

Structure and Conduct in the Commercial Banking Sector of South Africa

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EXECUTIVE SUMMARY

The banking sector in South Africa is highly concentrated. When there is high concentration, it is necessary to examine the effects on efficiency and prices. In this paper, we discuss the fact that there are various types of efficiency in banking, and that high levels of concentration tend to reduce the overall level of efficiency. The presence of an oligopoly structure implies that the level of competition required to induce efficiency improvements may not exist. So one of the key methods of improving efficiency is to increase the level of entry and to make the banking market more contestable, which can be done by reducing the cost of entry and the welfare costs of exit.

However, costs of entry and exit in the retail and corporate sectors of the industry are very different. Entry into multi-branch retail banking is more much more expensive than entry into single-branch corporate banking. The nature of the services provided entails the use of different types of technology for service delivery; this difference in the types of technology has implications for the nature of speed of entry and exit. This in turn has implications for the level of competition, which then affects the level of efficiency.

The oligopoly structure and the perception that there are high costs in delivery of retail banking services in South Africa have militated against entry into the retail banking sector. However, a number of foreign entrants have taken advantage of the relatively lower costs of entry into the corporate banking sector, which has increased the level of choice and countervailing power in this sector. Anecdotal evidence suggests that in the corporate banking sector, interest-based income and fee income spreads are competitively driven, and the level of competition in the corporate banking sector has contributed to the level of efficiency.

Conversely, the absence of entry into the retail banking sector has had a negative effect on competition. As a result, it is fair to suggest that cost efficiency is less than it would be in the presence of greater entry into the retail sub-sector. The perception that there is an absence of competition and countervailing power has contributed to a growing debate regarding the impact of the high concentration levels on the welfare of consumers of retail banking products.

Recalling that it is necessary to examine the impact of concentration on prices as well as on efficiency, and in order to test the validity of this view, a structure conduct analysis has been undertaken in this paper so as to assess whether the level of concentration influences the pricing of retail banking products in South Africa. The findings herein suggest that the pricing of retail banking products fits with the structure-conduct-performance framework, which suggests that the industrial structure influences the prices charged for banking services. Specifically, we see that banks pay lower rates to depositors and charge higher deposit rates to their borrowers than they would if the level of concentration were lower.

This elicits a number of policy responses that should be focused on methods of introducing greater competition and regulatory reform in order to reduce welfare costs.

There needs to be reform of competition policy in the financial services sector to enable greater entry. This may mean the merging of a number of small banks or vertical integration among different parts of the financial services sector. This particular policy will require a review of the structure of prudential regulation. In addition, there is a need to introduce greater economic regulation to increase the level of service delivery, and if the retail banks are operating as a monopoly, then an appropriate regulatory response may be required. Finally, there is a need to abandon legislation (for example, aspects of the Usury Act) and industry practices (red lining) that create cross-subsidies and inefficiencies in the optimal assessment and pricing of risk for delivery of financial intermediary products and services.

1. INTRODUCTION

The aim of this paper is to evaluate competition and concentration in South Africa's banking industry. This is done through an analysis of the price-concentration relationship in the retail banking sector of the industry. The study will follow along the lines of Berger and Hannan (1989), who have studied the US banking industry in this way, and Okeahalam (1998), who has studied competition and concentration in the Botswana banking industry.

It is difficult to evaluate the economic welfare impacts of competition and regulation without an examination of costs and efficiency; accordingly, a theoretical discussion of these issues will follow that evaluates the interaction between efficiency and costs of delivery of banking products to all stakeholders in South Africa. From this analysis it might be possible to reflect on issues of economic regulation and policy implication, which can lead to better banking intermediation in South Africa.

In situations of high industrial concentration, there tends to be debate and enquiry into the effect that this might have on competition and consumer welfare. During the 1990s, there was an increase in consolidation in the banking industry, particularly in the US and Western Europe. Indeed, the introduction of the Euro as a means of exchange in the European Union has been seen by the senior management of a number of banking firms as *raison d'être* for pursuing a strategy of further consolidation. The European Commission – having recognised the significant increase in the enlargement of geographical and market boundaries – is concerned about the detrimental effects of further consolidation on consumer welfare. Accordingly, a number of enquiries have been conducted to assess the relationship between concentration and pricing. Recently in the United Kingdom, there has been a major enquiry – the Cruickshank Report (2000) – into rates of profitability of the banking industry.

South Africa has not been immune to the trend in consolidation; in 2000, the competition and monetary authorities rejected the proposed merger of two of the four largest banks. One of the major reasons given for turning down the request to merge was that the commercial banking sector in South Africa is already highly concentrated, and that further consolidation was unlikely to be in the interest of the consumer welfare.

This paper attempts to explore whether or not the current industrial structure of the banking industry has an impact on the pricing of retail banking deposit products. The findings are used to discuss whether this influences the behaviour of banks in credit extension to the under-banked market sector, and what impact this has on the aggregate social welfare function and the possible policy implications. Both issues have regulatory policy implications regarding entry and exit within the industry. Section 2 provides a brief theoretical review of concentration and efficiency. Section 3 describes the South African banking sector, and Section 4 discusses the data and the model. Section 5 presents estimates of a price-concentration model, Section 6 discusses the results, and Section 7 concludes the paper. Finally, Section 8 provides a discussion of related policy implications.

