BANK REGULATION WHEN ‘BANKS’ AND ‘BANKING’ ARE NOT THE SAME

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I. INTRODUCTION

In almost all developed countries, competition for banks has come from the opening of debt markets and markets for mutual funds and also from entry by foreign banks and non-banks. A few examples will suffice to recall this well-known scenario to mind. In Japan, in 1975, 90 per cent of the corporate debt of public companies was bank debt, but by 1992 it was less than 50 per cent (Hoshi et al., 1993). In the case of Germany, the Deutsche Bundesbank (1987) reported that: ‘In the last few years, financing through securities has increasingly taken the place of conventional bank credit.’ Later, the Bundesbank (1992) reported that over the period 1978–89, the stock of liabilities of large corporations to banks decreased from 13.7 to 7.6 as a percentage of total assets. In the US the bank share of short-term (non-financial) corporate debt fell from about 70 per cent in the late 1970s to less than 60 per cent by the late 1980s. Consistent with direct competition from the junk-bond market, large US banks’ stocks showed an abnormally positive return upon announcement of the demise of Drexel Burnham Lambert (see Barveniste et al., 1993). In addition to competition from debt markets, foreign banks have become important in many countries’ domestic banking markets. For example, foreign banks held 16.8 per cent of US banking assets in 1982, but by 1989 this had reached 26 per cent. Japan’s percentage share of US domestic banking assets was 15 per cent in 1989, up from 6.4 per cent in 1982. There is also competition from non-banks. Non-bank subsidiaries of General Electric, Westinghouse, IBM, and Weyerhaeuser, together with Heller and Transamerica, accounted for $58 billion of

1 Thanks to Richard Rosen and Colin Mayer for comments. I would also like to thank the Bank of England for support during my tenure as a Houblon–Norman Fellow.
commercial loans in 1987. Ten large US insurance companies accounted for $119 billion worth of commercial loans in 1987.²

Banks around the world have responded to these trends by engaging in new activities. For example, off-balance-sheet products such as foreign-exchange forward contracts and options, interest-rate derivatives such as swaps, swaptions, and captions, and currency trading are increasingly important bank activities. These activities, which have come under intense scrutiny because of possible risks to the world's banking systems, are not unique to banks.³ They are often undertaken by non-banks, sometimes the same firms that are now engaging in corporate lending. This raises the important question of whether the new activities are 'banking', and if so, then which firms are 'banks'.

These trends, of non-banks entering corporate lending, of the replacement of commercial loans with traded bonds, and of banks undertaking activities which are not necessarily 'banking', clearly raise questions for bank regulators. In the past, 'banks' were firms which engaged in 'banking', namely, they issued demand deposits to finance loans (and did little else). Banks have been regulated because these activities, historically, led to banking panics. But the overlap between the activities which were the source of public policy concern and the set of firms known as 'banks' is less clear today. One point of this article is to identify some of the difficulties that arise for bank regulation when it is not clear which firms are banks and which are not.⁴ In addition, it is not clear whether many of the new activities that banks engage in are 'banking' activities in the sense that they have important synergies with deposit-taking and corporate lending which are cause for public policy concern.

Another point of this article concerns the proper conceptual framework for thinking about these issues. I argue that bank regulation is fundamentally based on creating incentives for banks to limit risk-taking. In the past, this incentive was based on the value created for banks by limitations on entry into banking. Restricted entry, whether formal or informal, creates value to being deemed a 'bank' by the government. This value, called charter value, is part of bank capital because it is a title to future monopoly profits. But it is lost if the bank fails. Thus, charter value creates an incentive for bank owners to avoid risk which would jeopardize their charter. In this way, charter value helps align the banks' private propensities for risk-taking with the social goal of a stable banking system.

Entry into banking by competitors must change the way banks are regulated because bank regulation depends on restricting entry into the banking industry. Entry by competitors reduces charter value since banks no longer have a monopoly on an important source of firm finance. Entrants underprice loans or debt in order to capture market share in financing corporations. Incumbent banks must then lower the interest rates they charge on loans, resulting in reduced profitability. But, there are two further effects. First, in attempts to maintain profitability banks enter new activities which are not necessarily a source of public policy concern per se, but become entwined with traditional banking activities and, hence, a source of concern. Second, and most important, with a less valuable charter, banks will engage in riskier activities. Without the incentive effects of a valuable charter, the level of bank risk-taking should increase.

Bank regulators cannot easily respond to these recent changes by raising new entry barriers because the traditional activities of 'banking', the activities which motivate bank regulation to start with, are not contained within any clearly delineated set of firms which can be called 'banks'. Without limited entry into banking, restrictions, such as capital requirements, will not be acceptable to market participants who must supply the capital to banks. After all, non-banks can engage in most of the same activities as banks and avoid the costs associated with regulatory restrictions. Consequently, the threat of exit from the regulated banking

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² These trends do not mean the end of banking or even that banking is unimportant. They mean that firms other than 'banks' can provide banking services. The problem, from the point of view of public policy, only arises if entry into banking by non-banks makes banks riskier.

³ See Gorton and Rosen (1995) for an analysis of the risks posed by interest-rate derivatives to the US banking system.

