This paper reviews the role of competition in banking against the background of a transforming sector. It uses industrial organization and modern financial intermediation analysis to study the relationships between the level of competition, risk-taking incentives, and the regulatory frame. The consequences for market structure of the liberalization process and the need for competition policy in the sector are highlighted.

I. INTRODUCTION

Competition has always been contentious in banking. Regulators have traditionally tried to restrict competition in the sector with the aim of avoiding excessive risk-taking. From the 1940s to the 1970s the sector was tightly regulated and stable. Deposit insurance and the lender-of-last-resort facility prevented runs, and failures were kept at a minimum. The tide changed in the 1970s with competition from the mutual funds in the USA. In the 1980s a fully fledged liberalization process was put in place in many countries and there was a notable increase in banking failures (with episodes in developed countries such as the savings and loan associations (S&L) and Scandinavian crises). At the same time, technological change in information technology and communications (yielding a lowering of transportation costs) coupled with market integration and the liberalization process have given way to a transformation of the banking business, and a restructuring of the sector materialized in a consolidation wave.

It does not take a lot of thinking to conclude that the situation before the liberalization was far from the optimal balance between enjoying the benefits of competition and increasing the potential for instability. Indeed, the costs of financial repression and regulatory failure are apparent by now. However, has the pendulum moved too far towards unleashing competitive forces in banking?

1 I am grateful to Colin Mayer and the Editorial Board for helpful comments that have helped to improve the presentation of the paper.
or, on the contrary,

- does the consolidation wave pose a threat to competition in the sector?

or still, perhaps,

- do we not need to worry about public intervention and competition policy because the Internet and globalization have made banking contestable?

To answer those questions is certainly not easy. In this paper I try to shed some light on these issues, taking stock of modern industrial organization and financial intermediation analysis. A challenge that the analysis must face is to take account of the specificity of banking in relation to other industries.

Section II starts by reviewing trends in banking and in its regulation. Section III surveys contributions from industrial organization and financial intermediation theory to understand the effects of banking competition. Section IV looks at the relationships between liberalization, market enlargement, and diversification and tries to understand the underpinnings behind the consolidation wave. It starts with the puzzle of why banks keep merging while economic studies do not give much value to such mergers. Section V looks at the role of size in the banking firm and the effects on market structure: is banking a natural oligopoly? Section VI examines the role of competition policy in a transforming banking sector, and concluding remarks follow.

II. TRENDS IN BANKING AND IN ITS REGULATION

In the earlier of these periods, the regulation of rates, activities, and investments, the separation between commercial banking and investment banking, the restrictions on the activity of the savings banks, and geographical segregation (in the USA) limited competition between financial institutions. Universal banking was permitted in some European countries. Deposit insurance was established, and the central bank acted as last-resort lender to the financial system.

The stability of the earlier period contrasts with the sizeable increase in the number of failures in the later period, in which the sector has been liberalized and competition has been introduced. Indeed, international evidence points at liberalization as one of the factors, together with inadequate macro policies, adverse macro shocks, and vulnerability of the foreign sector, that explain banking crisis. However, the fact that the effect of liberalization is weaker in a ‘strong’ institutional environment (for example, in terms of the rule of law and contract enforcement) points to inappropriate regulation that accompanies liberalization as aggravating crises. This is consistent with banking crises in diverse places such as the USA (S&Ls), Scandinavia, and Spain. In all those cases regulatory failure played an important part in the development of the crisis. There is also evidence that bank franchise values are eroded owing to liberalization, providing a potential explanation, as we see in the next section, of the increased risk-taking incentives and associated fragility.

All in all, none the less, it must be said that financial liberalization helps financial development and, therefore, output growth (consistent with King and Levine, 1993), either in the absence of a banking crisis or even in the presence of a banking crisis if the economy was financially repressed to start with.