2. A BRIEF REVIEW OF THEORY ON CONCENTRATION AND EFFICIENCY

The structure-conduct-performance (SCP) framework is the most commonly used empirical approach to evaluating competition in banking, and is used extensively in the evaluation of anti-trust and other regulatory issues. With this framework, we assume that measurements of market structure and concentration can provide reliable inferences regarding the extent of competition or conduct in an industry. The extent of competition affects the price that consumers pay for banking services, which determines the level of profits and performance. The SCP framework suggests that higher concentration leads to higher prices, which in turn lead to higher profits. A number of studies (Berger and Hannan 1989, Hannan 1992, Neumark and Sharpe 1992, Okeahalam 1998, and Prager and Hannan 1998) support the SCP framework.

However, a number of other studies (such as Shaffer 1989) cast doubt on the SCP findings. There is also theoretical criticism of the SCP – originally put forward by Demsetz (1973) and more recently by Berger (1995) – that larger market shares may be the result of better efficiency and lower costs. The basic argument is that if higher profits are derived from greater efficiency, then adverse welfare costs, which the SCP predicts as the result of higher prices, do not arise. The SCP framework is primarily an empirical approach, which is often applied without direct reference to theoretical models of competition. In other words, the link, which may or may not exist between higher prices and higher profitability, is considered to be an empirical issue. Yet, it is because of this reason that the SCP is theoretically debatable.

Some theorists, such as Mullineux and Sinclair (2000), argue that the existence of higher concentration may indeed lead to higher prices, and as a result lower demand, but this need not result in higher profits for a highly concentrated banking sector. They argue further that in contestable markets (free entry and exit, see Baumol 1982) profits are likely to approximate zero, even in the presence of oligopolistic competition.¹

Therefore, if we assume that Cournot behaviour takes place and competitors operate with fixed costs, then it is possible that there can be zero profits as well as higher concentration and higher prices. In such a scenario, higher prices can be the result of higher average costs, which are the result of lower market output. Theorists therefore argue that while the SCP framework might conclude that higher concentration results in higher profitability, this conclusion is not fully justifiable on a theoretical basis. It is

¹ In the contestable market framework fixed costs are differentiated from sunk costs. Sunk costs provide market power in that in the worst case scenario, entrants have to be able to discount the value of their investment to zero. It is therefore argued that fixed costs do not provide market power. Entry by foreign banks into the South African market is particularly focused. The type of competition levelled at domestic banks by their foreign counterparts has been in certain niche areas of the market. The costs of credit rating and monitoring make it relatively more expensive for banks to deliver services in those market segments. When they do so, it is often at a price that is considered unsustainable and leads to assessments of consumer welfare. This credit information asymmetry cost is a barrier to entry, which it had been hoped that smart technology would be able to overcome.

argued that arriving at this conclusion should be a function of the cost of entry and exit from a market and that this provides insight into the empirical findings of the SCP framework.

Yet, on the other hand, there is a need to be precise in the theoretical debate. First, to some extent there is a sunk cost element in all fixed costs – whether or not this is determined by a time-dependent and/or utility loss derived nature, which has its empirical corollary in accounting depreciation. Second, it is important to differentiate between the costs of entry into retail banking and the cost of entering corporate, investment or merchant banking. The underlying distribution of the cost structure of the two different types of banking businesses is not the same. In short, the fixed and variable costs and sunk cost components range from being fairly sizeable in the case of a retail bank firm, which owns its branch premises, to being fairly negligible in the case of a single branch investment bank. Third, the existing (pre-entry) state of the banking industry dictates the risk-return relationship of a new or potential entrant. Seen in another way, the discount rate, which is attached to the investment, is influenced by the current market structure and the values of the discount rate can be widely distributed and do not centre around the mean as implied by the theorists. Thus it might be argued that given these facts, theory that does not fit empirical reality can be considered by some as an unnecessary luxury.

Despite this repost to the theorists, it can be seen that the suggestion stating there is an absence of theory has led to considerable debate on the efficiency of banks. There is now a very large literature on efficiency of the banking industry.² The main objective in this area of enquiry has been to attempt to separate the profits derived along the lines suggested by the SCP framework from profits derived from efficiency.

Efficiency analysis is useful in evaluating the extent of market power use. Information on profits and prices is often used to assess efficiency and market power, and therefore to arrive at an accurate estimate of the effect of market power it is essential that we assess the level of efficiency. Indeed, unless we accurately measure the level of efficiency, it is difficult to separate increases in prices that are the result of greater efficiency from those that are a function of the use of market power.