⁴ I focus more on this issue than on the issue of regulating foreign banks. The former issue seems to me to be more difficult and to have received less attention.
sector limits the ability of regulators to threaten banks.

If it is not clear what firms are 'banks', then it is not 'banks' which will be regulated, but certain specified 'banking' activities, namely, any activity that 'banks' engage in (since there is the further problem of trying to decide what is 'banking'). From this point of view, regulation inevitably will be based on a universal banking model since many non-banks engage in the same activities as banks and so will also be regulated. Thus, there is a tendency for the regulatory framework to expand by creating an ever-increasing set of rules, regulations, and 'fire walls' which rely on regulators for enforcement rather than on the creation of incentives for limiting risk-taking. Limiting risk-taking by creating incentives for banks to limit risk, via charter-value creation, is very different from attempting to limit risk-taking more directly. With a high charter value, regulators rely on the understanding of the banks themselves to limit risk in, say, the derivatives business. With low charter value, limiting risk-taking relies on training bank examiners to understand the derivatives business so that they can try to limit risk by enforcing strict rules in a world where banks have an incentive to take on more risk (since charter value is low).

It seems clear that bank regulation needs to be reconsidered. The important issues concern the definition of 'banking' and 'banks'. In this article I discuss these issues in more detail. In section II the historic rationale for bank regulation is reviewed and the basis of bank regulation, creating charter value through limiting entry, is discussed. Charter values decline when there is entry by non-bank competitors and by foreign banks. In section III I briefly provide some new evidence that the loss of market share by US banks in financing US corporations is due to underpricing by competitors. Because of the costs of setting up a bank relationship, underpricing by entrants reduces the profitability of the share of the corporate lending market that banks do not lose. In section IV I discuss the implications of these changes for bank regulation. Section V concludes.

II. THE HISTORICAL BANK REGULATORY FRAMEWORK

Banks are regulated because of the social costs of banking panics. In this section I briefly review the origins of bank regulation. This discussion is important because subsequently it will be necessary to evaluate new 'banking' activities in light of the social objective of avoiding costly banking panics.

(i) The Rationale for Bank Regulation

Governments throughout the world regulate banks because the combination of loans financed by demand deposits has, historically, been a volatile mix, leading to costly banking panics.\(^5\) If the banking system becomes insolvent, potentially large costs are borne because the payments system is disrupted, borrowers become illiquid, and information about borrowers is possibly lost.\(^6\) Banking system insolvency is caused by a banking panic, an event in which bank depositors _en masse_ demand cash in exchange for their deposits. Banks cannot honour these demands because markets for bank loans are not sufficiently developed. Markets for loans do not exist because of the expense of producing information about the riskiness of borrowers and the incentive problems of inducing banks to monitor borrowers if the bank has nothing at stake (having sold the loan).\(^7\) In general, were banks to sell loans in private markets during a panic it would be at such discounts that banks would be unable to honour their debts. However, if banks did not have to honour their debts immediately, then they might be able to honour them over time as their loans were repaid. In this sense, there is a distinction between the market value of the bank when depositors demand cash and when they do not demand cash.

The combination of lending financed by demand deposits is the source of the problem of banking

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\(^6\) Bemanke (1983), studying the Great Depression in the US, suggests that, when there is no public or private deposit insurance, the costs of panic can be large.

\(^7\) Recently, a market for the sale of commercial and industrial loans has opened in the US. This market is fairly sizeable. See Gorton and Pennacchi (1990b) for a discussion.
The trouble is that lack of information about the value of bank loan portfolios can cause rational depositors to fear for the value of their investments in banks, causing them to want to reallocate their resources by withdrawing from banks based on macroeconomic information or rumours. Banks which would otherwise be solvent can face withdrawals because of the possibility that there exist banks which are not solvent. Without information about which banks are insolvent and which are not, depositors may seek to withdraw their funds from all banks. The possible presence of insolvent banks creates an externality for other banks since risk-taking by a single bank can have consequences for the banking system.

Deposit insurance (possibly implicit) has been the (nearly) universal regulatory response to the possibility of banking panics because it eliminates the motivation for depositors to demand cash in exchange for deposits. But it is only the beginning of bank regulation. Deposit insurance subsidizes risk-taking since it allows banks to borrow at the risk-free rate. Of course, if the insurance premium could be properly priced to reflect the risk, then this would not be true. But this obvious fact overlooks the equally obvious fact that if it were possible to price the risk of bank loan portfolios, then banking panics would not be an issue to begin with because banks could sell their loans. So there is an issue of risk-taking when deposit insurance (explicitly or implicitly) exists.

The decision to engage in banking, and the level of risk to accept, are decisions made by private agents, bank equity-holders, or bank managers, based on a calculation of the expected benefits of engaging in banking relative to other opportunities. In making these decisions private agents weigh the costs and benefits, but they do not take account of the external effects on other banks and on the economy due to the possible failure of their own bank. The bank regulator makes a different calculation since the regulator takes into account the social value of a stable banking system. On the one hand, the bank regulator is concerned that the level of risk that is privately chosen by a bank may be higher than socially desirable, in the sense that the likelihood of failure would impose costs on the economy that are best avoided. Thus, because of deposit insurance, one goal of the bank regulator is to limit the level of risk in the banking system. On the other hand, the regulator is also concerned about the size of the banking system. Limiting risk in banks must be consistent with private demands for the provision of banking services. For example, bank regulators are often concerned with the provision of loans to small business, the efficiency of the payments system, the availability of banking services in poor communities, etc. Meeting these perceived needs requires the existence of a banking system of the appropriate size. The two goals are difficult to meet simultaneously. For example, a requirement that banks hold 100 per cent reserves clearly limits the riskiness of banks, but it also eliminates bank loans if loans can only be produced by firms which issue demand deposits.

