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The Diagnosis and Prediction of Bank Failures in Zambia, 1990-98

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This article presents a non-econometric, yet practical approach for regulators in developing countries. With limited financial resources to determine the 'safety and soundness' of a large number of financial institutuions, regulatory authorities are appreciative of any kind of mechanism that can identify banks that are in financial difficulties. The Zambian case is interesting, in that the bank failures of 1995 and 1997/8 brought into question the ability of the central bank to diagnose the financial condition of banks. This article evaluates the Bank of Zambia's experience over the period 1990 to March 1998 and makes recommendations on how to improve diagnosis and prediction of bank failures by incorporating non-financial factors into the analysis of bank performance.

In May 1995 the Bank of Zambia (BoZ) experienced its first bank closure following the reforms in the financial sector, namely, that of Meridien Bank Zambia Limited. This was followed by the closure of the African Commercial Bank and Commerce Bank later in the year. The turbulence experienced in the banking and financial sector had a severe impact on the banking and financial system, resulting in the failure of four more banks in 1997 and one in 1998. As of 31 December 1999, the African Commercial Bank, Credit Africa Bank, Manifold Investment Bank, Meridien BIAO Bank, and Prudence Bank were in liquidation, while First Merchant Bank was undergoing reorganisation. The cost of these bank failures to the BoZ has been high, both financially and in terms of its reputation and credibility as the regulator and supervisor of the financial sector. Its 1997 *Annual Report* indicates that the overdrawn accounts for banks in liquidation as of 31 December were in excess of US$30 million.

Although the liquidator would contribute towards reducing the banks' indebtedness both to the government and to the BoZ, the liquidation process has been slow, owing to a depressed property market; a tight monetary economy; a slow judicial process; protracted legal battles between the liquidators and depositors; and the high cost of the liquidation process. The prospects for full recovery of these funds are therefore pessimistic in most cases. In others, such as the case of Meridien and the Credit Africa Bank, partial recovery may be expected but not in the near future. And because the

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government and the BoZ rank as priority creditors under Section 107 of the Banking and Financial Services Act of 1994, it was initially unlikely that depositors would be compensated beyond the statutory payment of K500,000 per depositor.

The Financial System Supervision Department (FSSD) of the BoZ came under severe criticism for its handling of the bank failures. Because the failures of 1995 and 1997/8 did not occur suddenly, the BoZ was criticised for not acting promptly in dealing with the banks concerned. Critics argued that the failures were the culmination of a long process of financial mis-management and breaches of the law. The public regarded the BoZ as having failed in its supervisory action due to inadequate supervisory tools and skills. In particular, it accused the BoZ of failing to diagnose the rate of financial deterioration in a timely and consistent manner.

This article evaluates the method of financial analysis employed by the BoZ during the period 1990-98 (see Table 1). It shows that, despite the weaknesses in its regulatory and supervisory policies and procedures, the BoZ had a financial analysis model that adequately detected financial deterioration in the banks. Excluded from the study are banks that opened during the period. Having started operations only recently, they do not portray typical banking ratios and distort the ratios used in the study.

Table 1: Types of banks in Zambia

Foreign banks	Local banks	Failed local banks
Bank of China (1997)	Cavmont Bank (1993)	Chase Trust Bank (1995-7)
Barclays Bank (1918)	Finance Bank (1999)	Credit Africa Bank (1994 – 2 Dec. 1997)
Citibank Bank (1979)	First Alliance Bank (1995)	First Merchant Bank (1994 – 2 Feb. 1998)
Stanbic Bank (1956)	Indo-Zambia Bank (1985)	Manifold Bank (1987 – 5 Dec. 1997)
Standard Chartered Bank (1906)	Invest Trust Bank (1989)	Prudence Bank 1994 – 17 Oct. 1997)
	New Capital Bank (1989)	Meridien Bank (1984-5)
	Union Bank (1979)	
	United Bank of Zambia (1997)	
	ZANACO (1968)	

The following section describes the FSSD's objectives and structure, and details the functions of each of its four divisions. The third section evaluates the method and quality of off-site bank monitoring tools and techniques between 1990 and 1998. The following section shows how, by including non-quantitative factors in its analysis of bank failures, the BoZ could have enhanced the timeliness of its diagnostic and predictive capacity.

The Financial System Supervision Department

Created in 1974, the FSSD is responsible for licensing, regulating and supervising banks and non-bank financial institutions (NBFIs) (Musokotwane, 1997: 9). Up to 1992, it did not undertake any off-site analysis (Mwape, 1997a: 5). Banks were not

required to submit any prudential returns other than those required for monetary policy. The FSSD's focus was on checking bank compliance with foreign-exchange controls and other economic directives. There was heavy reliance on direct controls, such as ceilings on interest rates and bank lending for monetary policy purposes. This approach was acceptable at the time because the majority of banks were subsidiaries of reputable international banks, subject to consolidated supervision by their home country regulators. Through liaison with these supervisory authorities, it was relatively easy for the BoZ to monitor the banks' financial conditions and performance (Mwape, 1997b: 6).