To separate prices that result from increases in efficiency from those that result from increases in the exercise of market power, we need to separate efficiency values into standard profit efficiency and alternative profit efficiency. In measures of standard profit efficiency, costs as well as revenues are used to assess how close the firm being analysed is to earning the maximum level of profits that the most efficient or ‘best practice’ firm might be able to earn under the same operating environment. For that reason, in standard profit efficiency, output values vary so as to incorporate errors in choosing outputs as well as inputs, and output prices are statistically constant; accordingly, increases in output prices – which would ordinarily indicate greater use of market power – have limited impact on measured standard profit efficiency.

² For a useful review of this literature see Berger and Humphrey (1997).

Alternative profit efficiency takes outputs as given (as with cost efficiency) and then estimates the extent to which firms maximise profits, as does standard profit efficiency. Alternative profit efficiency is useful when some of the assumptions of cost and standard profit efficiency do not hold, and when there are large unmeasured differences in the quality of products, for example, variations in the level of services provided to depositors.

Furthermore, in some instances, banks choose to operate in such a way that they provide higher quality loans or appropriate bank intermediation services, and then charge higher prices to compensate for the higher quality services provided. If cost or standard efficiency is used in such instances, the additional costs may be inaccurately classified and measured as inefficient. Alternative profit efficiency helps to obtain a more accurate estimate of the level of efficiency because, unlike cost efficiency, it includes the extra revenues of the high services, and unlike standard profit efficiency, which holds prices statistically constant, it allows these extra revenues to be earned through higher prices. Therefore, basic comparisons on the earnings of banks relative to other banks do not fully reflect the level of efficiency.

For the same reasons, cost accounting ratios – such as cost-to-income ratios – do not fully reflect the level of efficiency either, in that they do not differentiate efficiency changes in the quantity of input or outputs from changes in the exercise of market power. This is important because, in practice, a bank may be capable of producing a similar output with a smaller number of inputs because it can use market power to offset this efficiency by widening the interest rate spread.³ Furthermore, since banks are multi-product firms, it is important to carefully estimate the costs and efficiency of producing different types of products.⁴ Clearly, even when the balance sheets are adjusted for scale, the cost structure of a bank primarily involved in loans to households or small businesses is quite different from that of a bank with a loan portfolio that is primarily sovereign bonds, syndicated loans, structured finance or large corporate lending. Cost efficiencies may not necessarily result in profit efficiencies.

In sum, the evidence on banking efficiency suggests that cost efficiencies do exist even in an industry with an oligopoly structure. The rest of this paper is dedicated to an SCP analysis of the banking sector of South Africa.

³ In addition, banks can substitute purchased funds, which are interest cost intensive, with funding from core deposits, which are operating cost intensive. Such substitution of current liabilities funds on the balance sheet might decrease the operating cost ratio even if there has been no reduction in total costs.

⁴ In corporate and merchant banking, market banks provide a wide range of services such as: cash, cheque and transmission accounts; deposits; loans, advances and overdrafts; leases and instalment sales agreements; and treasury services. Banks also provide an array of retail products: international trade finance; international business centres; custodial services; asset management (unit trusts); project/structured finance; corporate finance; and stock broking. Information on retail banking products are classified by DI 900 returns into: cash, cheque and transmission accounts; credit cards; deposit products; mortgage products; and overdraft facility products.

3. DESCRIPTION OF THE SOUTH AFRICAN BANKING SECTOR

The number of firms that supply products in a market and the proportion of the market that each firm supplies determine concentration. This is considered to be a major indicator of the competitiveness of an industry. The two most commonly used measures of concentration are the concentration ratio and the Herfindahl-Hirschman Index (HHI). As Table 1 below illustrates, the South African banking sector is highly concentrated.⁵ The sector has four major banking groups and while this is not unusual, the market share of the top four firms, as a proportion of the total market, is very large.

In analysing concentration, it is usual to use concentration ratios, although there are problems with their use. The concentration ratio is a discrete measure of concentration. They can be calculated for two or more different industries; however, while the concentration ratios may be the same, the competitive implications in the industries may be different if they do not have a similar number of firms considered in the calculation.⁶ Therefore, the concentration ratio provides an intuitive evaluation of the level of concentration.

Accordingly, most analyses of concentration use the HHI, which is the sum of the squares of the relative size of all firms in the defined market. The HHI is used because unlike the concentration ratio, it considers all firms in an industry, and therefore illustrates the market shares of the major firms as well as the shares of the firms that are not in the top three or four. The HHI is widely used by regulatory authorities when attempting to evaluate the impact of a merger.⁷ As can be seen in Table 1 below, the market share in the corporate and merchant banking market is fairly evenly distributed among the four main banks. Standard Bank plays a major role in the provision of international banking business products.

⁵ This is one of the reasons why the regulatory authorities did not allow the proposed merger between Nedcor and Standard Bank – or depending on the perspective taken, the attempted hostile takeover of Standard Bank by Nedcor – to take place. As the report by the Competition Commission (2000) indicates, if they had allowed the horizontal integration to take place, then the top three banks (Nedcor/Standard, ABSA and First National Bank) would have had 77.7% market share. In comparison, one of the reasons why the Monopolies and Mergers Commission and the Office for Fair Trading in the United Kingdom granted permission for the takeover of National Westminster Bank by the Royal Bank of Scotland was that after the merger, the market share of the top three banks would still only be 26.5%. The top three banks in the US control approximately 10% of the domestic banking market.