The bank regulator must balance the two social goals of limiting risk in the banking system while allowing for the production of the desired level of loans and deposits. This can be difficult because, in limiting risk, the regulator cannot force private agents to abide by bank regulations because private agents can always choose not to participate as equity-holders in banks. In other words, regulations which make the cost of capital in banking too high will result in a banking system which is too small; regulations which are too lax result in a larger banking system, but possibly one which is too risky.

(ii) Limiting Entry: The Basis of Bank Regulation

How can bank regulators affect the risk-taking propensities of banks when deposit insurance exists? Regulators have at their disposal two instru-

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1 Of course, this raises the question of why demand deposits are created as claims on bank assets, since bank assets are particularly hard to value. I discuss this issue later.

2 Effective deposit insurance need not necessarily be provided by the government. Private insurance was effective in the US during the nineteenth century. See Gorton and Mullineaux (1987).

3 As I discuss below, historically it has been necessary to finance non-traded bank loans by debt which has the feature that it is redeemable on demand. Redeemability creates an incentive for debtholders to monitor the otherwise unobservable actions of bankers.
ments: restrictions (which are, in effect, taxes) and subsidies. The restrictions include (non-interest-bearing) reserve requirements, capital requirements, limitations on asset holdings and trading activities, prohibition of some kinds of activities, reporting requirements, and so on. The subsidies are in the form of underpriced deposit insurance, (explicit or implicit) limitations on entry into banking, interest-rate ceilings on liabilities, some freedom from bankruptcy constraints (i.e. ability to continue in business for some time after insolvency), other benefits of being in a ‘club’ with the central bank (e.g. discount window access).11

The effectiveness of both restrictions and subsidies depends on limiting entry into banking. Restrictions on banks, such as capital requirements and the requirement that banks hold non-interest-bearing reserves, are forms of taxation. This is most clear in the case of required non-interest-bearing reserves since these resources are idle. But, capital requirements, to the extent that they are binding, are also costly. These taxes, however, while a distortion from the point of view of the bank, can serve the social function of altering the private incentives of the bank to take risk. This serves the public policy goal of a less risky banking system. Who bears the burden of these taxes? In the past bank borrowers have borne this burden (see Fama, 1985; James, 1987). In other words, the demand for bank loans has been fairly inelastic. This is because in the past bank loans did not have good substitutes, so borrowers were willing to bear these costs.12 Imposing restrictions depends on an inelastic demand for loans or, in other words, limited entry into banking. Without this, banks would exit the regulated banking industry, becoming non-banks providing the same services, but avoiding the costly restrictions. As substitutes for bank loans developed and as non-banks entered the industry, these restrictions become increasingly costly, that is, the demand for loans becomes increasingly elastic, at least for large firms (though see Becketti and Morris (1992) for a discussion of this).

The basic form of subsidizing banks has been to create ‘charter value’ through restrictions on entry into banking and price ceilings on liabilities. A bank charter is an official or unofficial licence to engage in the business of banking; it is an intangible asset which is forfeited if the bank becomes insolvent (Marcus, 1990).13 Entry into banking is sometimes formally limited by the requirement that a licence be obtained to engage in the activities deemed banking (deposit-taking and commercial lending). In addition, informally, large banks are members of a ‘club’ with the central bank. The central bank, serving as lender of last resort, and sometimes overseer of the banking system, protects its members not only in the sense of creating a market for loans via the discount window, but also in keeping troublesome competitors at bay and offering special privileges to large banks.

There is a great deal of evidence to suggest that banks rationally calculate the costs and benefits of charters and that regulatory changes (i.e. alterations of the balance of subsidies and taxes) affect bank value and, hence, bank decisions. A natural environment in which to study such questions is the US since there are numerous banks and regulatory systems there. For example, during the post-Second World War period in the US the percentage of banks in the Federal Reserve System decreased from 49.1 per cent in 1945 to 39.3 per cent in 1976, as banks changed from federal charters to state charters. Gilbert (1977) and Frodin (1980) show that US banks’ decisions were based on the costs and benefits of Federal Reserve System membership during this period. A second example is Black et al. (1990), who find that state statutes allowing interstate banking negatively affected the value of money-centre banks which were not allowed to enter these markets, but increased the value of large regional banks which were allowed to enter other states. These examples concern regulatory arbitrage, that is, the choice of bank regulator based on an assessment of the costs and benefits of the

11 Goodhart (1988) discusses this idea of ‘clubs’ in banking.
12 The lack of good substitutes for bank loans basically says that bonds and bank loans are quite different securities. See Gorton and Kahn (1994).
13 Charter value is an asset and should be reflected in the value of the bank. But, bank equity is usually assessed by regulators on a book-value basis so charter value is not reflected.
different regulatory systems, but the point is that charter value is rationally assessed.

