LOAN PRODUCTS TO MANAGE LIQUIDITY STRESS WHEN BROAD-BASED BLACK EMPOWERMENT ENTERPRISES INVEST IN PRODUCTIVE ASSETS

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Abstract

Investments in productive assets by broad-based black economic empowerment (BEE) enterprises in South Africa (SA) during the 1990s have been constrained, in part, by a lack of access to capital. Even if capital can be sourced, BEE businesses often face a liquidity problem, as conventional, equally amortized loan repayment plans do not take into account the size and timing of investment returns, or there are lags in the adjustment of management to such new investments. This paper describes five alternative loan products to the conventional equally amortized loan: the single payment non-amortized loan; the decreasing payment loan; the partial payment loan; the graduated payment loan; and the deferred payment loan. Recent SA experience with the graduated payment loan and the deferred payment loan suggests that there is scope to alleviate the liquidity problem if a wholesaler of funds can offer such terms to private banks and venture capital investors who then on-lend to finance BEE asset investments that are otherwise considered relatively high credit risks. This would shift the liquidity problem away from the client to the wholesaler of the funds, but requires access to capital at favourable interest rates. Such capital could be sourced from empowerment funds earmarked by the private sector, donors and government.

1. INTRODUCTION

Broad-based black economic empowerment (BEE) is a key policy objective in South Africa (SA) aimed at addressing the past lack of access to resources, like capital, by previously disadvantaged individuals (PDIs) (Mantu, 2003). In 2003, SA businessman Mr Nicholas Oppenheimer proposed that BEE could be promoted if companies that achieved higher levels of BEE (in equity ownership, human resource development and input procurement) were given the incentive of paying lower corporate tax rates (The Brenthurst Initiative, 2003). This resembles the tax incentives available in the United States (US) since 1974 to businesses and employees that participated in Employee Stock

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Ownership Plans (ESOPs) as a way to motivate employees to improve company profitability (SA Government, 2003). Lenders that financed companies in which ESOPs are the majority shareholders also qualified for tax benefits (DiMarzio *et al*, 2002:67). The SA government recognises that broad-based BEE will require partnerships between the private and the public sector, with the latter providing funds to help finance the transfer of skills and asset ownership (Zille & Lyne, 2002). To this end, the Finance Minister Mr Trevor Manuel allocated R10 billion to the National Empowerment Fund (NEF) to support the funding of new ventures and business expansions that meet agreed empowerment criteria (Africapulse, 2003). These public funds could be profitably applied to programmes that leverage additional finance from the private sector for BEE firms.

This raises the key question: what alternative loan products could be used to draw public and private funds into financing the purchase of productive assets (land, machinery, equipment etc.) by broad-based BEE projects so that more people benefit than only a limited number of shareholders who acquire ownership in established companies? Past development finance programmes in SA have charged relatively low nominal interest rates (sometimes negative in real terms) to encourage BEE (Coetzee, 1994). Low interest rates, however, discourage deposits, make it harder for banks to screen borrowers, encourage rent seeking, and reduce the sustainability of financial institutions (Adams, 1987:12). While commercial banks are also unlikely to finance the purchase of equity by unskilled workers who are not creditworthy and lack collateral to secure loans (Krafft, 1996:213), they may be prepared to co-operate in public-private efforts to develop and offer new loan products if there is the incentive that these products would finance productive assets to help empowered firms to grow.

Conventional long-term loans in SA are repaid in a series of equal annual, semi-annual, quarterly or monthly payments that may not match the repayment capacity of BEE projects, particularly in the early years of operation. Profitable agribusiness investments often have relatively high development costs followed by a period of gradual growth in nominal cash flows (Barry *et al*, 1995). This creates a temporary liquidity problem in the early years, particularly when inflation is relatively high. Inflation raises current costs (the nominal interest rate exceeds the current rate of return to land or to other assets like machinery) and defers returns (nominal cash flows grow over time and improve repayment capacity) (Tweeten, 1989; Mueller & Hinton, 1975). Liquidity stress may also arise due to lags in adjustment by the managers of BEE firms to new asset investments. These lags may be caused by a lack of management experience and/or the need to develop new skills in

machinery, labour and marketing management (Barry *et al*, 1995:176). Naude (1998) identified a lack of business and administrative skills as the key issue affecting the performance of entrepreneurs in the small business sector in SA. In addition, Rogerson (1998; 1999) found that the lack of management, marketing skills and access to finance in the Free State and Mpumalanga provinces in SA constrained the development of small, medium and micro-enterprises. Policymakers in SA thus need to find ways to encourage financiers to fund potentially creditworthy BEE projects using loan products that alleviate the liquidity problem and make the projects financially feasible in the long-term.

The aim of this paper, therefore, is to examine alternative loan products to the conventional equal payment (equally amortized) long-term loan in SA that lenders could offer to finance the growth of BEE firms faced with liquidity stress. The paper first reviews literature on the loan repayment problem under inflation, and outlines recent trends in inflation in SA. Section 3 then describes the repayment terms for conventional long-term loans, while section 4 discusses five alternative loan products: the single payment non-amortized loan; the decreasing payment loan; the partial payment loan; the graduated payment loan; and the deferred payment loan. A loan principal of R200,000 amortized over 20 years at a contractual nominal annual interest rate of 10% is used to compare the cash-flow effects of all of these loans. Section 5 discusses recent experiences in SA with some of these alternative loan products in trying to promote broad-based BEE via investment in productive assets. Finally, a concluding section discusses some management and policy implications of the analysis.

