



Competition Among Banks: Introduction and Conference Overview

FRANKLIN ALLEN
University of Pennsylvania

HANS GERSBACH
Ruprecht-Karls-Universität Heidelberg

JAN-PIETER KRAHNEN
Johann Wolfgang Goethe-Universität Frankfurt

ANTHONY M. SANTOMERO
Federal Reserve Bank of Philadelphia and University of Pennsylvania

The genius of American banking is competition. And the more competition the better. You look at every other major country and they only have a handful of banks that account for most of the business.

(William Proxmire, late Chairman of the U.S. Senate Banking Committee)¹

The U.S. traditionally had a radically different view of competition in the financial sector compared to other countries. Distrust of power in the hands of large financial institutions very early led to restrictions on the ability of banks to expand geographically or to diversify into other activities. Throughout the nineteenth century the U.S. banking system was highly fragmented and unlike every other industrializing country the U.S. failed to develop nationwide banks with extensive branch networks. Prior to the Civil War, states were free to regulate their own banking systems and there was no national system. Many states adopted a “free banking” system that allowed free entry. The advent of the Civil War in 1861 significantly changed the role of the Federal Government in the financial system. The National Bank Acts of 1863 and 1864 set up a national banking system. These granted limited powers to banks. In particular, the 1864 Act was interpreted as confining each to a single location. This ensured there were a large number of banks. It is often argued that this promotes competition.

¹ Quoted by Roe (1991; p. 36). From ‘Naylor, Proxmire to seek Bank Size Limits’, *American Banker* December 10, 1986, p. 1.

In other countries, including both those with market-oriented systems and those with bank-oriented systems, the banking sectors became highly concentrated many years ago. For example, in the U.K. banks developed nationwide networks during the latter part of the nineteenth century, so that by the beginning of the twentieth century there were essentially only five major banks. Other industrialized countries also experienced consolidation and the development of nationwide networks around this time. In many cases governments actively encouraged this change.

Padoa-Schioppa (2001) argues that the severe banking crises of the 1930's led to a revision of traditional views of the desirability of competition in the U.S. Financial stability became an important goal in the U.S. and other countries. Banks were protected from competition. The resulting oligopoly profits permitted banks to better absorb shocks and if a particular bank had severe problems, then others in the industry could be persuaded to take it over.

The last decades have witnessed significant deregulatory moves in the banking sector in many countries with respect to interest rates, fees, lines of business, entry and ownership. Concurrent with these actions designed to foster competition, prudential regulation has been strengthened or at least harmonized and the coverage of deposit insurance has been extended.

Modern banking regulation in most countries rests on three pillars: prudential supervision with capital adequacy rules, deposit insurance with bailout or crisis management and a regulatory framework that sets the rules for competition among banks. While the first and second pillars have received a great deal of attention in academic and public discussions, it has been taken for granted in recent years that competition among banks should follow the broad argument that competition in industries is welfare-enhancing.

Why have there been such different views on the desirability of different banking structures historically? What are the trade-offs between competition and concentration? What is the optimal degree of competition? These questions have been given some urgency because of moves toward increased competition in the European Union (EU) and Japan. The EU has committed to remove barriers across banking markets in order to have a completely integrated banking market on both the demand and supply sides (see Cerasi, Chizzolini and Ivaldi (1997)). In Japan one of the underlying principles of the "Big Bang" financial reform was to increase competition in the financial sector.

The economic arguments in favor of competition have mostly been transplanted from the industrial organization (IO) literature (see, e.g., Alhadeff (1954), Fischer (1968), Rhoades (1982), Gilbert (1984) and Freixas and Rochet (1997)). It is argued that competition ensures that costs are minimized and the prices of banking services are such that resources are allocated efficiently. In other words, competition promotes efficiency and shares the benefits of the financial system with the rest of the economy. On the other hand, if banks acquire market power, they can exploit it to charge higher interest on loans, pay lower interest on deposits, and distort the savings and investment decisions of consumers and producers. Similarly, by char-

ging excessive fees for banking services, they raise the costs of transactions and distort the exchange decisions of consumers and producers. Finally, lack of competition may cause banks to operate within the limits of their technical capacity, so-called X-inefficiency.

There is a vast literature on efficiency in banking, most of which has focused on issues of X-inefficiency, efficient scale of production, and so forth. This literature does not treat the banking industry as different from any other industry (see, e.g., Berger and Mester (1997) for a survey and Berger, Leusner and Mingo (1997) for a recent empirical study). Banks are assumed to have a production technology and an efficient frontier like any other firm or industry. The crucial question is whether the assumptions of the standard models of competition are necessarily appropriate for the banking sector.