In the past, charter value created an incentive for banks to limit risk-taking owing to their fear of losing the charter through insolvency. By creating charter value for banks, regulations acted to align the private goals of bank owners with the public goal of stability of the banking system. But, creating charter value by limiting entry requires defining a set of activities called 'banking' which only firms with charters are allowed to engage in. In the past, defining the activities which constituted banking was quite straightforward because private markets had created firms which took deposits and produced loans. It was these firms which were sometimes subject to panic and collapse. In some countries the definition was further clarified by restricting the firms engaged in these activities from engaging in other activities which were not related to deposit-taking and loan production.

III. ENTRY, PRICE WARS, AND MARKET SHARE IN BANKING

Bank regulation depends on limiting entry, but recently banks in many countries have seen competitors enter banking. In some countries money-market mutual funds have become successful competitors for resources that previously became bank deposits. Also, new debt markets have opened, non-banks have entered corporate lending, and foreign banks compete in domestic markets. A key issue concerns how entry by competitors leads to less profitable and riskier banks. After all, if more efficient providers of lending or investment services enter, banks should shrink or engage in new activities. I focus on entry into commercial lending. In subsection III(i) I discuss how corporate lending will be less profitable than before whether banks lose market share or not. Entry by rivals is only successful if rivals can bid customers away by lower prices (lower interest rates on loans). This process forces banks to lower interest rates. Some evidence of underpricing by rivals is presented in subsection III(ii). The point of this section is to provide some sense of the loss to US banks caused by entry by competitors. The example, of foreign-bank entry into the US commercial lending market, illustrates the order of magnitude of the charter-value decline. If you imagine that the private level of risk-taking in 1980 was aligned with the socially acceptable level for the banking system, then the size of the decline in charter value will provide some sense of the current gap.

(i) Bank Relationships and Switching Costs

It is not immediately obvious why entry from non-bank competitors should cause banks to display long periods of weak profitability and high risk. Entry by competitors means that the competitors have been successful in luring bank customers away from banks, but why should this cause banks to become riskier? In this subsection I discuss this entry process in more detail as a first step to answering this question. The next subsection examines some evidence.

When a firm borrows from a bank, the bank learns information about the borrower which is not publicly available. This is why loans are hard to sell: the bank is better informed about the borrower’s credit risk than are prospective loan-buyers. The process of information acquisition about borrowers by banks is sometimes described as developing a ‘bank relationship’. The development of a bank relationship means that switching to another bank or funding source is costly for a borrower since the new financing source does not know the information and time and resources are required to learn it. Some evidence on the magnitude of these costs comes from Slovin et al. (1993) who study the effects of the failure of Continental Illinois on borrowers. They found that when Continental failed there were large negative wealth effects for firms who were Continental borrowers. This suggests that sizeable costs must be borne to establish a relationship with a new bank (or that Continental was systematically underpricing loans).

What happens when there are switching costs and entry occurs in an industry? New entrants seek to capture market share by inducing borrowers to switch from their current bank to another lender (a foreign bank or non-bank) or to a debt market. Borrowers must be induced to switch by the offer of a lower interest rate on the loan or debt. Faced with such new competition, banks must lower the inter-
est rates they charge or face the loss of their customers. Roughly speaking, a price war occurs as banks and entrants lower prices to attract business, hoping to maintain market share. Note that because of the switching cost it may be rational to maximize market share. Once customers have been lured away to a new entrant, they will not switch back unless there is another round of interest-rate reductions. A price war is not profitable for banks; either they retain borrowers, but at lower interest rates, or they lose customers.

(ii) Underpricing By Entrants into Banking

Is there evidence of price wars in banking? Some suggestive evidence can be found by examining the interest rates that entrants in the US corporate lending market charged in the 1980s compared to the rate charged by a US bank, holding the risk of the borrower constant. The evidence presented below is restricted to foreign banks entering the US market, but this is only because evidence about non-bank entrants and the effects of debt markets is not available.

The empirical procedure is, briefly, as follows (see Gorton (1994) for details). All US firms that issue debt publicly must file with the US Securities and Exchange Commission. The population studied consists of information on roughly 11,000 loans taken from these filings over the period mid-1987 to 1992. From the underlying population of 11,000, three samples were created consisting of: (i) all loans made by Japanese banks to US firms; (ii) all loans made by non-Japanese foreign banks that entered the US market during the 1980s (called 'New Foreign'); (iii) all non-Japanese foreign banks that had a presence in the US prior to 1980 (called 'Old Foreign').

The sample of Japanese banks and the sample of New Foreign (but non-Japanese) banks are groups which entered the US corporate lending market during the 1980s. The first sample, Japanese banks, is examined separately since these banks lent heavily to US firms during the 1980s and there may be special reasons for this. In 1982 Japanese banks' percentage share of US domestic banking assets was 6.4 per cent, but had risen to 14.9 per cent by 1989. See Rose (1991) for a discussion of the reasons for this trend.

The second sample, New Foreign (but non-Japanese) banks, are banks that established a presence in the US during the 1980s. The third sample, Old Foreign (non-Japanese), had a presence in the US before 1980. This group was already present in the US. It is, therefore, not clear that they increased their business by underpricing relative to US banks.