2. THE LOAN REPAYMENT PROBLEM UNDER INFLATION

Past studies in developing countries show that high nominal interest rates associated with inflation led to poor liquidity, which caused many (20 to 30% of) emerging agribusinesses to default on loans (Boakye-Dankwa, 1979:236). Lack of profitable technology, poor managerial ability, weather conditions, lack of records and collection procedures also contributed to the repayment problem. Inflation - an increase in the general level of prices for all goods and services in the economy - causes prices to increase with an equal decrease in the value of fixed money claims. Inflation is difficult to predict and thus uncertainty about inflation creates uncertainty over future prices (Baldwin & Ruback, 1986:657).

Financial feasibility refers to the ability of an investment to satisfy the financing terms and performance criteria that are agreed upon by both the borrower and the lender (Barry *et al*, 1995:360). A profitable investment may

not always be financially feasible if the financing plan does not account for the size and timing of the investment's returns, and the effects of capital gains. This problem occurs particularly in farmland investments due to the liquidity stress that arises when investors purchase farmland with debt finance. Farmland earns a real current return (rent), and nominal capital gains if nominal land values increase. Nieuwoudt (1987:10) reported that the average annual real current (cash) rate of return to land in the United Kingdom, US and SA is about 5% of its market value. Capital gains on land generate no cash flow for servicing debt unless that land is sold or used as collateral for refinancing (Melichar, 1979:1082).

Lenders expect loan repayments to include both principal and interest that are paid in cash - of which part is a real return and part is the Fisherian "inflation premium" to reimburse lenders for any expected loss in purchasing power (Friedman, 1978:833). Given that borrowers only receive part of their return as cash, a financing gap occurs if they have considerable debt and the inflation rate is relatively high. Borrowers will not be able to make debt repayments from the cash that is generated from earnings in the early years after land purchase, and thus only after several years will the financing gap be reduced. This problem occurs with conventional long-term loans that are repaid in equal instalments (principal plus interest) that make no allowance for variable cash flows (Barry *et al*, 1995:361). If alternative loan financing methods could alleviate the cash-flow stress in the early years, then after several years, the combined effects of inflation in nominal returns, technology advances and improved managerial skills could increase cash flows and thus close the financing gap (Von Pishke, 1977, as cited in Boakye-Dankwa, 1979:249).

Webb (1982:169) showed that borrowers in the US housing market experienced liquidity problems due to a combination of inflation and the terms of the traditional mortgage instruments. Cohn & Fischer, (cited in Vandell, 1978:1279), proposed that Alternative Mortgage Instruments (AMIs), with payments that can vary, could be a solution to these problems. The prospect of the widespread use of mortgages with variable repayments has not been met with universal enthusiasm (Webb, 1982; Colwell & Dehring, 1997). Lenders would be more reluctant to grant such mortgages to borrowers that are more prone to income fluctuations. Webb (1982:182) reported that a borrower with relatively higher income variations would be likely to have a potentially delinquent loan, whether or not the mortgage has highly variable payments.

In SA, Mostert & Van Zyl (1989) found that droughts, high inflation and high nominal interest rates had severely reduced the liquidity of many farmers in the summer rainfall regions. They concluded that income injections without

obligations best alleviated the liquidity constraint, followed by interest-rate subsidies and debt standstill, for farmers faced with repaying medium- and long-term loans. Lyne *et al* (2000) compared the liquidity effects of cash grants and finite, diminishing interest-rate subsidies, and presented evidence from KwaZulu-Natal suggesting that cash grants have performed poorly in terms of helping to redistribute farmland to PDIs. This work supported Nieuwoudt and Vink's (1995) finding that interest-rate subsidies that diminish at the expected rate of inflation can help to alleviate the cash-flow problem in the first few critical years after land purchase, while cash grants were less effective per rand of subsidy.

2.1 Recent trends in inflation in South Africa

The SA Reserve Bank conducts monetary policy within an inflation-targeting framework and the current target is for the average consumer price inflation rate less mortgage interest rates (CPIX) to be within the target range of 3 to 6% in 2002, 2003, and 2004 (Mboweni, 2002). According to Mboweni (2002), a number of factors show that SA could be close to the period when inflationary pressures could start to decrease, such as: a significant reduction in the rate of increase in the production prices of goods, which generally precedes changes in consumer price inflation; a strengthening in the external value of the rand since October 2002; slower growth in bank credit extension to households and firms; and ongoing fiscal discipline (considerable increases in revenue collections from taxes on income).

During 2003, the Monetary Policy Committee in SA allowed the SA Reserve Bank to cut prime lending rates by 5.5 percentage points up to 12 November, lowering the current repo rate to 8% and prime overdraft lending rates to 11.5% (Mboweni, 2003). While these developments should partly ease the liquidity problem that borrowers experience when using debt during periods of inflation, this problem still remains for those broad-based BEE projects that are more highly indebted, have lower initial annual cash flows, or experience management lags in bringing different types of new assets into full production. Section 3 shows why the conventional long-term loan with a series of equal repayments may not be appropriate to finance such projects.