In 1994, a year before the first bank failures, the FSSD consisted of four off-site analysts. Banks provided only four financial returns – the profit and loss statement, balance sheet, liquidity return and statement of capital – which had no legal backing, and the department inspected institutions only once a year.

However, with the increasing number of banks, this approach was clearly inadequate. The need to re-examine the regulatory and supervisory framework was unavoidable. Following the enactment of the Banking and Financial Services Act, 1994 (BFSA), the FSSD embarked on a capacity-building programme of its core divisions – the Bank Inspection Division, NBFIs Division, and Regulatory Policy and Financial Analysis Division (GRZ, 1998: 279). The BoZ significantly improved its terms and conditions of service in order to attract the right calibre of professional staff. In 1995, the number of professional staff increased from 22 to 26 and by December 1996 had increased to 33.

The department also conducted a wide range of training activities in the form of attachments, seminars and short courses, both within and outside Zambia. Training during 1995 focused on the restructuring of troubled banks, credit risk analysis, and financial institution analysis and included staff internships with reputable supervisory authorities around the world. During 1996 members of staff attended seminars, workshops and conferences conducted by the Federal Reserve Bank, the Federal Deposit Insurance Corporation and the East and Southern African Banking Supervisors Association.

The Bank Inspection Division was responsible for verifying bank performance through regular or *ad hoc* inspections (Mudenda, 2000: 2). In addition, it took an active role in implementing corrective measures in financially distressed banks. In the months leading up to the 1995 and the 1997/8 bank failures, it also assumed the responsibility of closely monitoring the daily core liquidity ratio, deposit movements and the net clearing of distressed banks. This function later included monitoring the foreign-exchange exposures, treasury management and the level of non-performing loans (NPLs) (FSSD, 1995: 12).

The Non-Bank Financial Institutions Division conducted on-site examinations of NBFIs (FSSD, 1995: 12). Before the Banking and Financial Services Act of 2000, the activities of this division were restricted because the BFSA, 1994 focused on the supervision and regulation of banks. The provisions for NBFIs were generally inadequate and at times misleading and inconsistent. For example, the Building Societies Act, which solely regulated building societies, had far less stringent licensing and on-going supervisory requirements than the BFSA (Musokotwane, 1997: 10). With the increasing number and variety of providers of financial services, it became imperative to establish an appropriate legislative framework that would address the

operations of all providers. The fast rate of growth in the number and range of services, the marked inadequacy of capitalisation, and the lack of proper management resulted in some institutions becoming insolvent, and thus posing a significant threat to the stability of the financial system (GRZ, 1998: 277). To this end, revisions regarding the regulation of the NBFIs sector were included in the BFSA, 2000.

The FSSD originally created Management Information Division as a banking intelligence unit, investigating specific tasks whilst allowing the other divisions to continue their normal functions. The intention was that the division would act as the FSSD's rapid response mechanism, thus guaranteeing a proactive approach to emerging financial difficulties. Although the division did initially uncover malpractices in several banks, relating to, for example, excessive insider borrowing, that were not reported to the BoZ, its role in the department was received with mixed feelings, especially since it was seen as encroaching on the key functions of other divisions.

In time, the division came to focus on dealing with all matters regarding banks in receivership, liquidation and other forms of restructuring. It also became responsible for compiling management information reports for the department; attending to public queries concerning banks; co-ordinating tripartite meetings between external auditors, bank management and the FSSD; and co-ordinating the FSSD's training programme (FSSD, 1995: 12).

The responsibilities of the Regulatory Policy and Financial Analysis Division include licensing all financial institutions; conducting off-site analysis of banks and NBFIs; handling administrative matters under the BFSA; and monitoring compliance with prudential returns (Muke, 1996: 4). The division has drafted licensing policies and procedures and made recommendations on their implementation. Its other more *ad hoc* responsibilities include reviewing existing regulations and drafting new regulations and amendments to the BFSA. During 1995, the division concentrated on issuing statutory instruments for capital adequacy, insider loans, large loans, fixed assets, interest disclosure, classification and provisioning of loans.

The division is also responsible for carrying out off-site examination of banks and NBFIs and checking their compliance with prudential regulations. It evaluates bank performance using monthly financial statistics and prudential returns data, which include balance sheets and profit and loss statements (Mudenda, 2000: 3). The division played a key role in the provision of information about the quality of banks during the 1995 and 1997/8 banking sector instability that occurred immediately after the financial reforms.

The BoZ CAMEL Model

The pre-1995 off-site model of analysis

Before the introduction of uniform monthly bank off-site reports, the FSSD produced *ad hoc* Financial Highlights Reports (FHR) and Market Share Analysis Reports (MSR). The FHRs concentrated on total risk capital, asset growth, deposit growth, and earnings performance, and the MSRs on total assets, deposits and loans distribution. In a 1995 MSR, staff identified several discernible trends indicative of impending financial difficulties in the banking sector, especially for the small local banks (Mulendele, 1995: 9):