Regulatory change has included the liberalization of rates and of banking investment activities, convergence between institutions of various types (e.g. between savings banks and ordinary banks, between

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2 See Demirgüç-Kunt and Detragiache (1998).
3 Regulatory problems were pervasive in the S&L crisis. In Scandinavia the roots of the early 1990s crisis are to be found in a conjunction of factors after the financial liberalization of the 1980s: lax enforcement of capital requirements, poor supervision, lack of internal risk-control methods, together with mistakes in fiscal and monetary policy in the context of an asset price bubble. In Spain, financial liberalization started in the 1970s and the banking crisis of the first half of the 1980s is explained by the large impact of the economic crisis derived from the oil shocks, the close links of banks with industrial firms, lack of diversification of banks’ industrial portfolios, bad management, and inadequate supervision (see Caminal et al., 1990).
commercial banking and investment banking), the lifting of geographical restrictions, elimination of obligatory coefficients, etc.

Behind this process of liberalization and regulatory reform we find advances in information technology, in the processing of transactions (automatic tellers, telephone and electronic banking), and in computational capacity. There have also been advances in management techniques and risk coverage (based on the use of derived instruments and securitization techniques, for example), demographic changes and problems in financing the welfare state, and a reduction in transport costs and barriers to trade. An integral part of the process is the liberalization of international capital movements. All those changes are associated to what we term ‘globalization’.

The result of the liberalization and deregulation process is a formidable increase in competition, both within and outside the industry, with the development of disintermediation and direct competition from financial markets, market integration (the single-market programme, SMP, in Europe), and financial innovation. Overall there is an effective expansion of the market, one result of which is that in the USA, for example, in spite of the advance of disintermediation, the banking sector has grown in real terms (see Berger et al., 1995b).

Restructuring is taking the form of consolidation. Consolidation is taking place in Europe with a predominance of domestic mergers. In the USA the weight of interstate mergers is important. A consequence is that, despite an increase in concentration at the US level in the last 10 years, local concentration (measured in Metropolitan Statistical Area (MSA) and non-MSA counties) does not show a definite tendency (Berger et al., 1999). In Europe the dominance of domestic mergers tends to increase local concentration. This, as we see in section VI, poses questions for competition policy.

The general trend is to introduce competition in banking, check risk-taking with capital requirements, and reform deposit insurance to introduce risk-based systems. To this, more recently, emphasis is added to reinforced supervision adding disclosure requirements to financial institutions, in order to increase transparency and foster market discipline, as well as allowing banks to rely on their own internal models to assess and control risk. This represents a movement from a rigid to a more flexible view of capital requirements. The proposal for a New Basel Capital Accord advances three pillars—minimum capital requirement, supervision, and market discipline—allowing banks to choose from a menu of approaches (for example, standardized and internal rating) to measure risk (credit, market, and operational). The whole idea is to provide more risk sensitivity to capital requirements. Supervisors will have to assess how well banks are matching their capital to the risks assumed and banks will have to disclose information on their capital structures, accounting practices, risk exposures, and capital adequacy in a timely manner. In summary, capital requirements plus appropriate supervision and market discipline are seen as the main ingredients to maintain a sound banking system.

4 However, we should expect that banks will maintain a liquidity insurance provision role. See Diamond (1997) and Holmstrom and Tirole (1998) for a theoretical analysis.

5 For example, Hypobank–Vereinsbank in Germany, UBS–SBC in Switzerland, BNP–Paribas in France, IMI–San Paolo and Crédito Italiano–Unicrédito in Italy, Santander–BCH to form BSCH, and BBV–Argentaria to form BBVA in Spain. Exceptions are some cross-border deals in Benelux and Scandinavia. Some cross-border mergers have failed because of political interference of national authorities (see Danthine et al., 1999).

