

IS THERE EVIDENCE OF DISINTERMEDIATION IN THE SOUTH AFRICAN BANKING SECTOR?

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A dissertation submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand in partial fulfilment for the degree of Master of Commerce (Economics) by coursework with a fifty percent research.

Johannesburg, 2010

ABSTRACT

This paper assesses the level of financial intermediation in the South African financial industry and the reasons for these levels of intermediation. Different banking intermediation measures are considered and mostly reflect disintermediation during the 1993 to 2009 period. Panel regressions are run to assess which economic factors had the biggest impact on intermediation by SA's four largest banks (Absa Bank, Standard Bank of South Africa, Firststrand Bank and Nedbank). It is found that bank intermediation was impacted by bank size, profitability, as well as the level of competition and client relationships. The level of financial intermediation in SA has been low, negatively impacting on banks intermediation ability, and possibly impeding government and corporate sectors' investment and economic activity.

Keywords: banking, financial intermediation, financial disintermediation, South Africa

Journal of Economic Literature classification code: G21

DECLARATION

I, Michelle Pingo-de Abreu, declare that this research report is my own, unaided work. It is submitted in partial fulfilment of the requirements for the degree of Master of Commerce in the field of Economics at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

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Signed this 10th day of January 2011 at Sandton

To my husband, for his utmost patience and support throughout the compilation of this thesis, it is highly appreciated. Thank you to my parents, other family and friends for their support.

ACKNOWLEDGEMENTS

Supervisor Professor Kalu Ojah for his patience and perseverance, it was a long road, throughout which his advice, guidance and input was invaluable. To Nikki Pingo for help in sourcing some of the data used. To Carmen Altenkirch whose advice on the statistical package Eviews and statistical methods was helpful.

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CHAPTER 1: INTRODUCTION

The South African (SA) banking industry is dominated by four banks, which held an average of 77.98% of the industry's assets between 1993 and 2009 (SARB DI900 and BA900 reports), consequently endowing these banks with significant market power. The ownership of these four banks is highly concentrated, owned predominantly by big incorporated industrial groups of firms (Ojah, 2005). These groups of firms, of which some are largely institutional investors such as insurance and pension funds, also own large stakes in other SA corporations possibly creating pressure for the banks to transact with these corporations even if these transactions are not the most economically efficient; thus, leading to financial disintermediation from the perspective of "non-member" firms. To investigate the ownership of the banks, a controlling shareholder is defined as holding 5% of the voting rights in the bank (La Porta, et al., 1999) and a shareholder breakdown for each bank is sourced.

Financial disintermediation, as suggested by Ojah (2005), is where banks receive deposits from a small pool of individuals and corporations, many of whom are their shareholders, and provide loans to these same individuals and corporations. Thus restricting capital to firms and individuals on the outside of this circle of depositors and borrowers and/or increasing these outsiders' cost of capital. The literature reviewed shows that financial development and economic activity is closely aligned, with Rajan and Zingales (1998) finding financial development has a substantial supportive influence on the rate of economic growth as it decreases firms' cost of external finance, while Levine (2002) finds financial development is strongly associated with economic growth.

The dominance of the top four banks in the SA banking sector creates an environment that is short of competition. Greater competition could force banks to compete aggressively for deposits and thus provide loans at the lower end of the market, for example, in order to obtain increased market share, increasing banking efficiency and access to loans for most individuals and firms. Maudos and de Guevara (2007) find that the welfare gains associated with a reduction of banks' market power are greater than the loss of banking cost efficiency, which in turn boosts economic growth while diminishing income inequality in the economy. To investigate the level of competition

in the SA banking industry, data will be analysed to compile the percentage of total industry deposits held and loans provided by each bank. The South African Reserve Bank's (SARB) DI900 and BA900 are a good source for this data.

To investigate the level of disintermediation in the South African banking sector, a number of intermediation measures are compiled for each of the top five banks, total of the top four and five banks, total of the medium and small sized banks, as well as total for the industry. The SARB's DI900 (1993-2007) and BA900 (2008 and 2009) bank returns, which collect data from individual banks on different asset and liability classes, are a good source for this data.

The level of intermediation by the total SA financial sector including banks, pension and provident funds, insurers and unit trusts (collective investment schemes) are also assessed. A comparable intermediation ratio will be compiled for each of the banks, pension and provident funds, insurers and unit trust, industries. The level of financial intermediation in the whole of the SA financial industry could dictate banks' financial intermediation ability. The SARB online statistical database and banks DI900 and BA900 returns are a good source for this data.

Banks often require firms to provide collateral, a credit history and/or a business plan when applying for a loan. Some of these requirements if overly stringent can lead to the exclusion of many applicants (Hawkins, 2002). SA's historic discriminatory policies, high bank account fees and high capital costs can also be leading to the exclusion of applicants. Hawkins (2002) outlines the spectrum of financial provision, ranging from the super-included to the included, the fringe and the excluded. The super-included and included categories are likely to encompass major bank shareholders as well as large, listed corporations, who have easy or almost unlimited access to funds. The fringe and excluded categories mainly include SMEs, particularly start ups, which lack proof of income and history of operation or those excluded on the grounds of inability to service loans due to their high cost.

SA banks' ownership structure, the lack of competition in the banking industry, historical discriminatory policies, applicants' inability to meet normal loan requirements and the high cost of debt, raise the spectre of possible disintermediation

in the SA banking industry. The implications of disintermediation are far reaching, restricting the ability of SMEs to source capital for expansion, thereby diminishing employment and economic growth. Disintermediation could also increase the cost of attracting funding for banks, as small depositors are paid lower interest rates than larger depositors, who have negotiating power.

This study aims to analyse the level of disintermediation in the SA banking industry and the factors influencing intermediation, as well as the impact of intermediation (disintermediation) on SA's economic activity. Therefore a panel regression of the four largest banks' financial intermediation measure is run on banks' assets as a percentage of the total industry, number of branches, capital ratio, number of employees and bank margin of interest bearing assets. The study contributes to the limited literature on SA financial development and the likelihood of disintermediation in the banking industry, which can, in turn, impact on overall economic growth.

CHAPTER 2: LITERATURE REVIEW

The literature shows that financial development and economic activity are closely aligned, while reflecting banks as special kinds of financial intermediaries that support economic development. Banks create funds, decrease transaction costs, monitor borrowers, transform assets, create liquidity and act as risk managers. Within the literature banks' financial intermediation role and their impact on financial markets, economic development and production is reviewed.

1 The role of financial intermediaries in supporting economic activity

Rajan and Zingales (1998) find financial development has a substantial supportive influence on the rate of economic growth, playing a beneficial role in the rise of new firms. Levine (2002) finds financial development is strongly associated with economic growth. Financial intermediation, when funds are transferred from surplus savings units (usually households) to deficit savings units (usually the corporate and government sectors), is undertaken in financial markets by financial intermediaries. Financial intermediaries provide external funds to non-financial firms, enabling firms to invest beyond their current resources and leading to increased economic activity (Mishkin, 2007). Financial intermediaries also transform the quality of capital with respect to maturities and risks, putting capital to more efficient use (Santomero, 1984; Schmidt, et al., 1999).

Financial intermediaries fall into three categories, namely depository institutions, contractual savings institutions and investment intermediaries.

Commercial banks are the largest depository institutions, accepting deposits from individuals and institutions (checkable, savings and time deposits) and making loans (commercial, consumer, mortgage, etc.) to them. Santomero (1984) finds demand deposits, issued largely by banks, play a central role in the economy as a medium of exchange, which facilitates trade. Mutual savings banks (saving societies) are another type of depository institution, which accept a large range of deposits and provide loans, although largely restricted to residential mortgage loans. A further type of depository institution is a credit union, a small cooperative lending institution

organised around a particular group (for example the employees of a firm) that issues consumer loans, which are funded by deposits called shares. Depository institutions increase the availability of funds for investment and consumption by firms and individuals, thereby increasing economic activity.

Contractual savings institutions acquire funds on a periodic basis as set out in a contract, while making pay-outs at an estimated date, diminishing liquidity constraints and facilitating long-term investments in assets like bonds and equities (Mishkin, 2007). Life and short-term insurers are the most well known contractual savings institutions. Life insurers insure people against the financial obligations following a death or provide an annuity post-retirement. Short-term insurers insure policyholders' property against loss from theft, fire and accident, and also provide health insurance. Reinsurers insure long- and short-term insurers against unforeseen large pay-outs. Private and public pension and provident funds are other types of contractual savings institutions, which provide retirement income to employees in the form of annuities or a once off payment. Monthly contributions by employees and employers are made to the fund, which in turn invests these in long-term assets (Mishkin, 2007). Contractual savings institutions boost overall investment in equity and bond markets, increasing the capital funds available to individual firms, thus increasing potential investment and economic activity.

Investment intermediaries include finance companies, mutual funds, money market mutual funds and investment banks. Finance companies provide loans to individuals (for vehicles, furniture and home improvements) and small businesses, funded by the issuing of stocks and bonds. Mutual funds sell shares to individuals, pool these funds to purchase diversified portfolios of stocks and bonds, decreasing transaction costs through economies of scale for individuals while providing firms with investment funds. Money market mutual funds are a special type of mutual fund that only invests in money market instruments. Investment banks may act as deal makers in mergers and acquisitions, while also providing advisory services to corporations when issuing stocks or bonds, underwriting the securities and reselling them in the market (Mishkin, 2007). Investment intermediaries boost firms' current purchasing and investment power by increasing the capital funds available, buoying economic activity.

Financial intermediation, as suggested by Allen and Santomero (1998), can transfer economic resources through time, allowing future profits to pay for current consumption (e.g. bank and finance company loans), increasing current potential investment, or allowing current savings to increase future consumption (e.g. insurers and pension and mutual funds). Financial intermediaries, like banks, are also risk managers, evaluating credit risk for uninformed depositors or shareholders, thereby improving investment returns (Allen and Santomero, 1998; Santomero, 1984).

2 Why banks are best suited to the role of financial intermediation

Banks are special kinds of financial intermediaries which are particularly able to create funds, reduce transaction costs and information asymmetries, develop beneficial relationships, monitor borrowers, transform assets, create liquidity and act as risk managers. Schumpeter (1934) defined banks as uniquely able to add to the existing stock of money by lending money created by claims on their liabilities, while Bossone (2001) found that other financial intermediaries mainly reallocate existing liquidity. Banks can finance new production by creating money, through lending that can yield real output ex-ante, thereby mobilising real resources for production, increasing economic activity.

Banks reduce transaction costs through brokerage services, which bring together providers and users of capital essentially by transforming assets (claims). Banks have a cost advantage in information production that decreases transaction costs, as private information can be gathered on borrowers that deposit funds with the same bank (Bossone, 2001). Banks establish long-term relationships with borrowers, providing a steady and reliable supply of funding for borrowers and generating for themselves safe sources of rents. This facilitates banks' funding and decreases their cost of doing so, increasing the amount of funding available and thereby economic activity. Gathering of information about a borrower may provide an insider's view on the borrower's investment and decrease the banks' problems of adverse selection (bad credit risk borrowers are most likely to apply for loans) and moral hazard (borrowers may engage in undesirable activities that make it less likely that the loan will be repaid). Therefore bank loans diminish information asymmetries and thus enhance

aggregate investment and economic activity (Diamond, 1984; Bhattacharya and Thakor, 1993).

