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Contents

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Bank of Botswana Monetary Policy Statement – 2004

1. Introduction

1.1 The monetary policy of the Bank of Botswana aims to promote and maintain monetary stability. A low and sustainable rate of inflation is the principal way in which the Bank contributes to the broader national objective of improving the economic well-being of the country. The role of the Bank's annual Monetary Policy Statement in pursuing this task is threefold. First, it is an opportunity for the Bank to report on inflation and monetary developments in the previous year, and to present its assessment of the outlook for inflation in the current year. Second, it contains the Bank's annual objectives for inflation and explains how these are derived, in the context of the Bank's monetary policy framework. Third, the Statement outlines the approach that will be taken in formulating its policy response to inflation-related developments throughout the year. The Monetary Policy Statement, therefore, plays an important role in conveying to stakeholders and the public at large a range of information relating to inflation and monetary developments as well as the formulation and implementation of monetary policy. The transparency entailed in the presentation of the Statement is intended to influence economic and financial expectations and, therefore, the behaviour of economic agents. In particular, the Bank aims to engender a public expectation of low inflation consistent with the broad objective of macroeconomic balance and stability as a basis for sustainable growth.

1.2 Consistent with past practice, the 2004 Monetary Policy Statement reviews developments in inflation in the previous year and their underlying causes, and assesses the extent to which monetary policy was successful in meeting its objectives. This is followed by a presentation of the Bank's analysis of prospective developments during 2004 and, based on that, the policy outlook for the current year. The Statement concludes that, after taking account of the continued impact of value added tax (VAT), introduced in July 2002, underlying inflation for much of the year was not far above the upper end of the Bank's desired range of 4–6 percent. Demand pressures were moderate, reflecting in large part the absence of a salary increase for civil servants and the restrictive stance of monetary policy; external inflationary developments were also favourable. As a result, inflation followed a steady downward course in the second half of the year to reach 6.4 percent at year-end. However, looking ahead, the inflation outlook for 2004 is subject to considerable uncertainty, mainly because of the potential inflationary impact of the devaluation of the Pula carried out in early February 2004, but also because of volatile oil prices, possible increases in regional food prices, and continuing uncertainty over the strength and durability of the global economic recovery. The task for monetary policy in the circumstances will be to minimise the inflationary impact of the devaluation and to prevent inflation from rising excessively during 2004.

2. The Bank's Monetary Policy Framework and Objectives

2.1 The principal objective of monetary policy in Botswana is to achieve a sustainable, low and predictable level of inflation that will, among others, contribute towards broader national objectives of durable economic growth and development. One particular objective to which the Bank believes it can contribute in this regard is the maintenance of international competitiveness. In the short term (normally on an annual basis), this can be achieved by monetary policy aiming for a domestic inflation rate that, at a minimum, is no higher than the average inflation of its major trading partners, after taking account of any change in the nominal effective exchange rate of the Pula. In the longer term, achieving and maintaining low inflation will ensure that domestic price pressures do not undermine international competitiveness. This is the basis from which the Bank derives its annual inflation objectives, as described in detail in Section 7 below. The current policy framework seeks to achieve this domestic inflation objective while at the same time supporting a pegged nominal exchange rate. This policy combination is feasible in view of the limited international capital flows and the present embryonic development of domestic financial markets.

2.2 In pursuing its inflation objective, the Bank uses interest rates to influence inflationary pressures in the economy. This is achieved indirectly through the impact of interest rates on credit which, in turn, affects other components of domestic demand. Changes in interest rates, along with other policies, especially fiscal and exchange rate policies, affect the overall level of demand for goods and services in the economy relative to a given level of output. Inflationary pressures are likely to emerge when aggregate domestic expenditure exceeds the supply of available goods and services.

2.3 Therefore, when implementing monetary policy, the Bank focuses on the intermediate targets that influence the main components of demand. The principal intermediate target is the rate of growth of commercial bank credit to the private sector, which is considered an important contributor to the growth of private consumption and investment, and can be directly influenced by

monetary policy through changes in interest rates. The growth rate of government spending is also an important determinant of domestic demand, since a large proportion of this demand is derived from expenditure on public consumption and investment. While the Bank can affect private sector growth through monetary policy, the continuing large role of the Government in the economy underscores the need for complementarity between fiscal and monetary policies in achieving the inflation objective.

2.4 In formulating monetary policy, the Bank examines closely the sources of changes in inflation. Monetary policy responds primarily to changes in inflation that are due to domestic demand pressures rather than those that are due to transitory factors, discrete adjustments of administered prices, or supply fluctuations on which monetary policy will have no direct influence. For this reason, in addition to headline inflation data published by the Central Statistics Office, the Bank also looks at core inflation. This enables analysis of the underlying inflationary trends that are relevant for monetary policy purposes. While the inflation objective will continue to be assessed in terms of headline inflation, core inflation will be used to evaluate trends in headline inflation and the reasons for any volatility or divergence from the inflation objective.[1]

3. DOMESTIC INFLATION TRENDS IN 2003

3.1 The Bank's inflation objective for 2003 was 4–6 percent. With this objective the Bank sought to influence and maintain expectations of sustainable low inflation in an environment in which there was a risk of a VAT-induced increase in inflationary expectations. Moreover, the Bank considered that aiming for inflation at a lower level than in trading partner countries would help regain some of the competitiveness that may have been lost in 2002 as a result of higher inflation in Botswana.

[1] The Bank's preferred measure of core inflation is based on an approach using the trimmed mean. This approach removes the most extreme price changes, regardless of their source. The core inflation rate is currently calculated by the Bank from data published by the Central Statistics Office.

3.2 World economic growth remained subdued in 2003, and global inflation stayed low, hence the major central banks sustained their policies of monetary stimulus to support economic activity. In Botswana, domestic demand pressures eased, as the growth in credit slowed and government expenditure growth remained at a similar level to that of the previous year. As a result, prospects for inflation in Botswana improved through the year, especially once the effect of VAT ran its course in July.

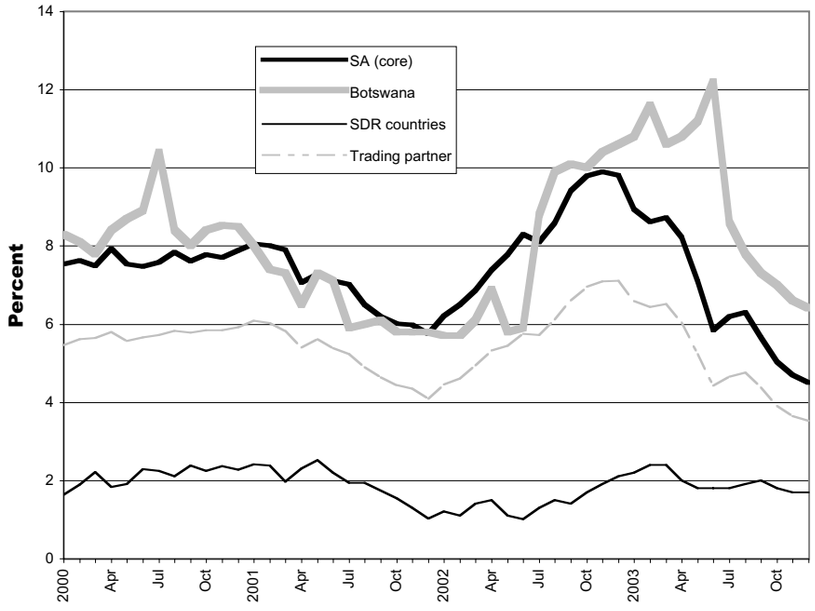
CHART 1: BOTSWANA INFLATION (JANUARY 2000 – DECEMBER 2003)

3.3 After rising sharply through the latter months of 2002 following the introduction of VAT in July of that year, annual inflation rose further in the first half of 2003, peaking at 12.2 percent in June. Thereafter, it slowed considerably as the effect of VAT fell away, to the year's low of 6.4 percent in December 2003, close to the upper end of the inflation objective (6 percent). Discounting the impact of VAT, which, in the Bank's estimate, added between 4 and 5 percentage points to the rate of inflation, the rate was not far above the upper end of the Bank's objective for most of 2003. The decline in annual inflation towards the end of 2003 particularly reflects the very low level of monthly inflation that emerged during the second half of the year. Indeed, there is a sharp contrast between inflation developments in the two halves of 2003. In the first six months of the year, prices rose by 5.3 percent, or 10.9 percent at an annual rate. In the second half of the year, however, prices rose by 1 percent, equivalent to an annual rate of only 2 percent. Core inflation closely tracked headline inflation during 2003, reflecting the absence of extreme price changes in any of the categories of goods and services in the consumer price index basket, and ended the year at 6.7 percent,

marginally above the headline inflation rate of 6.4 percent.