Each sample consists of information on loans to US firms. For each sample a matching US firm is found by matching firms on the basis of: (i) type of loan (term loan, revolving credit, letter of credit, etc); (ii) four digit SIC code; (iii) whether the loan is secured or not; (iv) the maturity of the loan; (v) the purpose of the loan (takeover financing, general corporate purposes, real estate purchase, etc); (vi) the size of the loan; (vii) the size of the firm. The idea is to match the foreign loan with a loan by an American bank to a firm of the same risk. The choice of characteristics to match on is dictated by the available information. In many cases, no suitable match can be found. All the loans in the matched samples are floating rate loans.¹⁴

The matched samples allow us to ask whether new entrants, in this case foreign banks, underprice to enter the US lending market. The interest rate (including fees amortized over the loan life) on the US loan is compared with the interest rate on the foreign bank's loan, holding risk constant by comparing with the matched firm. The mean difference between the US rate and the foreign rate, in basis points, is shown in Table 1. For each sample of foreign banks, there are three sets of results. The first set is exact matches. These are cases where both the foreign bank and the US bank are making exactly the same type of loan (same contract, same maturity, same purpose, etc) to the same firm at the same time. These loans may or may not be secured. The second sample matches on all of the above characteristics and, in addition, on the fact that the

¹⁴ Over 90 per cent of all the loans are floating rate so this is not much of a selection bias. The difficulty with fixed-rate loans is that the term structure of interest rate then matters so that the date the loan is originated matters. But then it is difficult to find US firms with which to match the entrants' loans.
Table 1
Underpricing by Foreign Bank Entrants in the US Lending Market

<table>
<thead>
<tr>
<th>Match type</th>
<th>Japanese banks</th>
<th>New foreign banks (non-Japanese)</th>
<th>Old foreign banks (non-Japanese)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean difference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exact</td>
<td>mean difference</td>
<td>61.50</td>
<td>38.34</td>
</tr>
<tr>
<td></td>
<td>no. of observations</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>t-statistic</td>
<td>3.17</td>
<td>0.63</td>
</tr>
<tr>
<td>Secured</td>
<td>mean difference</td>
<td>91.54</td>
<td>64.08</td>
</tr>
<tr>
<td></td>
<td>no. of observations</td>
<td>22</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>t-statistic</td>
<td>2.52</td>
<td>2.93</td>
</tr>
<tr>
<td>Secured and exact</td>
<td>mean difference</td>
<td>80.38</td>
<td>59.84</td>
</tr>
<tr>
<td></td>
<td>no. of observations</td>
<td>35</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>t-statistic</td>
<td>3.38</td>
<td>2.77</td>
</tr>
</tbody>
</table>

Source: Gorton (1994).

loans are secured loans. Finally, exact matches and secured matches are combined.\(^{15}\)

Japanese banks underpriced to enter the US lending markets. The most dramatic result is the case of the exact matches. Lending to the exact same firms as the US banks, Japanese banks charged 61.5 basis points less than the US banks, on average. Non-Japanese banks also underpriced to obtain market share, though they were not willing to underprice to obtain a share of exact matches. Old Foreign banks possibly did not need to underprice in the case of exact matches. New Foreign banks made few loans in the exact-match case.

(iii) The Effects of Underpricing on US Banks

The results in Table 1 are, perhaps, not surprising given that we know that foreign banks have increased their market share at the expense of US banks. This observation must imply that these competitors reduced prices to attract customers away from US banks. But this is not the point. It is not just that US banks lost business. That fact would not, in itself, make US banks riskier, though it can explain reduced profitability. In order for US banks to maintain any market share, the interest rates to borrowers who did not switch to a foreign lender must have been decreased to induce them not to switch. The losses for US banks then were enormous (as were the gains to US borrowers). Note the size of the underpricing; for the cases where it is significant, it is always above 50 basis points and reaches a high of about 90 basis points. So the loss to US banks would be on the order of 0.5 per cent on the total of US commercial lending. These losses are a rough indication of declines in charter values owing to entry by competitors. It is this decline in charter value which is most important since it alters the degree of risk that banks will accept.

It is important to stress that US firms benefited from entry by new competitors into US corporate lending. Also, from the point of view of public policy, the problem with entry is not that US banks suffered losses (though that is clearly a problem from the point of view of US banks). Rather the problem is how banks can be regulated when entry is not limited and the regulated group appears to be weak and prone to engaging in activities which are too risky from the point of view of maintaining a stable banking system.

IV. BANK REGULATION WHEN CHARTER VALUES ARE DECLINING

Limiting entry into banking creates capital in the form of a valuable charter. Entry into banking by

\(^{15}\) The results of unsecured loans are not presented because it seems less persuasive that risk is being held constant in the comparison (though the results are no different from the other cases).
non-banks, i.e. firms which from the point of view of the government are not 'banks', or by new debt markets, causes charter values to fall. The difficulties for bank regulation with such a situation are enormous. When charter values are declining due to entry, there is a difference between the privately optimal and socially optimal levels of risk in the banking system. Without charter value, banks engage in new activities which are risky and, possibly, difficult to assess. These activities may trigger panic because they are intertwined with lending and deposit-taking. To the extent that non-banks engage in banking, they may also be subject to runs.  