3. CONVENTIONAL LOAN REPAYMENT TERMS

3.1 Fixed (FRL) and variable rate (VRL) long-term loans

Fixed rate long-term loans (FRLs) allow for equal total repayments each year, with a larger proportion of each succeeding payment representing principal

and a smaller portion comprising interest. The nominal contract interest rate is set at the time the loan is made and does not change over the life of the loan. The maturity term and size of the monthly payments on the loan are usually also fixed (Rose, 1989:481). In SA, fixed and capped mortgage loans have been available since 1996, and can be set for a fixed term, usually six, 12 or 24 months. The level at which interest rates are fixed varies from bank to bank, and depends on the period and size of the loan - most banks offer fixed rates up to 1.5 percentage points lower than the prime overdraft rate. Finance charges are levied against borrowers who decide to exit early from their FRL. By paying an interest premium the borrower can have the interest rate capped at a ceiling level, whilst still benefiting from any drop in the interest rate below the capped rate (ABSA Current Rates, 2003). Lending institutions in SA also offer VRLs that have mortgage interest rates that vary in line with changes in prime overdraft interest rates. Clients choosing VRLs can obviously benefit from expected reductions in interest rates, and vice versa. ABSA Bank also offers a facility whereby clients can fix the interest rates for a portion of their mortgage bonds, while leaving the balance at a variable rate (ABSA Current Rates, 2003). For illustration purposes, this paper will assume that, while the conventional loan is a VRL, it can be treated as a FRL for an assumed constant nominal annual interest rate level (10% in this case).

An example of the FRL for a R200,000 loan at a nominal 10% annual interest rate over 20 years is given in Appendix 1, section 1.1. Following Barry *et al* (1995:619), equation (1) for the present value of a uniform series of payments (an annuity) was manipulated to calculate the total equal annual nominal loan repayment (A) by dividing the loan size (V_0 = R200,000) by the annuity factor given in the square brackets, where i = the contractual nominal annual interest rate of 10%, and N = 20 years:

$$V_0 = A \left[\{1 - (1 + i)^{-N}\} \div i \right] \quad (1)$$

The interest portion of A was calculated by multiplying the loan balance after annual repayment by the nominal interest rate on the loan, while the principal portion was the difference between the total nominal payment and the interest payment in each specific year.

The nominal annual payments (A = R23,492) are constant over the life of the loan. The annual principal payments increase, while the annual interest payments fall. Each year the loan balance diminishes, until year twenty when the loan has been fully amortized (Nelson *et al*, 1973:169). This FRL would require total nominal and real repayments of R469,838 and R319,263 respectively, over the 20-year loan. Since the real burden of the nominal

annual payments declines over time with inflation, each successive payment over the 20-year loan period was adjusted to real terms assuming an expected annual inflation rate of 4%, in line with the November 2003 CPIX in SA (Mboweni, 2003). Following Gittinger (1982), the nominal A for each year was expressed in real terms by dividing it by the compounding inflation factor for that year. For example, the real value of A = R23,492 in Year 1 after an expected annual inflation rate of 4% is R22,588 (R23,492 ÷ 1.04), the real value of A = R23,492 in Year 2 is R21,720 (R23,492 ÷ $(1.04)^2$) and so on. This equal payment loan amortization plan may not be suitable for highly indebted BEE projects faced with the liquidity problem. Alternative loan products for such projects are considered in section 4.

4. ALTERNATIVE LOAN PRODUCTS

The main problem with most conventional loan contracts is that the borrower is committed to fixed repayment schedules at a particular level of nominal interest rate, while net income may vary widely from year to year. Some borrowers may want to make pre-payments in high-income years, while those borrowers whose repayment ability is jeopardized by low yields or prices, or large unanticipated business expenses may have little choice but to default on debt repayments when a FRL is used (Lee *et al*, 1980:126). As noted in section 2, loan contracts that allow for repayments to vary with incomes could be a solution to these repayment difficulties. The main advantage of such loans is their responsiveness to unexpected changes in market interest rates (Tucker, 1976:427). Stansell and Millar (cited in Tucker, 1976:427) concluded that the variable rate, variable payment mortgage did not constitute an undue burden on the mortgagor. Rather the lender (bank) experiences the cash-flow problem, and thus its shareholders bear the cash-flow burden and are reluctant to offer these products. In the US, variable payment loans are also usually interest rate-capped, which prevents the borrower from paying significantly higher interest rates than originally agreed upon during the loan term. Most rate caps increase or decrease by a maximum of two percentage points per year, and no more than six percentage points over the life of the loan. A payment cap on adjustable rate mortgages limits the amount by which the stream of constant nominal payments can increase (Kapoor *et al*, 1991:269).

Edelstein (cited in Tucker, 1976:443) suggested that the ideal mortgage loan would be a combination of a fixed rate and non-standard mortgage, and he opted for a loan instrument that precisely corresponds to the proportion of income sources (including rents) that were nominally fixed and variable over time, respectively. By using a combination of different mortgage instruments, borrowers could diversify against any income-stream risk. While Edelstein

argued that the income of the typical mortgager will grow at least by the rate of inflation on average in the long-run, he felt that this was not true for all households that hold mortgages and thus the analysis of variable repayment plans needed to take into account possible distribution effects across each household, and income shocks.

Alternative loan products that differ widely in the composition of their variable repayments include: the single payment non-amortized loan; the decreasing payment loan; the partial payment loan; the graduated payment loan; and the deferred payment loan.