6 See http://www.bis.org/publ/bcbsca.htm

7 The internal model approach can be rationalized as a direct-revelation mechanism, where a bank of a certain type sends a message to the regulator about its type and is required to hold the certain level of capital (see Rochet, 1999).
III. COMPETITION AND REGULATION

There are general arguments in favour of competition that, in principle, apply to any industry. Indeed, the benefits of competition for allocative efficiency have been well established since Adam Smith. It must be noted, however, that competition is in general imperfect and, in this, banking is no exception. Sources of frictions in retail banking are entry barriers, such as reputation and the branch network, and switching costs, and, in corporate banking, established relationships and asymmetric information. The result is that there is room to exercise market power (Vives, 1991). A consequence is that the welfare theorems associated with perfect competition are not directly applicable to banking. All in all, however, competition is perceived to be good for allocative efficiency. The benefits of competition for productive efficiency, including the reduction of slack or X-inefficiency, are somewhat more controverted but still generally accepted. The pressure of a competitive market gives managers the incentive to perform and provides information to design appropriate incentive schemes.\(^8\) Monopoly power induces inefficiency and waste. The importance of X-inefficiency in explaining deadweight losses in banking does not seem to be less than in other industries, and may dominate scale and product-mix efficiency (Berger and Humphrey, 1992). Furthermore, a healthy degree of rivalry is deemed to be necessary to keep a vigorous pace of innovation in an industry—that is, for dynamic efficiency.

Even accepting that competition will be necessarily imperfect, vigorous rivalry seems to be necessary both for static and dynamic efficiency of an industry. Is banking different? In principle, the contribution of competition to allocative, productive, and dynamic efficiency in banking is no different than in any other industry. This fact is probably at the basis of the trend towards introducing more competition in the banking sector all over the world. However, banking has some specificities.

Crucial features are the important weight of debt in banks’ capital structure and the wide dispersion among small investors of this debt (deposits). The large amount of debt increases the risk of failure (or insolvency), while the dispersion on small investors limits their ability to monitor the activities of the bank. This implies that banks have a moral-hazard problem that induces them to take too much risk given their limited-liability charters. Further, the social cost of failure of a bank is perceived to be large. This social cost includes the costs of financial distress and economic distress (see Berger et al., 1995a). The former are typically borne by the bank’s creditors and shareholders and hence internalized in their decisions. Some other costs are only partially internalized by the bank, such as the loss of informational capital and the destruction of long-term relationships of borrowers of the bank (who have to find other lines of credit to continue their business) (see Bernanke, 1983; Bernanke and Gertler, 1989). Other costs are completely external, such as the disruption of the payment system (interrupting the clearing process, inducing perhaps a failure in inter-bank settlements), and contagion effects (the failure of a bank carries bad news for another bank with a similar portfolio and can trigger its failure) (see Guttentag and Herring, 1987).

It is worth emphasizing that owing to the nature of bank liabilities (short-term debt redeemable at par) banks are subject to runs. Indeed, a solvent bank may be subject to a purely speculative panic, depositors withdrawing the funds invested and the bank being forced to liquidate assets quickly at a high cost. In addition, there is the danger of systemic risk owing to contagion from the failure of an entity, which may give rise to a strong negative externality, both for the financial sector and for the real sector of the economy.\(^9\) Deposit insurance and the lender of last resort have been put in place precisely to face the potential fragility of the banking system. Those facilities may compound the moral-hazard problem.\(^10\)

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\(^9\) Despite leaving the system vulnerable to runs, short-term debt may be efficient as a risk-sharing and/or as an incentive mechanism (see Diamond and Dybvig, 1983; Calomiris and Khan, 1991). At the same time a run can also be brought on by information regarding bank solvency, and it may have a disciplinary effect on the assumption of risk by financial entities (see Postlewaite and Vives, 1987; Jacklin and Bhattacharya, 1988).

\(^10\) Gale and Vives (2001) and Vives (2002) examine the trade-off involved in using external discipline (dollarization and/or short-term debt, for example) to restore incentives.
In summary, banking is fragile, with an important probability of failure and a potentially severe moral-hazard problem, and failure has associated with it a large social cost, typically of a systemic nature. The fact that governments are prepared to pay large amounts to bail out banks as opposed to simply liquidating them may be interpreted as evidence that the external cost of failure is perceived to be high.\(^{11}\)

How do the specificities of banking affect the desirability of competition in the sector?