The first scenario would occur, for example, if a bank were subject to a run because of defaults on its derivatives book. The second scenario would occur, for example, if a money-market mutual fund were subject to large withdrawals because of publicized declines in the value of money-market instruments. In both cases, the problem is that activities which are not related to lending and deposit-taking become informationally intertwined with banking in the eyes of the public.  

It is not only that banks may engage in new activities which are risky, they may also engage in old activities which are riskier than previously, activities such as commercial real-estate construction and development loans.

In this section I briefly consider the current regulatory responses to this situation. I argue that they are basically unworkable at addressing the problem.

(i) Capital Requirements

One basic regulatory response to the problem of entry by non-banks has been capital requirements. It should be emphasized that this represents a shift of policy focus. It was only in 1982 that US bank regulators first began enforcing explicit capital adequacy requirements. Since then there has been increasing attention devoted to capital requirements in the US (see Baer and McElravey, 1992). The same emphasis on capital levels characterizes international bank regulation. The 1988 Basle Capital Accord established capital adequacy standards for international banks. The focus on capital requirements appears to coincide with the decline in charter values. The implicit logic appears to be that if capital cannot be created by limiting entry, then perhaps banks can be forced to produce it from private equity markets.

Can capital requirements substitute for the creation of capital via entry limitations? To see that such restrictions will not work, consider the response of private agents to an increase in capital requirements when charter value has declined. When capital requirements are raised, the existing bank equity-holders must decide whether to meet the capital requirements or whether to shrink the size of the bank or exit banking altogether (by giving up their charter but continuing in 'banking'). The decision will be based on the cost of capital which, in turn, depends on the alternative uses of capital. Bank regulators cannot set the cost of capital; they set the capital requirement and then market participants decide whether or not to buy new bank equity should it be offered.

When banks have high charter values, those values will be capitalized into the price of any new equity issued by the bank. When charter value is declining due to competition, that too will be priced. In the latter case, there are two possible responses to an increase in capital requirements. First, it may be that it is profitable to invest more equity in banks so that the capital requirement is met. Since charter value is declining, this must mean that banks have found profitable new activities. But, in this case, the capital requirement was not binding and it is not clear why the additional capital was not in the banks in the first place. Second, the cost of capital may be such that banks choose not to issue equity (nobody would buy the equity at a price the issuing banks found profitable). In this case, banks are unprofitable relative to alternatives, even with new activities. Hence, the capital requirement can only be met through reducing the size of banks. The increase in the capital requirement then serves the purpose of

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16 Gorton and Pennacchi (1993b) test for the presence of contagion effects in non-banking and find no evidence for their presence.

17 It is worth stressing that in most cases of new activities, such as derivatives or foreign-exchange trading, there is no reason for public policy concern per se. Risk is not the issue; information externalities are the issue and these emanate from loans financed by deposits. See Gorton and Rosen (1995) for an analysis of these issues.

18 This section draws on results from Gorton and Winton (1994).
reducing the size of the official banking sector. After all, if charter values are declining, the 'bank' can give up its bank charter and, by doing so, it can avoid the capital requirement, but engage in the same activities since entry is not limited. If that was the goal of the regulator, then it was accomplished.

Suppose the regulator wishes to reduce the level of risk in the official banking sector, while maintaining the existing size of the banking sector. Recall the regulator’s two goals: maintain a stable banking system while ensuring that the size of the banking system is consistent with the desired level of banking services for the economy. Clearly, when charter values are declining, these goals cannot both be accomplished by capital requirements. The market will have already determined the capital ratio and a regulatory increase above this level will result in a decline in the size of the official banking system. If regulators do not wish to force a shrinkage of the system, then risk cannot be reduced via capital requirements. It may be that capital requirements are conceived of as a way to force the banking sector to shrink, but this is not the logic articulated by proponents of capital requirements.

There is an additional complication concerning reconciling the two regulatory goals discussed above. The difficulty is that entry into banking by non-banks may have occurred more on the asset side of bank balance sheets than on the liability side. In most countries, banks still have a monopoly on demand deposits and the payments system, even if they have lost market share in lending. This means that banks have access to an enormous pool of resources, but not necessarily any place to invest unless they engage in riskier activities. Regulators may want to reduce the amount of risky investments, perhaps via capital requirements, but seem unwilling to do so if it means shrinking the banking system’s supply of media of exchange. Regulators cannot shrink one side of the balance sheet without shrinking the other. As a result, whatever the stated goal of capital requirements, the practical effect is not to shrink the banking system.