It can be argued that the standard competitive paradigm is not appropriate for the banking industry. For example, Allen and Gale (2000, Chapter 8) show that a small fixed cost of switching banks radically changes the nature of competition. The inconvenience of changing banks in practice means that such an assumption is quite plausible. If there are a large number of independent competing banks then the fixed cost means that the resulting equilibrium is the same as if there was a monopoly. If competing banks initially charge the same price, each bank can raise its price by a small amount without losing customers. The only equilibrium is when all banks are charging the monopoly price. In contrast when there are only two banks with extensive nationwide networks, and people move from location to location, reputation effects can lead to the banks charging a price close to the perfectly competitive level.

Allen and Gale also show that one possible effect of an increase in competition in the banking sector and an associated reduction in profits is to increase the incentive for banks to take risks in their investments. The reason is that banks' incentives are distorted by their use of debt contracts with depositors. This distortion is reduced the greater the degree of concentration and the higher is the level of profits. As a result a concentrated banking system can be more efficient than a competitive one. Keeley (1990) argues that deregulation of the banking industry in the U.S. in the 1970's and 1980's led to an increase in competition and a reduction in banks' profits. This in turn greatly increased the incentive for banks to undertake risk-taking behavior. His empirical findings strongly support this thesis. All this suggests there is likely to be a relationship between competition and financial instability. A lower degree of competition can lead to higher profits and hence a larger "buffer" should the financial system be hit by a shock.

The analysis of competition of banks for both market sides, deposits and loans, may itself lead to a departure from competitive outcomes. Stahl (1988) and Yanelle (1997) have shown that the competitive outcome need not obtain since a bank may corner one market side in an attempt to achieve a monopoly. Gersbach (1998) indicates that the market side choice of entrepreneurs who decide whether to save their funds or to apply for loans can restore the Walrasian outcome. Entrepreneurs who

are offered unfavorable credit terms find it better to save their funds which limits the scope of a bank that wants to exploit its monopoly power with borrowers. But it remains open whether the one market side IO framework can capture the nature of competition in banking.

The conflict between the results based on the traditional one market side IO framework and those from more recent theoretical models tailored to the banking industry mean it is unclear whether competition among banks is good or bad. This open issue led the Center for Financial Studies at the Johann Wolfgang Goethe-Universität Frankfurt am Main and the Wharton Financial Institutions Center to jointly sponsor a conference on this topic. The conference was held on April 7 and 8, 2000 in Frankfurt. The full program is contained in the Appendix. This special issue contains a number of the papers that were presented there.

The first paper, Padoa-Schioppa (2001), recounts how attitudes toward banking competition have changed over his career as a central banker. At the start memories of the Great Depression meant that there was a negative attitude towards competition. It was believed that some degree of profitability was essential for stability so that the banking system would be less fragile and more able to absorb shocks. Over time attitudes changed and competition came to be viewed in a positive way. The new view was that competition helped strengthen institutions and make them better able to handle shocks. Padoa-Schioppa argues that it was primarily technological changes that allowed banks to circumvent the old regulations and led to the change in views. It is not entirely clear how far the new attitude can go. Unlike most other industries the banking system needs co-operation (in payment systems, for example) and this limits competition. On the other hand internationalization of markets for financial services increases competition. This is particularly true in the EU given that the introduction of the Euro has eliminated currency risks in Euroland and has strengthened the moves towards integrating markets. The next three papers are theoretical analyses of various aspects of banking competition. By and large they find that banking competition is bad. The starting point of Cao and Shi (2001) is Petersen and Rajan's (1995) empirical finding that bank loans are more available in areas with a concentrated banking sector than in areas with a competitive banking sector. The standard explanation for this phenomenon is that monopolistic banks can extract more rents *ex post* than competitive banks and this makes them more willing to provide loans at a loss to start-up firms. However, Cao and Shi point out that this rationale suggests that medium-aged firms should have even more access to loans from monopolistic banks but this is inconsistent with Petersen and Rajan's findings.

Cao and Shi develop an alternative explanation based on the "winner's curse". They argue that when banks compete for loans they will acquire "noisy" information about the quality of the borrower. If a bank mistakenly comes up with a high valuation it is likely to win the bidding for the loan. This is the winner's curse. Banks must take account of this by lowering their valuation and bidding an amount corresponding to this valuation. The more informed banks that compete the bigger

the winner's curse is because the winner must have beaten a higher number of competing bids and on average the mistake is likely to have been larger. As the number of competing banks increases not only does competition increase but also the negative externality associated with the winner's curse increases. In order to break even the probability of costly information acquisition must be reduced and this effect can be so large that the availability of loans is decreased.