4. INFLUENCES ON DOMESTIC INFLATION IN 2003

CHART 2: INTERNATIONAL INFLATION (JANUARY 2000 – DECEMBER 2003)



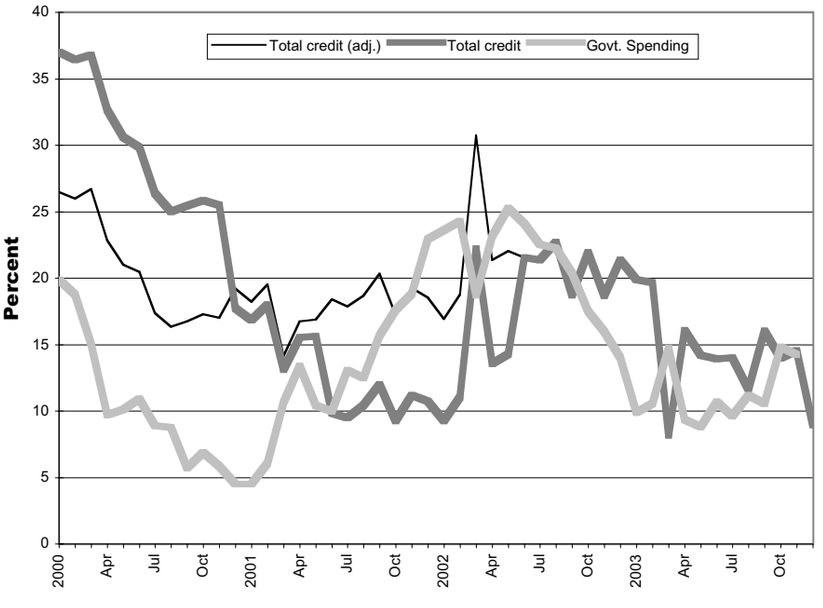
4.1 Global economic growth remained sluggish for much of the year, following a similar weak performance in 2002. However, world growth improved significantly towards the end of the year, although the geographic spread of the recovery was mixed and its sustainability uncertain. The recovery was led by a rise in demand in the USA and Japan, while economic performance in the euro zone remained weak. Inflation in major industrial countries fell slightly, to an average of just under 2 percent by the end of the year. In South Africa, inflation slowed largely as a result of the appreciation of the rand as well as the lower rates of increase in prices of food, transport and housing. The combined effect of all these developments was that, by December, average inflation for Botswana's trading partners had fallen substantially to 3.5 percent, from 7.1 percent in 2002.

4.2 Domestically, inflation-adjusted economic growth for 2002/03 (July-June) was 6.7 percent, a significant improvement from 2.1 percent (revised from 2.3 percent) of 2001/02. The higher output growth is largely due to the turnaround in the performance of the mining sector, with output growth of 10.4 percent compared to a 3.1 percent contraction in the previous year. Although many other sectors performed reasonably well, output excluding mining grew by 4.8 percent, which was marginally lower than the 5.1 percent for 2001/02.

4.3 The twelve-month growth in commercial bank credit slowed to 8.9 percent in 2003 from 21.3 percent in the previous year, and compared to the Bank's intermediate target for credit growth of 12–14 percent. This slowdown occurred in the context of a tightening of monetary policy in the fourth quarter of 2002, as well as restrained fiscal expansion. The absence of salary increases for civil servants restricted growth in personal incomes overall and, therefore, access to higher levels of credit for households. Both business and household borrowing grew at lower rates compared to 2002.

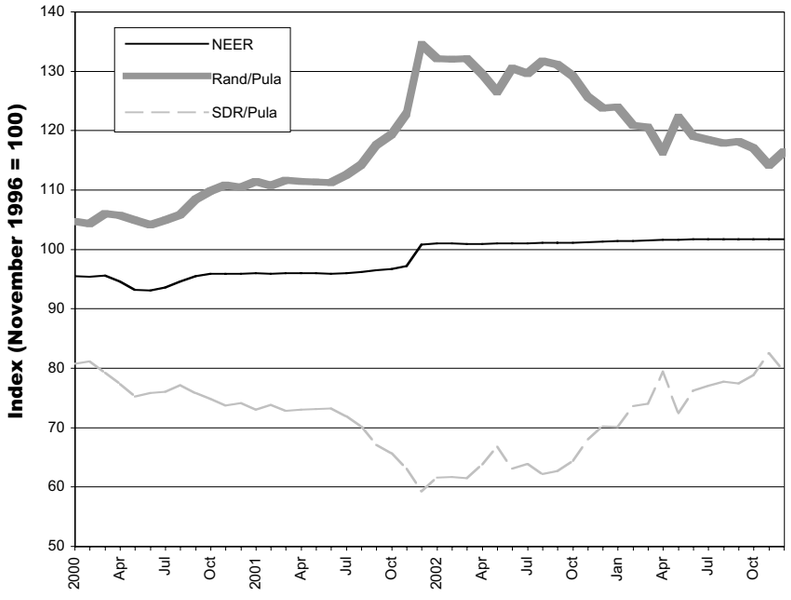
4.4 Government expenditure rose by just over 14 percent last year (twelve months to November 2003), little changed from the growth rate recorded in 2002. While this rate of growth is somewhat higher

CHART 3: ANNUAL GROWTH RATES OF CREDIT AND GOVERNMENT SPENDING (JANUARY 2000 – DECEMBER 2003)



than rates that would be consistent with the inflation objective being pursued, it implies a better balance between fiscal and monetary policies than has been the case in some recent years.

CHART 4: NOMINAL EXCHANGE RATES (JANUARY 2000 – DECEMBER 2003)



4.5 During 2003, the Pula appreciated in nominal terms against major international currencies on the back of a significant strengthening of the rand and weakening of the US dollar. As a result of the link to the rand through the currency basket, the Pula appreciated by 13.3 percent in nominal terms against the SDR over the 12 months to December 2003, which included a 23 percent appreciation against the US dollar. Against the rand, the Pula depreciated by 5.9 percent. Nevertheless, because of the fixed exchange rate arrangement, the trade-weighted nominal effective exchange rate (NEER) of the Pula remained stable, appreciating marginally, by 0.4 percent, in the 12 months to December 2003. The real effective exchange rate (REER), on the other hand, appreciated by a further 3.4 percent in the year to December 2003 due to higher inflation in Botswana than in trading partner countries which was, in turn, largely due to the faster decline in inflation in South Africa than in Botswana.

In Charts 4 and 5, a rise in the index indicates an appreciation of the Pula

5. MONETARY POLICY IMPLEMENTATION DURING 2003

5.1 As noted above, the aim of monetary policy in 2003 was first and foremost to contain the inflationary impact of the previous year's introduction of VAT. It was also thought important to continue to support the downward trend in underlying inflation that had begun to develop in 2000 and 2001. In the circumstances, monetary policy remained relatively restrictive for much of the year. However, as credit growth slowed and inflation rates declined, as had been expected, and the global inflation outlook remained supportive of continuing low inflation abroad, the Bank took the opportunity to reduce the Bank Rate twice, by 50 basis points in October and another 50 basis points in December, to 14.25 percent.

5.2 Although inflation in Botswana fell to levels close to the Bank's desired range, inflation in trading partner countries also declined, but at a much faster rate than had been earlier forecast. At 3.5 percent by year-end, average inflation in trading partner countries was more than 2 percentage points lower than what had been expected at the beginning of the year. The relatively high inflation in Botswana meant that there was a further increase in Botswana's REER.

CHART 5: REAL EXCHANGE RATES (JANUARY 2000 – DECEMBER 2003)

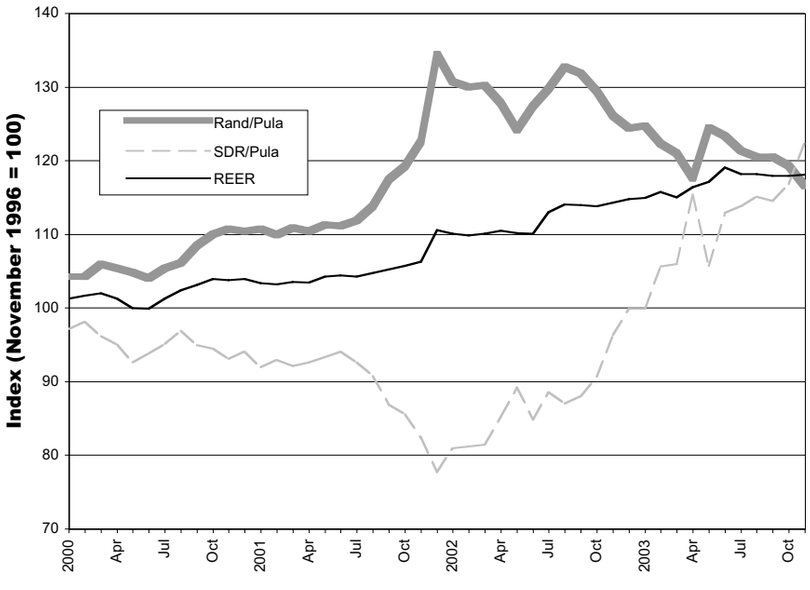
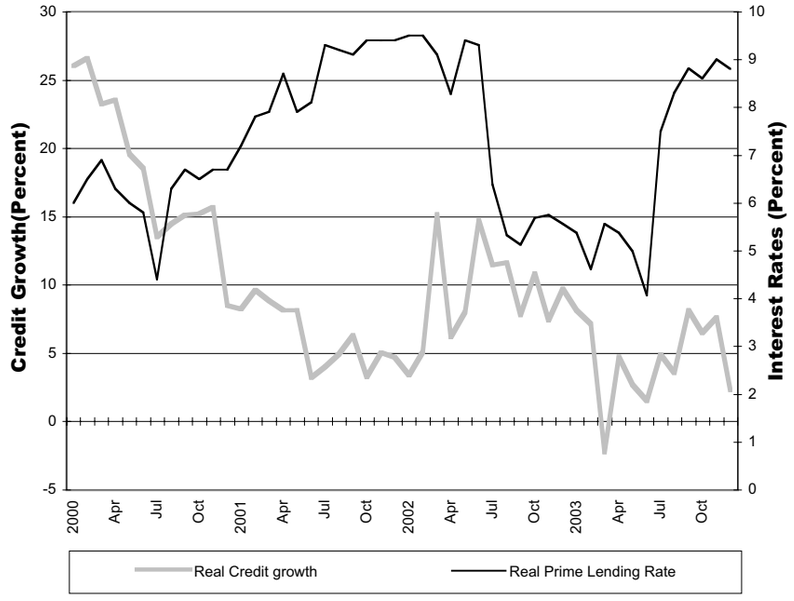


CHART 6: REAL CREDIT GROWTH AND REAL PRIME LENDING RATE (JANUARY 2000 – DECEMBER 2003)