Bhattacharya and Thakor (1993) found banks transform assets by financing illiquid loans with liquid deposits in an environment where random shocks affect preferences for the timing of consumption, providing a riskless claim while lending to risky entrepreneurs. Banks transform large denominated financial assets into smaller units, which are thereby more accessible to small borrowers (Santomero, 1984).

Hakens (2004) highlighted the role of banks as risk managers, including analysing and controlling (through hedging tools) risk, and then granting loans to entrepreneurs. Through risk transfer and sharing, banks mobilise risk-averse investors, transforming deposits into loans, increasing the amount of funds available in the economy and boosting economic activity (Bhattacharya and Thakor, 1993; Santomero, 1984).

3 Policies, laws and regulations that support financial intermediation

Informational frictions that create a role for financial intermediaries also generate instability: for example, when deposits are withdrawn unexpectedly and/or assets are liquidated prematurely. Policies, laws and regulations relating to the financial sector aim to reduce instability and decrease moral hazard, although, as will be discussed below, other problems may be created (Bhattacharya and Thakor, 1993).

3.1 Direct regulation

Governments, usually via their central banks, provide safety nets to depositors through deposit insurance and by being the lender of last resort. In the case of a bank failure, deposit insurance ensures the central bank either pays depositors or reorganises the bank through a merger with another. Deposit insurance can prevent bank runs as it provides an incentive for depositors to keep their funds in the bank until needed for consumption as the risk of total loss is diminished (Bhattacharya and Thakor, 1993). As a lender of last resort the central bank provides funds to banks to bring them back from the brink of collapse (Mishkin, 2007). The central bank's provision of deposit insurance and being a lender of last resort can, however, lead to problems like bank instability, moral hazard (banks provide more risky loans as they

will be supported by the central bank in the event of default) and adverse selection (banks have a decreased incentive to monitor loans) (Mishkin, 2007; Kane, 1989). Also banks need to set aside funds which could be provided as loans to pay for deposit insurance to the central bank.

Other forms of direct regulation include official restrictions on banks' holding of risky assets like equities and banks' diversification into other financial activities, stunting bank development, financial intermediation potential and possibly diminishing economic growth (Barth, et al. 2004). Barth, et al. (2004) sets out the theoretical reasons for restricting banking activities, which include conflicts of interest, increased moral hazard incentive and decreased ability of regulators to monitor and discipline more complex banks. By contrast their argument for allowing banks to undertake universal operations include exploring economies of scope and scale and diversifying income streams, creating more stable banks. There may also be limits on borrowing to specific parties and mandated funding to a specific production area, which may have positive welfare effects but decrease financial intermediation and the universal availability of funds.

Bank supervision, including reports to authorities on the banks' assets and liabilities and visits by bank examiners, another type of direct regulation, increase the cost of financial intermediation and resources needed to intermediate, but boost public confidence in financial intermediaries (Mishkin, 2007). However, Barth, et al. (2004) find powerful bank supervisors may exert a negative influence on banks' performance as they may extract bribes and depending on their ability to monitor banks, may hinder banks' performance.

Government ownership of banks, another type of direct regulation, is aimed at promoting socially desirable investments, but may result in the facilitation of politically attractive projects and not economically efficient ones (Barth, et al. 2004). Increased government ownership is associated with restricted banking sector activities and competition, increased bank crises and decreased private sector monitoring; while more private sector oriented approaches to regulation tend to lead to greater bank development and efficiency and improved performance (Barth, et al. 2004). More

efficient and better developed financial intermediaries tend to increase the availability of funds for investment and thereby economic growth potential.

3.2 Indirect regulation

Indirect regulation of the financial system includes bank minimum reserve and capital requirements, private sector monitoring of banks and portfolio restrictions (Bhattacharya and Thakor, 1993).

Minimum reserve requirements require banks to hold funds (usually a certain percentage of their deposits) with the central bank, without earning interest, in order to cover its liabilities in the case of failure or insolvency (where a bank's assets and capital are exceeded by its liabilities). In addition to reserve requirements many central banks around the world require banks operating in their country to adhere to the Bank for International Settlements (BIS) Basel Committee's Basel II capital requirements accord. Basel II has been adopted by many countries since the beginning of 2008 and has widened the scope of capital that may be used by banks to meet their capital requirements.

Basel II aims to address some of the negative effects of capital requirement regulations, which Barth, et al. (2004) says include decreased banks' liquidity provision role. Capital requirements are aimed at reducing banks' incentives to invest in riskier assets, but may not be sufficient on their own and may even lead to more risky activities, including greater outside equity, which increases moral hazard as managers have a smaller stake in the bank that they run (Bhattacharya and Thakor, 1993). These minimum reserve and capital requirements allow the government to avoid the cost of bank failures and boosts public confidence in the banking industry (Mishkin, 2007).

Banks may also be exposed to indirect regulation through private sector monitoring, as defined by Barth, et al. (2004), including adherence to strict accounting practices and scrutiny by ratings agencies, which is found to be positively related to bank development, but may diverge bank resources away from its core intermediation role. Also proposals for new banks may be screened by authorities to prevent undesirable people from running banks, while some central banks restrict the entry of new banks

and foreign ownership of large local banks. However, Mishkin (2007) found restricted competition tends to lead to increased consumer account charges and decreased banking efficiency. Restricting foreign and domestic bank entry is found to be associated with bank fragility, hindering bank development (Barth, et al. 2004).

4 Factors that impede the financial intermediation function of banks

Banks' financial intermediary role may be limited by a number of factors including regulations, policies and financial market and macroeconomic conditions. Regulations requiring banks to hold a percentage of their deposits with the central bank to back their capital in the case of default (minimum reserve requirements) and holding a percentage of their assets as capital (Basel II accord capital requirements) decrease depositors' risks. However, the availability of funds to borrowers is decreased, as is banks' ability to create funds and provide liquidity (Mishkin, 2007). Policies or regulations, which mandate funding to a specific production area or limit deposits and borrowing to specific parties, decrease banks' diversification, profits and their ability to intermediate.

Bossone (2001) found the development of financial market infrastructure, providing individuals with better information, can result in a diminished role for banks as a decline in information asymmetries lead investors to prefer higher yielding asset classes such as equity. Also an increase in inflation could increase demand for other higher yielding assets, in place of bank offered deposits and investments, thus decreasing the importance of banks in financial markets and their ability to intermediate, as diversification is diminished. Limits on banks' brokerage activities, increasing the amount of information required to bring down transaction costs, could also limit the financial intermediation function of banks.

A relationship-based banking system (financial provision to entities with whom the bank has a relationship and therefore has gathered information on) is less amenable to financing innovations. Bertocco (2008) found innovations are typically undertaken by new entrepreneurs, which source mainly venture capital outside of the banking industry. This also limits banks' financial intermediation role, leading to possible

disintermediation. However, relationship banking creates a safe source of funding for banks (Bossone, 2001), increasing financial intermediation potential.

The level of competition in the banking industry is likely to impact on intermediation ability, as Mishkin (2007) finds bank efficiency decreases along with competition. Bank size and market power is found by Bossone (2001) to also affect financial intermediation potential, with smaller banks having more limited access to inter-bank funds than larger banks, requiring smaller banks to hold greater reserves against their assets, constraining their intermediation ability.

5 Possible consequences of the break down in banks' financial intermediation role on financial markets, economic development and production

Banks create funds, transform assets, diversify risk, provide liquidity and produce information about investment opportunities, boosting the availability of funds for industrialisation and contributing to economic growth. All these functions can be broadly tied to the intermediation role of banks, a breakdown of which is likely to limit the depth of financial markets and thus stunt economic development and production. By investing in the industries that generate rapid economic growth and pioneering new markets and industries, banks boost economic activity. Banks also facilitate exchange and trade, decreasing transaction costs and boosting the potential size of the corporate sector and the economy. In the absence of financial intermediaries, entrepreneurs would only undertake investments that could be funded with current resources, which would diminish investment and economic activity. Also funds that do not earn interest, for instance through a bank account, hold an opportunity cost, decreasing potential corporate returns, the availability of funds, investment capability and economic growth (Da Rin and Hellmann, 2002).

Small and medium enterprises (SMEs) are more dependent on bank finance than large firms as larger firms can more easily raise capital through bond and stock issues. Beck and Demirguc-Kunt (2006) find that a large SME sector is a characteristic of fast growing economies and small firms' financing obstacles have almost twice the

negative effect on annual growth than large firms' do. Therefore a breakdown of banks' financing of SMEs has a potentially significant impact on economic activity.

During banking crises sectors more dependent on external finance experience less growth in value added, number of establishments and capital formation than do sectors less dependent on external finance (Dell'Ariccia et al., 2008). A breakdown of financial intermediation leads to poor economic performance and bank distress, which may additionally cause banks to diminish their lending. If bank credit cannot be substituted by other sources of finance then projects may be cut back or abandoned, creating a downward spiral of bank distress and economic contraction (Dell'Ariccia et al., 2008).

CHAPTER 3: FINANCIAL INTERMEDIATION MEASURES

In this chapter the level of intermediation in the SA financial industry is assessed using financial intermediation ratios. For the banking sector these include ratios for the total, large, medium and small banks, as well as the top five largest SA banks individually. Comparable financial intermediation ratios are then compiled for banks, insurers, pension and provident fund and the unit trust industries to assess the level of intermediation in the financial sector and what implications this has for intermediation in the banking sector.

3.1 Banking sector intermediation ratios

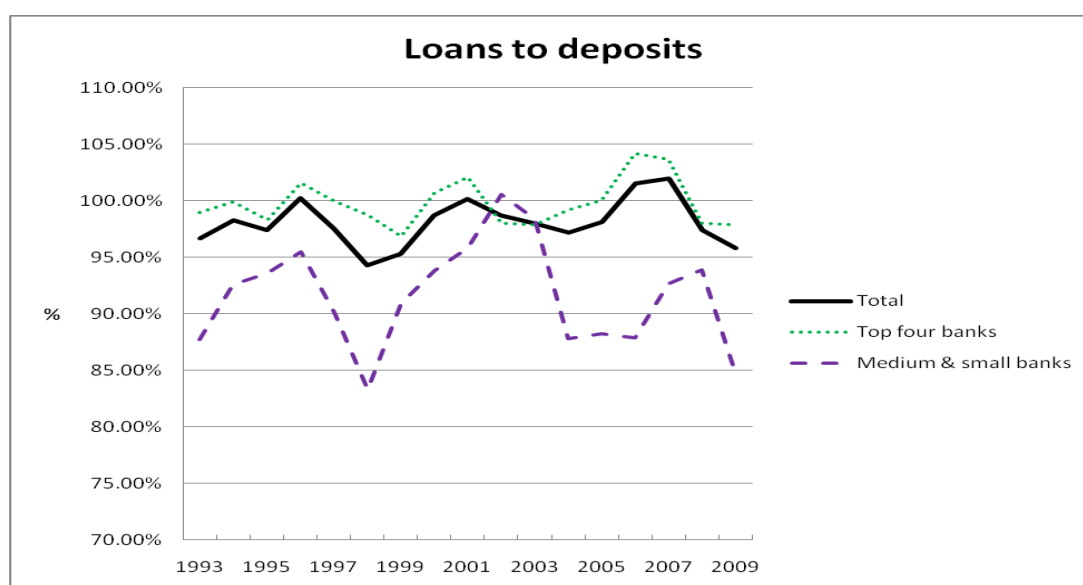
Ratios have been compiled for the total banking industry, top four banks (which constituted 77.98% of banking industry assets during 1993 to 2009) and top five banks (which constituted 82.74% of industry assets between 1993 and 2009) at aggregated and disaggregated levels, as well as medium and small banks (both including and excluding the fifth largest bank), with detailed figures available in Tables I to X in the Appendix. The data is sourced from the SARB's database of banks' DI900 (1993 to 2007) and BA900 (2008 and 2009) returns; from which the December data for each year is used¹.