The banking system does not shrink when capital requirements are raised because bank regulators do not enforce capital requirements when they become binding. Japan is the best recent example of this. But, it is important to stress that capital requirements should not be enforced if the effect would be to shrink the supply of needed bank services (on the liability side). If not enforcing capital requirements is for the best when weighing public policy goals, then clearly capital requirements do not constitute an unworkable way of creating a stable banking system. The fact that regulators renege on capital requirements when they become binding explains, in part, why banking systems seem not to be shrinking in the face of non-bank entry into banking.10

The same argument about the uselessness of capital requirements applies to any restriction imposed on banks in an environment where entry is not limited. That is, since bank equity-holders can choose to exit banking if the restriction is too costly, regulators will not impose binding restrictions if they do not want the official banking sector to shrink. Note that if entry into banking can be limited, then restrictions can be imposed because bank customers cannot obtain bank services elsewhere; the demand for bank services is then inelastic and customers are willing to bear the burden of the costly restrictions. Restrictions such as capital requirements cannot hold when there are substitutes for bank loans available (substitutes such as loans from non-banks).

(ii) Increased Subsidies to Banks

When charter values are falling, capital requirements cannot, by themselves, result in a safer banking system of the same size. But, there has been another regulatory response as well: an attempt to increase charter values, not by limiting entry, but by increasing the subsidies to banks. This has been done by increasing deposit insurance coverage, allowing insolvent banks to continue in operation for a period of time, directly

10 Another problem concerns the market for corporate control in banking. Bank equity-holders face problems in disciplining bank managements in many banking systems because hostile takeovers are difficult in banking. As a result, even if equity-holders want to unseat management and shrink the size of the bank, they may be unable to do so. These ideas are developed in more detail in Gorton and Rosen (1994).
transferring resources to banks which are insolvent, and so on.

The most direct evidence for the increase in subsidies comes from the US where the ‘too big to fail’ policy increased the value of being a large bank by broadening the range of liabilities which are effectively insured. O’Hara and Shaw (1990) found that the large US banks covered by this policy did, in fact, increase in value in response to the US Comptroller of the Currency’s announcement of the policy. In other countries there is no statistical evidence (partly because bank regulators typically do not announce ‘too big to fail’ policies even when they are in effect), though there is plenty of evidence of government bail-outs of banks, e.g. Banesto in Spain and Crédit Lyonnaise in France, and favourable treatment of troubled banks, as in Japan.

There is a problem with increasing subsidies to banks when entry is not limited. When banking is less profitable and riskier than before, the only way that the loss in value can be made up when entry is not limited is by directly transferring resources to banks, that is, by subsidizing their attempts to remain as large and as profitable as they were prior to entry by competitors. The subsidies are counter-productive because they do not result in a valuable asset which is lost if the bank becomes insolvent, like the charter. Rather than creating an incentive to limit risk, the subsidies are increased when the bank becomes insolvent, creating an incentive to engage in risk-taking. The defence of these policies is that they are needed to protect the provision of banking services. For example, it is argued that the loss of information produced in the course of developing bank relationships would be sizeable if the particular bank were allowed to fail. (The Slovin et al., 1993, study is consistent with this.) Sprague (1986), the former chairman and director of the US Federal Deposit Insurance Corporation, is fairly explicit about this rationale.

While it is true that there may be sizeable costs to bank failure, the policy is fundamentally confused. In the current situation of reduced charter values, such policies can only increase the likelihood of the very events, risk-taking and failure, that they are supposed reduce. These policies subsidize bank risk-taking in an environment where banks can be expected to increase risk.

V. THE NEED TO REDEFINE ‘BANKING’

Entry into banking by competitors is of two sorts which are distinct. Were entry only coming from foreign banks, the problem would be quite different from the case of entry from non-banks, debt markets and money-market mutual funds. I am primarily concerned with the latter case because it means that the activities of corporate lending and deposit-taking can be separated or unbundled to a significant extent. I have focused on two implications of this trend. The first is that this unbundling of banking makes defining a ‘bank’ much more difficult. In addition, when banks engage in new activities which non-banks are also engaged in, the issue arises of whether these activities are ‘banking’ in any meaningful sense. Without a definition of a ‘bank’ it is impossible to create entry barriers. As a result, bank charter value declines. This leads to the second implication, namely, that the decline in charter value associated with entry by competitors means that banks will rationally choose to become riskier. This raises the spectre that the new activities that banks engage in are attractive primarily because they are riskier (in which case, the fact that banks are primarily engaged in them is not obviously evidence that they are ‘banking’ activities).

These trends do not mean the end of banking. Even by the traditional definition of ‘banking’, i.e. financing loans by issuing deposits, banks are of fundamental importance for virtually every economy. Nevertheless, the demand for ‘banking’ of the traditional sort has declined. Firms called ‘banks’ may eventually find other activities which are profitable and transform themselves into viable entities which compete with other firms called ‘non-banks’. But, the combination of the two trends in banking discussed above, new activities and increased risk-taking, puts bank regulators in a difficult position. For example, bank regulators in the US have complained that banks are making loans which are too risky (presumably relative to the level of risk that banks would have found
acceptable when charter values were higher). But, clearly, complaining about the dangers of this level of risk cannot change the fact that without valuable charters rational banks should choose to become riskier. The same problem arises in discussions of derivatives in banking. That is, aside from whether derivatives are really 'banking' or not, or whether they are really risky or not, the question arises of whether banks are willing to accept levels of risk which regulators find unacceptable from the point of view of public policy. If the risks are unacceptable then, without raising charter value, regulators are forced into the position of having to attempt to limit risk-taking by use of the 'stick', rather than the 'carrot'.