A first remark is that competition is not responsible for the fragile character of banking. A monopoly bank can be subject to a run. Fragility comes from a coordination problem faced by depositors that generates multiple equilibria, some of which imply the collapse of entities or even the whole system (Matutes and Vives, 1996). However, competition can be excessive in banking.

Indeed, market power, up to some degree, may be beneficial in banking. In other words, the view that competition is unambiguously good in banking is more naïve than in other industries. Market power moderates risk-taking incentives. In static models of deposit competition, a bank with some market power is less aggressive in setting rates. This may be valuable, particularly when the social cost of failure is high and deposit rates excessive. Flat-premium deposit insurance tends to make the banks more aggressive by increasing the elasticity of the residual supply of deposits faced by the bank (Matutes and Vives, 1996, 2000). Risk-based deposit insurance moderates risk-taking incentives, but still banks may take too much risk in the presence of a large social cost of failure (Matutes and Vives, 2000).

Limited liability implies that banks will take excessive risk on the asset side except if the risk position of the bank can be assessed (for example, by large holders of certificates of deposit). A bank cannot then increase its market share and profits by taking more risk because investors discount it. Disclosure requirements may help to make the risk position of the bank known (or, more realistically, better assessed). However, introducing flat-premium deposit insurance (or implicit bail-outs) destroys the disciplining effect of the market because then investors do not care about the failure of the bank.

In a dynamic setting, market power enhances the charter value of a bank and makes the bank more conservative. Indeed, a bank with more market power enjoys higher profits and has more to lose if it takes more risk, fails, and its charter is revoked. If future profits carry enough weight, the bank will moderate its risk-taking. Indeed, the decline of charter values due to deregulation and liberalization has been blamed for the increase in failures in the banking sector from the 1980s on (Keeley, 1990; Hellmann et al., 2000).

All these explanations have in common that market power raises the opportunity cost of going bankrupt.

Competition on the credit side has equally ambiguous implications on welfare. To start with, the bank faces both adverse-selection and moral-hazard problems when lending to firms. The well-known effect is that a higher rate set by the bank will tend to draw riskier applicants (adverse selection) and/or induce the borrower firms to choose riskier projects (moral hazard).\(^{12}\) Banks may then find it optimal to ration credit instead of raising the interest rate (Stiglitz and Weiss, 1981). A bank with market power has more incentive to alleviate this asymmetric-information problem by investing in monitoring the projects of firms and establishing value-enhancing relationship banking (Besanko and Thakor, 1993; Petersen and Rajan, 1994, 1995).\(^{13}\) This effect tends to increase the availability of credit to firms. However, market power has also the (more traditional) effect of increasing the lending rate and therefore increasing the tendency towards credit rationing to avoid the increase of the average riskiness of the pool of applicants. Even abstracting from the possibility of banking failure, market power presents a welfare trade-off. This is easily understood. More market power for the bank diminishes the moral-hazard problem faced by the bank, but aggravates it for the entrepreneur. Some market power tends to be good unless monitoring is very costly (Caminal and Matutes, 1997a).

\(^{11}\) See the evidence presented in Goodhart and Shoenmaker (1992).

\(^{12}\) Note that entrepreneurs also have limited liability.

\(^{13}\) See Riordan (1993) for a theory of excessive competition in the credit market owing to a winner’s-curse problem.
If to this we add the possibility of banking failure, the analysis becomes more complicated. In principle, a first effect of higher lending rates is to depress investment and, under plausible assumptions, to decrease the overall portfolio risk of the bank. More rivalry, then, should increase the probability of failure of the bank and have adverse welfare consequences. However, more competition may destroy incentives to monitor and therefore reduce lending. If the latter effect is strong enough, a monopolistic bank may be more exposed to aggregate uncertainty (because it tends to ration credit less) and be more likely to fail (Caminal and Matutes, 1997b).

All in all, it seems plausible to expect that, other things being equal, an increase in competition will tend to increase risk-taking incentives and the probability of failure of banks. This tendency may be moderated by reputational concerns (Boot and Greenbaum, 1993) of the banking institution (because a better reputation lowers the cost of outside finance to the bank) or by the presence of private costs of failure of managers.