⁶ In addition, banking is, in practice, a multi-product business. However, it appears that in South Africa banks and their retail customers do not bundle the supply or consumption of the products. As Cowling, Yusof and Vernon (2000) note, meaningful measures of market concentration need to be assessed on the basis of the distribution of markets across firms that operate within the specific market, irrespective of the location from which the product is sourced.

⁷ For example, in South Africa, the Competition Commission used the HHI in its assessment of the Nedcor bid for Standard Bank. The basic method of interpreting the HHI follows. The competition authorities split the range of HHI values within which the merged firm can fall. A post-merger HHI of between 0 and 1000 points indicates a market with low concentration and so is unlikely to lead to negative competition effects. A HHI value of between 1000 and 1800 points indicates a relatively concentrated industry. As a result, if the post-merger HHI value increases by more than 100 points, then the competition authorities are likely to examine it. If the market already has an HHI value of more than 1800 points, then a merger that increases the HHI value by more than 50 points is likely to be challenged by the competition regulatory authorities.

Information from DI 900 returns indicates that the retail sector is divided into two sectors – retail services for consumer and retail services for small businesses. The market shares in these two sectors is summarised in Table 2 and Table 3 below. It can be seen that the four largest banks supply over 90% of the products in the retail sector and about 96% of banking products to small businesses. Furthermore, Table 2 indicates that Standard Bank has the largest share of the small business banking market and that ABSA has the largest share of the retail banking market.⁸

The four main banking groups have disaggregated the supply of retail products on the basis of three income segments, lower income market (mass market), middle-income market and the upper income market. While it is possible to evaluate the banking sector on a regional or other geographic basis, there are a number of difficulties. The most significant difficulty is that the four banking groups do not provide data in a uniform manner once it is disaggregated to a level lower than national.

⁸ In practice, banking services for small businesses are supplied through the retail network and so there is an overlap in classification of services. For example, overdraft facilities for small-scale businesses are mostly provided on the same terms as those for individuals.

Table 1: Market Shares in Corporate, Investment and Merchant in South Africa

	STANBIC	NEDCOR	ABSA	FIRST RAND	BOE	INVESTEC	OTHER
Cash, cheque and transmission accounts	31.3	22.6	20.6	22.8	1.2	-	1.2
Demand Deposits	20.1	15.4	21.8	17.5	7.1	-	18.4
Loans, advances, overdrafts	21.2	20.9	15.3	22.9	5.5	-	14.1
Installment Finance	23.	9.5	23.1	27.1	3.8	6.1	12.9
Treasury service	31.0	26.0	19.0	13.0	-	6.0	5.0
International banking services	39	13	18	22	-	-	Citibank – 5.0 Other - 1.5
International business centres	35	15	15	10			25
Custodial services	40	22	14	20	-	-	Citibank-4
Asset Management Unit Trusts	8	7	9	-	-	-	Old Mutual 21 Sanlam 13 Investec 19 Coronation 11 Other 12
Project/Structured Finance	15	12	12	15	-	12	33
Corporate Finance	19.5	9.9	17	15		12	33
Stock-broking	5.0	0.5	-	-	-	-	Deutsche Bank 15 Merrill Lynch 14 Warburgs 10 HSBC Flemings 6 Other 43.5

Source: SARB, DI 900; Stanbic Business Unit estimates, SWIFT Statistics, Dealer estimates and Competition Commission 2000

Table 2: Banking Services for Small Businesses -Market Shares of Banking Firms

NAME OF BANK	ABSA	STANBIC	FIRST NATIONAL BANK	NEDCOR	OTHER BANKS
Market Share	27	33	19	17	4

Source: Galactica Survey and Competition Commission 2000

As the description of the structure of various sub-sections of the South African banking sector indicates, entry into commercial corporate banking has ensured a less concentrated corporate banking market. In addition, foreign banks have provided corporate consumers

with a greater degree of countervailing power. The relative ease of entry and the presence of countervailing power should – in theory – ensure that the corporate banking market is more competitive than the retail banking sector, and that therefore the possibility of anti-competitive pricing is less likely. However, most individuals (particularly those who fall into the low income segment) have limited countervailing power. As Table 3 below illustrates, the four large banks dominate the retail-banking sector. Accordingly, in this study, the focus is on the retail-banking sector.

Table 3: Market Shares in Retail Banking in South Africa – Personal Banking Services

	STANBIC	NEDCOR	ABSA	FNB	OTHER
Cash, cheque and transmission accounts	17.7	33.8	23.5	22.6	1.0
Total Deposits	19.6	20.7	26.4	15.0	9.0
Mortgages	22.7	17.4	33.7	7.4	10.7
Credit cards	19.2	34.7	18.2	22.4	4.1

Source: SARB, DI 900 and Competition Commission 2000

4. DESCRIPTION OF THE DATA AND THE MODEL

4.1 Data

Data has been collected from a number of sources including the South Africa Reserve Bank (SARB), the Registrar of Banks (RoB), the Financial Standards Board (FSB), the Council of South Africa Bankers (COSAB), ratings agencies, stock brokerage reports and the annual reports of commercial banks. In addition, information on the market share of banks has been obtained from DI 900 returns. DI 900 returns provide value-based information on the market share of banks at a national level.⁹ This information has been used to create a database, which has 36 monthly observations for bank deposits for the period inclusive of January 1997 to December 1999.