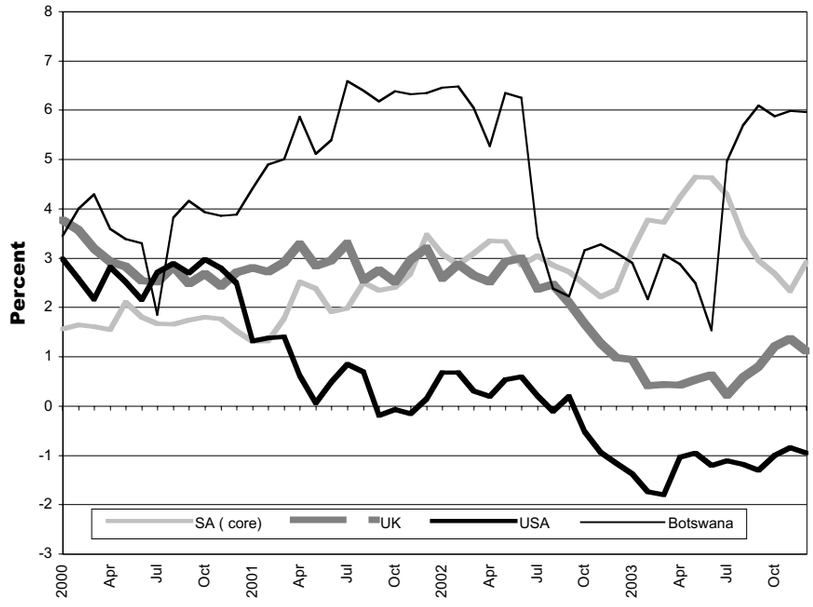
during the year to ensure that short-term interest rates, in particular yields on Bank of Botswana Certificates (BoBCs), were consistent with the monetary policy stance. Through the year, the nominal three-month BoBC rate moved in a narrow range (roughly between 13 percent and 14 percent), with lower rates towards the end of the year due to the easing of monetary policy and market expectations of a further decrease in interest rates going forward. Open market operations in BoBCs were used throughout the year to sterilise increases in liquidity arising, for the most part, from the ongoing funding by the Government of the Public Officers Pension Fund. Funds were also attracted to BoBCs by relatively high rates compared to alternative financial investments and external markets. However, growth in the volume of outstanding BoBCs slowed towards the end of 2003, largely due to shifting of funds to longer maturity bonds and external investments.

5.3 The appreciation of the REER has raised concerns that it has contributed to a deterioration of Botswana's international competitiveness, thus undermining the national development strategy of economic diversification through the growth of non-traditional exports. These are valid concerns, but it should be noted that, for a number of reasons, the REER is not a totally precise measure of competitiveness and is only one of many factors that should be considered when drawing policy conclusions about it. Notwithstanding this uncertainty over the extent of any loss of international competitiveness, or its impact on the growth of non-traditional exports and economic diversification, a decision was taken by the Government in early February 2004 to devalue the Pula by 7.5 percent, with the objective of reversing some of the real exchange rate appreciation that had occurred in recent years. Over the longer term, however, it is considered that the most sustainable way to achieve real exchange rate stability is through low inflation, and the Bank's focus on bringing inflation down to low and sustainable levels over time reflects both the national objective of export-led economic growth and the Bank's own statutory objective of achieving and maintaining monetary stability.

5.4 The Bank's open market operations were conducted

5.5 During 2003, P2.5 billion worth of government bonds were issued with maturities of 2 years, 5 years and 12 years. At the end of December 2003, the yield curve was downward sloping and rates on these bonds had fallen, an indication that the market expected the decrease in inflation to continue, followed by a further easing of monetary policy.

CHART 7: REAL INTEREST RATES INTERNATIONAL COMPARISONS (JANUARY 2000 – DECEMBER 2003)



5.6 Following the October and December reductions in the Bank's lending rate (Bank Rate) totalling one percentage point, commercial banks reduced their deposit and lending rates. The average 88-day deposit rate fell to 9.5 percent from 10.15 percent while the prime-lending rate fell from 16.75 percent to 15.75 percent. Real interest rates were relatively low during the first half of the year but increased sharply in the second half as inflation declined. Therefore, despite the decrease in the Bank Rate, the real three-month BoBC mid rate rose to 6 percent in December, from 2.9 percent in January and 1.5 percent in June. As at the end of the year, the real commercial bank prime lending rate was 8.8 percent. Hence, real interest rates in Botswana remain higher than comparable rates in major economies and South Africa.

6. OUTLOOK FOR INFLATION IN 2004

6.1 The global economic recovery is expected to gather momentum in 2004, with forecast GDP growth of 3.8 percent compared to an estimated 2.5 percent in 2003. It is anticipated that the main impetus to growth will be the improvement in consumer and business spending as geopolitical risks stabilise. Global inflation is, however, expected to remain low, allowing monetary policy in most of the major economies to continue to be relatively accommodative. Average inflation in the SDR countries is forecast to decline to 1.5 percent in 2004, from 1.7 percent in 2003. Furthermore, although oil prices are volatile, they are generally expected to remain close to OPEC's reference range given the improved outlook for political stability in the Middle East and the continued review by OPEC members of their output levels.

6.2 Inflation in South Africa, which is the most important external influence on inflation in Botswana, declined sharply in 2003 and is expected to remain low in 2004. Significantly, the South African target measure of inflation (CPIX) had fallen within the 3–6 percent target for the first time since its inception in 2000. It is expected that inflation will remain within the target range through most of 2004 in response to low international inflation and the strength of the rand, although it is uncertain if the appreciation of the rand that took place in 2003 will be sustained, especially in the latter half of 2004. In view of these developments and the positive inflation outlook, monetary policy was loosened in the second half of 2003 and a further easing of monetary policy in South Africa is possible if inflation stays within the band and inflationary pressures remain benign.

6.3 In Botswana, domestic demand pressures, as indicated by the growth of commercial bank credit and government expenditure, were somewhat lower in 2003 than in the previous year. Furthermore, the 2004 Budget indicates a welcome further reduction in government expenditure growth, with total recurrent and development spending projected to grow by only 5.3 percent in the 2004/05 fiscal year, compared to 9.4 percent in 2003/04. However, the increase in civil servants' salaries, by an average of 15 percent effective April 2004, could aggravate inflationary pressures through enhanced access to credit and increased consumer spending. In addition to the impact of government spending on the economy, the introduction of VAT and other tax changes in the fiscal years 2002/03 and 2003/04 tended to dampen domestic demand through sharp rises in tax revenues. In 2004/05, however, this deflationary effect will wane as only modest increases are projected in domestically-generated tax and other revenues. On the cost side, the devaluation of the Pula in early February 2004 will push up import prices and this runs the risk of generating serious inflationary pressures throughout the economy, given that imported tradeables account for nearly 50 percent of the consumer price index basket. The timing and extent of the impact of devaluation on inflation will depend on how much and how quickly importers adjust to the higher costs of their products. However, based on the proportion of imports in the consumer price index, higher import costs could directly add between 3.5 to 4 percentage points to inflation over the next 6–12 months, in the absence of any offsetting declines in inflation elsewhere in the economy. There is also a danger that traders could exploit the devaluation by raising prices across a range of goods and services more than is justified by the change in import costs, although this will be constrained to the extent that competition is effective. With regard to administered prices, it is expected that most of the increases in 2004 will not exceed the inflation objective. Although the public sector pay rise that will take effect in April does not directly affect the private sector, there is nonetheless a possibility that it could lead to relatively high pay awards throughout the economy, which would in turn put further upward pressure on costs.

6.4 As a result, there are likely to be conflicting pressures on inflation during 2004. Globally and regionally, inflation is forecast to remain low, while domestically, both credit growth and fiscal expansion are likely to be restrained, at least in the early part of the year. During the second half of the year, the balance of risk with regard to inflation is less positive. The global impact on domestic prices should continue to be benign, but there is uncertainty with respect to the value of the rand, a depreciation of which may lead to an increase in inflation regionally. Domestically, the planned increase in civil servants salaries in April and the possible follow-up increases for the wider economy are likely to stimulate credit growth for the household sector. Most importantly, there will be inflationary pressures from rising import prices

from the second quarter onwards, and these run the risk of causing a sharp rise in overall inflation unless there is an appropriate policy response focused at containing such inflationary pressures.

7. MONETARY POLICY STANCE IN 2004

7.1 The annual objective of monetary policy, as indicated in Section 2, is to achieve a level of inflation that, after taking account of any changes in the nominal Pula exchange rate, will contribute to maintaining relative stability in the real exchange rate. The inflation objective, therefore, is anchored on an assessment of forecast inflation for trading partner countries. In 2004, the forecast inflation for trading partner countries is lower than the 2003 estimate used to establish last year's inflation objective of 4–6 percent. This implies a need for the Bank to lower its 2004 inflation objective in order to meet its related objective of a stable real effective exchange rate. However, it would be unrealistic and costly in terms of output and employment for the Bank to try and counter the full inflationary fall-out of the devaluation completely over too short a period of time. In the circumstances, it may be necessary as a result to accept initially some of the direct rise in inflation from the higher import costs while focusing on preventing these costs from spilling into underlying inflation and inflation expectations.

7.2 To accommodate all these various considerations, the Bank has concluded that an inflation objective of 4–7 percent during 2004 would be appropriate. This will allow room and time for the economy to adjust to the higher imported inflation arising from the devaluation, while ensuring that the potential gain in competitiveness that the devaluation is intended to achieve will not be eroded by higher inflation. The widening of the inflation range from 2 to 3 percentage points reflects the likely conflicting influences on inflation during 2004, and the expectation of considerable volatility. The wider range is also consistent with the desire to bring inflation down on a stable, steady path, and at a measured pace.