The first and most unambiguous intermediation measure used for banks is loans divided by deposits, which is a clear intermediation measure. Loans include instalment sales, mortgages, credit cards, overdrafts and foreign currency loans, as well as loans under resale agreements, while deposits include local and foreign currency denominated deposits. The ratio reflects the percentage of a bank's deposits that are lent out, which should be at least one hundred percent as banks are uniquely able to add to the existing stock of money by lending money created by claims on their own liabilities (Schumpeter, 1934). A level above one hundred percent suggests intermediation, which as can be seen in Chart 1 was the case for the total banking industry in 1996 (100.25%), 2001 (100.17%), 2006 (101.05%) and 2007 (101.99%),

¹ Alternatively data from Bankscope, which collates individual banks' annual financial reports may have been used, but these did not add up to the total banking industry data as sourced from the SARB's DI900 and BA900 bank returns and therefore do not provide comparable data that can supplement the SARB's data. This may be a result of different financial year-ends employed for the banks in assembling the Bankscope database.

while marginally below this level for the remainder of the 1993 to 2009 period (in a range between 94.32% and 98.71%). In the United States of America (USA) commercial banks' ratio of loans to deposits was above one hundred percent for all but three years (1993, 1994 and 2009) during the 1993 to 2009 period, reflecting clear financial intermediation. To compile total USA loans: commercial and industrial, real estate, consumer, interbank and other loans and leases were included, while large time and other deposits are included in the deposits measure used. The data is sourced from the online USA Federal Reserve Bank database. Detailed data for USA commercial banks is available in Table XI in the Appendix.

Chart 1- Intermediation measure: loans to deposits for the total banking industry, top four banks, and medium and small banks



Source: Author's computation, using data from the South African Reserve Bank

The disintermediation in SA's banking industry in 13 of the 17 years analysed may be a result of stringent bank reserve requirements, which necessitate banks hold funds with the central bank, without earning interest, in order to cover their liabilities in the case of failure. In SA the bank reserve requirement specifies that 2.50% of total assets and risk exposures must be covered by the greater of 250 million SA rands or the sum of primary, secondary and tertiary share capital as well as primary and secondary

unimpaired reserves.² By comparison bank reserve requirements are not enforced in the United Kingdom, while in the USA the reserve requirement is 10.00% of transaction deposits.

SA banks, in line with many developed and developing economies, are also subject to minimum capital requirements under the Basel II Accord, enforced by the SARB since January 2008, leading to increased risk management and possibly also impacting banks' ability to intermediate. However, the SARB enforces more stringent requirements than the benchmarks set by the Basel Committee. In SA a minimum ratio of equity capital to total assets of 7.00% for Tier I capital is enforced (4.00% set by the Basel Committee), 5.25% for core Tier I capital (2.00% set by the Basel Committee), while SA limits Tier II capital to one hundred percent of Tier I capital (as is the case in the Basel Committee's requirement)³.

In addition, the top four SA banks have been operating capital ratios above minimum regulatory capital requirements. At end-December 2009, the Tier I capital ratio of Absa Bank was 12.70%, Standard Bank of South Africa was 11.80% and Nedbank was 11.50%, while that of Firststrand Bank was 12.30% at end-June 2009. These ratios

² Primary share capital includes capital obtained through the issue of ordinary shares, non-redeemable non-cumulative preference shares and prescribed categories of preferred securities (hybrid debt instruments). Secondary share capital includes a prescribed percentage of capital obtained through the issue of cumulative preference shares, as well as ordinary shares or other preference shares resulting from a revaluation of assets or primary share capital instruments where the proceeds of such instruments, or any portion thereof, are excluded from qualifying as primary share capital as a result of a prescribed limit. Tertiary share capital includes capital obtained by means of unsecured subordinated debt. Primary unimpaired reserve funds include funds obtained from actual earnings or recoveries, premiums on the issue of ordinary or non-redeemable, non-cumulative preference shares and a surplus on the realisation of capital assets. Secondary unimpaired reserve funds include funds obtained from actual earnings or recoveries, but not disclosed as a general or special reserve in the banks' financial statements. Secondary unimpaired reserve funds also include a prescribed percentage of any surplus resulting from a revaluation of assets, a prescribed amount of a reserve held against unidentified and unforeseen losses, funds obtained by way of premiums on the issue of cumulative preference shares or debt instruments. Also qualifying as secondary unimpaired reserve funds are those funds constituting primary unimpaired reserve funds where such funds, or any portion thereof, are excluded from qualifying primary reserve funds as a result of a prescribed limit, but excludes any fund required to be maintained in terms of any other law (The Banks Act 1990).

³ Core Tier I capital includes ordinary shares and disclosed reserves. In addition to core Tier I capital, Tier I capital includes non-cumulative, non-redeemable preference shares and hybrid debt instruments. Tier II capital includes undisclosed reserves, revaluation reserves, general provisions, hybrid instruments and subordinated term debt.

are up from the previous year's 11.60%, 11.00%, 9.60% and 11.10% respectively, reflecting Von Thadden's (2004) expectations for banks' capital held in excess of their capital requirements to increase in economic downturns (2009), while decreasing in economic upturns.

In the case of the top four banks, there has been evidence of financial intermediation (ratio of loans to deposits above 100%) in only six years (1996, 2000, 2001, 2005, 2006 and 2007) of the seventeen years of data analysed, while for the medium and small banks aggregated only once (2002) in the period 1993 to 2009 is there evidence of intermediation (as seen in Chart 1). A breakdown of the top four banks (see Chart I in the Appendix), reflects intermediation in the three largest banks (Absa Bank, the Standard Bank of SA and FirstRand Bank, with corresponding average 22.59%, 22.17% and 17.76% of banking industry assets during 1993 to 2009), while the fourth biggest bank Nedbank's (with average 15.46% of industry assets during 1993 to 2009) data reflects disintermediation over the period. The ratio of loans to deposits for the fifth largest bank, Investec Bank (with average 4.76% of industry assets during 1993 to 2009, see Chart II in the Appendix), also reflects a similar picture of disintermediation, suggesting medium and small banks were most responsible for disintermediation during the study period.

Another reason local banks may have provided financial intermediation below potential is their shareholder structure, with many of the banks' major shareholders (over 5.00% shareholding) being local investment managers or corporates, leading to preferential access to loans for them. The Public Investment Corporation, the dominant manager of most public sector workers' pensions and provident funds, owned 8.57% of Absa Bank, 12.20% of Standard Bank of SA and 5.78% of Nedbank at end-December 2009, while holding 8.92% of FirstRand Bank's ordinary share capital as at 30 June 2009. Other majority shareholders of FirstRand Bank are Rand Merchant Bank Holdings (effective shareholding of 15.00% at end-June 2009) and Remgro Limited (effective shareholding of 16.03% at end-June 2009), both investment holding companies. Nedbank's major shareholder is Old Mutual (52.21% as at 31 December 2009), which is an international financial services group with operations in SA, providing investment and savings solutions. Absa Bank's major shareholder is Barclays (55.52% shareholding at 31 December 2009), which is a

United Kingdom based bank, while that of the Standard Bank of SA is the Industrial and Commercial Bank of China (20.10% shareholding at 31 December 2009), the world's largest bank by market capitalisation⁴, which is based in China.

As in other countries, banks also need to adhere to scrutiny by ratings agencies, accounting standards, while making disclosures of information on banks' financial performance and compliance with minimum capital, reserve and liquid asset requirements⁵ to the Registrar of Banks and the public (Regulation 43 of regulations relating to banks as part of the Government Gazette No. 30629, 1 January 2008). This could direct resources away from core banking activities, possibly limiting intermediation. The National Credit Act (NCA, Act No. 34 of 2005) effective from 1 June 2007, introduced more stringent conditions to credit provision, including a more holistic look at the affordability of credit for the consumer, limiting banks' ability to freely provide loans and increasing banks' costs of assessing loan applications. The data analysed suggests the NCA had little impact on financial intermediation in the total SA banking industry, with the ratio of financial intermediation rising in 2007. However, the subsequent global financial crisis and economic recession are likely to have contributed towards the fall in financial intermediation in 2008 and 2009.

The second intermediation measure compiled for banks is loans divided by liabilities⁶, which is the percentage of a bank's total liabilities that are lent out, a broader intermediation measure than the loans to deposits ratio. The loans to liabilities measure is expected to be around one hundred percent, but below the loans to deposits intermediation measure as the denominator, liabilities, is greater than the denominator, deposits. As can be seen in Chart 2, for the total banking industry in the period 1993 to 2009 70.12% to 81.76% of banks' liabilities were lent out. This ratio for the top four banks (between 70.14% and 83.70% during 1993 to 2009) has been mostly higher than that for the total industry, while that of medium and small banks (between 65.51% and 84.25% during 1993 and 2009) has tended to be lower than the

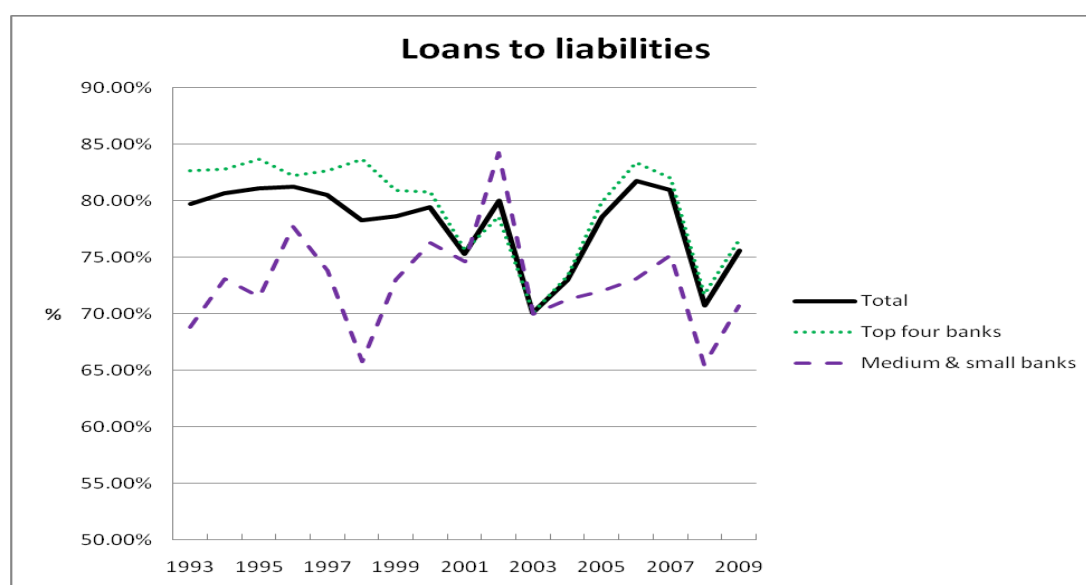
⁴ Source: www.icbc-ltd.com

⁵ SA banks are required to have liquid assets greater than or equal to the sum of a prescribed percentage of the sum of their liabilities.