What is important for public policy is the creation of confidence in a system which produces riskless demand deposits and a sufficient quantity of loans. How can this be achieved? I have argued that, at least historically, public-policy goals have been achieved by subsidizing banking via limiting entry. This creates incentives for banks to limit their risk-taking. This regulatory framework is superior to a system in which banks would prefer levels of risk which are higher than socially acceptable and regulators must directly intervene in attempts to limit risk. Without some workable definition of banking, every activity undertaken by banks, and hence by non-banks undertaking the same activity, must be regulated, a kind of de facto universal banking. Compared to a system where banks have incentives to limit risks themselves, this outcome, which relies on regulatory intervention, seems undesirable. Thus, my basic conclusion is that the best approach is to define a set of activities which constitute 'banking', and then limit these activities to firms which receive charters.

In order to accomplish this goal, 'banking' needs to be redefined to the extent that demand deposits are claims on new types of risky assets which are hard for market participants to evaluate. In order to have a workable definition of 'banking' it may help to review why, historically, commercial loans have been financed by issuing demand deposits. There are two reasons for this combination to have been pervasive in history. First, consumers have a demand for an interest-bearing transactions media which has the feature that is riskless, or near riskless. The reason is that riskless securities have easily computable prices so that there is no loss to better-informed traders when less-informed traders must make purchases (or sales). The intuition for this is the same for understanding why 'fire sales' of assets generally result in a loss for the seller. When consumers want to purchase goods, they do not want to be in the position of having to sell a highly illiquid asset for cash in order to use the cash to buy goods. Rather, they would prefer to have a very liquid asset which can be used to buy goods. But 'liquidity' refers to the degree to which the asset value is not known. Very liquid assets have a low variance around their true value. Demand deposits are a leading example of liquid assets.

Liquid securities are generally thought of as government liabilities. How can private firms create liquidity? Banks are in a unique position in this regard because they are firms which hold diversified portfolios of loans (compared to non-financial firms which are not diversified). By issuing debt claims on these diversified portfolios banks come close to creating a riskless, interest-bearing, transactions media. This argument is developed by Gorton and Pennacchi (1990a, 1993a). Note the link between the creation of demand deposits and loans. Historically, banks were the only firms which held diversified portfolios because of the nature of bank loans and, hence, it was natural for them to be the firms which issued a transactions media.

The second (non-mutually exclusive) reason concerns the nature of the assets produced by banks. Loans are (at least, historically) non-traded and difficult to value, as discussed above. Since information is difficult to produce about loans, there is the possibility that bank managers are not properly performing their jobs (of monitoring borrowers and producing information about borrowers). But, by structuring bank debt as puttable (i.e. demand deposits can be redeemed on demand), there is an

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20 Alan Greenspan, the chairman of the Federal Reserve, in a speech to members of the American Bankers Association said: 'Competition among banks and their non-bank counterparts has never been greater. We have been seeing for some months now the result of that competition in the form of easing of the price and non-price terms for credit for business loans.' Eugene Ludwig, the US Comptroller of the Currency, speaking to the same group said: 'We found signs that some banks have eased their underwriting standards over the last several quarters.' See New York Times, 9 October 1994.
incentive created for some depositors to produce information. Those that produce information will be first in line at the bank to withdraw when they discover bad news; they will, consequently, receive more than latecomers, compensating them for having produced information. Calomiris and Kahn (1991) develop this argument.

These two arguments explain the connections between the production of information-intensive assets and demand deposits. I take 'banking' to refer to these two interrelationships, bank assets and liabilities. Financial innovation has weakened these connections. But, banks have also become engaged in many new activities. In order to make a decision about the direction bank regulation should take, it is necessary to decide whether these new activities are banking, that is, inherently connected to the process of producing demand deposits and loans. In other words, in the absence of deposit insurance, would we observe firms which combined these new activities with demand deposits? For many activities the answer to this question must clearly be 'no' because there are many firms which have nothing to do with demand deposits which are also engaged in these activities. 21

From this point of view it is difficult to view most derivative activity as banking. It does not primarily involve assessment of credit risk (interest-rate risk or currency risk are the primary considerations); it is information-intensive only in the sense that firms can alter their positions very quickly. 22 But, even if many new activities that banks are engaged in do not seem to be banking in the sense of one of the above arguments, not all new activities can be so easily dismissed as not constituting 'banking'. Some off-balance-sheet activities, such as stand-by letters of credit or loan commitments, appear to be information-intensive in the same sense that commercial loans are, and hence, might well be related to the production of demand deposits.

While I view many of these issues as open questions, it does not seem so difficult to make these kind of distinctions (though clearly there is some arbitrariness). These distinctions must be made in order for restricted entry to create charter value.

REFERENCES


21 In that case, the 'narrow banking' proposal addresses the question of defining a bank very clearly. It focuses completely on the production of demand deposits, limiting entry into that industry, and then requiring that deposits be claims on pre-specified assets. Moreover, it might be argued that this would be the natural outcome in a less regulated world (see Gorton and Pennacchi, 1992). While a version of this view appears to have lost the debate (on political if not intellectual grounds), some attempt to delineate what is meant by banking is necessary if any regulatory outcome other than the present drift towards universal regulation is to occur.

22 There is also the issue of how to report the market value of positions.