4.2 Model

The basic methodology follows in the footsteps of Berger and Hannan (1989) and Okeahalam (1998). The price-concentration methodology entails defining two or more industry concentration variables. After this, the rate of interest paid on the differing types of deposits is specified in basis points and regressed against the two concentration variables and the exogenous variables. The theoretical rationale for using this model is that it allows for estimation when exact market concentration measures, such as the HHI and concentration ratio, are unknown. Therefore, the dependent variables in the analysis are retail deposit rates. Commercial banks in South Africa offer a wide array of retail deposits, but on average offer six types of deposit accounts. Accordingly, the approach used in this study is that the rate of interest of the six deposit accounts is specified in

⁹ Market shares can be calculated on the basis of volume, such as the number or value of bank accounts, or by the proportion of total banking assets held by the bank. Most surveys of the banking market in South Africa are based on volume.

basis points and then regressed against the two concentration measures (CR_3 and $HERF$) and the exogenous variables. This specification leads to the following reduced-form equation, specified to illustrate empirical relationships in the banking sector in South Africa. The specification is as follows:

$$Y_{ijt} = \hat{\alpha} + \hat{\alpha}CONC_{jt} + \tilde{\alpha}X_{ijt} + \hat{\alpha}_{jt} \quad (1);$$

where Y_{ijt} is the rate of interest paid at time t for one of the six types of retail deposits by bank i in the South Africa banking market j . $CONC_{jt}$ represents a concentration ratio level in market j at time t ; and X_{ijt} is a vector of control variables that probabilistically differ across the banks and time periods.¹⁰ To correct for heteroscedasticity, the ordinary least squares (OLS) model correcting the covariance matrix of the parameter estimates is used. In this manner the exogenous variables and OLS residuals have been used to develop an unrestricted probability distribution for each of the four banks. The definitions of the variables estimated are provided below.

Dependent Variables

Y_1 CADR = Current account deposit rate

Y_2 SDR = Savings deposit rate

Y_3 1MC = One month call account

Y_4 R<3 = Deposit rate fixed up to three months

Y_5 R<6 = Certificate of deposit rate fixed up to six months

Y_6 R<12 = Certificate of deposit rate fixed up to 12 months

Exogenous Variables¹¹

CR_3

HHI

Explanatory Variables

X_1 AGR = Growth rate of market deposits for 1 year

X_2 BR = Number of each bank branches as a proportion of the total number of commercial bank branches.

X_3 WAGE = Index of commercial banking wage rate

X_4 PCI = Annual rand per capita income

X_5 MKTS = Banks market share of deposits

X_6 TA = Total assets

¹⁰ It is important to make two econometric methodology points. First, the model uses pooled data and so there is likely to be some correlation among the error term for bank firms. Error terms for banks and bank markets may be heteroscedastic and this has been known to bias estimates.

¹¹ All the banks (in particular, ABSA) have closed some of their branches, though ABSA still has the largest number of branches. Although there is a 0.71 correlation between the variable X_2 BR and X_5 MKTS, as explained in Section 3 above, market definition in banking is product dependent. See Okeahalam (1998) for a full discussion of the benefits or otherwise of specifying X_5 MKTS exogenously.

The three variables X_1 AGR, X_3 WAGE, and X_4 PCI have been specified and estimated to explore some theoretical relationships. They also increase the number of variables so as to improve the fit and statistical control of the model. Basically, the growth variable (X_1 AGR) indicates the annual growth rate in the South African banking industry. Given that it is indicative of interaction between supply and demand, in theory it can take either a positive or a negative sign. The wage variable is estimated to evaluate the cost structure in commercial banking. It too can take either sign, given that we make the tenuous assumption that the differences in intra-industry cost structures are not greatly different from zero.

The per capita income variable was estimated so as to evaluate the extent to which income had an effect on the supply of funds. Given that the marginal utility of income takes a concave form as increments take place, then higher income is correlated with higher expenditure and higher savings. The income variable can take either sign since it is dependent on supply, elasticity and market structure conditions. In addition, to test the extent to which changes in the qualitative magnitude in the interest cycle may influence the results, twelve binary (0,1) variables were fitted.

5. RESULTS

The estimations provided some interesting results, which should also yield significant regulatory policy implications.¹² As can be seen in Table 4, the coefficient for the CR_3 variable has a negative sign (-0.68) and is significant (-3.39). This finding indicates that given a CR_3 measure of 0.794, commercial banks in South Africa pay retail depositors 35.9 basis points less than they would if the value had a CR_3 value of 26.5, as exists in the UK ($0.68 \times (26.5 - 79.4) = 35.9$).