4.1 Single payment non-amortized loan (SPL)

The SPL requires repayment of the entire loan principal at the end of the loan term. Traditionally, most farm mortgage loans in the US were five-year single payment loans. These loans required borrowers to pay interest each year, and then after five years, borrowers had the option to extend, renew, refinance or repay the loan. Loans were either renewed or refinanced for greater or smaller amounts depending on the losses or profits experienced in the past five years. As credit services increased in US agriculture, the five-year single payment loan was replaced by longer, more modified end-payment plans. These new loans included partial payment loans and they became particularly common in life insurance companies (Nelson *et al*, 1973:167). An example of a SPL is shown in Appendix 1, section 1.2. For a loan of R200,000 at a nominal annual interest rate of 10% over 20 years, the interest would be R20,000 each year until year twenty, when both the annual interest (R20,000) and the total principal (R200,000) are repaid. This SPL would require total nominal and real repayments of R600,000 and R363,084 respectively, over the 20-year loan (real payments calculated by the same method as the FRL).

4.2 Decreasing payment loan (DP)

The DP allows for a fixed annual principal payment and a declining interest payment on the outstanding principal balance. This repayment plan is easy to use and has a psychological advantage as the loan has a declining total annual payment which gives the borrower a definite sense of progress as each total payment is less than the previous one (Lee *et al*, 1980:124). An example of a DP is given in Appendix 1, section 1.3, where in year one the nominal annual principal is R10,000, while the nominal interest is R20,000. As the loan progresses, so the interest portion decreases from R20,000 in year one to R19,000 in year two, and the total annual repayment falls from R30,000 in year one to R29,000 in year two and so on, while the principal payment remains

fixed at R10,000 per year. This DP would require total nominal and real repayments of R410,000 and R296,145 respectively, over the 20 years (real payments again calculated by the same method as the FRL). While this is less costly overall than the 20-year FRL and SPL from the borrower's perspective, it *aggravates* rather then alleviates the cash-flow problem for BEE investments in productive assets, as the total annual repayments are higher than for these loans over years one to seven and one to ten, respectively.

4.3 Partial payment loan (PPL)

The PPL (also known as a balloon payment loan) allows for small principal payments each year during the term of the loan, with the unpaid balance of the principal due as a lump sum or balloon payment at the end of the term. The balloon payment reflects the entire remaining balance of shorter-term loans (e.g. five years) that is amortized over the longer-term (10 to 20 years) (Barry *et al*, 1995:635). An example of the PPL is given in Appendix 1, section 1.4 where the nominal principal and interest payments are calculated by the same method used for the FRL. The payments for years one to four are identical to a 20-year FRL, but in year five the outstanding principal of R183,794 plus an interest balance of R18,379 gives a total balloon payment of R202,173. This amount must either be refinanced at the current terms prevailing in year five, or paid up in full. If interest rates fall and credit conditions improve, a borrower could negotiate more favourable loan terms at renewal. If interest rates rise, the loan terms may become less favourable. This PPL would require total nominal and real repayments of R296,141 and R251,445 respectively, over five years. If balloon repayments are expected in year five, the PPL will worsen the liquidity problem facing BEE enterprises relative to a longer-term FRL. Alternatively, if the PPL terms allow interest rates to be assessed every five years over the 20-year period, then the financing terms of the PPL are similar to that of the 20-year VRL already offered by financing institutions in SA, and thus there would be no need to test this option.

4.4 Graduated payment loan (GPL)

The GPL was primarily developed for the US residential mortgage market in response to relatively high inflation rates in the US in the early 1970's (Lee *et al*, 1980:127). Under the GPL, earlier payments are lower than if a FRL were used - the borrower's initial nominal interest rate is stated as a percentage below the standard (i.e. market) rate. This percentage, or the interest rate differential, changes each year, so that the difference between the borrower rate and the standard rate gradually decreases. After a pre-determined period, the borrower will pay the standard rate, and thus the loan ultimately becomes

a conventional amortized loan (Introducing the Graduated Payment Plan, 2003). In the US, the GPL repayments are structured so that the early repayments are lower than they would be on a corresponding FRL, but the later repayments (after the borrower's annual incomes are expected to have risen by the annual expected inflation rate) are higher than they would be on a corresponding FRL. Lenders are indifferent between the FRL and this GPL from the point of view of the present value of the cash-inflows from these repayments (the respective initial principal amounts and future debt service amounts), but not from a risk perspective. The GPL has the same rate of return for the lender as the FRL, but a different default risk due to negative amortization – early nominal repayments may be so low that they do not cover interest payments, thus principal payments owed actually increase, rather than falling in the early stage of the loan (Colwell & Dehring, 1997). Due to such negative amortization, this type of loan can carry a higher down payment and higher interest rate to compensate lenders' for the cash-flow problem that it paradoxically creates for them.

To date, most GPLs in the US have been used for student loans as an incentive for graduates to bank with the issuing institutions in the future. More recently, GPLs were introduced in the US motor industry to help improve car sales. In SA, the Ithala Development Finance Corporation (Ithala) has used a GPL since 1996 that starts with a *lower* interest rate than would be charged on a conventional VRL to finance the purchase of medium-scale sugarcane farms by black commercial farmers. This was made possible as the sugar millers who sold these farms deposited 18 per cent of the purchase price with Ithala in order to finance an interest-rate subsidy (Mashatola & Darroch, 2003). Once the graduated nominal interest rate equals the market interest rate after about seven years, the loan becomes a conventional VRL. Some pros and cons of this scheme are discussed in more detail in section 5. If the GPL attracts subsidy, lenders would be less reluctant to finance a GPL than a VRL, even though the GPL has the added risk that the borrower's repayment capacity may not increase in line with anticipated inflation (and, like the VRL, may be subject to unanticipated income shocks).