In conclusion, a higher level of market power can be tolerated in banking in relation to other industries. This is not to say that movements towards increasing disclosure and/or pricing risk better (both in capital requirements and deposit insurance) are not for the better in general. However, even if the asymmetric-information problem between the bank and the investors could be solved (and this is an extreme proposition) there would remain the external effect of a banking failure (not internalized by the financial institution).

IV. LIBERALIZATION, DIVERSIFICATION, AND CONSOLIDATION

There is a puzzle linked to empirical banking studies of economies of scale. Indeed, most academic econometric studies in banking find that economies of scale are exhausted at relatively low asset levels and that the supposed cost efficiencies of mergers are hard to find or inconclusive (see Rhoades (1998), Calomiris and Karceski (1998), and Piloff and Santomero (1996), for overviews). Furthermore, the market assessment of mergers is either inconclusive or it is found that the acquirer suffers a loss of market value. However, banks continue to merge.

Although large horizontal mergers in the USA are found to cut total costs—basically staff costs and data processing systems and operations—this does not mean that cost efficiency is improved in terms of the appropriate ratios or econometric estimates. A problem arises in that empirical studies of scale economies and cost efficiency typically do not account for risk. Indeed, the studies measure the effect on cost of the joint increase in scale and risk. Noting that the lower cost of risk management of a larger, better-diversified bank may induce the bank to take on more risk, cost savings may not then be detected, if to take on more risk is costly. Controlling for risk-taking, large economies of scale that increase with asset size are found in US banks (Hughes et al., 1996, 1998).

If to control for risk helps in resolving the puzzle, then a key component of a consolidation is the augmented diversification possibilities it offers (beyond what can be obtained in the financial markets). Can then liberalization, opening up consolidation possibilities, yield at the same time an increase in competition and a decrease in insolvency risk?

(i) Liberalization and Market Enlargement

An effective market enlargement typically accompanies liberalization, be it because of the possibilities of access to international markets and market integration, or because of an increase in internal demand for financial services once ‘financial repression’ is eliminated. Progress in information technology and globalization, understood as a decrease in transport costs in a broad sense, have also worked in the direction of market expansion and have occurred concurrently with market liberalization.14

Market enlargement also increases the diversification possibilities of financial institutions. A typical example is the repeal in the USA of the restrictions on interstate branching. It is clear that interstate

14 See Besanko and Thakor (1993) for the distributional implications of liberalization in a spatial banking model and Cordella and Yeyati (2001) for the effects of financial opening in the presence of deposit insurance and disclosure requirements.
expansion increases competition and the diversification possibilities of banks. A similar phenomenon may be developing in Europe, with the possibilities of cross-country expansion. Liberalization may thus increase at the same time competition and diversification possibilities. It is important to keep in mind that, absent macroeconomic undiversifiable risk, the ideal of a perfectly competitive market could be approached in a large market in which financial institutions can diversify completely their portfolio risks. A large economy then aggregates uncertainty and eliminates market power (Yosha, 1997). In order to maximize the rate of convergence of individual welfare to the first best (the limit Walrasian outcome), for a given rate of growth of risky technologies, increased diversification must be balanced with increased competition.

A potential problem, however, is that the presence of limited liability may induce financial institutions not to take advantage of the increased diversification possibilities. Furthermore, and obviously, not all risk can be diversified. However, if the bank manager and/or the shareholders bear a cost of failure or distress (for example, failure eliminates the charter or option value of the bank and/or the private benefits of control of the manager) their objective will not be to take maximum risk. Diversification then improves the expected return–risk trade-off faced by the bank. In principle, however, the lower cost of risk management of a larger, better-diversified bank may induce the bank to take on more risk (and even increase the probability of insolvency). Diversification may also lessen the agency problem faced by the banker and improve the incentives to monitor projects, improving in turn the portfolio performance of the bank.15

It is possible to envision an initial situation none the less, in which (limited liability) financial intermediaries were constrained by their diversification possibilities. Liberalization, then, at the same time increases competition, potentially raising the incentive to take on more risk, but enlarges the pool of available investment projects with the possible end result of better diversified banks with lower margins and lower insolvency probability.