Using DI 900 data, which indicates the total size of retail deposits at end-1999 of R33.8 billion, then the 35.9 basis points is equal to a direct cost to retail consumers of R121.8 million.¹³ In addition, to confirm the validity of this estimate and finding, the $CONC_{jt}$ variable was substituted with the $HERF_{jt}$ measure of concentration to assess whether the finding would be robust to changes in definition of the market concentration variable. The coefficient estimates changed from -0.68 to -0.73. The economic meaning of both measures is very similar, and so in keeping with theory, there should only be marginal and insignificant changes in the values of the coefficient estimates. From a policy perspective, the model clearly indicates that consumers are paying for the profits of the banks in that the high concentration level contributes to welfare costs.

¹² See Okeahalam (1998), in which bank regulation in South Africa is discussed.

¹³ The CR_3 value of 26.5 has been used to attempt to illustrate the difference in concentration in the South Africa banking sector and the banking sector of an industrialised country (such as the United Kingdom), which has a well-established economic system of regulation.

Table 4: Ordinary Least Squares Estimates (T-Statistics are in parenthesis)

DEPENDENT VARIABLE/ EXPLANATORY VARIABLES	CURRENT ACCOUNT DEPOSIT RATE	SAVINGS DEPOSIT RATE	1 MONTH CALL ACCOUNT	DEPOSIT ACCOUNT FIXED < 3 MONTHS	DEPOSIT ACCOUNT FIXED < 6 MONTHS	DEPOSIT ACCOUNT FIXED < 12
Constant	122.6 (9.7)	131.4 (10.8)	124.3 (10.1)	123.7 (9.5)	124.1 (9.2)	124.5 (8.9)
CR ₃	-0.68 (-3.39)					
D1 CR ₃	-0.44 (-1.35)	-0.49 (-1.41)	-0.47 (-1.18)	-0.51 (-1.22)	-0.59 (-1.40)	-0.55 (-1.38)
D2 CR ₃	-0.28 (-1.27)	-0.43 (-1.12)	-0.68 (-1.33)	-0.41 (-1.39)	-0.53 (-1.17)	-0.36 (-1.29)
D3 CR ₃	-0.63 (-1.26)	-0.45 (-1.07)	-0.68 (-1.28)	-0.45 (-1.12)	-0.59 (-1.32)	0.42 (-1.19)
D4 CR ₃	-0.77 (-1.05)	-0.51 (-1.17)	-0.83 (-1.22)	-0.65 (-1.15)	-0.72 (-1.38)	-0.49 (-1.28)
D5 CR ₃	-0.68 (-1.19)	-0.57 (-1.25)	-0.79 (-1.14)	-0.40 (-1.31)	-0.64 (-1.12)	-0.57 (-1.10)
D6 CR ₃	-0.51 (-1.02)	-0.42 (-1.30)	-1.85 (-1.91)	-0.45 (-1.14)	-0.67 (-1.05)	-0.51 (-1.27)
D7 CR ₃	-0.64 (-0.99)	-0.46 (-1.15)	-1.73 (-2.20)	-0.49 (-1.26)	-0.61 (-1.08)	-0.55 (-1.13)
D8 CR ₃	-0.68 (-1.07)	-0.49 (-1.21)	-1.68 (-1.99)	-0.57 (1.19)	-0.63 (-1.12)	-0.52 (-1.20)
D9 CR ₃	-0.70 (-1.11)	-0.55 (-1.22)	-1.91 (-2.03)	-0.50 (1.03)	-0.67 (-1.11)	-0.53 (-1.09)
D10 CR ₃	-0.62 (-1.03)	-0.48 (-1.27)	-1.81 (-1.67)	-0.43 (-1.17)	-0.59 (-1.21)	-0.49 (-1.21)
D11 CR ₃	-0.58 (-1.14)	-0.44 (-1.19)	-0.81 (-1.09)	-0.46 (-1.21)	-0.61 (-1.04)	-0.54 (-1.13)
D12 CR ₃	-0.64 (-1.09)	-0.53 (-1.27)	-0.78 (-1.11)	-0.53 (-1.28)	-0.60 (-1.13)	-0.54 (-1.27)
Annual Growth Rate	1.76 (1.92)					
No. of Branches	0.48 (0.63)					
PCI	-0.55 (-0.88)					
MKTS	3.01 1.89					
TA	3.26 (1.85)					
Wage	0.76 (0.69)					
R ² *	0.49	0.57	0.57	0.58	0.57	0.58

* R² = coefficient of multiple determination¹⁴

¹⁴ R² measures the proportion of total variance affected by linear influence of explanatory variables.

In the literature (see for example Hannan 1997), there is some debate as to whether or not the relevant bank market for deposits should be exogenously estimated (as we do herein) or be considered endogenous. As the coefficient value 3.01 (1.89) for market share of deposits indicates, market definition is a significant exogenous determinant of the probability of the concentration measures influencing the level of prices. The coefficient for total assets is positive and significant 3.26 (1.85). This supports the view that there is a correlation between concentration and scale. In theory, large total assets might lead to benefits of economies of scale, which in a competitive market would lead to lower prices. On the other hand, this finding could be interpreted to mean that given the industrial structure that exists, further increases in scale increase the likelihood of oligopolistic pricing and greater use of market power. From a policy perspective, this might entail greater evaluation of the use of market power via increased examination of profit levels.