One of the important issues in the comparative financial systems literature has been a comparison of bank-based systems with close relationships between banks and firms and market-based systems with arm's length relationships between borrowers and lenders. Yafeh and Yosha (2001) develop a traditional IO model to investigate the interaction between multi-product banks and arm's length lending. In the first part of the paper they consider what happens when there is one multi-product bank that does relationship lending as well as arm's length lending and many other banks that just do arm's length lending. It is shown that the more competitive is the arm's length market the less profitable it is for the multi-product bank to attract customers away from the arm's length market because they must give up a large fraction of the rents from the relationship.

In the second part of the paper they take the market structure in the arm's length market as endogenous. Here the main result is that the relationships between the multi-product bank and firms can be used to deter entry by other banks into the arm's length market. By sharing the surplus from the relationship appropriately the multi-product bank can discourage defections to the arm's length market and therefore prevent entry of rivals. Thus a banking system with close ties between firms and banks will tend to perpetuate itself once it is in place.

Ennis (2001) considers a financial system where banks can be regional or national and considers the nature of competition between the two. He is interested in whether one type dominates or whether they both coexist. In his model the assumption of indivisible investments is combined with a hidden action moral hazard problem. This creates a role for banks to act as monitors as in Diamond (1984). These building blocks are embedded in an overlapping generations model. It is demonstrated that in equilibrium a large nationwide bank that saves on agency costs by monitoring competes with a fringe of small regional banks that do not have to pay the costs of a nationwide system.

The empirical papers included in the volume use the traditional IO competitive framework, testing for an effect of structural parameters, such as firm size, age, or regulatory regime, on market performance, notably bank output. Their results are consistent with competition being good. Berger, Goldberg and White (2001) focus on the effect of mergers and acquisitions on lending to small businesses. Previous research in this area finds that large banks created through M&A's tend to cut their lending to small businesses. Berger et al. extend the literature by looking at the effect of M&A's on the lending of other banks and on entry into the banking market. They find modest positive effects on the small business lending of other banks irrespective of whether they are small or large. As far as entry is concerned

they identify a positive effect on the small business lending of small banks but a negative effect on the small business lending of large banks.

The European Commission has implemented two banking directives designed to improve cross-border competition. Hasan, Lozano-Vivas and Pastor (2001) use data envelopment analysis using banking variables and environmental factors such as cross-country distinctions in demographics, regulations and economic conditions. The aim of the approach is to predict what the efficiency of banks in one country would be if they started operating in another country. Banks from Spain, Portugal and Denmark that operate in adverse environmental positions in their domestic markets are found to have higher potential performance if they move to other countries. It is also found that being technically efficient is a significant deterrence to foreign competition. Finally, French and Italian banks are found to be less efficient institutions across the board.

In conclusion, as might be expected, it is not possible to provide an unequivocal answer to the question posed by the title of the conference and of this special issue. One reason is that the empirical papers in this volume, in line with most of the current literature, do in fact pose a different question than is being asked in the recent theoretical literature. The current empirical literature is concerned with symmetric information models that focus on production efficiency. However, many justifications for the existence of banks involve asymmetric information. Much of the recent theoretical literature takes asymmetric information as its starting point. In these models, the emphasis is not only on allocational issues but also on the effects of competition on bank behavior with respect to individual loan risk, and with respect to the correlation of lending portfolio returns. While the first effect gives rise to bank default risk, the second effect may give rise to herding behavior and to financial system instability. Thus, the question of whether competition in banking is good or bad needs to be qualified: Good or bad with respect to production efficiency or financial system stability? While current empirical work on the economic effects of banking competition is largely concerned with the conventional theory of bank production, a more integrated test of the predictions derived from the current theoretical banking literature requires an assessment of bank assets risk. Nevertheless, our understanding of the feedbacks between the nature of competition among banks, the functioning of markets for financial services and the consequences for financial system stability has been considerably improved. The contrast between the findings of the recent theoretical and empirical literatures underlines the need for empirical work based on recent theoretical advances rather than the traditional IO framework.

Appendix: Conference Program

Joint Conference

The Center for Financial Studies/Institut für Kapitalmarktforschung at
Johann Wolfgang Goethe-Universität Frankfurt am Main, Germany

and

The Wharton Financial Institutions Center
Wharton School, University of Pennsylvania, Philadelphia, USA

Competition among Banks: Good or Bad?

Frankfurt/Main, April 7–8, 2000.