(i) The more established banks were losing their share of the deposit market to the newly licensed banks. The loss in deposits was a possible indication of increased innovation among the local banks used to attract more depositors. The report recommended developing appropriate monitoring techniques so that banks did not engage in unethical ways of attracting depositors.
(ii) The rapid increase in loans and advances among the new, smaller banks suggested the prevalence of poor credit policies. The report recommended that the FSSD monitor the new credit exposures closely to ensure that banks were using sound business principles. It suggested that the small banks might not even have the capacity to evaluate the creditworthiness of borrowers, and recommended additional monitoring of large credit exposures and NPLs to minimise misleading financial indicators.
(iii) The banking sector was becoming more competitive. The report expected that in future only banks able to offer quality services would maintain their market niches. The increased competition required the FSSD to increase its supervisory activities in order to detect malpractice.
(iv) Finally, the report expressed concern that, at the time, there were no regulations stipulating the nature of capital required to open a bank. It was therefore possible for individuals to open banks with overvalued fixed assets as capital, mobilise cash deposits and subsequently let the bank collapse without suffering any financial loss or undue risk.

Along with the increased competition reported in the MSRs, the FHRs also reported declining profitability in the banking sector. Compared with 1993, the average return on equity fell from 75% to 30%, the return on average assets reduced from 7% the previous year to 3%, and after-tax profits declined by 33% (FSSD, 1995).

While both the MSRs and FHRs provided valuable off-site monitoring information, they revealed a critical weakness in their timing. The FSSD produced the 31 December 1994 MSR only in February 1995, the FHR in May 1995 (long after the Meridien banking crisis had escalated) and the 31 March 1995 MSR in June 1995. During the banking crisis, decision-makers used data that were six months (or more) out of date; and the FSSD found itself trying to understand transactions which had their genesis many months before the crisis.

The post-1995 off-site model of analysis

During 1995 and 1996, the FSSD continued to improve its off-site resources by recruiting professional staff with financial analysis skills and adopting the US-style CAMEL[1] financial analysis model (Muke, 1996: 5). The CAMEL approach, as designed, developed and implemented by the BoZ, used the same basic principles as the US model and employed 19 capital, asset quality, earnings and liquidity ratios. When

1. CAMEL is the acronym for the Federal Reserve's regulatory agency Uniform Interagency Bank Rating System, signifying five areas of analysis used to evaluate bank performance, namely, Capital; Asset quality; Management; Earnings; Liquidity. The model uses selected ratios for the five different categories which it then consolidates into one composite rating for comparison with other banks in the financial system. Banks are classified as 'Strong', 'Satisfactory', 'Potential Problem' or 'Problem' in order to help regulators determine the supervisory action required.

the FSSD first designed and developed it in 1996, it was intended to act as an early warning system to improve the quality and timeliness of supervisory decisions (FSSD, 1996: 18). However, its effectiveness as an early warning system was limited by the absence of a mechanism for consolidating the ratios into a single measure of performance, against which to compare the performance of other banks in the industry. Before an analyst formed an opinion on the overall condition of a bank, each of the 19 ratios was analysed and interpreted individually. Furthermore, despite plans and attempts to develop software to record, store, and analyse the data submitted by banks monthly, quarterly and annually throughout the 1995 and 1997/8 banking crises, the model remained a manual system utilising basic spreadsheet packages for analysis (FSSD, 1996: 18).

The choice of ratios was the culmination of the initiatives of individual FSSD analysts and reflected recently introduced statutory ratio limits. The inclusion of non-financial variables in the monthly and industry reports was largely at the discretion of the analysts. In the absence of a rating system, the model provided no ability to predict failure. Implementation of the CAMEL off-site model faced a number of further problems:

(i) **Lack of information** The information submitted was inadequate for substantial financial analysis. Banks submitted a limited number of prudential returns. In addition, some banks tended to delay the submission of some of the prudential returns.
(ii) **Absence of standard accounting practices** The absence of a standard approach in the treatment of a number of accounting practices reduced the comparative value of the ratios computed. The most common and serious deficiency was the lack of asset valuation guidelines and loan classification and provisioning regulations. Similarly, the lack of policies and procedures for accruing interest on NPLs led to highly overstated earnings (Muke, 1998: 7).
(iii) **Choice of ratios** The FSSD could only compute a limited number of ratios because of inadequate financial information, and the lack of standard definitions and formats for financial statements.
(iv) **Absence of industry performance benchmarks** The lack of industry benchmarks left room for subjective analysis and interpretation. The increasing number of bank analysts responsible for different institutions led to subjectivity and hindered fair and objective assessment of the industry.
(v) **Absence of a standard rating mechanism** The method of analysis ignored the different attributes and types of business of the banks in the industry and increased the level of analysis subjectivity. There was no mechanism for consolidating financial information on the basis of the nature of the bank's business, its relative size and the types of customers, each of which can influence the inter-industry comparison of performance results by means of ratios.
(vi) **Lack of resources** The off-site department was seriously understaffed at the time, with very limited operational resources. Each analyst was responsible for an average of five banks, and manually collected and analysed a substantial part of the banks' data. Given these constraints, there was a negative effect on both the quality and timeliness of the financial analysis.

Despite weaknesses in its design, the BoZ CAMEL model highlighted the key aspects of bank performance. It offered a framework for selecting the appropriate ratios and specifying the standards against which to evaluate the performance of an individual bank, as well as the performance of an industry. Most importantly for the BoZ, it provided sufficient indicators of financial distress amongst local banks in 1997/8 in terms of their capital, asset quality, earnings and liquidity ratios.