(ii) Diversification and Consolidation

Diversification can be achieved with mergers between financial institutions. Recent empirical studies in the USA find strong benefits of consolidation (improving profitability and production efficiency, and reducing insolvency risk) when the degree of macroeconomic (geographic) diversification increases (Hughes et al., 1996, 1998). More precisely, those authors find that geographic diversification offsets the tendency of larger banks to take more insolvency risk (controlling for diversification). An expansion in asset size is associated with a less than proportionate increase in expected profit and a more than proportionate increase in risk. An expansion in asset size and the number of branches within the same state is associated with a more than proportionate increase in expected profit and a less than proportionate increase in risk. An expansion in asset size, branches, and diversification across states is associated with an improvement in value efficiency and reduction of insolvency risk. Consolidation within the state reduces insolvency risk but does not improve market value.

If the results of these studies generalize, then it seems possible to have an increase in competition coupled with a reduction of insolvency risk, via consolidation, as an outcome of the liberalization process.

V. SIZE ADVANTAGES AND MARKET CONCENTRATION: A NATURAL BANKING OLIGOPOLY?

Size provides other advantages on top of diversification possibilities. First of all, size offers the possibility of exploiting scale economies from overhead in administrative and back-office operations, information technology, and in investment-banking-type operations (related to information gathering and fund management). Second, size may help in realizing scope economies (of combining different product lines because, for example, it increases the relationship value and decreases average marketing costs). Another possibility is that there are scope...
economies between commercial and investment banking. However, the benefits of universal banking are disputed.\textsuperscript{16} Finally, a large bank may be too big to fail (TBTF) and have a larger capacity to influence regulation. The disadvantages of size come from diseconomies of management and agency problems.

Consolidation may deliver the advantages of size, eliminating excess capacity in the branch network (when the networks of the merging banks overlap) and improving diversification, particularly if the banks operate in regions with non-synchronized cycles. Furthermore, consolidation may provide a way to cut excess labour in rigid labour markets (as in Europe) and to access the mass retail market in a foreign country. At the same time, consolidation may be an instrument to relax price competition and increase market power, to fulfil the ‘empire building’ ambitions and maximization of private benefits of managers, and to avoid being taken over (perhaps with the complicity of national authorities who may not want to lose the headquarters of a large bank to a foreign country or simply want to promote a national champion).

We have argued that liberalization usually entails market enlargement. What happens to the equilibrium concentration level in a market when the market size expands?

We know that in an industry characterized by the presence of a sunk cost of entry, concentration decreases as the ratio of the market size to the sunk cost of entry increases. From this standard entry model we have found that an increase in the size of the market (induced, for example, by market integration and liberalization) will decrease the number of banks, but concentration in the enlarged market (say at the European level) will be lower than the starting level in the individual countries. We have argued in section II that banking is being transformed towards a service industry in which sunk costs are determined by banks investing (in communication networks, information technology, or specialized human capital) to reduce costs or improve the quality of the services offered. In this case an increase in market size need not lower concentration (Sutton, 1991).

More precisely, consider a three-stage game: first, entry decisions incurring a fixed cost; second, investment decisions (such as expenditure on cost-reducing information technology and/or fixed investment in information acquisition); and, finally, competition in the market-place. It is known, then, that there are circumstances where increasing the size of the market does not generate more entry in equilibrium, and in fact it may generate exit, because competition at the investment stage is very strong. This happens when the fixed expenditure looms large in relation to the variable one at the production and market stage, and when market share is sensitive enough to the investment effort. Increasing the size of the market generates increased expenditures by a few firms at the investment stage and there is typically an upper bound to the number of active firms in the, no matter how large, market (see Sutton, 1991; Schmalensee, 1992).