An example of a 20-year loan of R200,000 that has 17 years of subsidised graduated payments (17YRGPL) is shown in Appendix 1, section 1.5, for a nominal annual interest rate of 10%. The borrower's initial interest rate of 5% (corresponding to the assumed expected real current annual rate of return on land (Nieuwoudt, 1987)) gradually increases each year compared to the preceding year in line with a plausible expected annual inflation rate of 4%. The nominal interest rate paid, therefore, rises from 5% in year one, to 5.21% in year two and so on each year, until it equals 10% after 18 years. Since the

initial interest rate is five percentage points below the market interest rate of 10%, the first year interest payment falls from R20,000 to R10,000 (a reduction of R10,000). This 17YRGPL requires total nominal and real repayments of R385,204 and R251,537 respectively, and a nominal interest subsidy of R84,634 over 20 years (real payments again calculated by the same method as the FRL). Adding this interest subsidy of R84,634 to R385,204 gives the total nominal repayment of R469,838 required for the FRL.

The six-year GPL (6YRGPL) in Appendix 1, section 1.5a shows that a higher initial borrower interest rate of 8% could be used on machinery-type assets that yield a higher real current annual rate of return than land is expected to generate (Mueller & Hinton, 1975). In this scenario the graduation period would only be for six years with a nominal interest rate subsidy of R13,957 and total nominal and real repayments of R455,882 and R306,667 respectively. Again, adding the total nominal repayments and the nominal interest rate subsidy gives the R469,838 total nominal repayment for the FRL.

4.5 Deferred payment loan (DEFPL)

The DEFPL is an extreme form of the GPL where no principal or interest payments are made for a specified period of time. Deferred payments improve the borrower's cash flow and allow for retained cash surpluses to supplement dividends in future years when reinvestment is expected to reduce liquidity. Different projects might require longer periods of deferment to overcome cash-flow problems (Graham & Lyne, 1999). The trade-off from having a longer deferment period is that future profits from BEE investments in productive assets will decline. Projects that might not have been approved thus become feasible, but at the expense of a lower net present value of future income streams to the borrower (Zille & Lyne, 2002). If lenders offering DEFPLs can also defer their loan repayments to the wholesalers that provided their funds, they may charge a lower nominal interest rate than that charged on the FRL, because the default risk profile of the borrower improves with the DEFPL. The borrower must, however, reimburse the lender for any accumulated interest or principal that is postponed during the term of the loan, plus a small additional fee. This reimbursement may be through the refinancing of the loan (Rose, 1989:483). Appendix 1, section 1.6 shows a two-year DEFPL (DEFPL0-2) repayment schedule, where neither interest nor principal are repaid in the first two years of the R200,000 loan. From year three, the interest portion of the loan is fully capitalised using the simple compound interest formula (Lee *et al*, 1980:50):

$$S = s (1 + i)^n \quad (2)$$

where:

S = capitalised loan size (R242,000), s = initial loan size (R200,000), i = nominal annual interest rate of 10%, and n = two years.

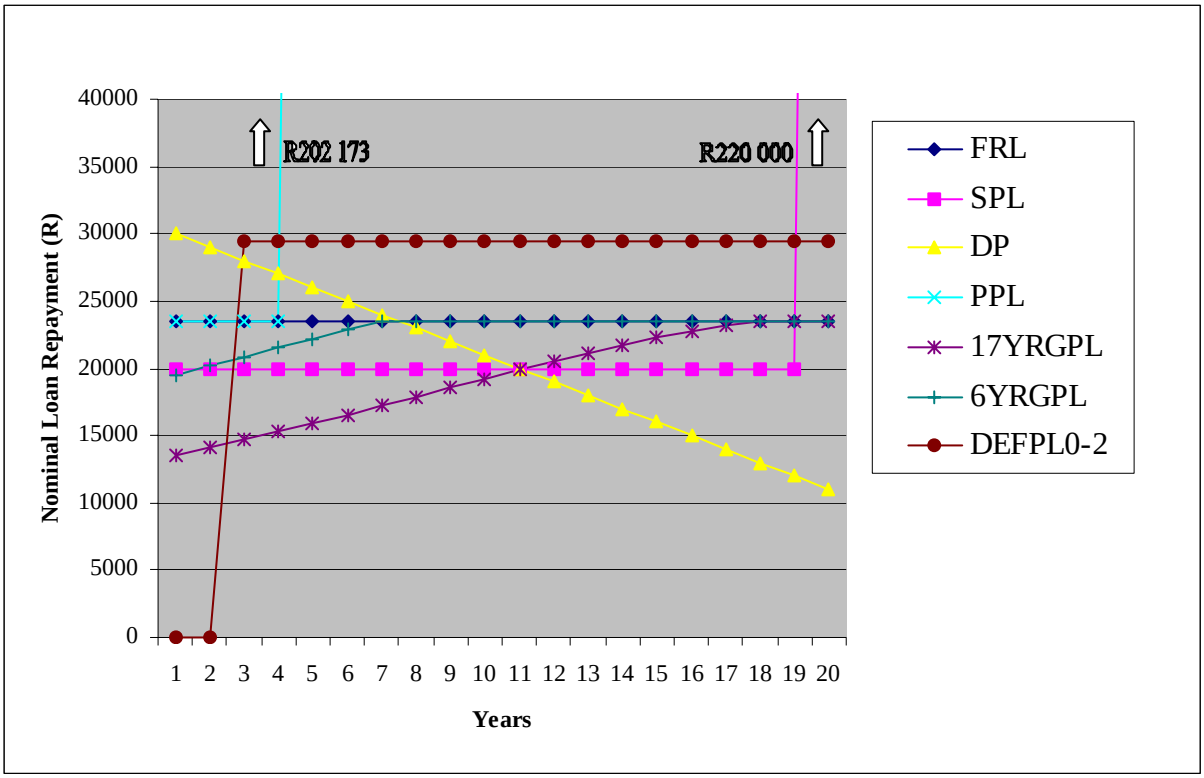
At the start of year three, the loan amount outstanding is (R200,000) $(1.10)^2$, or R242,000. The nominal total annual repayments are calculated using equation (1) as for the FRL in section 3.1, on the R240,000 loan for 18 years, and equal R29,507. The interest portion and principal payments are calculated in the same way as for the FRL. The present value of the loan is the same for the lender, whether or not a deferred or conventional loan scheme is utilized, with the only difference being a *shift in the cash-flow problem* from the borrower to the lender (or to the wholesaler if the lender can defer repayments on the funds that it sources). The DEFPL0-2 would require total nominal and real repayments of R531,128 and R345,358 respectively, over the 20 years (real payments again calculated by the same method as the FRL).