7.3 The adoption of a 4–7 percent range in 2004, compared to 4–6 percent in 2003, should not be seen as a loosening of monetary policy; if anything, it implies the contrary. Indeed, achieving the inflation objective of 4–7 percent will be challenging in the face of cost-related pressures on inflation. This implies that overall inflation in the short run will only be allowed to rise by around 1 percent as a result of the recent devaluation, notwithstanding the fact that many import prices are likely to rise by significantly more than this amount. The key task for policy will be to prevent this from feeding through to the prices of domestically produced goods and services, and hence inflation for these commodities will have to be significantly lower than it would have been without the devaluation. Furthermore, other policies that affect aggregate demand will have to be tightened to help keep demand-related inflationary pressures in check. It is important to emphasise that the choice of a 4–7 percent range for 2004 does not imply that the Bank is abandoning its basic long-term objective of low and stable inflation. The path to price stability is not smooth, and the Bank's inflation objectives need to take this into account. The raising of the upper end of the range in 2004 should, therefore, be seen as a short-term tactical measure, in response to a specific set of factors relating to inflation in 2004. The expectation is that the inflation objectives chosen in future will again relate directly to expected trading partner inflation rates, in order to ensure real exchange rate stability and the Bank's longer term objective of low and stable inflation.

7.4 The Government Budget announced on February 9, 2004 entails a relatively low rate of government expenditure growth, which means that fiscal policy will help to contain the demand pressures emanating from the public sector. But, as already noted, this will have to be accompanied by a relatively tight monetary policy in order to ensure that demand pressures from the rest of the economy are similarly contained, especially given the prospect of higher credit growth in the light of the sizeable public sector pay award effective April 2004. Furthermore, restraint by parastatals in raising their prices in the current circumstances would further help moderate inflationary pressures that arise from administered price increases.

7.5 As noted earlier, the Bank's principal intermediate target is the rate of growth of bank credit to the private sector, which is an important contributor to the growth of consumption and investment, and hence to aggregate demand. A desired range for credit growth is specified in order to facilitate keeping it at levels that are consistent with the Bank's inflation objective. The range for the growth rate of commercial bank credit that is considered to be compatible with achieving the 4–7 percent inflation objective in 2004 is 12–15 percent. This range is derived from the Bank's expectation of the rate of growth of the non-mining sector of the economy (aggregate supply), and the desired inflation for the year, with an allowance for the process of financial deepening as the economy develops.

8. SUMMARY AND CONCLUSION

8.1 Inflation was significantly lower in 2003 compared to 2002, but was slightly above the inflation objective indicated in the 2003 Monetary Policy Statement. The lower inflation was largely explained by the transitory impact of VAT in the first half of the year. Once this fell away after June,

inflation declined steadily and, by the end of the year, it was close to the upper end of the 2003 target range of 4–6 percent. Significantly, overall domestic expenditure growth was lower in 2003, and this should reduce pressures on inflation going forward.

8.2 It is expected that output growth will further improve in the major industrial countries in 2004, while inflation will remain under control. With the appreciation of the rand and the commitment by OPEC to maintain production at levels commensurate with their stable price target, there are minimal external pressures on inflation. Domestically, it is expected that the public sector pay adjustment could cause credit growth to rise somewhat from the levels seen at the end of 2003, but fiscal restraint will help to contain domestic demand pressures on inflation in 2004. The major policy challenge, however, will be to ensure that the inflationary impact of the devaluation of the Pula is contained, and the initial competitiveness gains are not dissipated through higher prices.

8.3 Against the background of the recent devaluation of the Pula, the challenge is to ensure that the downward trend in inflation that occurred in the second half of 2003 is sustained throughout 2004. The Bank will conduct monetary policy with the objective of ensuring that inflation falls within the desired range of 4–7 percent by the end of the year. To this end, the Bank remains committed to respond appropriately to monetary and inflation developments, in particular any deviation of credit and government spending growth from levels that are consistent with the inflation objective.

The Impact of Value Added Tax on Inflation in Botswana[1]

M.V. Maramane, K.S. Masalila and M. O'Reilly[2]

Introduction

Botswana introduced value added tax (VAT) on July 1, 2002, which replaced the 10 percent sales tax and covered a wider range of goods and services. As an ad valorem tax, it would be expected that prices would initially increase due to the additional tax margin, although the overall rate of increase in the price level might be lower than the 10 percent tax rate because of exemptions and zero-rated items and the fact that, for some items, VAT was a replacement of the sales tax. It is estimated that VAT added 4–6 percent to the general price level, as a result of which inflation was 4 percentage points higher between July 2002 and June 2003. While the resultant inflation was higher than the objective of 4–6 percent stated in both the 2002 and 2003 Monetary Policy Statements (MPS), the Bank of Botswana recognised this as a one-off effect, especially in the absence of a compensating increase in wages. The Bank nevertheless tightened monetary policy in two successive actions in the last quarter of 2002, in response to sustained high growth rates in credit to the private sector and the apparent emergence of expectations of an increase in inflation due to the introduction of VAT.

This paper reports the Bank's assessment of the impact of VAT on inflation and policy response. The next Section presents a basic description of VAT while Section three discusses the impact on inflation and policy response in several countries where VAT was implemented. Section four details the process of estimating the impact of VAT on inflation in Botswana, followed by a discussion of the policy considerations in anticipation of VAT in Section five. Section six analyses inflation developments after the implementation of VAT and is followed by a conclusion and summary of policy issues.

The Basics of VAT

Value added tax is an indirect tax on consumer spending collected on imports and in portions on domestic supplies as services are rendered and goods pass through the various stages of production and distribution. The portion collected at each stage is based on the value added during this stage, of which a simple and rough representation is as follows:

Value Added = Wages + Profits = Price of Output – Cost of Inputs

Ultimately, the total collected is a proportion, equivalent to the VAT rate, of the final value of the product or service to the consumer (see example in Table 1) and is exactly the same as a one-off sales tax collected at the point of sale to the consumer (see Wright, 2002 and IMF, 2003; Wright 2002 also explains why VAT is a preferred approach to taxing consumption). In the example, which assumes a 10 percent VAT and a final value of P360.00, exclusive of VAT, the consumer pays P36.00 tax made up of taxes at various stages of production and distribution of P10.00, P10.00, P8.00 and P8.00. Importantly, the application of VAT alleviates the problem of cascading of the tax burden where tax is applied on successive prices at the various stages of distribution, for example, sales tax. Table 2 shows the difference in tax paid in the case of sales tax and VAT. If a 10 percent sales tax was applicable to a raw material, e.g. paper, as well as to a final product (envelopes) and the manufacturer retailed the envelopes, the manufacturer would pay the P10.00 tax, with which he will not be credited and the purchaser of the envelopes will pay tax of P20.00, making a total payment to the tax office of P30.00, instead of P20.00 under VAT (see Table 2). It should be noted, in this case, that since the various stages of production or distribution do not get credited for tax paid on inputs, the tendency will be to add this to the cost of the final product; in the extreme case adding the tax margin to each stage of production or distribution.

Table 1: Calculation of Value Added Tax on a Taxable Supply

		Price + VAT	Payment to VAT office
Supplier of raw materials	Sale	P100 + P10	P10
Manufacturer	Purchase of raw materials	P100 + P10	
	Sale	P200 + P20	P10 (20 – 10)
Wholesale dealer	Purchase from manufacturer	P200+P20	
	Sale	P280 + P28	P8 (28 – 20)
Retailer	Purchase from wholesaler	P280 + P28	
	Sale	P360 + P36	P8 (36 – 28)
Total			**P36**

[1] This paper includes material originally written as an internal Bank of Botswana assessment of the possible impact of VAT on inflation prior to its implementation as well as post implementation analysis.

[2] At the time of writing M.V. Maramane and M. O'Reilly were economists in the Research Department of the Bank of Botswana; M. O'Reilly has since left the Bank. K.S. Masalila is the Deputy Director of the Research Department.

Table 2: Calculation of Value Added Tax and Sales Tax on a Taxable Supply

		Price + Tax	Payment to VAT office	Sales Tax Collected
Supplier of raw materials	Sale	P100 + P10	P10	P10
Manufacturer	Purchase of raw materials	P100 + P10		
	Sale	P200 + P20	P10 (20 – 10)	P20
Total			P20	P30

Note: For illustrative purposes it is assumed that the producer absorbs the full impact of the additional sales tax. In practice, however, much of this is likely to be passed on to the consumer.

The application of VAT also incorporates the classification of some items as exempt and zero-rated. Exempt items are not taxable as an end product or service and their vendors cannot claim back the VAT paid on inputs. For zero-rated items no tax is collected from the buyer but all VAT paid on inputs used to make that item can be claimed (see Table 3).

Table 3: Calculation of Value Added Tax on Exempt and Zero Rated Supplies

			Exempt	Zero Rated
Supplier of raw materials	Sale	P100 + P10	P10	P10
Manufacturer	Purchase of raw materials	P100 + P10		
	Sale	P200 + P20	P10 (20 – 10)	P10 (20 – 10)
Point of exemption/zero rating				
Wholesale dealer	Purchase from manufacturer	P200 + P20		
	Sale	P280 + P0		–P20 (0 – 20)
Retailer	Purchase from wholesaler	P280 + P0		
	Sale	P360 + P0		P0 (0 – 0)
Total			P20	P0

Note: Negative figure indicates an overpaid VAT and can be claimed as a refund. Exemption/zero rating is shown at the level of the manufacturer, but can be at any level of production. The sale price shown is for the zero-rated supply. For illustrative purposes, for the exempt supply it is assumed that the producer absorbs the full impact of the VAT that is not refunded. In practice, however, much of this is likely to be passed on to the consumer.

Recent Experience from Other Countries: Impact of VAT on Inflation

A salient characteristic of the relationship between VAT and inflation is uncertainty. Linking the introduction of VAT unambiguously to higher inflation is not easy because of the interplay of many factors, which makes it difficult to uniquely relate one change to another. The experiences of other countries show mixed results from the introduction of VAT, with some countries experiencing an increase in inflation while in others there were one-off price increases or insignificant price movements. The VAT effect on inflation implies a variety of possible policy responses, including tightening of policy to moderate inflation or compensating increase in incomes or both. Thus, policy responses have not been uniform across countries that have introduced VAT.