⁶ Liabilities include deposits, other borrowed funds, foreign currency funding, derivatives issued and other trading liabilities.

total industry. These ratios have followed a mostly downward trend since 1993, suggesting diminishing intermediation in a period that would have been expected to have seen increased intermediation due to the end of the apartheid political regime, providing improved working opportunities for a larger portion of the population, increasing loan demand and the value of deposits amid broader access to financial services.

Chart 2- Intermediation measure: loans to liabilities for the total banking industry, top four banks and medium and small banks



Source: Author's computation, using data from the South African Reserve Bank

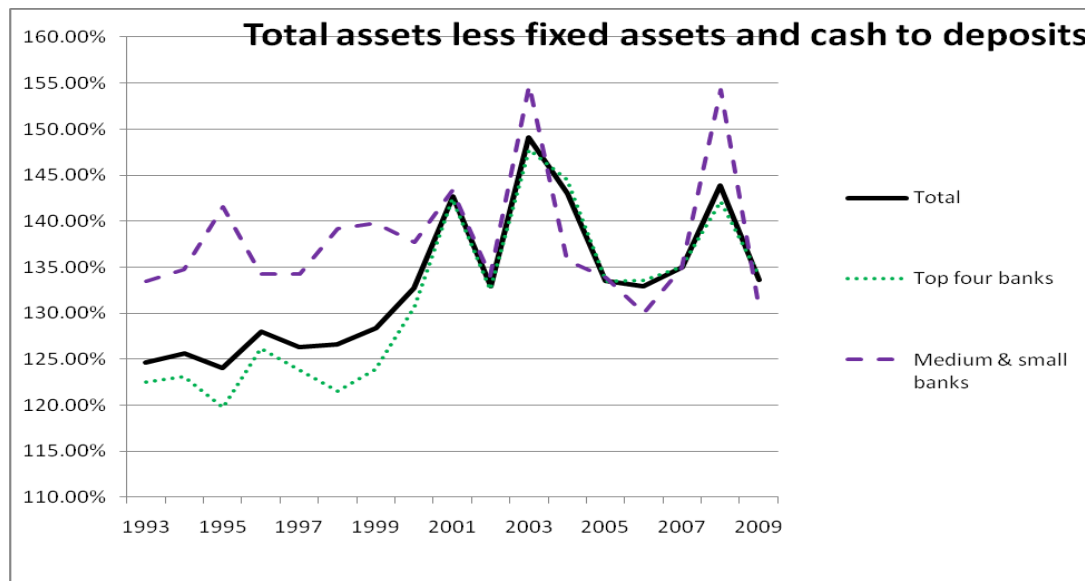
A breakdown of the top four banks (see Chart III in the Appendix) and aggregated medium and small banks reflects extreme volatility, with many of the top four banks' loans to liabilities ratio below the total for extended periods. SA's fifth largest bank Investec Bank's ratio of loans to liabilities (see Chart IV in the Appendix) has been even more volatile.

SA has always had stringent reserve and capital requirements and a highly regulated financial sector, likely sheltering the local financial sector from the 2008/2009 USA sub-prime debt crisis and resultant global financial crisis, however, these regulations may be hindering banks' ability to intermediate. In addition to the factors outlined above that impact on the banking industry's intermediation ability, low levels of competition in the sector may also be adversely affecting banks' intermediation role.

Companies (local and foreign) require SARB authorisation to operate in the financial sector and a huge fee is payable for the SARB to process applications, diminishing competition in the sector. The low competition is reflected in the top four banks operating in SA holding 77.98% of the industry's assets, 79.90% of loans and 78.56% of deposits. Limits on banks' investments and loans, including in immovable property, subsidiaries or in debentures or preference shares of subsidiaries may not exceed the sum of primary capital and primary reserves (Banks Act 1990), possibly also limiting banks' ability to intermediate.

The third, but much less representative, intermediation measure used is total assets less fixed assets and cash (represented by SA bank notes and coins on banks' balance sheets), divided by deposits, essentially the earning assets of the bank relative to deposits. As can be seen in Chart 3, for the total banking industry in the period 1993 to 2009 124.09% to 149.07% of banks' earning assets could be said to be supported by deposits (if deposits were the only inputs of the banks). This intermediation ratio followed a gradual upward trend between 1993 and 2002, while trending down from 2003 to 2009. The trend down in the 2003 to 2009 period is possibly due to increased investment alternatives for individuals' funds, including equities, mutual funds, unit trusts and exchange traded funds, despite banks' off-balance sheet operations, including securitisation, increasing banks' potential lending. SA banks did most of their securitisation transactions during the 2005 to 2009 period (The Banking Association of South Africa, 2010).

Chart 3- Intermediation measure: total assets less fixed assets and cash to deposits for the total banking industry, top four banks and medium and small banks



Source: Author's computation, using data from the South African Reserve Bank

Total assets less fixed assets and cash divided by deposits is a broader and less representative intermediation measure than the loans to deposits ratio and therefore the average of this ratio (133.13%) is much higher than the 109.30% average of the loans to deposits measure in the period 1993 to 2009. Another intermediation measure of total assets less fixed assets and cash divided by liabilities during the 1993 to 2009 period ranged between 102.81% and 107.78%, lower than the total assets less fixed assets and cash to deposits ratio as the liabilities denominator is larger than the deposits denominator.

The ratio of total assets less fixed assets and cash to deposits for the top four banks (in a range between 119.76% and 147.75% during 1993 to 2009) has been below that for the total industry for most of the period, while that of medium and small banks (130.05% to 154.75% during 1993 to 2009) has been significantly higher than the total. The breakdown of the ratio of total assets less fixed assets and cash to deposits of the top four banks (Chart V in the Appendix) and aggregated medium and small banks reflects an interesting picture with Nedbank and Absa Bank's ratios close to but below the total industry for most of the 1993 to 2009 period. FirstRand Bank's ratio was very volatile and above that for the total industry for extended periods and

Standard Bank of SA's ratio was close to that for the total industry between 1993 and 2002, but then far above the total from 2003 to 2009, reflecting the experience of larger banks in the US that have to borrow to boost their potential lending (i.e., like money centre banks); thus, reflecting less dependence on deposits. This suggests Nedbank and Absa Bank acquired funds from other sources, but these banks have similar branch networks to those of the other two large banks (FirstRand Bank and Standard Bank of SA). Therefore the funds may have been from their concentrated shareholder base, with both Nedbank and Absa Bank having a single largest shareholder with a greater than fifty percent holding.

Looking at the ratio of total assets less fixed assets and cash to liabilities for the top four banks (Chart VI in the Appendix), Nedbank's ratio is close to, but above that for the total industry during the 2001 to 2008 period. This suggests Nedbank relied less on its liabilities; that is, liabilities other than deposits of foreign currency funding, derivatives issued and trading liabilities, in the period than the average bank and more on its deposits as collateral for its earning assets. This may be a result of sufficient deposit taking due to relationship banking, particularly from a large shareholder like Old Mutual (52.2% shareholding in Nedbank at 31 December 2009).

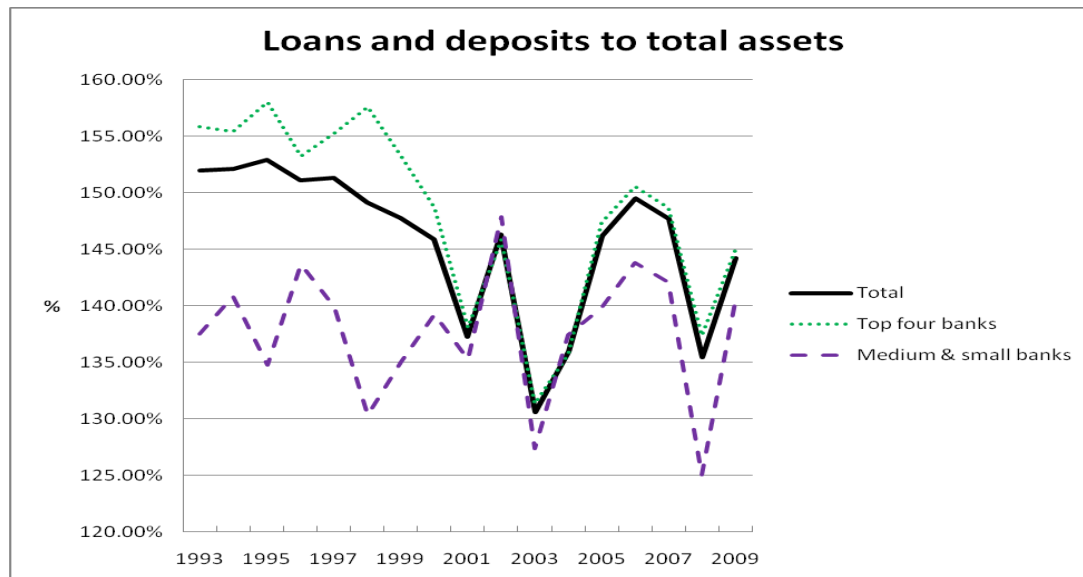
Standard Bank of SA's ratio of earning assets to liabilities was mostly below that of the total industry in contrast to its earning assets to deposits ratio that was around or below that of the total industry in the 1993 to 2003 period and then far above in the 2004 to 2009 period. A similar contrast is seen by FirstRand Bank's ratio in the 1993 to 2003 period, with the ratio of earning assets to liabilities mostly below that of the total industry and the ratio of earning assets to deposits above the total.

This discrepancy suggests the Standard Bank of SA and FirstRand Bank are more reliant on liabilities to back their earning assets. Absa's ratio of earning assets to liabilities compared to the total industry acts similarly to its ratio of earning assets to deposits compared to the total industry, i.e. remaining mostly below that of the total industry during the period analysed. Nedbank appears to be a more money centred bank, followed by FirstRand Bank, than the other large SA banks, i.e. more reliant on deposits, which may also be a reflection of their size, smaller than the other top four

SA banks. Internationally larger banks are typically less money centred as they are more easily able to raise funds from other sources like debt and equity.

The fourth intermediation measure used is loans plus deposits divided by total assets, essentially a banking operational efficiency measure, which would be expected to exceed one hundred percent. As can be seen in Chart 4, for the total banking industry in the period 1993 to 2009, banks' loans and deposits exceeded their total assets by between 1.31 and 1.53 times. The ratio has mostly trended down in this period, suggesting SA banks' operational efficiency has deteriorated, likely a result of many alternative financial products available to depositors. This ratio for the top four banks (131.33% to 158.03% during 1993 to 2009) has been above or close to that for the total industry, while that of medium and small banks (125.02% to 147.86% during 1993 to 2009) has mostly been below that of the total industry, suggesting larger banks are more operationally efficient than medium and small banks.