April 7, 2000

8:50–9:00

Welcome Address

Chair: Anthony Santomero

9:00–10:30

SESSION ONE: LOAN SCREENING AND COMPETITION

- Melanie Cao / Shouyong Shi
(Queen's University)
- Giovanni Dell'Ariccia (IMF)

Screening, Bidding, and the Loan Market Tightness

Learning by Lending, Competition, and Screening Incentives in the Banking Industry

Discussant

Paolo Fulghieri (INSEAD)

10:30–11:00

Coffee Break

11:00–12:30

SESSION TWO: MARKET POWER AND ITS EFFECT ON BANK PRODUCT MARKETS

- Dominik Egli / Bertrand Rime
(Schweizerische Nationalbank)
- Gabriel Oxenstierna (Centre for Banking and Finance at Södertörn University)

The UBS-SBC Merger and Competition in the Swiss Retail Banking Sector

Testing for Market Power in the Swedish Banking Oligopoly

- Allen N. Berger (Federal Reserve Board) / Seth D. Bonime (Yale School of Management) / Lawrence G. Goldberg (University of Miami) / Lawrence J. White (New York University)

The Dynamics of Market Entry: The Effects of Mergers and Acquisitions on De Novo Entry and Small Business Lending in the Banking Industry

Discussant

Philipp Hartmann (European Central Bank)

12:30–1:30

Lunch

1:30–2:30

Academic Key Note

JEAN TIROLE (Institut D'Economie Industrielle, IDEI, Université des Sciences Sociales, Toulouse)

Competition In The Credit Card Market

Chair: Jan Pieter Krahnen

2:30–4:00

SESSION THREE: THE EFFECT OF BANK PRODUCT EXPANSION

- Elias Denenis / Mohamed Nurullah (City University Business School)

Testing Return and Risk Effects of European Banks Diversification into Insurance Business

- Ayako Yasuda (Stanford University)

Relationship Capital and Competition in the Corporate Securities Underwriting Market

- Gyöngyi Lóránth (University of London, Birkbeck College)

Financial Innovation, Scope-Expansion and Incentives

Discussant

Hans Degryse (Tilburg University and K.U. Leuven)

4:00–4:30

Coffee Break

4:30–6:00

SESSION FOUR: THE IMPACT OF COMPETITION ON RELATIONSHIP LENDING

- Robert Hauswald (Indiana University) / Robert Marquez (University of Maryland)

Relationship Banking, Loan Specialization and Competition

- Yishay Yafeh (The Hebrew University) / Oved Yosha (Tel Aviv University)

The Industrial Organisation of Financial Systems and the Strategic Use of Relationship Banking

- Thomas Gehrig (Albert-Ludwigs-University of Freiburg) Banking Relations, Competition and Research Incentives

Discussant

Arnoud Boot (University of Amsterdam)

6:15–9:00

Dinner at Steigenberger Frankfurter Hof

Policy Key Speech

TOMMASO PADOA SCHIOPPA
(European Central Bank)

Competition and Banking Supervision

April 8, 2000

Chair: Hans Gersbach

9:00–10:30

SESSION FIVE: INTERMEDIATION THEORY AND THE IMPACT OF COMPETITION

- Michael Manove (Boston University) / A. Jorge Padilla (CEMFI) / Marco Pagano (Università di Salerno) Collateral vs. Project Screening: A Model of Lazy Banks
- John A. Weinberg (Federal Reserve Bank of Richmond) Interconnection and Rivalry between Banks
- Andrew Winton (University of Minnesota) Don't Put All Your Eggs in One Basket? Diversification and Specialization in Lending

Discussant

Enrico Perotti (University of Amsterdam)

10:30–11:00

Coffee Break

11:00–12:30

SESSION SIX: BANK EFFICIENCY IN THE EUROPEAN MARKET

- Barbara Casu / Philip Molyneux (University of Wales) A Comparative Study of Efficiency in European Banking
- Iftekhar Hasan (New York University) / Ana Lozano-Vivas (Universidad de Málaga) / Jesús Pastor (Universidad Miguel Hernández Elche) European Bank Performance Beyond Country Borders: What Really Matters?