The coefficient for the annual growth rate variable is positive and significant 1.76 (1.92) and thus fits with the hypothesis that yearly growth rates are correlated with the price-concentration relationship. This result should be interpreted carefully in that it can also mean that the observed prices have an insignificant impact on the basic upward trend in demand for bank deposit products. This would then support the surplus–supply of funds (deposits) hypothesis. Since the industry has a high concentration level then, unless the industry structure changes, growth rates in the sector are likely to increase the market power of the few firms that provide the service. This result suggests that policy needs to be found to either reduce concentration levels or diversify deposit and lending balance sheets.

The PCI -0.55 (-0.88) and WAGE 0.76 (0.69) variables are both insignificant, but have signs that theory can explain. With regard to wages, given the likelihood of oligopolistic collusion, wages are not likely to vary greatly and therefore would have almost no effect on the rate of profitability derived from interest income. The income per capita variable has the correct sign in that lower aggregate per capita income would adversely affect the aggregate level of savings, which would reduce the probability of banks achieving a wide interest rate margin, all else equal. The coefficient for the number of branches is positive, but insignificant 0.48 (0.63). There is not much policy-makers can do about this since we would expect differences in input costs to appear only after industry restructuring, changes in technology or new entry has taken place.

Most of the time control dummies are insignificant; however, the dummies for D6 CR3 to D10 CR3 April 1998 to June 1999 are all significant. This was a period of a significant upward trend in interest rates in South Africa and this result suggests that over the above mentioned period there appears to have been an obvious relationship between the interest rates on deposits that banks offered to consumers and the interest rate cycle.

6. CONCLUSIONS

Although small by global standards, South Africa has the largest and most sophisticated financial market in Africa. The financial services sector, in particular the banking sector, has well-established credit and management information systems. However, as the above

model indicates, the banking sector in South Africa is also highly concentrated. In South Africa, the top four banks have approximately 89% of retail deposits. This is high by international standards and was one of the reasons that the regulatory authorities did not permit the attempted take-over of Stanbic by Nedcor. The four largest banks – as with the rest of the banking sector – continue to make reasonable returns. It is generally accepted that when there is a high concentration there is a likelihood of collusive oligopoly, i.e., the possibility of firms co-operating to the disadvantage of the consumer.

As the findings of the model indicate, collusion: increases the probability of behaviour that fits with the structure-conduct-performance hypothesis; leads to comfortable returns; and reduces the incentive for banking firms to seek markets that are considered difficult.¹⁵ Accordingly, the large black township market where there are numerous entrepreneurs remains under-banked. The usual response by some banks is that the risks of lending to the township and lower income groups far outweigh the returns. There is no doubt that if you use the same credit rating scorecard for a large business as for a small business or sole trader then there will be a risk bias against smaller scale. If nothing else, the due diligence costs might well outweigh the non-interest income (fees) or interest income.

There is a need to introduce greater competition into the retail sector of the banking industry. Although there has been considerable debate about the service quality of banks in South Africa, surprisingly, no formal econometric analyses have been carried out on the industry structure impact of the banking sector, and whether or not this influences performance. This paper is a useful first step in examining this issue. With its potential for policy focus on the economics of competition and pricing in retail banking institutions, this paper has attempted to address an issue that is very much in the public interest.

7. AREAS FOR FURTHER RESEARCH AND POLICY IMPLICATIONS

7.1 Areas for Further Research

The results of the analysis of concentration and competition lead to the conclusion that consumer welfare in the retail-banking sector is not as high a priority as it could be. The findings illustrate that there is clearly a link between concentration and observed higher relative prices that retail consumers pay. The absence of service delivery is another aspect of the welfare cost of high concentration. In this section, a number of areas of further

¹⁵ In a less concentrated banking sector, the market power of each firm would be lower. Accordingly, on average, the capacity for each firm to achieve oligopoly profits would be lower than it is in the presence of the type of oligopoly structure that currently exists. Since the benefits of oligopoly profits would not naturally accrue, then all else equal there would be greater incentive for firms to attempt to enter markets, which in the current structure is considered difficult and therefore unattractive. This is likely to apply to the low income market segments, and if we recall that the ‘small’ component of the SMME sector tends to obtain banking services along the same lines as the retail sector, then it is this likely to apply to the SMME sector as well.

research work are discussed. These need to be pursued in order to improve the quality of retail banking and improve access to finance for the SMME sector.

First, how accurate and relevant are the credit risk models that some banks are using? The informal micro-lender market continues to thrive in South Africa. Once again, international experience and anecdotal evidence in South Africa illustrates that the micro-lending market is extremely profitable and that loan default and non-performance is relatively low. How do the micro-lenders do their business? If people in townships are willing to pay 25% a month interest to a money lender for personal loans, what are they willing to pay in the formal sector? What is the level of return that banks feel would justify meaningful entry into the low-income market and, in particular, in lending to the black SMME sector?

