowd 1996: 83–85).

These monitoring problems also have natural market solutions. If we start off with a large number of small investors, each of whom faces the monitoring disincentives just described, there is presumably some gain from concentrating the monitoring function by having one or more large debtholders (or other investors) take a more junior claim than the small debtholders (or investors). Their junior status and the need to protect their investments give the big investors an incentive to monitor, and their knowledge that the big investors face this incentive alleviates the small depositors' monitoring problem.

Miles thus fails to explain what is special about banks that justifies bank-specific regulation. The justification for capital adequacy regulation that he puts forward must therefore apply to many nonfinancial firms as well as banks—or not at all.

## Can Depositors Assess Individual Banks' Capital Strength?

So does it apply or not? I believe not. As noted already, a crucial link in Miles' analysis is his claim that depositors cannot assess the capital strength of individual banks. This link is crucial because it is the inability of depositors to assess the capital strength of any individual bank that leads banks to maintain less capital than they otherwise would, and thereby gives rise to a "need" for capital regulation. Miles (1995: 1375) accepts that this assumption might appear "unusual," but defends it on two principal grounds. First, he suggests that "in practice it is not easy" for depositors to evaluate bank capital because doing so requires valuation of the banks' assets.<sup>3</sup> And, second, he

<sup>3</sup>He also suggests that evaluation of bank strength is made difficult because it requires information about bank deposits, and obtaining this information is difficult because it "would require depositors to try to work out the flows of funds in and out of the bank since the last published report" (Miles 1995: 1375). However, there is in fact no need for depositors

suggests that “depositors cannot depend on stock market valuations of a bank to assess the value of shareholders’ capital (or equity) backing their deposits; the stock market value may be increased by gearing up and stock market participants also face the problem of valuing the underlying assets (loans) of the bank” (Miles 1995: 1375–76).

Yet the depositor monitoring problem is not as difficult as Miles makes out, and depositors can and do manage to assess the capital strengths of individual banks.<sup>4</sup> To some extent, this problem is solved in practice by depositors relying on shareholders to value bank capital, and depositors can reasonably assume that their funds are safe if the shareholders give the bank a sufficiently high capital value. The point is that shareholders are residual claimants who can only be paid after all the depositors have been paid in full, should the bank default on its debts. Shareholders as a group therefore have strong incentives to value the bank carefully, and if they believe that the bank has a high positive net worth (i.e., is well capitalized), then depositors can reasonably assume that their own funds (which have prior claim on bank assets) must be fairly safe. The typical depositor’s monitoring problem is thus considerably simplified; and, in practice, it frequently suffices for him to check that his bank maintains a fairly high capital valuation and watch for signs of trouble in the media. In addition, bank managers also have a strong incentive to make monitoring easier for depositors (and shareholders). The bank must maintain their confidence if it is to remain in business, and one of the ways in which it maintains confidence is by making it relatively easy for depositors to satisfy themselves that their bank is sound. Thus, if a bank’s management believed that depositors were having undue difficulty monitoring them, they might have the bank rated by an independent agency whose report would be disseminated in the media. The message coming through to individual depositors would then be fairly simple: either the bank is reasonably safe to leave your money in, or it is not. The depositor’s monitoring problem cannot get much easier than that.<sup>5</sup>

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to “work out” a bank’s flow of funds. All that is required is for the bank to publish (every so often) the total (face) value of its outstanding deposits (and any other relevant information). All that depositors should then need to do to be confident of the safety of their deposits is periodically check that their bank does not face a run.

<sup>4</sup>The reasons Miles gives for depositors being unable to assess the capital strengths of individual banks would also apply (if they are valid) to many nonfinancial firms. Many other firms have imperfectly marketable assets whose values may be problematic. The Miles position would therefore appear to be falsified by the abundant evidence that the shareholders of other (i.e., nonbank) firms do in fact manage to assess their firms’ capital strengths despite the (real) valuation difficulties Miles points to.