First, there was a significant difference between the capital ratios of the failed and non-failed local banks (see Table 2). The failed banks showed a greater weakness in their capital adequacy levels compared with the two other categories, sometimes as early as nine months before failure. The tier 1 and total risk-based capital ratio differences for the three groups indicated that at least 21 months before closure, the financial ratios of the failed and non-failed banks appear to have been markedly different.

Table 2: Capital ratios

Total capital to risk-based capital[a]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	67	28	33	25	22	19	23	17
Local banks	48	69	62	38	34	34	31	19
Failed banks	-60	-18	-64	-11	-9	-8	4	-11
Tier 1 to risk-based capital[b]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	26	27	31	24	21	18	21	10
Local banks	36	24	11	30	30	31	29	19
Failed banks	-60	-19	-65	-20	-15	-9	5	-18
Equity to total assets[c]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	15	14	14	12	11	10	13	13
Local banks	18	18	18	24	21	18	20	13
Failed banks	-41	-21	-12	39	24	10	19	17

Notes: a) **Total capital to total weighted assets** expresses primary and regulatory capital as a percentage of the total risk-weighted assets of a bank. b) **Tier 1 to risk-weighted assets** expresses primary capital as a percentage of the total risk-weighted assets of a bank. The ratios of both a) and b) indicate the margin of protection available to depositors and creditors against unanticipated losses that may be experienced. Thus they include the bank's resilience to economic difficulties. c) **Equity to total assets:** a crude measure of the extent to which a bank's total assets are financed by the shareholders' equity.

Table 3 shows that the NPLs to total assets ratio and NPLs to total loans ratio reflected differences between failed and non-failed banks nine and six months before closure, respectively. There was, however, a marked difference in the level of provisions made for NPLs relative to the total loan portfolios of the two groups. The ratios obtained under the asset quality category need to be treated with caution, however. Following the introduction of the 1996 classification and provisioning regulations, there was a lot of agitation about the levels of provisions required for

substandard loans. Some banks implemented them fully; others received exemptions from certain requirements, while others simply ignored them altogether. The uniformity of the ratios obtained for the different banks could thus not be ascertained. What was clear, however, was that, in 1994 the level of NPLs was rising.[2]

Table 3: Asset quality ratios

NPLs to total assets[a]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	4	4	5	2	2	2	3	2
Local banks	9	5	7	8	8	9	9	5
Failed banks	43	40	68	9	9	10	11	1
NPLs to total loans[b]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	6	14	17	6	7	8	9	10
Local banks	31	15	17	19	23	27	37	15
Failed banks	52	52	14	12	14	15	24	2
Allowance on loans to total loans[c]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	8	6	3	13	11	9	10	13
Local banks	23	15	23	27	26	25	28	6
Failed banks	13	25	23	6	6	6	6	1

Notes: a) **NPLs to total assets:** loans and advances usually represent the single largest asset of most banks. Thus monitoring the quality of a bank's NPLs relative to total assets is of the utmost importance. The greater the ratio, the higher the credit risk the bank is exposed to. b) **NPLs to total loans** provides useful insight into the quality of a bank's loan portfolio relative to its total loan portfolio. The greater the ratio, the higher the risk of liquidity problems, and possibly insolvency. c) **Allowance on loans to total loans:** a test of the adequacy of the allowance for loan losses. It reflects the extent to which the bank recognises how badly its total loan portfolio has been impaired.

Table 4 shows that the reported NPL portfolio grew from 25% of the total loans portfolio in March 1994 to 36% by December 1994. Likewise, the proportion of NPLs as a percentage of total capital and reserves grew to 86.5% from 60.33% over the same period.

2. In the years leading up to 31 December 1994, the BoZ defined NPLs as those loans on which interest was not being accrued because of reasonable doubt as to the ultimate collectability of the principal and/or interest. Commercial banks were required to classify loans and advances as non-performing when principal and/or interest payments were overdue for 90 days or more. By that time, the BoZ presumed that reasonable doubt existed.

Table 4: Growth in industry NPLs during 1994

Quarter	Total NPLs Km.	Total loans Km.	Total capital and reserves Km.	NPLs as % of total loans	NPLs as % of capital and reserves
Mar 1994	25,6363	99,419	42,493	25.78	60.33
June 1994	32,496	119,006	52,893	27.30	63.43
Sept 1994	44,191	142,694	55,450	30.96	79.69
Dec 1994	49,364	136,576	57,051	36.14	86.5

Source: BoZ NPLs returns.

Table 5: Industry NPLs as at 31 December 1994

Loans category	Gross balance Km.	As % of total NPLs	Provision Km.	Net balance Km.	Interest taken to income Km.
180 days overdue	41,989	85.07	9,539	3,562	74
90-179 days overdue	6,210	12.57	168	6,041	2,124
Renegotiated loans	2,165	02.36	546	620	55
Total	49,365	100	10,142	39,223	2,253

Source: BoZ NPLs returns.