A study of the effect of VAT on prices carried out in 35 countries, looking at two years on each side of the introduction of VAT, reflected that in seven countries there was a one-off increase in prices, in five countries inflation increased, one country experienced both a shift in prices and an acceleration in inflation, while in 22 countries there was no effect (Tait, 1988). In several cases the introduction of VAT coincided with other structural changes, making it difficult to separate the price change attributable to each occurrence. Moreover, there are cases where the introduction of VAT was accompanied by the implementation of interventionist policies, as governments were fearful of the outcomes of the new system. The behaviour of prices following the introduction of VAT, therefore, depends on, among others, the degree to which it replaces an existing consumption tax, coinciding exogenous influences and ex ante policy response. A few examples illustrate the ambiguous effect on prices of VAT introduction.

In South Africa, there was a short-lived impact of VAT on prices, with the main source of inflationary pressures being price increases by traders to maintain their profit margins as they were not certain that they would get the input tax credit. Subsequently, however, as the integrity of the new system was established and when over-pricing jeopardised turnover, traders lowered prices. In Denmark, the introduction of a 10 percent VAT to replace a higher level tax of 12.5 percent which also had a number of exemptions, saw prices rising substantially, with a significant portion of the rise attributable to the VAT since the previous tax had more exemptions. Similarly, in France, the extension of VAT to cover those items that were previously exempt resulted in price increases that reflected the tax changes. In Germany, New Zealand and the Netherlands the introduction of VAT to replace taxes that were narrower in scope and coverage led to one-off increases in the price level. In Ireland and Sweden, the switch to VAT had no effect on prices because new taxes replaced those of the same magnitude, scope and coverage, with only a few amendments.

In Korea, the introduction of VAT to replace

some eight varieties of taxes was also non-inflationary while it resulted in increased revenue. In the UK, where a uniform VAT was introduced to replace multiple taxes, most of which were substantially higher than the proposed VAT, the retail price index showed a moderate month-on-month rise following the introduction of VAT, with the bulk of the increase attributed to the increase in prices of items that were exempt from VAT. Only a marginal increase could be attributed to the transition to VAT. Common in all the cases is the major role played by governments in controlling prices by closely monitoring and ensuring that the public was aware and educated about VAT.

It is also notable that the introduction of VAT in most of the countries reviewed was not accompanied by monetary policy changes. Nevertheless, a few countries implemented wage increases (Denmark, France, and the Netherlands), in an effort to cushion consumers against expected inflationary pressures resulting from the introduction of VAT.

THE APPLICATION OF VAT AND ESTIMATED IMPACT ON INFLATION IN BOTSWANA

For VAT purposes, goods and services are classified into three categories, those subject to the 10 percent tax, zero rated items and those that are exempt. An analysis of the possible impact should also reflect that there are many goods and services that already attracted sales tax for which VAT was a substitute at the same rate of 10 percent. As the measurement of inflation is based on price movements for a representative sample of goods and services constituted in the Consumer Price Index (CPI) basket, Table 4 categorises items in the basket to examine how they would have been affected by the introduction of VAT.

The sales tax, which applied prior to the introduction of VAT, covered items with a combined weight of 58.34 percent in the CPI basket. However, for these items the introduction of VAT at the same rate of 10 percent would not necessarily have a neutral effect. For most items, the sales tax was levied on local manufacturers and importers so that the value added at subsequent stages of production – wholesale, retail, etc. – was not taxed. The size of the hitherto untaxed portion of the value added would be a principal determinant of the extent to which the new tax had an upward effect on consumer prices. For services that were subject to the sales tax, where the tax was levied at the point of sale to the consumer, the price effect of VAT would be neutral (or even downwards as producers would now be able to claim back the tax paid on inputs). About 41.69 percent of the CPI weight is constituted by items that were exempt from sales tax. Of these, 14.64 percent are exempt from VAT while 3.43 percent are zero rated, leaving 23.62 percent of the basket that was subject to a possible 10 percent increase in price due to the introduction of VAT.

Inflationary effects of VAT were expected to result from three groups of items: those that were taxable for the first time, those for which the sales tax did not cover total value added and those that are exempt from VAT but have taxable inputs. Regarding items that became taxable for the first time, assuming their retail price increased by the full 10 percent VAT, the introduction of VAT would on its own result in a 2.4 percent increase in the general price level. For the second category, data limitations prevent an exact calculation, but for illustrative purposes, if it is assumed that on average 60–80 percent[3] of value added was covered by the sales tax, then the remaining 40–20 percent would have an upward pressure on prices in the range of 1.2–2.3 percent. For the third category, a range of 0.5–1.2 percent impact on prices was expected to the extent that the inputs used to produce the exempt items are taxable. According to this, the combined potential increase in the general price level due to the introduction of VAT could be in the range of 4–6 percent. However, this both ignores the cost-lowering effects of reduced cascading and assumes that the full incidence of taxation will fall on the consumer, which might not be the case given competition in the retail sector. Furthermore, the introduction of VAT would have a demand-reducing effect on consumer demand of approximately 5–6 percent in real terms.[4] Given this, the impact on inflation would be much lower and will be one-off rather than sustained. The main threat to this scenario was the possible inflationary adjustment of wages, in both the public and private sectors, in response to the effect of VAT on prices. If wages were to be adjusted upwards specifically in response to VAT, this would lead to a further round of price increases and may cause the initial temporary increase in inflation to become permanent.

POLICY CONSIDERATIONS IN ANTICIPATION OF VAT

It was expected that the introduction of VAT covering a wider range of goods and services than the sales tax, would lead to an increase in the retail price of many goods and services. However, only a relatively small proportion of the CPI basket was either not already covered to some extent by the sales tax, or not zero-rated or exempt from VAT. Taking into account the relatively small weight of the items in the CPI basket which were exempt from sales tax but on which VAT is payable, combined

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[3] This assumes a mark-up of up to 40 percent on the factory/border gate prices.

[4] This is an estimate based on the proportion of consumption in GDP and the effect of the rise in inflation.

Table 4: Goods and Services in the CPI Basket Affected by the Introductions of VAT (CPI Weights)

	Exempt from Sales Tax	of which:		
		Exempt from VAT	Zero Rated	Subject to VAT
1. Food				
Cereal Products	2.79		2.79	
Meat and Fish	4.52			4.52
Vegetables	1.81			1.81
Fruit	0.54			0.54
Tea and Coffee	0.78			0.78
Other Food	0.28			0.28
Purchased meals	0.35			0.35
2. Clothing & Footwear				
Repairs	0.02			0.02
3. Housing				
Rent	6.88	6.88		
Home Owners' Costs	4.06			4.06
Water Rates	1.26			1.26
4. Fuel and Power	1.44			1.44
5. Household Operations				
Domestic Services	1.85			1.85
6. Health & Personal Care				
Health Care	3.99	3.99		
Personal Care	0.02			0.02
7. Transport and Communication				
Vehicle Running Costs	2.97			2.97
Public & Hired Transport	2.16		0.61	1.55
Communication	1.69		0.03	1.66
8. Leisure				
Leisure Services	0.12			0.12
9. Education	3.77	3.77		
10. Other Goods	0.39			0.39
Total Weight in CPI Basket	**41.69**	**14.64**	**3.43**	**23.62**

with competitive pressures, the demand-reducing effect of the additional taxation, and in some instances the cost reducing effect of VAT reclaimability, the overall effect on inflation of the introduction of VAT was expected to be one-off and moderate.

It was anticipated that following the introduction of VAT prices will rise, but the impact on inflation will be temporary. Given that its effect on inflation could be isolated and explained, it was not considered necessary to tighten policy to counter inflationary pressures due to VAT. Moreover, other major influences on inflation that emerged would be apparent, although it may have been difficult to uniquely quantify the various influences. Post implementation price movements were also monitored to determine any inflation increase due to retailers taking advantage of the expectation of price increases to raise their margins, or if the impact of VAT fed through to wage adjustments. In particular, it was considered important that the Bank managed expectations through public information as to the causes of any increase in inflation and its own assessment of the impact of VAT.[5] This was done through a Press Release, the mid-term review of the 2002 MPS and the 2003 MPS. There was a risk, however, that wages might be adjusted upwards to compensate for the increase in VAT, in which case the Bank might have had to tighten monetary policy, depending on the anticipated upward impact on the price level.

Post-Implementation Assessment of the Impact of Value Added Tax (VAT) on Inflation

Following the implementation of VAT there was a sharp rise in inflation to 8.8 percent in July 2002, from 5.9 percent in June (see Chart 1). This was followed by further increases to 9.9 percent in

[5] This was important in view of perceptions of an across-the-board 10 percent increase in prices, which could have created an environment for opportunistic price increases that coincided with the introduction of the tax.

