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European banking after EMU



European Investment Bank

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Increasing concentration and competition in European banking: The end of anti-trust?



Philip Molyneux

1. Size, concentration and performance in European banking

A trend common to virtually all European banking markets over the last decade or so has been the fall in bank numbers. The decline in number of banks and the associated increase in market concentration may suggest that banking service choice is declining. However, a growth in branch numbers in many systems, increasing foreign bank presence, as well as the growth of non-traditional banking service providers make it difficult to categorically state that overall customer choice is declining. In this section we discuss in more detail how market structure affects performance in the banking sector. This is followed with a discussion of the changing European market structure, and whether increased concentration does actually pose any risks for consumers. The paper concludes with some observations on the impact of mergers on bank performance.

Economic theory tells us that there is a relationship between market structure and firm performance. A market characterised by a large number of firms will be expected to operate in a different fashion to a market with one dominant firm. There is a variety of different types of market structure ranging from perfect competition when there are very many firms (and when consumer welfare is maximised), through imperfect competition under an oligopoly, to monopoly.

Deciding on what constitutes 'the market' is, of course, problematic in banking given its multi-product nature. Nevertheless, the traditional industrial organisation literature which examines banking markets posits that there is a relationship between the structure of the market, firm conduct and industry performance. In particular, the traditional structure-conduct-performance paradigm (SCP) states that market concentration fosters collusion among the largest firms in the industry, which subsequently raises profits to 'uncompetitive' levels. The argument goes that if a small number of banks dominate the industry then it is easier and (less costly) for these to collude (whether implicitly or explicitly). Therefore, the largest banks can charge higher rates on loans, pay less interest on deposits, charge higher fees etc., than compared with a competitive environment.

The bulk of the empirical US and European banking literature that has sought to test the SCP model broadly comes to the conclusion that concentration does positively influence profit levels as well as result in higher loan pricing and lower deposit rates (see Gilbert, 1984, and Molyneux *et al.*, 1996). Nevertheless, this general finding needs qualification. The empirical evidence is by no means overwhelming - in Gilbert's review of 45 studies, only 27 find evidence that the traditional paradigm holds. The much smaller number of European studies do, however, tend to find that the hypothesis holds. These results also have to be treated with considerable caution in that even when positive relationships between concentration levels and profitability are found the explanatory power of the estimated models tend to be very low - variation in concentration levels typically

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explain less than 10-20% of the variation of industry profitability - this means that concentration only has a relatively small influence on industry profitability (even if it is positive).

While there appears to be a weak relationship between market concentration and profitability, this finding cannot be unambiguously interpreted as the result of collusion and monopoly power, because it may simply be a reflection of the fact that bigger firms are more efficient than their smaller counterparts. All other things being equal, if bigger banks are more efficient then they will earn higher profits. As a consequence, more concentrated markets will have higher profit levels. This interpretation of the concentration-profits relationship is generally referred to as the 'efficiency hypothesis'. In other words it is not collusion that explains the positive relationship between profits and concentration, but firm-level efficiency.

Big banks are relatively more X-efficient

The focus on bank efficiency has spawned a substantial literature examining scale (size), scope (product-mix) and X-efficiency (managerial and technological efficiency). The literature up until the mid-1980s found that scale economies tended to be apparent in banking at relatively low asset size levels and then became exhausted (see Molyneux *et al.*, 1996). More recent US and European studies, however, have found stronger evidence of economies of scale for large banks (see European Commission, 1997, and Berger and Humphrey, 1997). The results on scope economies in banking are mixed and estimates tend to be unreliable. The main empirical regularity that comes from the broad cost efficiency literature, however, is that X-inefficiencies are much larger than scale economies. This means that banks can improve their overall cost efficiency to a greater extent if they emulate industry best practice (by improving managerial and technological factors) rather than by increasing their size.

On balance, the mainly US based literature does suggest that big banks are relatively more X-efficient, which means that (on average) they are more likely to be closer to the best cost practice of banks with similar size and product mix. In the case of similar small banks, cost differences vary to a much greater extent.