These are questions that need careful analysis. For example, when statistically adjusted, we cannot be sure that the impact of the default rates among the high-income groups is lower than that in the low-income group. International evidence suggests that the contrary is more likely: given that the size of each loan the average township SMME firm would seek is a fraction of the size of that of the average large firm, then several loans to such firms would need to go sour for their loan default to have the same impact as a large loan default. Thus, from both perspectives of absolute cost to the bank of deal default (that is, non-payment of the principle) and loss of interest income that would have been derived from the bond yield, the cost of large firm default normally outweighs small firm loan default.

Accordingly, while I am willing to concede that when measured in *standardised* format, the credit risk reputation for township and low-income borrowers is higher than that for high income borrowers – and as such there is a risk premium which needs to be a paid for – it is likely that from a welfare perspective the low-income group borrowers are inadvertently subsidising higher-income borrowers. Thus, while failure rates in the SMME sector are higher than that of larger, more well-established firms, the loan default creditor balance sheet effect of the higher failure rate is not commensurate. In addition, the default rate risk premium is used to penalise low-income borrowers and the SMME sector. This should not be the case.

To be clear, the argument is not that corporate scale economies – and for individuals, higher disposable incomes – do not affect the cost of capital. In all countries this is the case, but it is the extent to which this takes place and the methods by which the relative costs and prices are derived that are problematic.

7.2 Policy Implications

In South Africa, perhaps the most serious impediment to SMME development is access to finance. Why is this the case? Whenever the twin objectives of higher economic growth and the alleviation of poverty are discussed in South Africa, a dialogue soon ensues on access to finance and whether or not the South African banking sector is being sufficiently proactive to support these objectives. Some believe that banks are not doing

enough to engender economic growth, while banks respond that they are doing all that they can in the current climate.

The private sector, in partnership with government via a regulatory framework, has a significant role to play in achieving a reasonable and sustainable growth rate in South Africa. International evidence suggests that the SMME sector, which as a result of its scale, grows fastest and can make the most meaningful inroads to enhancing economic growth. This sector, also as a result of its scale, is the most vulnerable sector. For SMME development to take place, the government needs to consider an array of policy guidelines and regulatory frameworks that are clear and easy to understand, and that do not distort fair competition. With a regulatory framework established on that basis, there is a need to examine and remove impediments to SMME growth.

Further, while the government should be commended for a number of initiatives – such as improving the macroeconomic performance of the country, a reduced budget deficit, reduction in the foreign exchange liability position, a reasonable inflation target on which consistent monetary policy is now based, etc. – there is now much work to be done on microeconomic reform. The public sector is not going to be able to produce a level of economic growth that will meaningfully reduce the rate of unemployment, and unless unemployment and relative poverty decline, social cohesion in South Africa is unlikely.

The long-term solution must surely be different. There is a market out there that is not being served by some of the banks. Questions that need to be asked include: what mechanism can be used and what business process engineering needs to take place for banking services to reach this market? Some solutions are appearing. Some of the large banks, in particular ABSA, are making serious attempts at operating and servicing the low-income market. Also, the development of information technology solutions is an efficient way of extending greater retail coverage. The large banks have also created or bought subsidiaries that focus on the low-income market. These are all steps in the right strategic direction; however, the level of lending to SMMEs and the low-income sector will be the real measure of whether or not these strategies have been a success.

What can government do to support access to private sector finance? It should do all it can to enable entry into the banking sector while safeguarding financial stability. It should repeal the Usury Act (because it penalises creditors) and at the same time it should make enquiries to ensure that banks are fully transparent in their credit analysis and scoring of all individuals and SMMEs. The role of credit bureaux needs to be examined, as does the economics of land reform, given that land can serve as meaningful collateral and can enable the philosophy of property rights to be inculcated among SMME borrowers.

The government should also ensure that the idea and practice of red lining is made redundant, given that there is no such thing as an “average loan portfolio.” Each individual or business loan is unique and should be treated as such, irrespective of the address. The government also needs to work with banks to examine ways to help them to reduce their operational costs, particularly those relating to violent crime and fraud.

Finally, there is also a need to seriously consider enacting a Community Reinvestment Act along the lines of that enacted in the US in 1977. Such legislation is not as draconian as some would see it. Basically, the Act enables the government to monitor banks so as to assess whether they are discriminatory in their lending, and it also establishes specific requirements for lending to low-income groups. Given that most banks have sophisticated systems, compliance costs of the Act would not be high. Accordingly, if complaints arise that such legislation is socialist – or that it is likely to undermine the efficient workings of the economy – the government will be able to respond that it is in good capitalist company. The government should also be able to respond that the banks have a social obligation to their consumers, as well as to their shareholders, and that these responsibilities should be balanced. More pertinently, it should insist that such legislation is a last resort used to ensure that the opportunities for economic prosperity are available to everyone, so to enable the greater likelihood of higher economic growth, lower unemployment and political stability.

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