CHART 1: BOTSWANA INFLATION

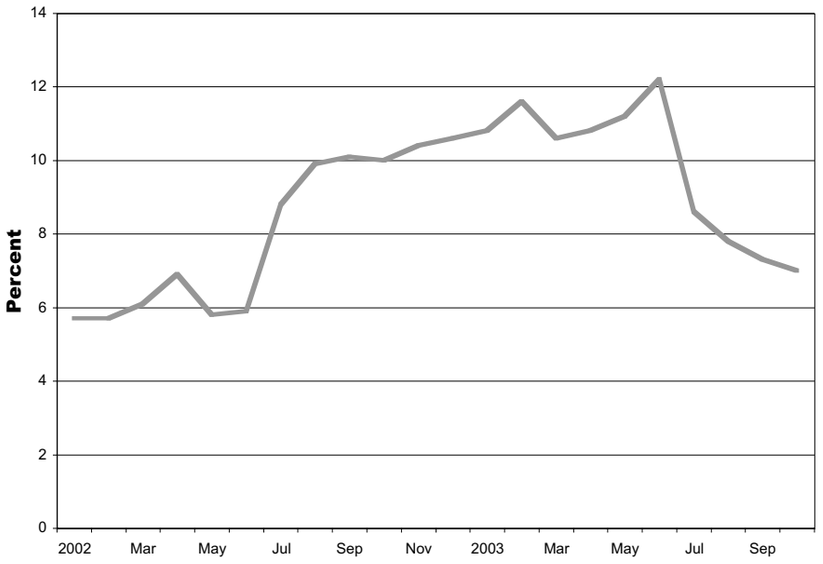
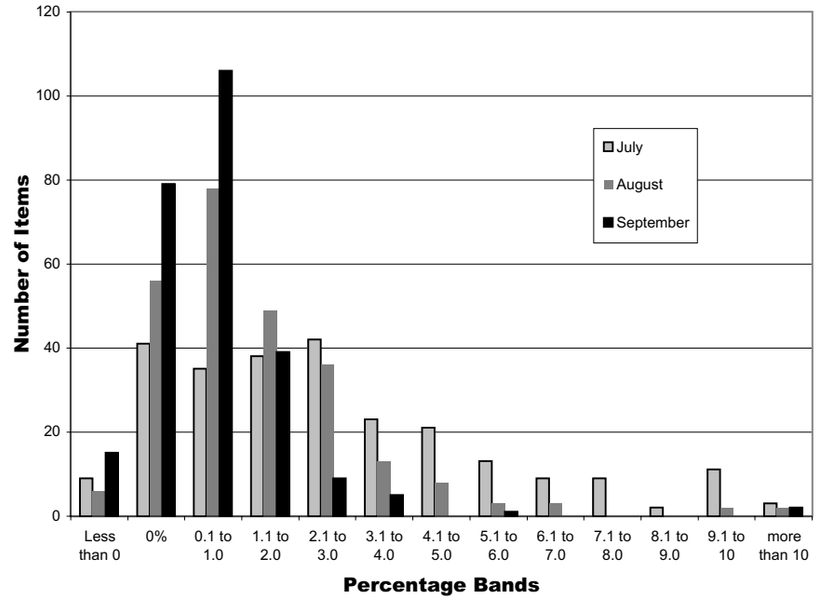


CHART 2: PERCENTAGE INCREASE IN PRICES (MONTH-ON-MONTH)



Note: Figures within the chart are total weights for respective percentage bands.

Source: Bank of Botswana calculations using CSO data.

August and 10.1 percent in September of the same year. Chart 2 shows the month-on-month rate of change in prices (in July, August and September 2002) for goods and services represented in the CPI basket. The month-on-month rate of price increases in July and August was 3.2 percent and 1.2 percent well above the average monthly increase of 0.4 percent for the twelve months to June 2002 (before the introduction of VAT), but slowed down to 0.6 percent in September, indicating the falling off of the impact of VAT on inflation. This is further demonstrated by the measures of variation[6] of price changes which were high in July, indicative of the strong initial impact of the varied application of VAT across the range of goods and services, while the lower measures in the subsequent months suggest a return to a generalised lower rate of price increase. Also notable is the fact that 23 more items (compared to August 2002) registered no price increases in September while 28 additional items fell into the range of a 0.1–1.0 percent monthly increase in price, from a higher range of price increase.

Chart 3 shows price changes for imported tradeables[7] in July, August and September 2002. This shows that the pattern of price change follows that for all items, an indication that there was no significant impact on prices that was due to imported inflation. Similarly, the measures of variation like those for all items declined progressively over the three-month period, suggesting that the rate of price change for imports is not exceptional compared to other categories.

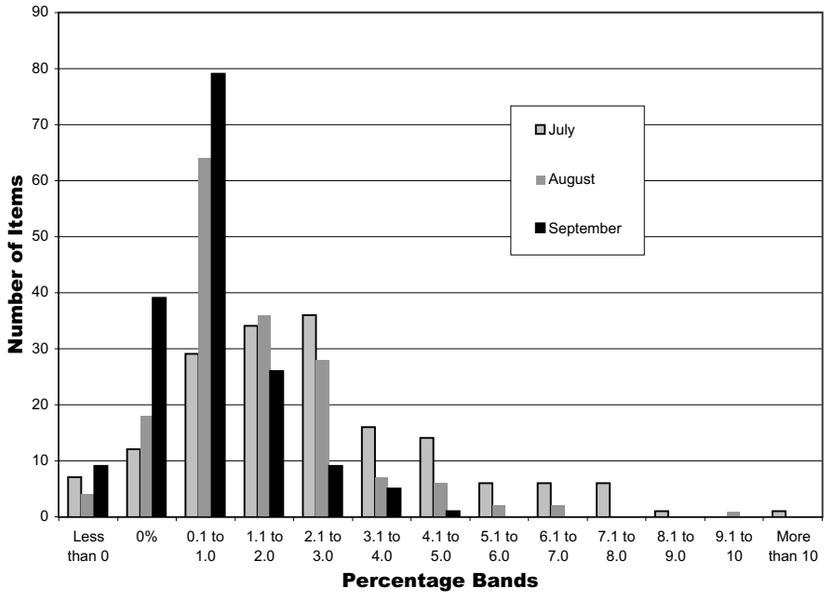
Over the three months following the implementation of VAT, prices rose by 5 percent in total, reflecting month-on-month increases of 3.2 percent in July, 1.2 percent in August and 0.6 percent in September. This total increase includes both the impact of VAT and other price developments. The progressive decline in the rate of monthly increase in prices was in line with expectations of an initial sharp increase followed by a tapering and eventual fall-off. Given that the underlying rate of inflation prior to the introduction of VAT was around 0.4 percent a month,[8] it is estimated that prices would have risen by 1.2 percent over the three month period without

[6] The standard deviation and variance of price changes were 5.5 and 29.7 in July, 2.7 and 7.5 in August and 1.7 and 3.0 in September.

[7] Imported tradeables are also generally subject to VAT.

[8] Excluding outliers such as the impact of the BHC rental increase.

Chart 3: Percentage Increase in Imported Tradeables Prices



Note: Figures in the chart are total weights for respective percentage bands.

Source: Bank of Botswana calculations using CSO data.

VAT and, therefore, that the impact of VAT on prices and inflation was around 4 percent.

Relating the overall price increase between July and September to the different categories that were identified prior to the introduction of VAT, it is evident that of the total of 5.1 percent, 1.5 percent was for the category of items that were taxable for the first time, 3.3 percent was for goods that already attracted sales tax and 0.3 percent was for exempt items with taxable inputs (see Tables 5 and 6). Therefore, the increase was largely attributable to those goods and services that were previously subject to sales tax but which did not cover the value up to the retail level; for this category, the price increase was more than expected. The increase for the other two categories was less than the estimate, implying that prices for items in the CPI basket that were being taxed for the first time rose by less than 10 percent. Furthermore, it had been expected that items being taxed for the first time would be the major contributor to the impact of VAT on inflation, but this was not the case.

Table 5: Change in Inflation by VAT Taxable Categories (Percent)

	Taxable for the first time	Originally covered by sales tax	Taxable inputs for exempt items	Total
Actual Outcome				
July	0.8	2.3	0.2	3.3
August	0.5	0.7	0.1	1.3
September	0.2	0.3	0	0.5
Total	1.5	3.3	0.3	5.1
Initial Estimates	2.4	1.2–2.3	0.5–1.2	4–6

However, notwithstanding the above, it is acknowledged that beside the impact of VAT on prices there were various factors independent of VAT that may have influenced the rise in prices.

While the overall impact of VAT on inflation was in line with expectations, the impact of VAT across the categories did not tell a consistent story. The higher-than-expected increase for items that were previously subject to sales tax indicates that retailers might have used the introduction of VAT to increase prices by more than justified by the new tax. However, an opposite picture is presented by the results from the other two categories, which suggests that competitive pressures might have kept price increases below that which would be justified by the introduction of the new tax. It might also be that assumptions made in the calculation of the projected VAT impact on the different categories may have been inaccurate; for instance, if the proportion of the retail price of previously-taxed items was significantly below the 60–80 percent estimate, the impact of VAT would be higher; similarly, if there was a significant evasion of tax.

Although inflation subsequently rose to a peak of 12.2 percent in June 2003, this mostly reflected subsequent discrete adjustments to administered prices rather than a generalised increase in prices resulting from sustained inflationary pressures or expectations due to VAT. In particular, during the second half of 2002, there was an increase in most administered utility tariffs (rail, electricity and water), which were in addition to the July VAT adjustment where applicable. These adjustments to administered prices were largely responsible for the increase in inflation to 10.6 percent in December 2002. Moreover, the increase in inflation to 12.2 percent in June 2003 was almost entirely due to the 7.7 percent average rent increase by the Botswana Housing Corporation, which forms the main reference price for housing rentals in the CPI basket.

Conclusion and Policy Issues

The introduction of VAT led to a generalised increase in the price level in the subsequent three months, which tapered off thereafter. This, along with other

TABLE 6: POST-VAT PRICE CHANGES AND CONTRIBUTION TO INFLATION

	Weight	Domestic tradeables (Number of items)	Imported tradeables (Number of items)	Non tradeables (Number of items)	Cumulative percentage increase in prices (July to Sept 2002)			Contribution to increase in inflation (3 months to Sept 2002)
					July	Aug	Sept	
Food	25.53	23	47	–	4.4	6.4	7.3	1.9
Alcohol and Tobacco	13.49	6	8	–	4.7	6.5	7.1	1.0
Clothing and Footwear	5.84	–	20	2	0.8	1.7	2.1	0.1
Housing	12.20	2	5	11	1.1	1.8	2.7	0.3
Fuel and Power	2.58	–	3	2	5.9	7.5	7.7	0.2
Furniture and Appliances	5.14	–	28	–	0.8	1.5	1.7	0.1
Household Operations	3.87	1	13	1	1.7	3.1	4.7	0.2
Health and Personal Care	5.70	1	19	6	1.8	3.1	3.7	0.2
Transport and Communications	19.73	–	12	16	3.5	4.2	4.3	0.9
Leisure	1.55	1	7	9	1.1	2.2	2.8	0.0
Education	3.78	–	–	4	3.5	4.1	4.0	0.2
Other Goods	0.61	–	6	3	2.9	5.8	5.9	0.0
Total	**100.00**	**34**	**168**	**54**	**3.2**	**4.4**	**5.0**	**5.1**

Source: Central Statistics Office and Bank of Botswana calculations.

exceptional CPI data adjustments, resulted in higher inflation in the period between July 2002 and June 2003. The Bank had managed public expectations by stating before hand the estimated impact of VAT on inflation, which was more or less vindicated by subsequent developments. The magnitude of the rate of price changes was largely as expected, while the impact of the price data adjustments and administered price increases could be uniquely isolated. The Bank had also indicated a willingness to tighten policy if, due to public expectations of a sustained increase in inflation resulting from the introduction of VAT, the rate of price increases was higher than expected and the increase in inflation was sustained. Significantly, there was no compensating increase in wages immediately following the implementation of VAT, which might have presented a policy challenge, particularly given the already strong demand pressures reflected in high rates of growth for private sector credit and government expenditure at the time.