<sup>5</sup>There still remain Miles’ claims that shareholders face a valuation problem, and that banks might increase their capital values by gearing up. The response to the first claim is that shareholders do indeed face valuation problems, but they choose to take on such problems

The claim that depositors cannot assess individual banks' balance sheets is also empirically falsified, at least under historical circumstances where the absence of deposit insurance or other forms of bailout gave depositors an incentive to be careful where they put their deposits. There is much evidence that depositors did discriminate between banks on the basis of their relative capital strengths. To give but one example, George Kaufman (1987: 15–16) observed:

There is . . . evidence that depositors and noteholders in the United States cared about the financial condition of their banks and carefully scrutinized bank balance sheets [in the period before federal deposit insurance was introduced]. Arthur Rolnick and his colleagues at the Federal Reserve Bank of Minneapolis have shown that this clearly happened before the Civil War. Thomas Huertas and his colleagues at Citicorp have demonstrated the importance of [individual] bank capital to depositors by noting that Citibank in its earlier days prospered in periods of general financial distress by maintaining higher than average capital ratios and providing depositors with a relatively safe haven. Lastly, an analysis of balance sheets suggests that banks took . . . less interest rate risk before the establishment of the FDIC.

The Miles position is also refuted by the empirical evidence on the bank-run contagion issue. If Miles is right and depositors cannot distinguish between strong and weak banks, then a run on one bank should lead to runs on all the others as well (i.e., we should observe universal contagion). If one bank is in difficulty, and I cannot tell the difference between that bank and mine, then mine must be in difficulty too, so I had better get my funds out. Yet the evidence overwhelmingly indicates that bank runs do not spread like wildfire in the way that the Miles hypothesis predicts (see Benston et al. 1986: chap. 2). Instead, there occurs a “flight to quality,” with depositors withdrawing funds from weak institutions for redeposit in stronger ones. Flights to quality have occurred in every major historical banking crisis, and the fact that they have done so shows that depositors have been able to tell the difference between strong and weak banks and thus demonstrates the very point that Miles denies.

## Can Regulation Improve on the Free Market Outcome?

Finally, there is the issue of whether regulation can improve on the *laissez-faire* outcome. Can a regulator formulate a feasible rule

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when they buy shares in the first place. Valuing shares is by no means easy, but shareholders effectively solve it when they decide for themselves the prices at which they are willing to buy and sell their shares. My response to the second point is that there are strong pressures on shareholders to act in ways that maximize the value of shareholder equity and therefore rule out the possibility that firms can increase shareholder value any further, by gearing up or by any other means. This is the case even in Miles' own model. If shareholder wealth

to make banks hold socially optimal levels of capital, assuming (but only for the sake of argument) that depositors cannot assess the capital strength of individual banks? I would suggest that they cannot. The Miles argument runs into a dilemma. If the information exists (or could exist) for the regulator to formulate a feasible capital adequacy rule, that same information could also be used to convey credible signals to depositors about the capital strength of their banks, and thereby enable them to distinguish one bank's capital strength from another's. But if that information cannot be collected, then the regulator cannot collect it either, and in that case Miles' capital adequacy regulation is not feasible.

To put this point another way, suppose we start by assuming that depositors cannot assess the capital strength of individual banks, but we also follow Miles and assume that a regulator can collect information to make capital adequacy regulation feasible. However, if the regulator can collect the information to make capital adequacy regulation feasible, a private body (e.g., a credit rating agency) should also be able to collect it and publish it in a form that depositors can readily understand.<sup>6</sup> It is also worth emphasizing that the banks would have an incentive to cooperate with the rating agencies (e.g., by providing information and, in many cases, by purchasing the reports to be distributed free to the public) for the same reason that most firms generally cooperate with rating agencies (i.e., "good" firms cooperate because they desire to distinguish themselves from "bad" firms, and the "bad" firms generally have to go along with the quality rating exercise if they are not to immediately reveal their true quality). The rating agencies' reports would also be credible because their long-run livelihoods would (and indeed, do) depend on their credibility.<sup>7</sup> It follows that to the extent that the Miles formula gives the regulator

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is not already maximized in neoclassical equilibrium, it should be.