Both Tables 4 and 5 are an understatement of the actual level of NPLs for the quarter ending 31 December 1994, because only 11 out of 18 banks submitted their returns for NPLs. Since there was no penalty for non-submission, the remaining seven banks faced few or no consequences. Nevertheless, the loan portfolio of the 11 banks (K136,577m.) represented 94.26% of the total industry loan portfolio (K144,885m.), their capital (K57,057m.) was 97.32% of the industry's total capital and reserves (K58,623m.), and their NPLs at K49, 365m. represented 86.5% of total capital and reserves. As Table 4 shows, at least 85% of the reported NPLs were in excess of 180 days overdue and 12% between 90 and 179 days. ZNCB had the largest proportion of NPLs, which stood at K33, 873m. or 68.61% of the total NPLs.

Concerned about the increasing level of NPLs, the FSSD noted in its 1994 industry NPL report that 'banks should be advised to be prudent in their lending activities. They should be told to try and reduce the level of NPLs in general within a given time-frame.'

As indicators of potential failure, the return on assets and the interest margins performed better over the 24-month period than the return on equity ratio. The latter's

variability, shown in Table 6, was possibly the result of a combination of deteriorating capital levels and variations in the reported profits relative to that capital. As with the asset quality ratios, the study did not ascertain the degree to which the agitation, caused by the levels of provisions required by the introduction of the Classification and Provisioning Regulations, affected the reported profits. The probability of banks using creative accounting to report artificial profits is an important factor.

Table 6: Earning ratios

Return on assets[a]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	3	5	4	9	6	4	8	6
Local banks	1	1	1	3	3	2	0	3
Failed banks	-38	-14	12	-8	-9	-9	6	2
Return to equity[b]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	17	30	21	75	60	45	16	45
Local banks	1	5	4	11	13	12	0	22
Failed banks	8	56	-87	107	42	-23	14	4
Interest margin[c]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	17	30	21	75	60	45	16	45
Local banks	1	5	4	11	13	12	0	22
Failed banks	8	56	-87	107	42	-23	14	4

Notes: a) **Return on assets** measures the net income generated from the employment of the total assets of the bank. If reasonable accounting principles are consistently applied to banks with similar asset structures, a bank with a higher return on assets is inherently sounder than one with a lower ration. b) **Return on equity** measures the rate of return on the shareholders' equity investment. In an inflationary environment like Zambia the rate should ideally be at least that of the ruling inflation rate so as to enable the bank to maintain its equity base in real terms, assuming no dividends are paid out. c) **Interest margin** identifies and evaluates the core earning capacity of the bank. A negative or declining ratio is an important indicator of treasury management problems that require attention.

Nevertheless, the most significant difference between the non-failed local banks and the failed banks was the liquid assets ratio shown in Table 7. As early as 24 months before closure, the failed banks had liquid assets ratios of less than 50%. From 52%, the ratio consistently declined over the 24-month period to 25% at the time of closure, having averaged 30% over the entire period. This is in sharp contrast to the 75% average maintained by the non-failed local banks. Also, the gross loans to total deposits ratio reflected a significant difference between the three groups. There is, however, no observable difference in the total deposits to total assets ratio between the failed and non-failed groups, perhaps suggesting that, even though the liquid assets ratio was markedly different, the non-failed banks were equally vulnerable to liquidity problems in the event of a run on the banks.

Table 7: Liquidity ratios

Liquid assets ratio[a]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	103	84	73	74	72	70	8	73
Local banks	71	119	83	59	65	75	67	63
Failed banks	25	22	26	21	28	35	52	38
Total deposits to total assets[b]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	67	63	62	66	67	68	69	69
Local banks	60	61	57	124	98	61	49	49
Failed banks	67	71	68	122	90	58	46	46
Gross loans to total deposits[c]								
Months to closure	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**
Foreign banks	103	84	73	74	72	70	8	73
Local banks	71	119	83	59	65	75	67	63
Failed banks	25	22	26	21	28	35	52	38

Notes: a) **Liquid assets ratio:** a rather crude yet useful measure of a bank's liquidity. It reflects the bank's ability to meet its short-term liabilities with its short-term assets. A bank that does not have to rely on the repayment of its loans in order to meet its obligations is 'insulated' against its non-performing portfolio. b) **Total deposits to total assets** measures the extent to which bank assets are financed by the deposits of its customers. The greater the ratio, the greater its vulnerability to liquidity problems in the event of a run on the bank. c) **Gross loans to total deposits** measures the extent to which a bank is able to mobilise deposits from the public to support its operations, and the extent to which it is able to lend these deposits. A higher ratio is traditionally associated with a greater element of risk since this indicates lower liquidity vulnerability to institutional lenders, adverse economic conditions, and/or the consequences of a run on deposits.

The BoZ CAMEL-S model

The CAMEL model used by the BoZ during the banking crisis offered a systematic framework for analysing bank performance. However, its lack of performance benchmarks and, more importantly, non-quantitative indicators of financial distress, and its sole focus on financial ratios meant that it ignored a lot of indicators in the industry of distress that appeared long before the bank's financial ratios began to deteriorate.

Although the banking supervision literature accepts the importance of management actions as indicators of bank failure, it remains divided about the most suitable indicators to use. As early as 1976, Argenti indicated that management actions, not the deterioration of the financial ratios, are ultimately responsible for the demise of a company. Poor management leads to inadequate internal controls, ill-advised strategic decisions and inappropriate risk assessments.