In SA, the Land Reform Empowerment Facility (LREF) was established in 1999 as a wholesale lending facility that offers DEFPLs (and hence shifts the cash-flow problem from the client to the LREF, rather than to the intermediary) to commercial banks and credit-rated investors, who wish to finance land and farm-worker equity-share schemes (ESSs). The LREF charges, and bears the costs of, a *lower* interest rate than would be charged on a FRL, with the discount (between one to three percentage points below the three-month Johannesburg Interbank Agreed Rate (Jibar)) depending on the empowerment content of the end-borrower (Khula Enterprise Finance Limited, 2003). The facility is funded primarily by the Department of Land Affairs (DLA) and the European Union (EU) (through the DLA) and is, therefore, dedicated to financing land and farm-worker equity share schemes including pack sheds and wineries. ABSA Bank is currently the main commercial bank in SA that is involved with the LREF. Experiences with this loan product in SA are discussed in section 5.

4.6 Summary of the alternative loan products

Figure 1 illustrates the differences in the time patterns of the annual series of nominal loan repayments for the R200,000 loan repaid over 20 years at a nominal annual interest rate of 10% for the FRL compared to the SPL, DP, PPL, 17YRGPL, 6YRGPL and DEFPL0-2. The SPL has smaller initial repayments (R20,000 versus R23,492) that ease liquidity stress in the early

years after asset purchase, but requires a nominal balloon repayment of both interest and principal in year twenty of R220,000. The SPL is also the most costly loan, with total nominal and real repayments that are R130,162 and R43,821 respectively, more than the FRL.



Note: FRL = fixed repayment loan; SPL = single payment non-amortized loan; DP = decreasing payment loan; PPL = partial payment loan; 17YRGPL = seventeen-year graduated payment loan; 6YRGPL = six-year graduated payment loan; and DEFPL0-2 = two-year deferred payment loan.

Figure 1: Time patterns of the nominal annual repayments for the conventional loan versus five alternative variable payment loans (all loan terms for a R200,000 loan principal repaid over 20 years at a nominal annual interest rate of 10%)

The PPL has the lowest total nominal and real repayments, assuming that the borrower can make the nominal balloon repayment in year five of R202,173. If not, the ending balance of the loan in year four would have to be refinanced at current market interest rates. In this situation, the PPL uses very similar financing terms to that of the VRL already used in SA, and thus may not be a useful option to consider. Interest rates may have risen over the last four years of the loan, encouraging lenders to add a premium into the interest rate for the refinanced loan, which could worsen the liquidity position of the BEE enterprise. The DP requires higher initial nominal annual loan repayments (R6,508 more than the FRL) that do not ease the liquidity problem in the early

years of operation. The DP loan, however, has total nominal and real repayments that are R59,838 and R23,118 respectively, less than the FRL.

A GPL with interest-rate subsidy seems to have the most potential to ease the borrower's (BEE project's) liquidity stress. The 17YRGPL to finance land had total nominal and real repayments that were R84,634 and R67,726 (after subsidy), respectively, less than the FRL. If the GPL was used to finance the purchase of machinery-type assets, then the 6YRGPL would have required total nominal and real repayments of R13,957 and R12,596 respectively, less than the FRL. Finally, the DEFPL0-2 loan required a total nominal repayment of R531,128 (R61,290 more than the FRL) and a total real repayment of R345,358 (R26,095 more than the FRL). Clearly, the GPL and DEFPL0-2 loan repayment schedules can partly resolve the liquidity problem in the early years (assuming no major income shocks), although the DEFPL0-2 plan requires higher total repayments than the FRL. The question remains whether lenders would be prepared to implement these two financing plans for BEE investments in productive assets, where the funds to finance the interest-rate subsidy and the deferment would be sourced, and how the interest-rate subsidy would affect asset values.