The Bank, however, determined, during the last quarter of 2002, that even taking into account the estimated impact of VAT, there was an underlying upward trend in inflation and that the growth rate in private sector credit remained high, while there was also concern on the part that the increase in inflation following the introduction of VAT was engendering expectations of a sustained increase in inflation; of consumers and producers. It was logical, therefore, that the Bank tightened monetary policy by increasing the Bank Rate by 50 basis points, first in October and then in November 2002.

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BLANK PAGE 16

The Government Bond Market in Botswana

Kristian Flyvholm[1]

Introduction

Botswana has recorded budget and current account surpluses in most of the past twenty years, and is known internationally for its sound macroeconomic policies and fiscal discipline. The country has the highest credit rating[2] of any country in Africa and the Middle East, predominantly due to the low level of national debt and substantial foreign exchange reserves (see Appendix 1).

According to the International Monetary Fund (Christensen, 2004), most African countries have historically relied heavily on external debt offered at concessional terms below market rates of interest. In comparison the issuance of domestic debt, when external debt is available at concessional rates of interest, could seem quite inappropriate, as domestic debt would be relatively expensive due to high credit and liquidity premiums demanded by investors for holding the domestic debt instruments. This argument can be advanced in respect of many African countries, with the exception of South Africa, which is considered the benchmark issuer in Africa due to the relatively good liquidity in its bond market.

As a large share of Botswana's external debt is concessional in nature, the general government gross interest expenditure accounts for less than one percent of government revenues, which is a much lower figure than in most other countries. In addition, the public sector holds net external assets, predominantly in the form of foreign exchange reserves, large enough to cover two years of imports of goods and services. These strong economic fundamentals and a stable political environment is the basis for the solid international credit rating awarded to Botswana.

Given this background, why would Botswana – in no apparent need for budget deficit financing – want to issue domestic debt at this juncture? To that end, the Minister of Finance and Development Planning at the launch of the government bond programme in March 2003 stated that the objective was twofold: first, to further the development of the domestic capital market by introducing a relatively risk-free government bond yield curve to act as a reference for future non-government bond issuance. Second, to add to the range of instruments available to meet the increasing investor demand for fixed income instruments.

The objective of this paper is to review the developments in the government bond market and explore opportunities for further capital market development in Botswana. In that regard, this paper is organised such that Section 2 details and analyses the activities in the primary and secondary government bond market; Section 3 analyses the degree to which the government bond programme objectives have been achieved; while Section 4 discusses the scope for further capital market development in Botswana. The summary and conclusions are presented in Section 5.

The data used in the paper combine public data, especially from the Botswana Financial Statistics (Bank of Botswana, 2004) and the Annual Economic Report to Parliament (MFDP, 2004), with previously unpublished data collected by the Bank of Botswana. The non-public data are disseminated for public consumption to facilitate further analysis and discussion.

Primary and Secondary Government Bond Market in Botswana

As a prelude to the issuance of government bonds in 2003, the Government, as the issuer, mandated the Bank of Botswana to be its agent for the issue and management of government securities, in accordance with Section 56 and 57 of the Bank of Botswana Act. In executing this agency role, the Bank of Botswana entered into agreements with selected Primary Dealers,[3] who are eligible to bid at government bond auctions and to perform the role of sub-custodians[4] for the bonds. Bonds are sold by auction, as opposed to the tap-sale system, using the so-called uniform price/yield auction format; all successful bidders are allocated bonds at the same yield, when bids, submitted in yield terms, are at or below the stop-out bond yield (the

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[2] Botswana's long-term local currency credit rating assigned by Moody's Investors Service and Standard & Poor's is A1 and A+, respectively, which is ranking higher than South Africa (A2/A), Kuwait (A2/A+), Israel (A2/A+), Qatar (A3/A+), Saudi Arabia (Baa1/A+) and Bahrain (Baa1/A) in comparison. Botswana's rating also compares favourably to some European countries, i.e. Greece (A1/A+), Czech Republic (A1/A), Poland (A2/A-) and Hungary (A1/A).

[3] The Primary Dealers are: Barclays Bank of Botswana Limited, Standard Chartered Bank Botswana Limited, First National Bank of Botswana Limited, Stanbic Bank Botswana Limited and African Banking Corporation. The Primary Dealers are subject to criteria specified by the Bank of Botswana, which include, inter-alia, being a registered and adequately capitalised commercial bank with a clearing account at the Bank of Botswana. Additionally, Primary Dealers must have the staff and systems resources necessary to enable the execution of the roles and obligations assigned, which includes the role of market maker and sub-custodian for the bonds.

highest yield accepted by the issuer at auction). Auctions are pre-announced and auction results are made public after each auction. All these features aim at making the bond programme as transparent as possible in line with best international practice.

Primary Bond Market Activity in 2003

In 2003, the Government issued three government bonds with original maturities of two years, five years and 12 years referred to as BW001, BW002 and BW003, respectively. The aim was to issue short, medium and long-dated bonds to derive a local market government bond yield curve. The Bank of Botswana, in its agency capacity for the Government, executed five bond auctions (including two re-openings) in 2003 and allocated a nominal value of P2.5 billion[5] to investors via the Primary Dealers, as illustrated in Table 1.

By the end of 2003, a total of P2.5 billion was outstanding in government bonds, with P750 million, P850 million and P900 million outstanding in the three bonds maturing in 2005, 2008 and 2015, respectively. By focusing on a few bonds, the Government aims at creating benchmark bonds in line with international best practice, whereby the issuer enhances market liquidity and hopefully reduces the liquidity risk premium. Market liquidity is furthermore important for price discovery and determination of the government bond yield curve in Botswana.

Investor Composition

The investor composition is monitored by the Bank of Botswana based on reports of the trading activities of the Primary Dealers, detailing holdings for own and customers accounts. Table 2 provides a summary of the investor composition by the end of June 2004.

TABLE 1: SUMMARY OF GOVERNMENT BOND AUCTIONS

Auction date	Bond description	(P million)		Demand to Supply Ratio (Percent)	Stop-Out Yield at Auction (Percent)
		Supply	Demand		
March 26, 2003	10.25% maturing on March 1, 2008 (BW002)	500.0	811.7	162	12.65
April 30, 2003	10.25% maturing on Oct. 31, 2015 (BW003)	500.0	841.2	168	11.50
May 21, 2003	10.75% maturing on June 1, 2005 (BW001)	750.0	1 107.1	148	13.00
October 29, 2003	Re-opening of 10.25% 2015 bond (BW003)	400.0	863.2	216	9.99
November 26, 2003	Re-opening of 10.25% 2008 bond (BW002)	350.0	623.7	178	9.50
Total		**2500.0**	**4 246.9**	**170**	

Source: Bank of Botswana

The five bond auctions were oversubscribed by 48 percent to 116 percent, and the total demand of P4.2 billion exceeded the P2.5 billion supply by 70 percent. Investor demand was strongest for the medium and long-term bonds, influencing the decision by the Government to re-open these bonds in October and November 2003.

TABLE 2: INVESTOR COMPOSITION OF GOVERNMENT BONDS, JUNE 2004 (P MILLION)

Type of Investor	BW001 (10.75% 2005)	BW002 (10.25% 2008)	BW003 (10.25% 2015)	Total
Primary Dealers	151.6 (20.2%)	204.6 (24.0%)	13.2 (1.5%)	369.4 (14.8%)
Domestic	500.7 (66.8%)	543.6 (64.0%)	874.3 (97.1%)	1 918.6 (76.7%)
Foreign	77.7 (10.4%)	15.5 (1.8%)	12.5 (1.4%)	105.7 (4.2%)
Bank of Botswana	20.0 (2.6%)	86.3 (10.2%)	0.0 (0.0%)	106.3 (4.3%)
Total	**750.0 (100%)**	**850.0 (100%)**	**900.0 (100%)**	**2 500.0 (100%)**

Source: Bank of Botswana

Primary Dealers and foreign investors seem to prefer the short- and medium-term bonds, whereas domestic investors prefer the long-term bond. The Primary Dealers consist of the local commercial banks, which seem to acquire short-dated instruments as alternatives to their significant holdings of the 3-months Bank of Botswana Certificate (BoBCs).[6] The domestic investor base, holding 97 percent of the long-dated bond, consist

[4] A global certificate is issued and signed by the Minister of Finance and Development Planning to certificate the issuer's liability in connection with each bond. The global certificates are held in custody with the appointed Transfer Secretary, a role performed since inception by the Bank of Botswana. The Transfer Secretary keeps a book-entry registry detailing the Primary Dealers' holdings for own account and on behalf of customers (acting as nominees for the customers). The Bank surveys the exact investor composition on a regular basis for statistical purposes.

[5] P2.5 billion is equal to US$535.5 million by end of June 2004.