Chart 4- Intermediation measure: loans and deposits to total assets for the total banking industry, top four banks and medium and small banks



Source: Author's computation, using data from the South African Reserve Bank

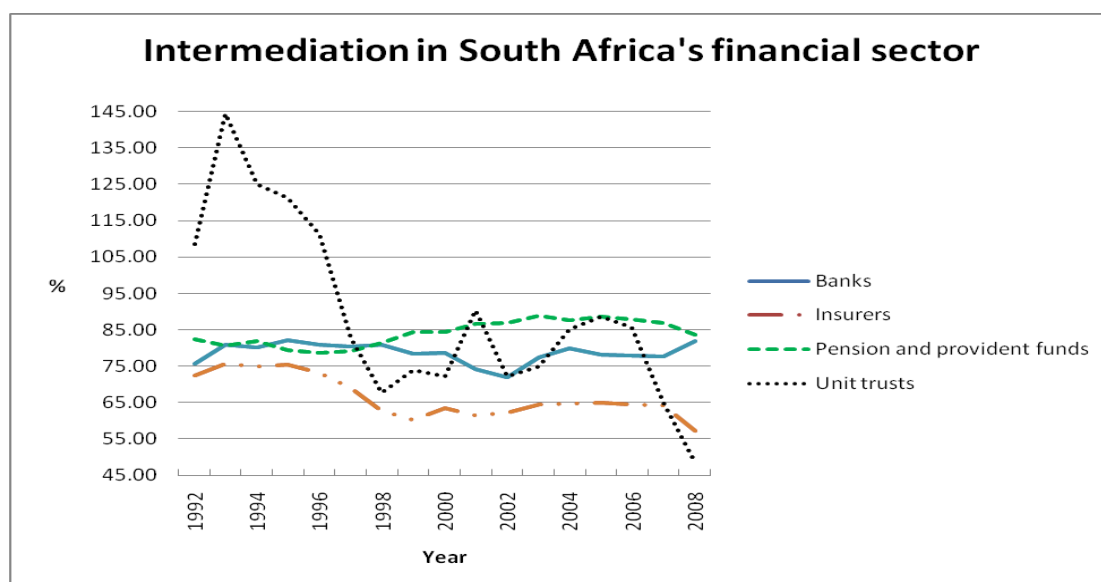
A breakdown of the top four banks (Chart VII in the Appendix) and aggregated medium and small banks, reflects a mixed picture with Absa Bank's intermediation ratio of loans plus deposits to total assets far above the total industry for most of the period under review, Nedbank's mostly above, while Standard Bank of SA and

Firststrand Bank's ratios have been close to the total banking industry ratio or below. Small and medium banks' loans and deposits covered less of their total assets than that of the total industry in the period.

3.2 Financial sector intermediation ratios

The level of intermediation in the total SA financial sector including banks, pension and provident funds, insurers and unit trusts (collective investment schemes) is also assessed, with a comparable ratio compiled for each of these industries within the sector. For banks the ratio is one of loans and marketable securities to total assets, essentially banks' earning assets relative to total assets⁷. This is compared to pension and provident funds, total insurers and unit trusts' marketable securities, which constitute most of these firms' earning assets, relative to their total assets. The ratios are included in Chart 5, while detailed data is available in Table XII in the Appendix.

Chart 5- Intermediation measures: ratio of loans and marketable securities to total assets for the total banking industry, as well as the ratio of marketable securities to total assets for pension and provident funds, insurers and the unit trust industry



Source: Author's computation, using data from the South African Reserve Bank

⁷ A better denominator for the intermediation measures, reflecting total industry intermediation more clearly, would have been the "input variable", total liabilities, but they were unavailable for other industries (insurers, pension and provident funds and unit trusts).

The data was sourced from the SARB's online statistical database, which has comparable data from 1992 to 2008⁸.

To compile the above ratio for the banking industry, banking institutions' total loans and advances and total investments and bills discounted are computed relative to banking institutions' total assets. As can be seen in Chart 5, the ratio suggests that between 71.94% and 82.20% of banks' total assets in the 1992 to 2008 period was either lent out or invested. This suggests that banks have not used their assets to their full potential (loans plus marketable securities at least one hundred percent of total assets), as banks are uniquely able to add to the existing stock of money by lending money created by claims on their own debt (Schumpeter, 1934), while below potential investment in corporates' fixed income securities and equities limits companies' ability to expand and invest, limiting economic activity. This ratio has mostly been stable in a narrow range during the 1992 to 2008 period.

To compile the marketable securities to total assets ratio for the pension and provident fund industry, the marketable securities of official as well as private self-administered pension and provident funds are used. The marketable securities include central government, local governments, public enterprises and others' fixed interest securities, as well as ordinary shares. Official and private self-administered pension and provident funds' total assets are added to get the total assets for the pension and provident fund industry. As can be seen in graph 5, the ratio has been in a narrow range between 78.55% and 88.75% during the 1992 to 2008 period, reflecting relatively low investment of pension and provident funds' total assets. Pension and provident funds' investments have possibly been capped by regulations limiting their investments in riskier securities and high direct and indirect costs of regulators' supervision (Pension Funds Act 24 of 1956 and as amended).

To compile the ratio for the insurance industry, both long- and short-term insurers' fixed interest securities of government, public enterprises and other assets, as well as

⁸ The annual reports of the Registrar of Short-Term Insurance, Registrar of Long-Term Insurance, Registrar of Pension Funds and Financial Services Board were also assessed, but did not have all the indicators in the time period required for the analysis.

ordinary shares are included to compile insurers' marketable securities, which are divided by total assets of long- and short-term insurers. As can be seen in graph 5, the ratio suggests that between 57.10% and 75.57% of insurers' total assets in the 1992 to 2008 period were invested, while grinding lower in the period. Insurers are subject to limits on investments within the Long- and Short- term Insurers' Acts (Long-term Insurance Act 52 of 1998 and Short-term Insurance Act 53 of 1998). The Acts also require insurers to provide financial returns to the Registrar on a regular basis, thus limiting their intermediation ability as resources need to be directed to this function. Insurers are required to hold assets at least covering their liabilities at all times, possibly limiting their ability to invest in marketable securities to avoid failing to cover claims. This may limit insurers' investments to below potential (marketable securities one hundred percent of total assets) due to a failure to balance funds needed for claims with the investment potential of premiums.

To compile the ratio for the unit trust industry the market value of security holdings of public sector securities, as well as private preference shares, debentures and ordinary shares is divided by unit trusts' total assets at book value. As can be seen in graph 5, the ratio suggests that between 48.43% and 144.35% of unit trusts' total assets in the 1992 to 2008 period were invested. Investment restrictions, in particular to liquid assets' exposure (The Unit Trusts Control Act 1981), may be negatively impacting the unit trust industry's ability to invest in risky marketable securities.

The ratio of marketable securities to total assets for the unit trust industry declined significantly between 1994 and 1998, likely a result of uncertainty in the economy due to a new government, leading investors to prefer less risky assets like cash. This ratio mostly rose between 1999 and 2005, impacted by demand for investments due to an expanding economy. However, the fall in the ratio between 2006 and 2008 was within an economic growth cycle (in 2006 and 2007 SA had economic growth above five percent year on year and in 2008 growth was 3.2 percent year on year), possibly reflecting the impact of increased alternative investments, some entailing lower costs for the investor.

The ratios used for the particular industries within the broader financial services sector are not core intermediation ratios but are a representation of intermediation in

the SA financial services industry, suggesting intermediation may be too low. This suggests banks have been operating in an environment that appears not to foster intermediation, perhaps this partially explains the below potential levels of banking intermediation. The banking intermediation measures considered mostly reflect disintermediation in the 1993 to 2009 period, with the top four banks' intermediation higher than that of the medium and small banks.

Banks' intermediation has been adversely impacted by high reserve and capital requirements (as benchmarked in the Basell II accord), concentrated shareholder base, regulatory disclosures, limited competition and limits on investments, among other factors. Increased bank lending, as well as investment by bank, insurer, pension and provident fund and the unit trust industries in government debt, corporate debt and equity would boost the government and corporate sectors' ability to invest, which would contribute towards greater economic growth and job creation.

CHAPTER 4: VARIABLES IMPACTING BANKS' FINANCIAL INTERMEDIATION

The intermediation ratios compiled suggest a negative trend in financial intermediation in SA, but do not provide insight into the reason for this. Therefore a panel regression is run on SA's four largest banks' (Absa Bank, Standard Bank of SA, FirstRand Bank and Nedbank) financial intermediation measures to assess which economic factors are likely to have facilitated financial disintermediation in SA between 1993 and 2009. Annual data series are used. Missing data lead to the regression being restricted to between 2002 and 2009⁹.

A number of variables (guided by the intermediation ratios considered and the literature) were considered as possibly having some impact on SA's top four banks' financial intermediation: including bank assets as a percentage of that of the total industry as a reflection of bank size, market power and competition, as Bossone (2001) finds that smaller banks have more limited access to inter-bank funds than larger banks, requiring smaller banks to hold greater reserves against their assets, constraining their intermediation ability. Also Mishkin (2007) finds decreased competition leads to increased account charges and decreased bank efficiency and possible lower financial intermediation.

The interest margin between banks' assets and liabilities, as a reflection of banks' profitability, which is expected to increase banks' ability to intermediate is also considered, with larger interest rate spreads associated with a more concentrated banking market (Degryse and Ongena, 2008). Number of branches and employees are also considered as a reflection of the extent of the banks' relationship with clients, which creates a safe source of funding for banks (Bossone, 2001), and consequently increases financial intermediation potential. Another variable considered is banks' capital ratio (total equity to total assets) as a reflection of banks' ability to cover their assets with their shareholder capital, which is expected to have an inverse relationship with banks' intermediation. That is the greater the amount of equity covering total

⁹ Capital ratio, number of branches, number of employees and interest margin between banks' assets and liabilities are test variables used in this analysis. Importantly the banking industry data is made up of Absa Bank, Standard Bank of SA, FirstRand Bank and Nedbank, because these top four South African banks have significant pertinent data for this test.

assets, the less funds are available to use for financial intermediation, but a well capitalised bank's financial intermediation potential is expected to be greater than that of a weakly capitalised bank.

Data on the annual assets of the individual banks and total industry are sourced from the SARB's DI900 and BA900 reports on banks' balance sheets. The banks' annual reports were used to source data on the number of branches, number of employees, capital ratio and interest margins, with comparable variables across all banks¹⁰.

An ordinary least squared panel regression is run for the largest four SA banks' loans to deposits intermediation measure on the bank assets as a percentage of the total industry assets, number of branches, capital ratio, number of employees and net interest margin between the bank's assets and liabilities. The regression appears to be reasonable for drawing inferences because it does not exhibit serial correlation between the independent variables, the Durbin Watson statistic is around two (Model 1, Regression 1 in Table 1).

The regression has a high adjusted R-squared (0.756), with bank assets as a percentage of the total industry assets, number of branches and interest margin between the bank assets and liabilities variables resulting in significant coefficients, which are positive, confirming our expectation that increased bank size, improved client-bank relationships (although only a marginal impact as the coefficient is 0.0002) and higher bank profitability increase banks' potential financial intermediation.

The number of employees and capital ratio variables' coefficients are insignificant, leading to the running of a redundant variables test on these, which results in a failure to reject these variables as redundant. The resultant test equation has all significant coefficients (bank assets as a percentage of the total industry assets, number of branches and interest margin between bank assets and liabilities), a high adjusted R-squared (0.733) and lacks serial correlation (Durbin-Watson statistic is close to 2 at 1.9) (Model 2, redundant variable test equation in Table 1).

¹⁰ Standardised capital ratio data are sourced from Nedbank Capital's banking sector analysts

Due to the insignificance of the number of employees and capital ratio variables as well as a failure to reject these variables as redundant, a restricted least squared regression is run for the loans to deposits intermediation measure on bank assets as a percentage of that of the total industry, number of branches and interest margin between bank assets and liabilities. The regression model (Model 3, restricted regression in Table 1) has a high adjusted R-squared (0.706), does not have serial correlation (Durbin-Watson statistic is close to 2 at 1.9) and the coefficients of all the variables are significant.

The regression suggests bank assets as a percentage of that of the total industry, number of branches and interest margin between bank assets and liabilities had a significant impact on the loans to deposits intermediation measure during the 2002 to 2008 period. These set of results suggests that an impact on bank intermediation by the bank size, profitability, level of competition and relationships with clients, are possible factors that both banks and policy makers can target in attempts to increase intermediation (or reverse the trends pointing towards disintermediation). The result is as expected from the literature.