5. EXPERIENCE WITH GRADUATED PAYMENT LOAN AND DEFERRED PAYMENT LOAN SCHEMES USED TO FINANCE BEE IN THE FARMLAND MARKET IN SOUTH AFRICA

5.1 GPLs used by Ithala to finance "medium-scale farmers" (MSFs) in KwaZulu-Natal

Cash grants to finance land purchase in SA were proposed by the World Bank in 1993, based on Binswanger's reasoning that poor people are unable to finance land with conventional mortgages, especially when the market value of land exceeds (what is claimed by some) to be its productive value (Lyne *et al*, 2000:2). Nieuwoudt and Vink (1995:514) argued that interest subsidies associated with GPLs make it easier for PDIs to finance land purchases due to the relatively high annual rates of inflation that were common in SA in the 1990s. This was in line with Tweeten's (1989) reasoning that higher inflation causes higher costs (higher nominal interest payments), but defers returns (higher expected future nominal incomes). Adams (1987:11) believes that countries that run fewer subsidy loan programmes have more efficient and equitable financial systems. Policymakers in SA are concerned that interest-rate subsidies will be capitalised into higher values of land and other long-term asset values. If the interest-rate subsidy for the GPL were finite and targeted at PDIs, it may create fewer distortions in capital markets (Lyne &

Darroch, 2003). Per rand of subsidy, the interest-rate subsidy is more effective at solving the cash-flow problem than are cash grants, but grants are still needed to finance equity – especially for employees wanting to purchase shares in ESSs (Lyne, 1995:17). Private-sector sugar millers working with Ithala in SA since 1996 have used the interest-rate subsidy approach, whereas the SA government has used only cash grants to finance land purchases by PDIs since 1994.

Lyne and Darroch (2002:127) indicate that for the six-year GPL, Ithala reduced the nominal interest rate for entrants from 16.5% to 10% initially, increasing it each year at the *then* expected 10% annual inflation rate in SA over the first six years of the loan. The nominal interest rate thus rose from 10% to 11% in year two, and to 12.1% in year three and so on until years seven to 20 when the sugarcane farmers would pay the full 16.5%. These medium-scale farmers (MSFs) were highly indebted - most had to borrow up to 95% of the funds needed to acquire the land (Mashatola & Darroch, 2003:1) - so the liquidity problem was inevitable. The MSF financing plan has shown positive results as currently some 80% of the 107 farmers that have used the scheme have met their loan repayments. The amount outstanding is reported to be only 0.5% of the R94 million total value of loans issued (Food and Agricultural Organization of the United Nations (FAO), 2003:141). Van den Heever as cited by Mashatola & Darroch (2003) attributes the absence of defaulters, despite very high leverage ratios, partly to the interest-rate subsidy. The low rate of default is surprising, given that the initial (subsidised) annual interest rate was 10%, compared to an expected annual current real (cash) return on farmland of 5%, and that these farmers must still repay loan principal. These borrowers probably used part of the annual return attributed to management and risk to help fund their loan repayments. Some loan rescheduling, client access to off-farm income and no major income shocks to date have also helped them to meet their repayments (Mashatola & Darroch, 2003:1).

The MSF programme can be criticised as being elitist, in that 107 relatively wealthy farmers have been financed at an average loan size of R878,036. However, the graduated payment principles could be adapted and applied to help PDIs to finance the acquisition of smaller, more affordable farms that are creditworthy, thereby exposing buyers to lower levels of leverage and less financial risk than in the MSF programme. This would be a more effective channel than cash grants alone for using taxpayer money and donor funds to promote asset-based BEE in SA. These principles could also be adapted to finance the purchase of other productive farm, agribusiness and non-farm assets such as machinery and equipment by BEE investors.

5.2 DEFPLs offered by the Land Reform Empowerment Facility (LREF)

The maturity term of each DEFPL offered by the LREF, and the period of deferment, is determined by the projected cash flows of the enterprise and the level of risk that the intermediary bank is prepared to accept in each case. Together with the one to three percentage point discount below the three-month Jibar, these terms have enabled commercial banks to help finance land-based empowerment partnerships that would otherwise have been rejected because of the liquidity problem and related financing risks. The LREF's deferred repayment loans thus ease liquidity problems faced by emerging black farmers and farm-worker equity share schemes when financing land and other long-term assets like orchards and pack sheds. The SA government provides cash grants to help PDI's to finance farmland or equity in land-based enterprises, and offers larger grants to beneficiaries that can raise loans to complement their grants.

Between 2000 and 2002, non-guaranteed commercial loans worth R50 million were approved for disbursement through commercial banks to 15 land-based empowerment enterprises (Zille & Lyne, 2002:7). These loans benefited 500 new worker-shareholders with shareholdings varying between five and 70% of total equity. The average LREF loan size per new owner was R135,000, making this a relatively cost-effective empowerment instrument considering the costs of buying high quality land using an individual mortgage, and the problem of creditworthiness that confronts new entrepreneurs. To date, no loan defaults have been reported by any of the participating banks (Zille & Lyne, 2002:7). The LREF's experience, together with a steady growth in loan enquiries for *non-land* BEE projects, suggests that the underlying loan concept could be extended beyond the land economy to creditworthy empowerment enterprises in other sectors.

Commercial banks can set the nominal on-lending interest rate above the Jibar, but are required to carry 100% of the lending (credit) risk, thus ensuring careful screening and appraisal of all loan applications. This also ensures that grant money is not used to re-capitalise non-viable white-owned farms that are experiencing cash-flow problems. Borrowers prefer the shortest deferment period necessary to overcome their liquidity problem, as there is a trade-off with profitability – the longer the deferment, the lower is the net present value of the investment's future income stream. In practice, the commercial bank intermediaries usually charge an interest rate that is slightly below the market rate. Interest costs decline further when farm-workers are awarded Land Redistribution for Agriculture Development (LRAD) grants to capitalise their share in an ESS (FAO, 2003:35). The LRAD programme also acts as an

important partnership incentive for white farm-owners, because the equity injection improves the owners' gearing ratios and thus improves their cash flow and risk profiles (Zille & Lyne, 2002:7). The LRAD grant ranges between R20,000 and R100,000, depending on the applicant's contribution. For example, a minimum own contribution of R5,000 is required for applicants to access a R20,000 grant. The maximum grant of R100,000 can be accessed if the beneficiary makes a minimum contribution (of equity plus debt) of R400,000. However, banks usually require a debt-to-equity ratio of less than unity when financing agriculture (Barry *et al*, 1995), which places an implicit cap on the LRAD grants. Even under optimal conditions, where the lender is assured that the borrower will receive a grant, a prospective owner-operator would have to contribute R100,000 of his/her own equity (from savings and/or other asset sources), in order to qualify for a grant of R90,000, and thus a loan of R190,000. The implicit cap on LRAD grants is less generous when the outcome of a grant application is uncertain (Lyne 2001:23).