The difficulty for supervisors has been how to design objective criteria for evaluating management. How can a numerical ratio be set for management's ability to satisfy customer demands? While bank supervisors acknowledge the importance of strategic managerial decisions in determining an institution's failure, it is difficult to

assess management skill and expertise objectively. In banking, management officials are expected to be 'fit and proper' for the positions they assume. Defining what is fit and proper, and more importantly assessing individual 'fitness and propriety', is a subjective and difficult process. How can a bank analyst determine whether a bank manager's knowledge, experience, judgement, reputation, character and diligence can prevent the failure of a bank? Direct assessment of these qualities requires skills which many regulators lack. Equally, why is the performance of one bank outstandingly superior to that of others? These are questions that schools of thought in the management literature have battled with: namely, what causes some companies to succeed and others to fail?

This article suggests that one method of resolving this problem is to incorporate strategic management tools of analysis into the study of bank failures. There are numerous studies in the strategic management literature that explore the link between the quality of management and corporate performance. Kay (1993) traced the use of corporate strategy models to the 1960s. Typically growing out of the budgeting process, the early models normally covered revenue and expenditure projections. Subsequently, strategists developed planning procedures that incorporated market expectations of economic growth.

The techniques for analysing and developing corporate strategy are many and varied. It is not the intention of this study to contrast one with the other, but rather, by selecting a few basic management tools, to illustrate that strategic management models are useful in the analysis of bank performance.

(i) **Five Forces model** Porter (1979) stipulated that the nature and degree of competition in an industry hinges primarily on five forces: the threat of new entrants, the bargaining power of customers, the bargaining power of suppliers, the threat of substitute products or services, and the level of competitive rivalry amongst industry participants. Porter's Five Forces model, probably his best known work in the area of management strategy analysis, presents a framework which, in his view, defines the basic posture of competition in an industry. It represents a concise analytical tool with which regulators can identify the important competitive issues facing the industry, and subsequently identify those banks that are pursuing inappropriate strategies to deal with them.

(ii) **Competitive strategy analysis** Determining the appropriateness of a strategy to a given market environment requires an understanding of the options available to management. Porter (1981) operationalised the strategic choices of corporations into three generic types: cost leadership, differentiation and focus. Each of these bears certain risks, for which a bank must be prepared. A cost strategy is hard to sustain as competitors can easily imitate it. Thus, for example, when a number of small banks choose to pursue this strategy in a market that is price-sensitive, regulators should be concerned. However, not every bank is capable of successfully following a differentiation strategy. The additional cost of adding service attributes, the risk of customers deciding they do not want the extra features, and the cost of continual product innovation may prove onerous for a bank without adequate financial resources. Similarly, banks pursuing a focus strategy without adequate safeguards to protect themselves against the associated risks place themselves in

danger of failure. Banks focusing on specific types of customers or sectors expose themselves to the cyclical risks associated with those businesses.

(iii) **Portfolio strategy analysis** This is useful for regulators interested in establishing which of the banks they supervise have unbalanced product portfolios. Banks with a relatively larger proportion of unprofitable products are candidates for failure. Management which continues to invest in 'problem' products which repeatedly fail to deliver profitable returns, may create an unwarranted liquidity problem for the bank. By monitoring the changing portfolio structure and matching it to the profitability of different investment avenues, the regulators can easily notice the likelihood of banks experiencing declining income levels due to an unbalanced portfolio. Ansoff (1984) stipulated that a business can develop its market geographically or through new customers, or it can simply push the same products in the same markets.

Like the portfolio strategy matrix, the product-market matrix is useful for regulators interested in identifying banks with inappropriate product-market portfolio strategies. In a tightly contested market, smaller banks, without adequate financial resources to compete favourably with the larger banks, should pursue new markets rather than try to penetrate an existing market. Management that continues to invest in a saturated market may lead a bank to failure. As is the case with models based on classifications and categorisations, its key limitation is a definitional one. Sometimes it is not clear whether a firm is pursuing a new market or merely penetrating an existing one. Likewise with its products, when does the augmentation of an existing product lead to the creation of a new one? Nevertheless, as long as the researcher ensures that the definitions of products and markets are clear and uniformly applied, there is no reason why this model should not be a useful tool in the diagnosis and prediction of bank failures.

(iv) **Environmental analysis** Using strategic management models as techniques in the diagnosis and prediction of corporate failure requires an analyst to consider environmental factors. Banks, like any other business, operate within the greater economy and their political and economic environments affect their performance. The political structures and traditions of a society are an important influence on the vulnerability of the banking system as a whole, and of individual banks. Honohan (1997) identified the two dimensions of political influence as the degree of concentration of political power in elite groups, and the freedom of the press. Furthermore, developing country economies tend to be more volatile than industrial ones. Sharp fluctuations in real economic growth, inflation, nominal and real exchange rates, and nominal and real interest rates can disrupt the operations of even the soundest banks, especially those whose portfolio reflects the undiversified nature of the economy.