<sup>6</sup>To illustrate: a rating agency might collect this information and publish reports giving each bank's actual capital relative to its adequate capital (e.g., as given by the Miles formula). It might also supplement this information with a commentary pointing out any implications. It might say, for instance, that bank *x*'s capital is 20 percent below its adequate level, which makes its deposits unsafe to hold. Depositors would then get a fairly clear signal on which they could act.

<sup>7</sup>As Cantor and Packer (1994: 4) state in their recent study of U. S. rating agencies, a rating agency's overriding objective must be

to maintain a reputation for high-quality, accurate ratings. If investors were to lose confidence in an agency's ratings, issuers would no longer believe they could lower their funding costs by obtaining its ratings. As one industry observer has put it, "every time a rating is assigned, the agency's name, integrity, and credibility are on the line and subject to inspection by the whole investment community." . . . Over the years, the discipline provided by reputational considerations appears to have been effective, with no major scandals in the ratings industry of which we are aware.

sufficient information to regulate banks' capital adequacy, it should also lead to depositors obtaining sufficient information to assess banks' capital adequacy themselves, without the need for regulation. On the other hand, if the information cannot be collected, then no one can use it, including the regulator, and the regulation is not feasible.<sup>8</sup> The regulation is therefore either feasible but unnecessary, or just not feasible.

## Conclusion

Bank regulators are deluding themselves if they think that there is any compelling economic justification for capital adequacy regulation. No one has yet provided a convincing case for it on market failure grounds, and the standard prudential and paternalistic arguments usually cited to defend such regulation do not meet even basic standards of economic analysis. No one has yet shown that there is anything wrong with *laissez-faire* banking that capital adequacy regulation would put right.

Perhaps the best argument for capital adequacy regulation—and even that is highly problematic<sup>9</sup>—is that it might help to counter the moral hazard created by the regulatory authorities themselves. But

<sup>8</sup>Miles' defense is not too convincing: (1) He doubts that banks have the "right incentives" to provide adequate information, and claims that, given his information asymmetry, banks would have an incentive to play up the size of their capital positions. (2) He acknowledges the possible role of private rating agencies, but instead of seeing it as restoring the optimality of *laissez faire*, he dismisses it on the grounds that it "is much harder to show" how such an equilibrium becomes established. (3) Finally, he suggests that regulation "cuts through" these problems of "establishing the right incentive for banks to reveal their true default risks by using the legal system" (Miles 1995: 1376–77).

In response: (1) Banks do have strong incentives to signal their individual capital strengths, as explained in the text, and the fact that banks have an incentive to exaggerate their strength if the public cannot tell them apart proves nothing. The relevant issue is not whether banks have an incentive to play up their capital positions, given that the public cannot tell them apart. The real issue is whether an individual bank would wish to signal its true capital position, if it had the means to do so. (2) Miles still fails to explain why a rating agency could not (or would not) provide the information that enables depositors to assess their banks, assuming that they could not otherwise assess them and that the information is technologically attainable as Miles assumes. (3) The incentives to provide information already exist in the free market, since good banks will always want to signal their quality. I therefore deny that regulation "cuts through" any problems, in a way that could not otherwise be done. In any case, regulation creates a whole new set of problems, since the regulatory process is not costless and we ought not to ignore the regulators' own interests or their record.

<sup>9</sup>It is highly questionable whether capital adequacy regulation even does this. Capital adequacy regulation creates a moral hazard of its own, and it is also doubtful whether the particular regulatory system actually used (most particularly, the "building block" system approved by the Basle regulatory framework) does much to improve banks' capital positions (see Dowd 1997: 99–105).

this is an argument based on government failure rather than market failure, and it is surely better for regulators to stop creating moral hazard problems in the first place. Regulators should get their own house in order. Government failure does not constitute a good argument for government intervention.

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