The LREF was initially capitalised with R63 million, R32 million of which was granted by the DLA, and R29 million by the EU (Lyne, 2001:9). Lyne (2001) simulated a series of loans with deferments of between one and three years and showed that the LREF could afford to disperse about R15 million per annum without reducing the real value of the fund to a level where it would become unsustainable. The facility approved R32 million in loans by 2001, with applications for another R34 million pending its recapitalisation. Out of the R32 million, some R4.8 million financed loans to individual farmers, and R27.7 million financed long-term loans to ESSs. Knight *et al* (2003:2) reported that about 50 farm-worker ESSs had been established in SA, mostly in the Western Cape. In 2003, 14 new loans worth R51,285,000 were approved, with 961 beneficiaries (526 male and 443 female), and the fund balance had risen to R124,337,507 with additional funds raised through the DLA, EU and the Department of Environmental Affairs and Tourism (Khula Enterprise Finance Limited, 2003). This empowerment programme appears to be much less elitist than that currently offered by Ithala's GPLs, and highlights the potential that financing asset growth can play in promoting BEE in SA.

Zille & Lyne (2002:9) applied the experiences of the LREF with its deferred payment plans to design a BEE loan product to finance investments in property, fixed improvements, equipment, and other durable assets under liquidity stress. They assessed the effects of variations in the interest rate, the maturity of the loan, the loan repayment schedule and the prospect of adding grant-financed equity capital, to identify the extent to which such variations could decrease the borrower's risk profile and thus enable loans to be made to PDIs. Using 20 loan variations on realistic enterprise cash-flow projections,

they showed that negative cash flows experienced using a conventional VRL could be overcome if a variation of the key loan features was applied. Higher interest rates reduced the borrower's liquidity, while longer-term loans with a one-year deferred repayment and equity grant could help to alleviate financial stress. The deferred payment had the largest statistically significant influence on liquidity, followed by the loan term, the interest rate and the use of grant money to finance equity.

6. CONCLUSIONS AND POLICY RECOMMENDATIONS

This paper shows that graduated loan repayment plans (GPLs) and deferred loan payment plans (DEFPLs) can partly resolve the liquidity problem that BEE investments in productive assets financed by conventional long-term loans are likely to face in the early years of operation in South Africa. A GPL scheme using interest-rate subsidies funded by private sector sugar millers has empowered 107 black commercial farmers to buy sugarcane farms in KwaZulu-Natal since 1996. Relatively high loan repayment rates for this scheme, despite very high leverage ratios, have also been promoted by some loan rescheduling, many clients having access to off-farm income, and the absence of any major income shocks to date. It has also required substantial private sector funding (of interest-rate subsidies) when compared to the other loan products discussed in this paper. The concept of graduated loan repayments can readily be applied to finance non-land asset investments that are characterized by liquidity stress in the early years, and would probably relieve financial stress relatively more effectively for other crop enterprises with less regular cash flows than sugarcane, such as maize or orchard investments.

The DEFPLs require higher total repayments than the conventional loans, but lenders would be reluctant to offer such loans unless they could finance the deferments. The Land Reform Empowerment Facility (LREF) is a wholesaler of funds that offers a loan product for this purpose in South Africa. The LREF has started to bridge the gap between the formal banking sector and new land-based BEE asset purchases by shifting the cash-flow problem away from the client to the LREF, rather than the intermediary. This aspect of the DEFPL resembles the KwaZulu-Natal GPL in the sense that the private sector millers, rather than the clients, bore the liquidity stress (by financing the interest-rate subsidies). The LREF's deferred financing terms mean that commercial banks, in return for a restructuring of the end-borrowers' ownership, can finance profitable agribusiness investments that are usually characterised by a temporary liquidity problem.

The lesson for policymakers from these experiences is that broad-based BEE could be promoted in *other farm and non-farm sectors* in South Africa using similar innovative loan products to leverage current cash grant funds via financial intermediaries. Bearing in mind the limitations of the GPL and DEFPL - in particular, where the funds to finance the interest-rate subsidy and the deferment would be sourced, and the impact of income shocks - this could be a constructive way to access private sector funds, donor funds and the NEF funds that have been set aside for BEE investments. Donor and NEF funds may be used to allocate grants to provide PDIs with own equity, and also to fund interest-rate subsidies via GPLs, or to fund DEFPLs (all LREF loans have been helped by a cash grant component). This could create an incentive for public/private partnerships, as public/donor funds could be then used to attract private sector loans to finance productive assets purchased by broad-based BEE enterprises that satisfy defined empowerment criteria. Further research is needed to test the liquidity effects of GPLs and DEFPLs relative to conventional VRLs using data taken from applications made by different types of BEE enterprises to commercial banks for term loans to finance a variety of farm and non-farm assets.

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