Strategic business indicators of financial distress

A review of the local banks' strategies in the years before the 1997/8 bank failures revealed that the banks that failed in 1997/8 lacked the requisite business strategies for their operational environment. The failed banks' competitive and business strategies were inappropriate for the competitive and economic environment prevalent during those years.

Competitive strategies

Following the liberalisation of the banking sector, significant rivalry existed among the local banks as they competed for market share. The decontrol of foreign exchange, the liberalisation of interest-rate controls and the introduction of the tender system in the sale of Treasury Bills on the open market attracted new entrants to the banking system. However, following the 1995 bank failures, the reduction in the number of banks increased the level of market concentration. There was a significant shift of deposits from the smaller local banks to the larger, and presumably safer, banks. The five largest banks increased their share of total deposits from 64% in December 1994 to 80% in December 1995, a level they maintained throughout 1996 and 1997. The 14 remaining banks, largely local ones, had to compete for the remaining one-fifth of the total deposit market.

Table 8: Banking industry deposit trends, 1994-7

	Dec. 1994	Dec. 1995	Dec. 1996	Sept. 1997
Five largest banks	K186bn (65%)	K338bn (80%)	K463bn (80%)	K561bn (77%)
Rest of the banks	K102bn (35%)	K85bn (20%)	K118bn (20%)	K169bn (33%)
Total deposits	K288bn	K432bn	K581bn	K732bn
Total no. of banks	18	17	19	19

Source: BoZ.

Table 8 shows deposit trends between 1994 and 1997. In the period 1994-7, the deposits market share of the five largest banks grew from 65% to well over 75%. The 1995 and 1997/8 bank failures dissipated public confidence in the banking system, especially in the local banks. In the absence of a deposit insurance scheme and a working social security system, people were understandably wary of the risk of losing their money in failing banks. In the event of a bank failure, the BFSA only provided for a fixed compensation of K500,000 ($150).

The intense competition for deposits resulted in some unethical banking practices. The FSSD received anonymous letters attesting to these practices and investigated them. Rumour-mongering was also rife in the banking community, with banks spreading false stories of the imminent closures of certain banks. This caused significant instability in the market, especially among the local banks hit hardest by the 'flight to quality' phenomenon, as banks attracted unstable and volatile deposits. The more established banks like Barclays, Standard Chartered, Citibank and Stanbic benefited from these rumours.

In addition, the FSSD received intelligence reports that banks were bribing public officials controlling huge accounts to transfer from competing banks. At a meeting with Chief Executives of all banks in August 1995, the Governor of the BoZ expressed his

concern about these unethical practices and asked banks to refrain from using unorthodox methods to attract depositors.

The lack of service differentiation[3] between the local banks made them even more vulnerable to a price-based competitive environment. The rational response to such competitive pressure was for the smaller banks to merge in order to present the larger banks with more credible competition. Speaking at the merger of two banks in January 1997, one managing director acknowledged 'the Zambian banking sector had to accept that, in the prevailing financial quagmire, weaker banks had to merge with stronger ones in order to survive'. Unfortunately, many of the failed banks resisted this option right up to their closure. One bank chairman and owner dismissed talks of a merger with another bank, eight months before both banks collapsed, saying there was no benefit in combining two troubled banks. In the absence of clear viable strategic alternatives, failure was almost inevitable.

The threat of new entrants and suitable products was also a notable indicator of potential banking distress. During the same period, the banking sector faced an increase in the number of NBFIs. By 1996 there were over 26 NBFIs registered with the BoZ, namely, leasing companies, building societies, deposit-taking NBFIs and development finance institutions. Compared with the banks, their relative size remained small. Deposits, and deposit-like instruments, amounted to K28.5bn in 1996, almost half of which was accounted for by the Zambia National Building Society, which represented 4.5% of total bank deposits. These credit organisations were more willing and able to provide enterprise finance at lower interest rates than the banks.

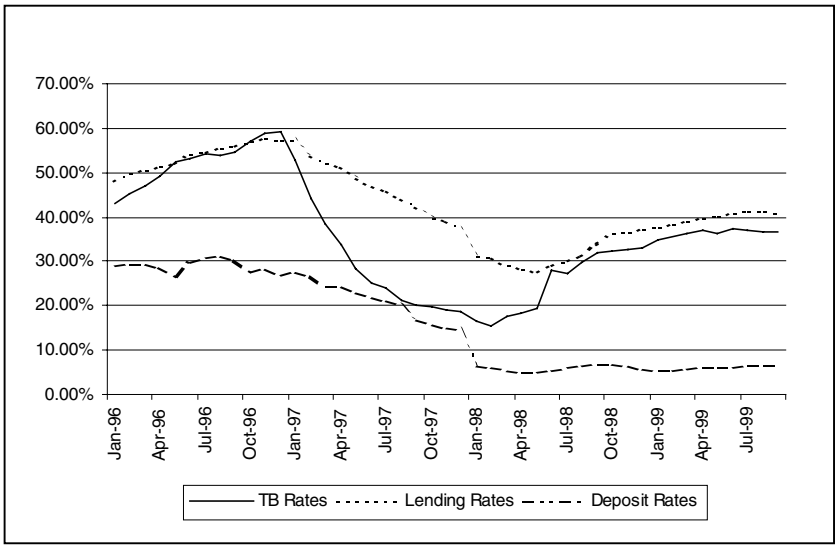
Finally, owing to the shortage of profitable financial instruments, the local banks, especially those that failed, invested heavily in Treasury Bills during the period 1995-7, giving the government immense bargaining power to determine the level of industry profitability. It could cut the cost of its borrowing by reducing the Treasury Bill rates without undue fear of losing its largest source of domestic funding. The reduction in Treasury Bill rates squeezed the profits out of an industry heavily invested in these bills (see Figure 1).