While European research on bank efficiency has not matched the volume of the US literature a handful of recent studies have sought to redress the imbalance. Vander Venet (1998), for instance, compares the cost and profit efficiencies of European universal and specialist banks (1). He finds that financial conglomerates are more revenue efficient than their specialised competitors and that the degree of both cost and profit efficiency is higher in universal compared with non-universal banks. For diversified banks, inefficiency appeared to be uncorrelated with size; however, small specialised banks appeared to be relatively inefficient compared with their larger counterparts. These results are broadly in accordance with Allen and Rai's (1996) cross-country comparison of universal versus specialist banking systems. Scale economies were only found for banks with assets under EUR 10 billion, with constant return thereafter and diseconomies for the largest banks (assets exceeding EUR 100 billion). Following his analysis, Vander Venet suggests that the bank sizes for which no diseconomies are found are higher today than in the 1980s, a result that was also reported for US banks by Berger and Mester (1997).

1) Using the translog methodology and a sample of 2375 EU banks from 17 countries for the years 1995 and 1996.

Altunbas *et al.*, (1999) also model the cost characteristics of banking markets (2). They find scale economies are widespread across different countries and increase with bank size. In general, scale economies are found to range between 5 and 10 percent, while X-inefficiency measures appear to be much larger, at around 25 percent. X-inefficiencies also vary to a greater extent across different markets, bank sizes and over time. In addition, Altunbas *et al.*, (1999) show that technical progress has had a similar influence across European banking markets between 1989 and 1996, reducing total costs by around 3 percent per annum. The impact of technical progress in reducing bank costs is also shown to systematically increase with bank size. Overall, these results indicate that Europe's largest banks benefit most from scale economies and technical progress. Altunbas *et al.*, (1999) conclude that these are important factors promoting the current trend for consolidation within the industry.

While the bulk of the above literature suggests a tendency for increased concentration across European banking markets there have been no studies, as far as we are aware, that attempt to examine the relationship between bank size, efficiency and market concentration with bank performance in Europe. Berger (1995), however, has done this for the US where he evaluates the influence of market structure (industry concentration), firm size and efficiency on bank performance. He estimates a range of equations along the following lines:

$$\text{ROE (ROA)} = a + b.\text{CONC} + c.\text{MS} + d.\text{X-EFF} + e.\text{S-EFF} + \text{a random error term}$$

where: ROE (ROA) = Return on equity (or return on assets)

CONC = Herfindahl index (a deposit market concentration measure)

MS = Bank's deposit market share

X-EFF = Bank specific X-efficiency measure

S-EFF = Bank specific scale efficiency ratio

and *a*, *b*, *c*, *d*, and *e* are constants.

Market concentration and bank size are not particularly important in determining bank performance.

Berger (1995) finds that only the market share and X-efficiency variables are significant and positive in explaining US bank performance. This means that larger banks tend, on average, to earn higher profits and those that are more X-efficient also earn higher profits. He interprets these results as providing evidence that bigger banks can do better because they have 'relative market power' (brought about through such things as product differentiation). More X-efficient banks (irrespective of size) earn higher profits because they have superior management and technology. Note that concentration and economies of scale are found to be unimportant in influencing bank performance.

These results, therefore, show that while market concentration is not an important factor in influencing bank performance, individual bank size appears to be. However, Berger (1995) qualifies his overall findings by pointing to the weak explanatory power of his models and concludes: "it does not appear that any of the [scale or scope] efficiency or market power hypotheses are of great importance in explaining bank profits".

Such findings strongly suggest that market concentration and bank size are not particularly important in determining bank performance, they thus clearly reject the traditional SCP hypothesis that

2) By applying the Fourier Flexible functional form and stochastic cost frontier methodologies to estimate scale economies, X-inefficiencies and technical change for a large sample of European banks between 1989 and 1996.

suggests that market concentration enables banks to earn anti-competitive profits. If the same holds true in other countries' banking systems, competition regulators would find it difficult to adhere to the view that concentration or/and market share will obviously increase the profitability (or the ability of banks to earn monopoly rents) if they get bigger.

2. The changing banking environment

2.1 Contestability in the financial services industry

Moreover, recent developments in antitrust economics question the rationale for examining structure-performance type relationships. As noted in a recent review article in the Economist magazine (1998), this approach is subject to two main shortcomings: first, it is often unclear as to what market is at stake; second, even when this is clear, the relation between concentration measures and market power is not. This has led economists to downplay market shares and has focused critical attention on other ways of evaluating whether a merger will drive prices higher than they otherwise would be.

During the 1980s, particular attention was placed on the notion of contestability in markets. The argument goes that if entry conditions are relatively free and new entrants can exit the market and recover their costs (no sunk costs) then a sensible monopolist will forestall competition by setting prices as if it were operating in a competitive market, and there will be no economic harm. The higher the entry and exit barriers the less contestable, and therefore less competitive, the market. The smaller the incentive for new entrants to compete against incumbent firms, then the more likely that incumbents will restrict output and raise prices.