- Bert Scholtens (University of Groningen)

Competition, Growth, and Performance in the Banking Industry

Discussant

Loretta Mester (Federal Reserve Bank of Philadelphia)

12:30–1:30

Lunch

1:30–2:30

Academic Key Note

MARTIN HELLWIG (University of Mannheim)

Structural Change, Competition, Concentration, and the Political Economy of Prudential Supervision in Banking

Chair: Franklin Allen

2:30–4:00

SESSION SEVEN: FINANCIAL STRUCTURE AND THE REAL ECONOMY

- Nicola Cetorelli / Michele Gambera (Federal Reserve Bank of Chicago)

Banking Market Structure, Financial Dependence and Growth: International Evidence from Industry Data

- Emilia Bonaccorsi di Patti (Bank of Italy) / Giovanni Dell'Ariccia (IMF)

Bank Competition and Firm Creation

- Huberto M. Ennis (Cornell University)

Loanable Funds, Monitoring and Banking

Discussant

Oren Sussman (London Business School)

4:00–4:30

Coffee Break

4:30–6:00

SESSION EIGHT: REGULATION ISSUES: DOES COMPETITION MATTER

- Reint Gropp / Jukka Vesala (ECB)

Charter Value and Deposit Insurance as Determinants of Risk Taking in EU Banking

- Rasmus Ruffer (Deutsche Bundesbank)

The Fight for Market Share and Bank Herding Behaviour

- Daniel M. Covitz / Erik A. Heitfield (Federal Reserve Board)

Monitoring, Moral Hazard, and Market Power: A Model of Bank Lending

Discussant

Xavier Freixas (Universitat Pompeu Fabra)

* Bold names indicate the presenter of the paper at the conference.

References

- Allen, F. and Gale, D. (2000), *Comparing Financial Systems*, MIT Press, Cambridge, MA.
- Alhadeff, D. (1954). *Monopoly and Competition in Banking*, University of California, Berkeley.
- Berger, A., Goldberg, L., and White, L. (2001), 'The Effects of Dynamic Changes in Bank Competition on the Supply of Small Business Credit', this issue.
- Berger, A., Leusner, J., and Mingo, J. (1997), 'The Efficiency of Bank Branches', *Journal of Monetary Economics* 40, 141–162.
- Berger, A. and Mester, L. (1997), 'Inside the Black Box: What Explains Differences in the Efficiencies of Financial Institutions?', *Journal of Banking and Finance* 21, 895–947.
- Cao, M. and Shi, S. (2001), 'Screening, Bidding, and the Loan Market Tightness', this issue.
- Cerasi, V., Chizzolini, B., and Ivaldi, M. (1997), 'Sunk Costs and Competitiveness of European Banks after Deregulation', Working Paper 16, Serie Banque, Assurance, Finance, Institut d'Economie Industrielle, Toulouse.
- Diamond, D. (1984), 'Financial Intermediation and Delegated Monitoring', *Review of Economic Studies* 51, 393–414.
- Ennis, H. (2001), 'Loanable Funds, Monitoring and Banking', this issue.
- Fischer, G. (1968), *American Banking Structure*, New York: Columbia University Press.
- Freixas, X. and Rochet, J. (1997), *Microeconomics of Banking*, MIT Press, Cambridge.
- Gersbach, H. (1998), 'Financial Intermediation with Market Side Switching', Working Paper, University of Heidelberg.
- Gilbert, R. (1984), 'Bank Market Structure and Competition: A Survey', *Journal of Money, Credit and Banking* 16, 617–644.
- Hasan, I., Lozano-Vivas, A., and Pastor, J. (2001), 'European Bank Performance Beyond Country Borders: What Really Matters?', this issue.
- Keeley, M. (1990), 'Deposit Insurance, Risk and Market Power in Banking', *American Economic Review* 80, 1183–1200.
- Padoa-Schoppa, T. (2001), 'Competition and Supervision in the Banking Industry: A Changing Paradigm', this issue.
- Petersen, M. and Rajan, R. (1995), 'The Effect of Credit Market Competition on Lending Relationships', *Quarterly Journal of Economics* 110, 407–443.
- Rhoades, S. (1982), 'Welfare Loss, Redistribution Effects and Restriction of Output Due to Monopoly in Banking', *Journal of Monetary Economics* 9, 375–387.
- Roe, M. (1991), 'A Political Theory of American Corporate Finance', *Columbia Law Review* 91, 10–67.
- Stahl, D.O. II (1988), 'Bertrand Competition for Inputs and Walrasian Outcomes', *The American Economic Review* 78, 189–201.
- Yafeh, Y. and Yosha, O. (2001), 'The Industrial Organization of Financial Systems and the Strategic Use of Relationship Banking', this issue.
- Yanelle, M. (1997), 'Banking Competition and Market Efficiency', *Review of Economic Studies* 64, 215–239.

Copyright of European Finance Review is the property of Springer Science & Business Media B.V.. The copyright in an individual article may be maintained by the author in certain cases. Content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.