Obviously, it is an empirical question to what degree in banking sunk costs are ‘endogenous’ in the sense described above. One may hypothesize, however, that the increased importance of investment in information technology and in information acquisition in general has increased the degree of endogenous sunk costs in banking, and that market share has increased also its sensitivity to the investment effort. If this is so, then in the new global marketplace there is only room for a few global players, even in an expanded market. This would apply particularly to wholesale and investment banking that provide services, such as underwriting, trading, brokerage, rating, and mergers and acquisitions (M&As), to the top tier of multinational corporations, as well as to medium-sized firms with international operations.

\textsuperscript{16} For example, Saunders and Walter (1994) when comparing the performance of specialized banks in the USA and Japan with the European universal banks find evidence of economies of super-scale in the former and of diseconomies of scope between investment and commercial banking. Boot and Thakor (1997) in a theoretical piece find that financial innovation in a universal banking system is less intense (in a stochastic sense) than in a financial system in which commercial and investment banks are functionally separated.
VI. COMPETITION POLICY

We have claimed in section III that some degree of market power in banking is optimal to check risk-taking. Does this mean that competition should be directly restricted in banking?

The status quo before the liberalization process was far away from the optimal balance between the benefits of competition (in terms of efficiency, quality provision, innovation, and international competitiveness) and the potential increase in instability. Indeed, central banks were too complacent regarding collusion agreements among banks and even fostered them. This applies in particular to Europe. Indeed, the costs of financial repression and of regulation are apparent. For example, rate regulation induces over-investment in services, excess entry, and introduces the possibility of regulatory capture. In general, the informational requirements of implementing appropriate regulation are very high.

Furthermore, even if it were desirable to restrict competition, given the present pace of innovation in information technology, marketing channels, and financial engineering, it may not be possible to do it. Indeed, new competitors would spring up to replace the forbidden activities of banks, or new products would be invented to circumvent the regulations. The cost that would be incurred by limiting competition would be too large.

Exceptional to this are institutions that have run into trouble: their margins are eroded, and they have an incentive to use ‘go-for-broke’ or ‘gambling for resurrection’ strategies. This is what happened with a segment of the US S&L industry. At the same time, the optimal degree of competition in banking will depend on the level of the social cost of failure and the capacity to use risk-based insurance and disclosure requirements to limit risk-taking. In countries where the cost of failure is high and the power of ‘market-like’ instruments low, as in emergent or LDC (less-developed country) economies, the optimal level of competition will be lower.

Still the question arises of whether the globalization process and the Internet make banking contestable and whether, again, competition may be excessive. Indeed, we may think that the Internet, as an extremely efficient search facility (for example, with search engines facilitating price comparisons), may increase the elasticity of demand so much that firms/banks may not be able to recover fixed costs (Ellison and Ellison, 2001). However, electronic banking is not widespread yet, and it is subject to exogenous and endogenous frictions and switching costs (see Rhoades, 1997). For example, institutions may counter enhanced search facilities with obfuscation strategies that increase frictions and restore margins. Such strategies can be of the type of ‘loss leader’ or ‘bait-and-switch’. For example, a bank may offer on the Internet a very low mortgage rate, with very restrictive ancillary conditions not visible from the point of view of the search facility, to attract customers and to convince them to take a higher mortgage rate with more reasonable ancillary conditions. In general, the enhanced price transparency brought by the Internet may have ambiguous effects. Transparency from the point of view of the consumer is pro-competitive in principle, but dynamic effects are ambiguous. Indeed, it is more tempting to undercut a collusive agreement with more consumer transparency (because it increases the effective demand elasticity of the firm), but more severe punishments for deviants are possible. Transparency from the point of view of producers is good for collusion because it is easier to detect price cuts.17

In any case, banking is a multi-product industry, with different segments having different levels of competition. Retail and SME (small and medium-sized enterprise) markets have a local dimension, with entry barriers and switching costs, and there is room to exercise market power. This is not to say that electronic banking and information technology have not eroded market power in retail. For example, Petersen and Rajan (2001) show that the distance between firms and their lenders is increasing in the USA. They conjecture that this is due not to banking consolidation but to a higher availability of borrow-

17 In a Hotelling model, Schultz (2001) finds that increasing transparency on the consumer side makes collusion more difficult to sustain (the elasticity effect dominates); meanwhile, increasing transparency on the consumer and producer sides (assumed at the same level) at the same time also makes collusion more difficult.
ers’ credit records and to an increased efficiency in processing them. Wholesale and investment banking is a global segment with strong competition where perhaps only a few players can survive. This means that the relevant market in retail (families and SMEs) is local, despite the possible extension owing to electronic banking, and in wholesale and investment banking it is global.