While the notion of contestability was strongly championed during the 1980s and influenced US antitrust policy in a major way, concerns that sunk costs were in fact substantial in many merger outcomes has led economists to focus on (usually game theoretic) models of strategic competition among oligopolists to evaluate market power outcomes. Typically, this latter approach uses sophisticated modelling and price/performance data to evaluate the likelihood of collusion resulting from mergers. As far as we are aware, these techniques have not (so far) been rigorously applied to any bank mergers. This is probably because of the complexity of dealing with mergers between multi-product firms where detailed and standardised product and price data are not readily available.

A relatively simple example of how rivalry between large banks can be modelled is presented in Molyneux (1995). This paper tests for inter-firm behaviour between leading banks across European banking markets. He finds that the traditional concentration-profits relationship holds although this is determined by the behaviour of the top two banks. In particular, a large leading bank does appear to promote co-operation (collusion) with other leading banks, but the appearance of a large second bank seems to induce rivalry with leaders rather than co-operation. The impact of more distant rivals does not seem to affect the profitability of banks in the industry. Overall, these results suggest that policy-makers should be concerned if the largest bank in the system is substantially bigger than its nearest competitors. It may well be justified in encouraging mergers between large banks so they can act as stronger competitors to market leaders. As far as we are aware, no other studies investigate this type of behaviour in banking markets, so it is difficult to generalise that the same pattern of behaviour is consistent over time and in other banking markets.

A large leading bank does appear to promote collusion with other leading banks, but the appearance of a large second bank seems to induce rivalry.

Contestability of banking markets also depends upon the demarcation line between different financial institutions, and this in turn depends upon technical change. Traditionally, commercial banking has been relatively clearly defined. Its scope was broader or narrower according to different national regulations and historical inheritance. As a typical feature of this industry, production and distribution of banking products and services had always been vertically integrated. Nowadays, however, the picture is more blurred as regulatory barriers hardly settle the border between banking and other financial service providers.

Deregulation and technological advances are making the banking and financial services industry increasingly contestable.

An ever larger array of negotiable assets, fed by sustained innovation, has combined with the use of new technologies to support the emergence and rapid growth of money and financial markets (see Molyneux and Shamroukh, 1996, 1999). Banks have experienced widespread disintermediation losing significant market share in deposit-taking and lending especially to large corporate clients and institutional investors. The substantial rise in the retail mutual fund industry as well as in other collective savings and investment vehicles (such as life insurance and pensions) is also promoting disintermediation in consumer banking business. This gradual shift in financing, which tends to benefit capital market operators (such as investment banks, brokerage firms and institutional investors), has forced many commercial banks to develop similar operations in order to benefit from the disintermediation trend. Fee and commission income now accounts for a much larger proportion of commercial banks' net income than it did a decade ago.

The rapid growth of direct banking and insurance services, as well as the increase in new asset-financing firms (factoring and leasing), credit card operators, consumer finance firms, venture capitalists and so on is a clear indicator of these trends. Banks, therefore, nowadays compete with a wider range of financial and non-financial firms than ever before. Increasingly, it seems that any large firm with a significant 'brand image' can enter the (at least retail) financial services industry. The growth of Internet financial services business is further opening up the market to technology firms and significantly reducing transaction and processing costs. The sunk costs associated with Internet banking are negligible compared with 'old' branch banking.

The falling entry costs of many new banking areas suggests that deregulation and technological advances are making the banking and financial services industry in Europe (and the rest of the developed world) increasingly contestable. More formal investigations, including studies undertaken by Molyneux *et al.*, (1994) and De Bandt and Davis (1998) find evidence of monopolistic competition in a variety of European banking systems which they suggest is consistent with the notion of market contestability. Davis and De Bandt (1998) also note that competitive conditions in the French, German and Italian banking markets still lag those of the US. While research in this area is in its infancy there is at least some empirical evidence to suggest increased contestability in European banking.