Business strategies

An examination of the business strategies of local banks revealed inappropriate reliance on cost-based competitive strategies. With only a few exceptions, the banks pursued a cost-leadership generic strategy. Yet, unable to muster the resources required to sustain operations at the lowest possible prices, the smaller banks found the advantages of such a strategy were short-lived, as rivals easily imitated each other. The failed banks would have been well advised at the time to reconsider their competitive positions in favour of either differentiation or focus strategies, leaving the larger banks to pursue the least-cost option. Only a bank of the size of the Zambia National Commercial Bank (ZNCB) could have sustained a loss of K9bn for the financial year ended 31 March 1996 and continued to operate. The bank's Managing Director attributed the loss to the bank's cost restructuring exercise, intended to entrench its low-cost leadership position.

3. The banks offered the same banking services, namely, savings, current and time deposit accounts.

Figure 1: Nominal interest-rate trends: Jan. 1996 - Sept. 1999



Source: BoZ *Financial Statistics*.

Furthermore, during the two years before closure, increasingly unbalanced and unprofitable portfolios of services inhibited the profitability of the failing banks. Government securities, which had been a very profitable investment in the past, ceased to be as profitable as in the early 1990s. Some banks tried to realign their portfolios by engaging increasingly in foreign-exchange transactions, but exchange-rate volatility meant that this was not always a favourable option. The local banks' heavy reliance on capturing savings accounts from the public also worked to their disadvantage. These accounts were highly unprofitable. At the opening of Investrust Merchant Bank, the bank's finance director acknowledged this fact. Explaining why his bank would only concentrate on corporate and merchant banking, he said '...the volume of transactions on savings accounts was high, yet the returns were low'.

There was little expansion into new banking markets during 1996 and 1997. Most of the local banks were struggling to maintain their existing market shares and continued to penetrate the market with the same profile of products and services. The few publicly reported exceptions were ZNCB, Stanbic and the Prudence Bank. On 9 July 1997, ZNCB announced its intention to open a branch in the Democratic Republic of Congo, soon after the fall of the Mobutu government. The fact that a government minister announced the planned market expansion underscores the point that political rather than economic factors took precedence. In any case, the civil war that erupted soon after rendered such plans void. Stanbic announced plans to open branches on the Copperbelt on 2 February 1997, expecting to benefit from the anticipated boom in the regional economy once the government had privatised the ZCCM. Except for the above moves, the rest of the banks appeared to be content with penetrating an otherwise saturated market, a recipe for disaster in an economy that was failing to grow. The ideal strategy would have been for them to seek new markets or new products that would have allowed them to avoid direct competition with the larger banks.

Conclusion

This study set out to discover whether the BoZ had the capacity and resources to detect financial deterioration in the banks that failed. Using basic ratio analysis, it showed that, as early as twelve months before the closure of the banks, it must have been apparent to the BoZ that several local banks were insolvent and should have been closed. Importantly, it demonstrated that qualitative indicators could help enhance the timeliness of indicators of financial distress. Specifically, the study found that:

(i) The BoZ methods for monitoring unsafe and unsound banking practices were initially weakened by a lack of information owing to the limited number of prudential reports submitted to the BoZ, standard accounting practices, a standard approach to the selection and use of financial ratios, industry performance benchmarks, standard rating mechanisms, and the lack of departmental resources.
(ii) The bank failures of 1995 and 1997/8 did not occur suddenly, but, rather, were the culmination of a long process of financial deterioration and breaches of the law. The BoZ CAMEL model was able to identify differences in the capital levels, asset quality, earnings performance and liquidity positions between banks that failed and those that did not as early as 24 months before the banks were closed. At that point the failed banks had liquidity ratios of less than 50%, which was in sharp contrast to the 75% average of the non-failed banks.
(iii) In an environment where the five largest banks held 80% of the deposit market in 1995, there was little product/service differentiation among the local banks and there were limited investment options available to bank managers, Furthermore, the incidence of unsafe and unsound banking practices, price-based competitive strategies and an unbalanced investment portfolio in government Treasury Bills was indicative of impending financial distress many months before the financial ratios started to decline.

This is the first comprehensive study of the performance of the BoZ's tools for diagnosing and predicting bank failures. It is hoped that this research will provide a basis for future research aimed at providing regulators in developing countries with appropriate indicators of potential financial distress in their banking systems. Future research should attempt to maintain a balance between the use of financial and non-financial indicators of bank failure. Far too often, the focus of research is weighted too heavily in favour of quantitative indicators, which, though useful, reveal signs of distress long after the fundamental banking problems/errors/mistakes have occurred.

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