Table I: Panel models of factors impacting the intermediation of South Africa's top four banks

Dependent variable is the intermediation measure: loans to deposits	Model 1 Regression 1	Model 2 Redundant variable test equation	Model 3 Restricted regression
Bank assets as a percentage of total industry	1.070 (2.237)	1.603 (4.128)	1.666 (4.237)
Number of branches	0.0002 (2.574)	0.0002 (2.552)	0.0002 (2.334)
Interest margin between bank assets and liabilities	6.068 (2.615)	6.928 (3.042)	7.289 (3.217)
Number of employees	0.000 (1.596)		
Capital ratio	-1.432 (-0.916)		
Constant	0.431 (2.315)	0.267 (2.068)	0.253 (1.924)
Adjusted R ²	0.756	0.733	0.706
Number of observations	28	28	28

CHAPTER 5: CONCLUSION

The literature highlights the importance of financial intermediaries in providing funds to non-financial firms, enabling investment greater than current resources, with banks as special types of intermediaries that are able to create funds, reduce transaction costs and information asymmetries, develop beneficial relationships, monitor borrowers, transform assets, create liquidity and act as risk managers. The literature also highlighted the factors that may impede financial intermediation, including regulations, bank size, market power, competition levels, inflation levels and extent of financial market developments, which could stunt economic activity and investment.

The ratio analysis shows intermediation in the broader SA financial services industry, including insurers, the pension and provident fund and unit trust industry, is too low; suggesting banks have been operating in an environment that does not necessarily foster intermediation, partially explaining the below potential levels of banking intermediation. The banking intermediation measures considered mostly reflect disintermediation during the 1993 to 2009 period, with the top four banks' intermediation higher than that of the medium and small banks. Banks' intermediation seems to have been adversely impacted by stringent bank regulations (reserve and capital requirements), low levels of competition and the shareholding structure of the banks. However, the ratio analysis suggests the size of SA banks may be impacting their financial intermediation ability, with larger banks locally and in the USA better able to intermediate.

The panel regressions conducted to assess which variables have the biggest impact on intermediation by SA's four largest banks, suggest bank assets as a percentage of the total industry, number of branches and interest margin between bank assets and liabilities had a significant impact on the loans to deposits intermediation measure during the 2002 to 2008 period. This reflects an impact on bank intermediation by bank size, profitability and level of relationship with clients.

The level of financial intermediation in SA has been low, negatively impacting on banks intermediation ability. However, low competition, conservative policies, relatively small bank size compared to global counterparts and concentrated

shareholding is likely to have also adversely affected banks' financial intermediation during the 1993 to 2009 period. It is difficult to remedy many of these issues, with limits on shareholding likely to be too restrictive and difficult to enforce. Less stringent regulations could increase financial intermediaries' intermediation potential, but may not have the desired effect as banks' policies are prudentially meant to be conservative: therefore, less stringent regulations may destabilise the financial sector. Banking appears to have important economies of scale, but too large banks may create the problem of "too large to fail" firms, which may entail government assistance and implicit subsidy, as well as diminish competition. Higher levels of competition appear to be needed to bring down financial services costs and increase the scope of financial intermediation.

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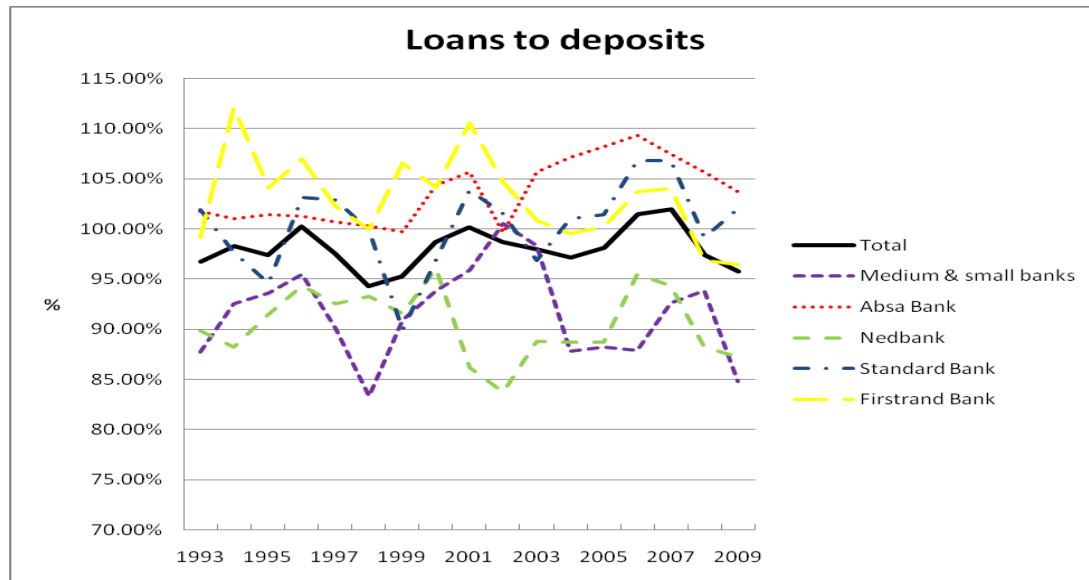
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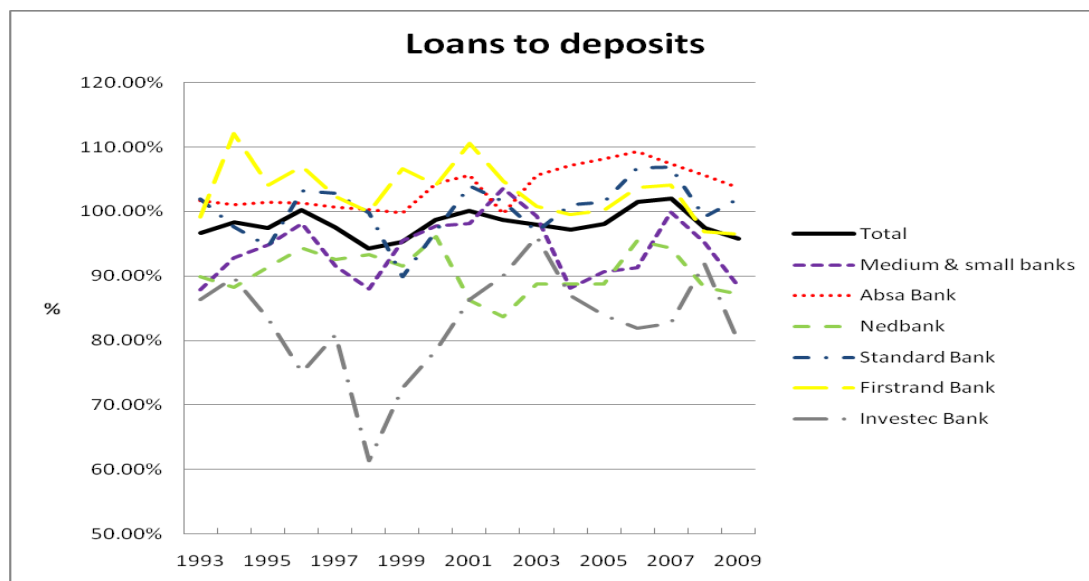
THE APPENDIX

Chart I- Intermediation measure: loans to deposits for total banking industry, Absa Bank, Nedbank, Standard Bank of SA, Firststrand Bank and medium and small banks



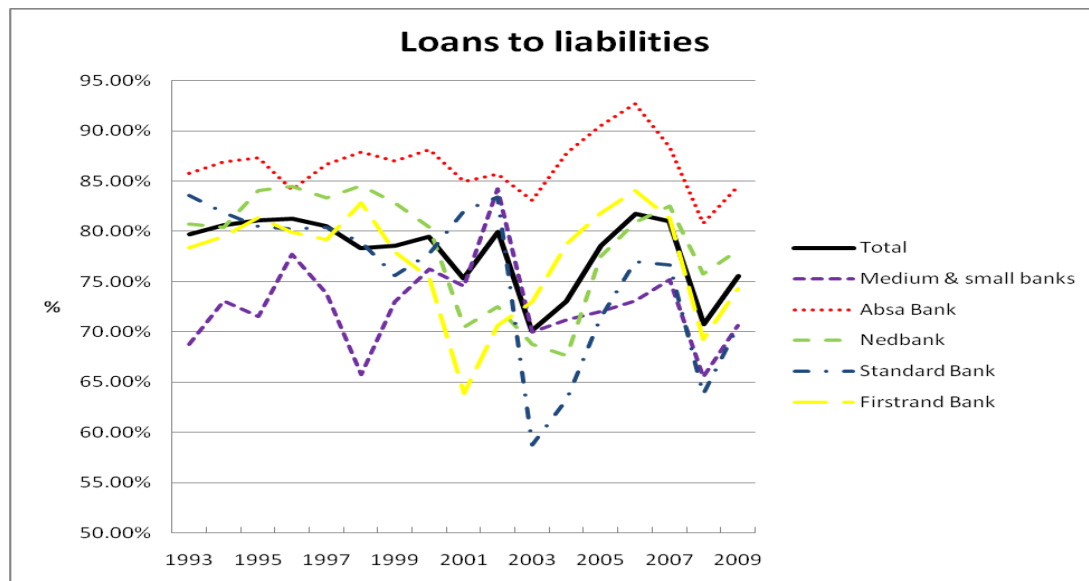
Source: Author's computation, using data from the South African Reserve Bank

Chart II- Intermediation measure: loans to deposits for total banking industry, Absa Bank, Nedbank, Standard Bank of SA, Firststrand Bank, Investec Bank and medium and small banks



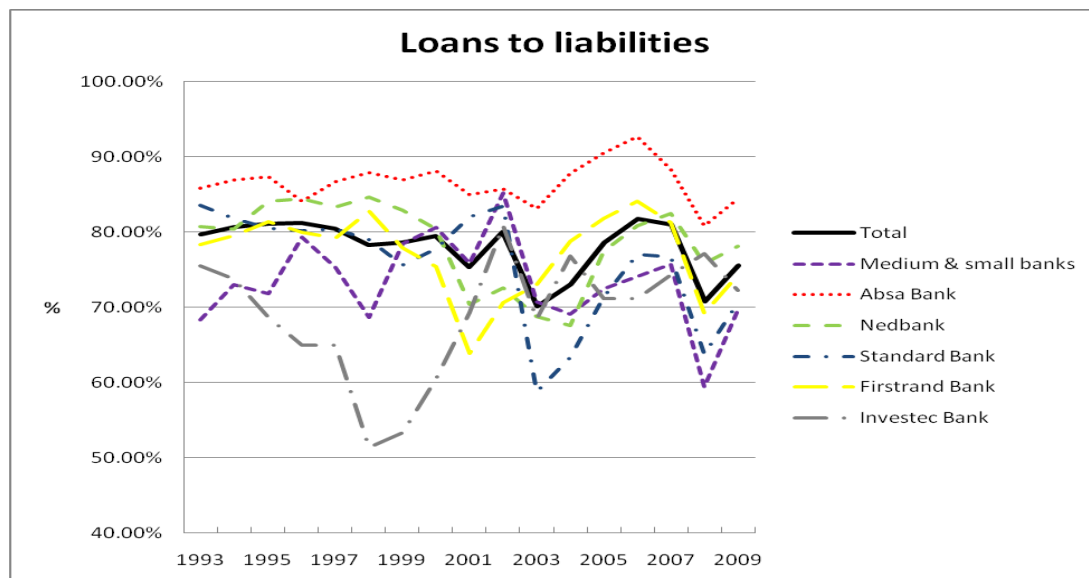
Source: Author's computation, using data from the South African Reserve Bank