2.2 Role of core banks and other rationales for consolidation

Another argument for having large banks of similar size is that it reduces the chance of one leader exerting undue influence in a wide range of areas beyond price-setting. This view is, to a certain extent, based on the notion that it is in the interests of government to promote and preserve a small number of 'core banks'. Revell (1987) identifies 'core banks' as the group of any country's largest banks that, by dint of their size, have certain privileges (i.e. are likely to be 'too-important' or 'too-

big' to be allowed to fail) which are balanced, and can often be outweighed, by their duties. In an earlier edition of the *EIB Papers*, Gardener and Molyneux (1997) noted that these core banks:

- are entrusted with the bulk of industry financing and form a pivotal role in the domestic economy
- they traditionally occupy a key position in central bank control of the financial system, especially bearing the brunt of monetary policy measures and being critical in the transmission mechanism for monetary policy
- have been expected to play their part in dealing with bank failures by acquiring troubled banks or providing extra liquidity at certain critical times
- are used a conduit for various government financing initiatives e.g. subsidised trade credit, preferential lending to certain sectors, student loans and so on.

It may be thought to be in the 'national interest' to encourage mergers between large banks, especially if there is the threat of foreign acquisition of a market leader.

It has also been stated that it is in the 'national interest' to encourage mergers between large banks, especially if there is the threat of foreign acquisition of a market leader. This view has recently widely trumpeted given the expected competitive threats posed by EMU. The major criticism of government support for 'national champions' is that it helps distort the competitive environment within domestic banking sectors. In particular, mergers motivated mainly for political reasons may result in sub-optimal restructuring and a strengthening of the 'too-big-to-fail' doctrine for the banks involved in such deals. This is likely to place these banks at a competitive advantage compared to other domestic banks and it also reduces the threat of market motivated foreign or domestic bank acquisition. As a consequence, the threat of foreign bank entry through acquisition is diminished reducing the contestability of domestic banking markets. Various commentators argue that 'core banks' or 'national leaders' have to have a critical size to be competitive, typically meaning that an asset size of at least EUR 150 to EUR 200 billion would be sufficient to have a reasonable European presence and be immune from hostile take-over. These factors, along with the more obvious economic reasons (increasing product and geographical market share, opportunities for cost reductions etc) are also important factors promoting the consolidation trend in European banking.

3. Impact of mergers on bank performance

Table 1 shows the main European banking deals that took place during the decade up to 1999. The performance effect of these mergers has been mixed. The main UK deals have been successful in improving efficiency - HSBC's acquisition of Midland resulted in a fall in the ratio of cost to income from over 70 percent in 1992, to under 60 percent by the end of 1997. Lloyds/TBS's cost ratio fell by 12 percent over the same period. Conversely, continental European banks appear to have been less successful. ABN AMRO, reduced domestic branch and staff numbers in the years after merger, with an improvement in ROE, after a time lag. Its cost-income ratio, has remained virtually static during the 1990s. Most of ABN AMRO's profits improvement came from its investment banking and international operations. In Spain, mergers that established Banco Bilbao Vizcaya and Banco Central Hispano (BCH) were convoluted deals that took three to four years to generate significant cost savings and performance enhancement.

Large cross-border deals have only recently taken place (e.g. Merita/Nordbanken, ING/BBL) and the short-term stock price reaction to the announcement of these deals has been negative. It remains to be seen whether these will generate significant gains in the short to medium term (3). While the

3) Although Vander Vennet (1996) and Altunbas et al., (1997) suggest limited X-efficiency gains from cross-border European bank deals.

merger between UBS and SBC, to create the United Bank of Switzerland is forecast to reduce costs by 20 percent over three years, it is unlikely that many other European banks can follow such a cost cutting strategy. This is because these two Swiss banks have an almost unique duplication of domestic and international businesses in private banking, investment banking, asset management and commercial banking.

One of the reasons for the mixed results is that competition is sufficiently intense in European banking that the cost savings are being passed onto consumers in the form of lower interest margins and keener fee and service charges. Intense competition from mutual savings and co-operative banks in many systems partly explains this trend. In addition, restrictive labour laws also prohibit (or severely limit) rapid headcount reductions.

4. Conclusion

This paper has examined the main structural and performance features of European banking. While banking markets have become increasingly concentrated and bank numbers have fallen, competition appears to have intensified. Given the large number of banks and branches in many countries there still remain indicators of excess capacity in the system and that the consolidation trend, especially with the advent of EMU, will continue.

With the current competitive environment, concentration in domestic commercial banking markets is becoming a less relevant antitrust issue.