How can the level of competition be influenced without causing distortions?

Merger policy can be used to soften competition by being more lenient in allowing consolidation. In the USA, the de-facto antitrust exemption for banking ended with Supreme Court decisions in 1944, 1963, and 1964, and for mergers somewhat more lax criteria than in general are applied. The safe-haven thresholds for the Herfindahl index in the relevant market, below which a merger will not be challenged, are higher for banking than for other industries. Otherwise, there is a potential challenge by the regulator (Office of the Comptroller of the Currency, Federal Deposit Insurance Corporation, or Federal Reserve System) and the Department of Justice, the latter using typically more stringent criteria, subject to the usual analysis of entry conditions and efficiency defence.

In the USA, typically, mergers have been approved subject to some branch divestiture in order not to increase concentration in the local market. This contrasts with the European practice of allowing domestic mergers (which have been the vast majority of consolidations) without requiring significant divestitures. This reflects different worries of the competition authorities. In the USA, as well as in the UK, there is a concern about the effect of consolidations on retail banking and, in particular, on lending to SMEs. In contrast, in Continental Europe market power at the local level does not seem to be perceived as a big problem by national authorities. Despite this, mergers among large national banks, such as UBS and SBC in Switzerland (see Neven and Von Ungern-Sternberg, 1998), do seem to have a potentially large impact at the retail level. In Spain, for example, mergers of large domestic banks (such as Santander with Central Hispano, or Bilbao-Vizcaya with Argentaria) have raised concerns only because equity participations by a bank in different firms in the same industry, such as energy or telecommunications, could lead to collusive behaviour or a too large softening of the competition in the product market. Some rules limiting equity participation by a bank in different firms of the same industry have been imposed to allay such fears. In general, national authorities in Europe have worried more about protecting and enlarging their national champions than about the possible consequences of consolidations for customers. The European Commission has taken a tougher stance.20

VII. CONCLUDING REMARKS

Banking is changing and both competition and regulation have to adapt to the new environment. Somewhat paradoxically, both the danger of excessive competition and of excessive market power are present in the sector. The reason is that banking is a multi-product industry, with different levels of competition in different segments, and that the optimal level of competition depends on the institutional characteristics of regulation and on bank soundness.

At the retail level, despite the inroads made by electronic banking and improvements in information processing, market power is still a concern. Frictions are important and competition policy has an active role to play.

At the wholesale and investment banking level the game is global, competition intense, and the equilibrium market structure may be a natural oligopoly. In this case efforts to change it may not prove fruitful. It is an open question as to what, if any, is the role of competition policy in this area.

18 Prager and Hannan (1998) provide evidence that substantial horizontal mergers of US banks in the period 1991–4 increase market power.
19 In the UK, concerns about market power in the payments system have also led to its regulation by the Office of Fair Trading.
20 The failed merger of BBVA with Unicredito because of the opposition of the Bank of Italy and the problems of BSCH in Portugal with Champalimaud are cases in point. See Vives (2001).
Different countries may have different optimal levels of competition intensity. Countries with a strong regulatory structure, where risk-based insurance and information disclosure can be implemented to a high degree, and with relatively low social costs of failure, will benefit from vigorous rivalry. On the other hand, emergent and LDC economies with a weak institutional structure and high social costs of failure should moderate the intensity of competition. In the extreme, competition should be restricted for institutions heading for trouble. The competitive tools will certainly be misused to extend risk-taking in this case.

REFERENCES