Chart III- Intermediation measure: loans to liabilities for total banking industry, Absa Bank, Nedbank, Standard Bank of SA, Firststrand Bank and medium and small banks



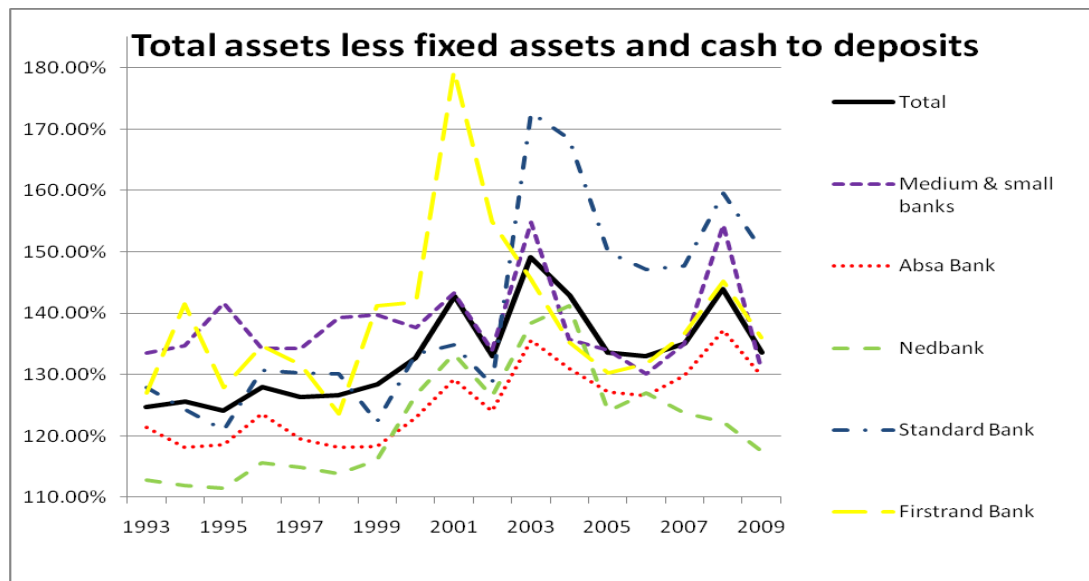
Source: Author's computation, using data from the South African Reserve Bank

Chart IV- Intermediation measure: loans to liabilities for total banking industry, Absa Bank, Nedbank, Standard Bank of SA, Firststrand Bank, Investec Bank and medium and small banks



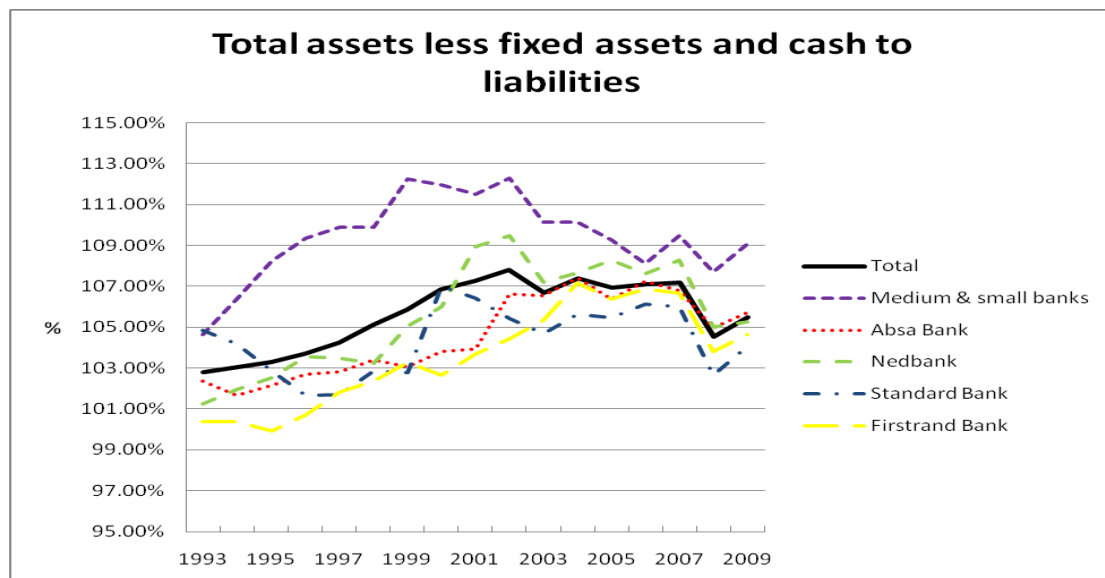
Source: Author's computation, using data from the South African Reserve Bank

Chart V- Intermediation measure: total assets less fixed assets and cash to deposits for the total banking industry, Absa Bank, Nedbank, Standard Bank of SA, Firstrand Bank and medium and small banks



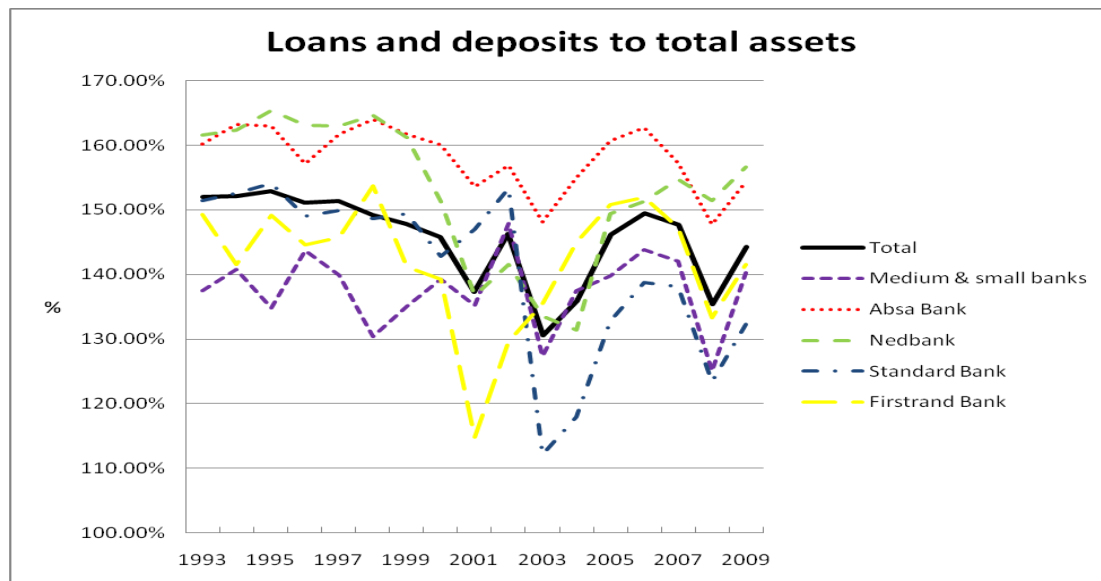
Source: Author's computation, using data from the South African Reserve Bank

Chart VI- Intermediation measure: total assets less fixed assets and cash to liabilities for the total banking industry, Absa Bank, Nedbank, Standard Bank of SA, Firstrand Bank and medium and small banks



Source: Author's computation, using data from the South African Reserve Bank

Chart VII- Intermediation measure: loans and deposits to total assets for the total banking industry, Absa Bank, Nedbank, Standard Bank of SA, Firststrand Bank and medium and small banks



Source: Author's computation, using data from the South African Reserve Bank

Table I- Intermediation measures for total banking industry

Total banking industry					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	96.71%	79.74%	124.69%	102.81%	151.98%
1994	98.31%	80.64%	125.61%	103.04%	152.10%
1995	97.39%	81.06%	124.09%	103.29%	152.89%
1996	100.25%	81.23%	127.97%	103.70%	151.10%
1997	97.56%	80.50%	126.36%	104.26%	151.34%
1998	94.32%	78.30%	126.60%	105.09%	149.16%
1999	95.30%	78.60%	128.35%	105.86%	147.79%
2000	98.71%	79.45%	132.74%	106.85%	145.85%
2001	100.17%	75.30%	142.69%	107.27%	137.24%
2002	98.67%	80.00%	132.95%	107.78%	146.34%
2003	97.97%	70.12%	149.07%	106.69%	130.57%
2004	97.19%	73.01%	142.97%	107.39%	135.96%
2005	98.10%	78.55%	133.55%	106.93%	146.15%
2006	101.50%	81.76%	132.95%	107.09%	149.49%
2007	101.99%	80.99%	135.00%	107.20%	147.66%
2008	97.40%	70.74%	143.91%	104.52%	135.41%
2009	95.78%	75.60%	133.65%	105.49%	144.21%

Table II- Intermediation measures for South Africa's four largest banks

South Africa's four largest banks					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	98.96%	82.67%	122.48%	102.32%	155.86%
1994	99.89%	82.83%	123.09%	102.07%	155.42%
1995	98.34%	83.69%	119.76%	101.92%	158.03%
1996	101.58%	82.19%	126.22%	102.13%	153.24%
1997	99.97%	82.69%	123.83%	102.42%	155.23%
1998	98.74%	83.70%	121.53%	103.02%	157.61%
1999	96.89%	80.90%	123.86%	103.42%	153.24%
2000	100.72%	80.75%	130.69%	104.77%	148.67%
2001	102.10%	75.61%	142.40%	105.46%	138.12%
2002	98.02%	78.57%	132.58%	106.27%	145.81%
2003	97.88%	70.14%	147.75%	105.88%	131.33%
2004	99.18%	73.34%	144.49%	106.86%	135.67%
2005	100.03%	79.80%	133.48%	106.49%	147.39%
2006	104.19%	83.41%	133.53%	106.89%	150.57%
2007	103.64%	81.99%	135.01%	106.81%	148.64%
2008	98.01%	71.69%	142.12%	103.96%	137.33%
2009	97.85%	76.47%	134.17%	104.85%	144.92%

Table III- Intermediation measures for total small and medium banks (including fifth largest bank-Investec)

Total small and medium banks (including fifth largest bank-Investec)					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	87.75%	68.78%	133.50%	104.63%	137.54%
1994	92.57%	73.08%	134.74%	106.37%	140.81%
1995	93.57%	71.53%	141.60%	108.24%	134.77%
1996	95.46%	77.75%	134.28%	109.37%	143.64%
1997	90.10%	73.78%	134.23%	109.90%	139.88%
1998	83.33%	65.78%	139.22%	109.90%	130.33%
1999	90.95%	73.03%	139.81%	112.26%	135.04%
2000	93.82%	76.28%	137.70%	111.95%	139.24%
2001	95.86%	74.58%	143.33%	111.51%	135.26%
2002	100.55%	84.25%	134.02%	112.29%	147.86%
2003	98.35%	69.99%	154.75%	110.13%	127.39%
2004	87.80%	71.24%	135.75%	110.14%	137.43%
2005	88.24%	72.00%	133.91%	109.27%	139.79%
2006	87.89%	73.06%	130.05%	108.10%	143.82%
2007	92.65%	75.16%	134.93%	109.47%	142.07%
2008	93.87%	65.51%	154.31%	107.68%	125.02%
2009	84.83%	70.68%	130.92%	109.08%	140.31%