A major theme of this paper has been that market concentration and bank size are poor indicators of market power. There is also increasing evidence that large European banks have efficiency advantages over their smaller counterparts. They also appear to benefit more from technological progress. Most of the available evidence points to increasing concentration across European banking markets. However, there is little evidence to suggest that market structure strongly influences performance. Important strategic drivers, such as deregulation and technological change, are changing the economics of the industry, lowering entry barriers and making markets more contestable. With the increasingly wide range of financial service providers, the larger 'domestic' market created by EMU and the current competitive environment, concentration in domestic commercial banking markets is becoming a less relevant antitrust issue.

Table 1. The main European banking M & A's, from late 1987 to early 1999

| Date | Target | Acquirer | Country | Value(USD billion) |
|---------|------------------------------------|--|---------------------|--------------------|
| Oct 87 | Hill Samuel | TSB | UK | 1.3 |
| Oct 88 | Banco de Vizcaya | Banco de Bilbao | Spain | 3.3 |
| Nov 89 | Morgan Grenfell | Deutsche Bank | UK/Germany | 1.5 |
| Mar 90 | ABN | AMRO | Netherlands | 2.4 |
| Nov 90 | NMB Postbank | Nationale Nederlanden | Netherlands | 7.5 |
| Jan 91 | Oesterreische Landerbank | Zentralsparkasse und Kommercialbank Wien | Austria | 1.2 |
| Apr 91 | BCI & Banco Exterior | Caja Postal, Instituto Credito Local, Banco Hipotecario, Banco Credito Agricola | Spain | |
| May 91 | Banco de Credito Industrial | Banco Exterior de Espana | Spain | 1.1 |
| Mar 92 | Midland Bank | HSBC | UK | 5.7 |
| Jan 93 | Swiss Volksbank | CS Holding | Switzerland | 1.1 |
| May 93 | ASLK-CGER | Fortis | Belgium | 1.1 |
| Jan 94 | Banesto | Banco Santander | Spain | 2.3 |
| Apr 94 | Cheltenham & Gloucester | Lloyds Bank | UK | 2.9 |
| Oct 94 | Credito Romagnolo | Credito Italiano | Italy | 2.4 |
| Mar 95 | Barings | ING | UK/Netherlands | 1.1 |
| Apr 95 | National & Provincial | Abbey National | UK | 2.2 |
| May 95 | S.G Warburg | SBC | UK/Switzerland | 3.2 |
| Jun 95 | Kleinwort Benson | Dresdner Bank | UK/Germany | 1.6 |
| Jun 95 | Lloyds Bank | TSB | UK | 15.3 |
| Mar 96 | Credit Communal Belgique | Credit Local de France | Belgium/France | 3.1 |
| Apr 96 | Banque Indosuez | Caisse Nationale de Credit Agricole | France | 1.2 |
| Oct 96 | MeesPierson | Fortis | Netherlands | 1.4 |
| Dec 96 | Stadshypotek | Svenska Handelsbanken | Sweden | 3.3 |
| Jan 97 | Creditanstalt | Bank Austria | Austria | 1.5 |
| Feb 97 | Foreningsbanken | Sparbanken Sverige | Sweden | 1.4 |
| May 97 | Cariplo | Ambroveneto | Italy | 3.9 |
| Jul 97 | Bayerische Hypobank | Bayerische Vereinsbank | Germany | 5.1 |
| Oct 97 | Merita | Nordbanken | Finland/Sweden | Na |
| Nov 97 | BBL | ING | Belgium/Netherlands | 4.5 |
| Dec 97 | UBS | SBC | Switzerland | 19.8 |
| Mar 98 | Kredietbank | Cera Bank, ABB Insurance | Belgium | 13.6 |
| Apr 98 | Credit Mutuel | CIC | France | 2.2 |
| Apr 98 | San Paolo di Torino | IMI | Italy | 10.0 |
| Apr 98 | Banco de Santander | Banesto | Spain | 4.0 |
| Apr 98 | Unicredito | Credito Italiano | Italy | 11.0 |
| May 98 | Generale | Fortis | Belgium | 11.2 |
| Sept 98 | Banca Agricola Mantovana | Monte dei Paschi di Siena | Italy | 1.6 |
| Sept 98 | BHF Bank | ING | Germany/Netherlands | 1.5 |
| Jan 99 | Banco Central Hispano-americano | Banco de Santander | Spain | 11.3 |
| Feb 99 | Paribas | Société Générale | France | 15 |

Sources: IFR Securities, Securities Data Company, and other news sources. The list is not exhaustive.

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