Table IV- Intermediation measures for South Africa's five largest banks

South Africa's five largest banks					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	98.73%	82.55%	122.62%	102.52%	155.55%
1994	99.67%	82.63%	123.60%	102.47%	154.72%
1995	97.94%	83.28%	120.43%	102.40%	157.00%
1996	100.74%	81.68%	126.70%	102.73%	152.18%
1997	99.15%	81.90%	124.41%	102.77%	154.01%
1998	96.27%	81.54%	121.87%	103.22%	155.46%
1999	95.21%	78.74%	125.33%	103.65%	150.46%
2000	98.99%	79.11%	131.33%	104.96%	146.93%
2001	100.85%	75.15%	142.65%	106.30%	137.24%
2002	97.43%	78.72%	132.55%	107.10%	145.53%
2003	97.76%	70.03%	148.76%	106.56%	130.53%
2004	98.44%	73.52%	143.80%	107.40%	135.93%
2005	98.97%	79.26%	133.47%	106.89%	146.78%
2006	102.70%	82.65%	133.17%	107.16%	150.01%
2007	102.19%	81.52%	134.25%	107.09%	148.55%
2008	97.60%	72.00%	141.23%	104.18%	138.02%
2009	96.50%	76.19%	133.09%	105.08%	145.25%

Table V- Intermediation measures for total small and medium banks (excluding fifth largest bank-Investec)

Total small and medium banks (excluding fifth largest bank-Investec)					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	87.86%	68.30%	133.76%	103.98%	137.37%
1994	92.81%	73.02%	133.71%	105.20%	142.08%
1995	94.84%	71.86%	141.18%	106.97%	136.02%
1996	98.18%	79.35%	133.32%	107.75%	146.64%
1997	91.59%	75.23%	133.71%	109.83%	141.70%
1998	88.02%	68.65%	141.88%	110.65%	131.24%
1999	95.44%	78.45%	138.54%	113.89%	139.47%
2000	97.78%	80.64%	137.37%	113.29%	142.37%
2001	98.13%	75.78%	142.81%	110.29%	137.24%
2002	103.63%	85.16%	134.52%	110.55%	149.56%
2003	99.33%	70.67%	151.14%	107.52%	130.80%
2004	88.16%	69.09%	136.96%	107.34%	136.17%
2005	90.66%	72.46%	134.30%	107.34%	140.83%
2006	91.27%	74.09%	131.12%	106.43%	144.94%
2007	99.87%	75.71%	142.87%	108.30%	138.88%
2008	95.24%	59.43%	172.42%	107.58%	112.47%
2009	88.51%	69.62%	139.32%	109.59%	134.03%

Table VI- Intermediation measures for Absa Bank

Absa Bank					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	101.74%	85.81%	121.36%	102.36%	160.24%
1994	101.05%	86.94%	118.15%	101.65%	163.21%
1995	101.43%	87.36%	118.62%	102.16%	163.04%
1996	101.26%	84.12%	123.65%	102.71%	157.18%
1997	100.69%	86.66%	119.46%	102.82%	161.76%
1998	100.31%	87.86%	118.06%	103.41%	163.94%
1999	99.76%	86.96%	118.24%	103.06%	161.76%
2000	104.38%	88.10%	122.97%	103.80%	160.00%
2001	105.64%	84.99%	129.16%	103.92%	153.57%
2002	99.66%	85.70%	124.01%	106.64%	156.87%
2003	105.67%	83.07%	135.54%	106.55%	148.19%
2004	107.11%	87.80%	131.06%	107.43%	154.94%
2005	108.20%	90.49%	127.21%	106.39%	160.67%
2006	109.33%	92.67%	126.50%	107.23%	162.78%
2007	107.45%	88.36%	129.85%	106.79%	157.27%
2008	105.65%	80.83%	137.20%	104.97%	147.79%
2009	103.71%	84.46%	129.80%	105.71%	154.35%

Table VII- Intermediation measures for Standard Bank of SA

Standard Bank of SA					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	101.94%	83.57%	127.92%	104.86%	151.46%
1994	97.68%	81.84%	124.35%	104.19%	152.61%
1995	94.60%	80.47%	120.90%	102.84%	154.08%
1996	103.17%	80.21%	130.76%	101.66%	149.05%
1997	102.89%	80.38%	130.20%	101.71%	149.92%
1998	99.85%	78.98%	130.07%	102.88%	148.59%
1999	89.93%	75.64%	122.22%	102.79%	149.43%
2000	96.96%	77.78%	133.39%	107.01%	142.77%
2001	103.92%	82.01%	134.85%	106.42%	146.99%
2002	101.54%	83.42%	128.32%	105.42%	153.33%
2003	96.91%	58.73%	172.72%	104.68%	112.18%
2004	101.05%	63.34%	168.49%	105.62%	117.89%
2005	101.43%	71.34%	149.93%	105.46%	132.73%
2006	106.78%	77.01%	147.16%	106.12%	138.78%
2007	106.83%	76.65%	147.75%	106.00%	138.06%
2008	99.14%	63.80%	159.49%	102.64%	123.38%
2009	101.97%	70.56%	150.37%	104.06%	132.23%

Table VIII- Intermediation measures for Firststrand Bank

Firststrand Bank					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	99.16%	78.37%	127.01%	100.38%	149.34%
1994	112.11%	79.49%	141.55%	100.37%	141.51%
1995	104.15%	81.40%	127.85%	99.92%	149.10%
1996	106.97%	79.94%	134.76%	100.71%	144.59%
1997	102.27%	79.14%	131.59%	101.84%	145.76%
1998	99.97%	82.82%	123.57%	102.37%	153.67%
1999	106.60%	77.92%	141.25%	103.26%	141.12%
2000	104.14%	75.39%	141.83%	102.67%	139.26%
2001	110.60%	63.86%	179.57%	103.69%	114.80%
2002	104.72%	70.60%	154.91%	104.43%	129.58%
2003	100.85%	72.97%	145.57%	105.32%	135.51%
2004	99.55%	78.81%	135.34%	107.14%	144.98%
2005	100.22%	81.80%	130.31%	106.36%	150.75%
2006	103.69%	84.09%	131.77%	106.86%	151.90%
2007	104.05%	81.26%	136.57%	106.66%	147.29%
2008	96.83%	69.21%	145.24%	103.81%	133.28%
2009	96.48%	74.26%	135.96%	104.65%	141.51%

Table IX- Intermediation measures for Nedbank

Nedbank					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	89.87%	80.72%	112.74%	101.26%	161.60%
1994	88.19%	80.37%	111.87%	101.96%	162.35%
1995	91.45%	84.08%	111.51%	102.53%	165.36%
1996	94.31%	84.46%	115.62%	103.55%	163.10%
1997	92.57%	83.35%	114.94%	103.49%	163.00%
1998	93.29%	84.58%	113.87%	103.25%	164.63%
1999	91.58%	82.88%	116.10%	105.07%	161.14%
2000	96.09%	80.37%	126.72%	105.99%	151.31%
2001	86.23%	70.44%	133.37%	108.95%	136.72%
2002	83.72%	72.55%	126.36%	109.49%	141.52%
2003	88.81%	68.79%	138.40%	107.19%	133.59%
2004	88.72%	67.61%	141.26%	107.65%	131.46%
2005	88.75%	77.44%	124.08%	108.26%	149.36%
2006	95.45%	80.86%	127.04%	107.63%	151.32%
2007	94.37%	82.51%	123.83%	108.26%	154.69%
2008	88.23%	75.80%	122.24%	105.03%	151.50%
2009	87.24%	78.13%	117.52%	105.24%	156.61%

Table X- Intermediation measures for Investec Bank

Investec Bank					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	86.38%	75.50%	130.28%	113.87%	139.72%
1994	89.82%	73.74%	146.40%	120.19%	127.64%
1995	83.32%	68.63%	144.95%	119.40%	124.86%
1996	75.06%	64.93%	141.48%	122.39%	122.36%
1997	80.91%	64.93%	137.48%	110.33%	129.01%
1998	61.30%	51.32%	126.75%	106.12%	125.56%
1999	72.64%	53.28%	144.97%	106.34%	117.77%
2000	78.43%	60.45%	138.96%	107.10%	127.16%
2001	86.36%	69.35%	145.51%	116.85%	127.08%
2002	90.03%	80.84%	132.27%	118.77%	141.96%
2003	96.06%	68.40%	163.24%	116.24%	119.94%
2004	86.97%	76.83%	132.95%	117.44%	140.44%
2005	83.92%	71.14%	133.21%	112.91%	137.92%
2006	81.94%	71.13%	128.17%	111.26%	141.79%
2007	82.71%	74.28%	124.02%	111.37%	147.15%
2008	91.92%	77.08%	128.64%	107.88%	148.97%
2009	80.05%	72.25%	120.01%	108.32%	149.84%

Table XI- Intermediation measures for United States of America commercial banks

United States of America commercial banks					
Year	Loans to deposits	Loans to liabilities	Total assets less fixed assets and cash to deposits	Total assets less fixed assets and cash to liabilities	Loans and deposits to total assets
1993	91.37%	69.82%	124.60%	95.22%	134.39%
1994	99.03%	71.43%	133.46%	96.27%	131.90%
1995	104.16%	72.60%	138.43%	96.48%	130.43%
1996	103.73%	73.81%	135.70%	96.55%	132.57%
1997	103.15%	72.86%	136.22%	96.22%	131.15%
1998	105.90%	72.75%	141.10%	96.94%	129.33%
1999	106.06%	72.33%	140.94%	96.12%	128.81%
2000	110.01%	73.78%	143.97%	96.56%	128.82%
2001	102.81%	72.19%	137.18%	96.33%	129.30%
2002	102.85%	70.96%	140.00%	96.59%	127.23%
2003	100.97%	70.62%	138.96%	97.20%	127.15%
2004	100.40%	71.64%	136.11%	97.12%	128.57%
2005	102.76%	72.89%	137.58%	97.60%	129.40%
2006	105.94%	74.12%	140.56%	98.35%	128.96%
2007	108.44%	74.72%	142.83%	98.41%	128.71%
2008	104.66%	67.90%	139.92%	90.78%	120.13%
2009	89.37%	66.30%	120.47%	89.37%	124.60%

Table XII- Intermediation measures for financial sector

Year	Banks	Long- and short-term insurers	Pension and provident funds	Unit trusts
	Marketable securities plus loans to total assets	Marketable securities to total assets	Marketable securities to total assets	Marketable securities to total assets
1992	75.62%	72.49%	82.38%	108.45%
1993	80.91%	75.57%	80.75%	144.36%
1994	80.02%	74.96%	81.87%	124.92%
1995	82.20%	75.52%	79.35%	121.24%
1996	80.96%	73.23%	78.55%	111.37%
1997	80.38%	68.88%	79.20%	82.67%
1998	80.99%	62.74%	81.30%	67.60%
1999	78.38%	60.12%	84.48%	74.02%
2000	78.57%	63.50%	84.46%	72.24%
2001	74.11%	61.45%	86.62%	90.41%
2002	71.95%	62.17%	86.99%	72.14%
2003	77.41%	64.53%	88.75%	74.98%
2004	79.85%	64.72%	87.57%	85.17%
2005	78.13%	64.94%	88.72%	88.52%
2006	77.88%	64.55%	87.83%	85.68%
2007	77.71%	64.16%	86.75%	64.95%
2008	81.85%	57.10%	83.75%	48.43%