[6] The BoBC is a 3-months money market instrument issued by the Bank of Botswana to mop up excess liquidity in the financial system and to determine short-term interest rates.

mostly of non-banks (pension funds, insurance companies, etc.) needing long-dated fixed income assets to better match their long-dated liabilities. Foreign investors held 4.2 percent of the outstanding bonds by the end of June 2004 compared to 11.2 percent by the end of December 2003. Foreign participation in the market is welcome, as it adds liquidity and sophistication to the market.

Secondary Bond Market Activity

The agents in the secondary bond market are the Primary Dealers trading among each other and with domestic and foreign clients. The Bank of Botswana has not taken part in the secondary bond market, as the Bank has not felt such action was necessary.

The government bonds are likely to be listed on the Botswana Stock Exchange once regulatory and systems issues are addressed. In the meantime, the bonds have traded in the over-the-counter (OTC) market between the Primary Dealers (the commercial banks) and their customers. The Bank of Botswana is able to measure the secondary market activity from the entries in the government bond registry under its custody. A previously unpublished summary of the secondary bond market activity is detailed in Table 3.

month, although the monthly variation has been significant. In 2003, the secondary market activity was highest in the short-dated bond, where especially foreign investors and Primary Dealers are invested. Interestingly, in the first half of 2004, the long-dated bond has been significantly traded. This activity is related to domestic investors acquiring long-dated bonds from Primary Dealers and foreign investors; the Bank's data indicated that domestic investors held 83 percent of BW003 by end of December 2003 compared to 97 percent by the end of June 2004.

HAS THE GOVERNMENT BOND PROGRAMME MET THE SET OBJECTIVES?

At this juncture it seems appropriate to analyse to what degree the objectives outlined by the Minister of Finance and Development Planning, when launching the government bond programme in March 2003, have been met. The bond programme's paramount objective was the development of the domestic capital market. An important sub-objective was the introduction of a relatively low-risk yield curve to act as a reference for non-government bond issuers. Furthermore, government bonds were introduced to add to the range of financial instruments available to meet the needs of longer-term investors, helping them better manage financial risk and facilitate asset/liability matching.

TABLE 3: GOVERNMENT BOND SECONDARY MARKET ACTIVITY (P MILLION)

Month	BW001	BW002	BW003	Secondary Market Activity	Bonds Outstanding	Monthly Turnover (Percent)
2003						
March	–	24.0	–	24.0	500.0	4.8
April	–	24.0	–	24.0	1 000.0	2.4
May	40.0	3.0	–	43.0	1 750.0	2.4
June	10.0	20.5	–	30.5	1 750.0	1.7
July	10.0	–	–	10.0	1 750.0	0.6
August	25.1	1.1	21.0	47.2	1 750.0	2.7
September	3.0	–	–	3.0	1 750.0	0.2
October	35.5	8.9	–	44.4	2 150.0	2.1
November	20.5	14.0	63.0	97.5	2 500.0	3.9
December	40.0	10.0	34.1	84.1	2 500.0	3.4
2004						
January	2.0	4.0	1.0	7.0	2 500.0	0.3
February	0.0	10.0	100.0	110.0	2 500.0	4.4
March	146.4	45.5	151.5	343.4	2 500.0	13.7
April	15.0	0.0	0.0	15.0	2 500.0	0.6
May	0.0	7.0	198.4	205.4	2 500.0	8.2
June	0.0	0.0	40.0	40.0	2 500.0	1.6
Total Activity	347.5	172.0	609.0	1 128.5	2 500.0	Monthly Average: 3.3

Source: Bank of Botswana

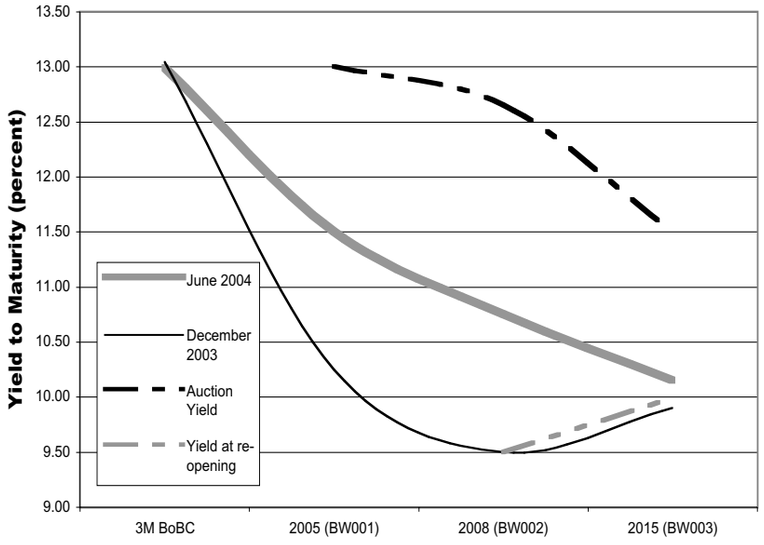
Note: The monthly turnover is calculated as the monthly secondary market activity in percent of bonds outstanding by the end of each month.

Since the launch of the bond programme in 2003, secondary market activity has exceeded P1.1 billion. On average, 3.3 percent of the outstanding bonds are traded in the secondary market each

The Government Bond Yield Curve

The government bond yield curve (December 2003 and June 2004) is illustrated below. The yields at auction and re-opening of BW002 and BW003 are added to illustrate yield movements since the bonds were launched. Finally, BoBCs are added for illustrative purposes.

CHART 1: GOVERNMENT BOND YIELD CURVES.



Note: Actual yield curve by December 2003 and June 2004. (Yields at auction and re-openings added for reference.)

As shown in Chart 1, bond yields are lower than the yields obtained by successful investors at the 2003 auctions. However, since the start of 2004, yields have increased somewhat, especially in respect of the short- and medium term bonds.

The shape and level of the yield curve may provide an important input to policy makers responsible for monetary and fiscal policies. Furthermore, private sector borrowers and investors benefit from an observable yield curve, as investors can make informed decisions about the required risk-adjusted rate of return for entering into certain projects. Conversely, borrowers can compute the expected cost of capital when making financing plans or evaluating the appropriate capital structure of their business.

It was against this background that the Government sought to establish a benchmark yield curve to act as a reference for non-government issuers in the capital market. The fact that a government bond yield curve now exists in Botswana is a major achievement in its own right in terms of capital market development.

Developing the Capital Market

By international comparison, the capital market in Botswana is still in its infancy. Two financial asset classes, domestic equities listed on the Botswana Stock Exchange[7] and BoBCs, have historically dominated the capital market. A few illiquid non-government bonds have been issued since 1997. Full details on all outstanding bonds as at June 2004 are in Appendix 2. To appreciate the progress on capital market development, a summary of the available capital market instruments in Botswana at various times is provided in Table 4 below.

More Instruments Available to Investors

The introduction of government bonds has obviously broadened the set of available instruments in the domestic capital market. Before 2003, domestic investors had to invest either in low-risk money market instruments (BoBCs) or domestic equities; the few non-government bonds outstanding before 2003 were very illiquid and tightly held by institutional investors.

TABLE 4: CAPITAL MARKET INSTRUMENTS IN BOTSWANA

Instrument/ Outstanding Amount *	End of 2002		End of 2003		June 2004	
	Pula (million)	Percent	Pula (million)	Percent	Pula (million)	Percent
Equities (Domestic Companies Index)	9 403	53.5	9 437	44.5	10 696	43.6
BoBCs	7 782	44.2	8 870	41.8	9 357	38.1
Government Bonds	0	0.0	2 500	11.8	2 500	10.1
Non-government bonds	405	2.3	405	1.9	2 005	8.2
Total	**17 590**	**100.0**	**21 212**	**100.0**	**24 558**	**100.0**

Source: Botswana Financial Statistics and Appendix 2.

* Market value for equities and nominal value for other instruments.

Government bonds introduced a new domestic asset class by offering government-backed fixed income securities denominated in Pula to investors.

[7] Equities listed on the Botswana Stock Exchange are grouped into the domestic companies index (DCI) and the foreign companies index (FCI), where the FCI represents companies with a dual listing on the Botswana Stock Exchange. Table 4 includes domestic companies only.

Previously, domestic investors had to invest in international fixed income markets and accept, or hedge, the currency risk of these investments in order to match known future liabilities in Pula. In addition to currency risk, investors incurred an interest rate risk, when challenged to match known future liabilities with either a string of BoBCs (equivalent to a floating rate note) or equities, where future dividends are unknown. Therefore, it is a safe conclusion that government bonds have met one of the set sub-objectives by adding to the choice of financial instruments available to meet investor demand.

In March 2004, Government met another milestone in the development of the capital market in Botswana, as it sold the Public Debt Service Fund (PDSF) loan book to a special purpose investment company, referred to as Debt Participation Capital Funding Limited (DPCF), the issued capital of which is held by the Government. At the end of May 2004, this special entity issued seven bonds with maturity dates ranging from three to 21 years. The bonds were structured so that the cash flows from the loan book match the obligations of the DPCF. The outstanding amount of each bond is between P30 million and P225 million. The bonds were sold by way of auction and listed on the Botswana Stock Exchange in June 2004. A total of P1 billion was sold to investors compared to the P1.22 billion demand for the bonds.[8] The bond details are summarised in Appendix 2.

Non-government Bond Issuance

The local commercial banks issued bonds in 2001 and 2002, although in small amounts, to diversify their deposit base. The introduction of a government bond yield curve in 2003 seems to have generated further momentum for bond issuance by commercial banks. To that end, Barclays Bank of Botswana Ltd., First National Bank of Botswana Ltd. and Stanbic Bank Botswana Ltd. issued bonds worth P200 million, P100 million and P150 million, respectively, in 2003 and 2004. Whereas the commercial banks in 2001 and 2002 used BoBCs to reference the variable coupon on their bonds, the issuance in 2003 and 2004 has been entirely at a fixed coupon rate, which seems to be related to the introduction of a government bond reference yield curve.

It is noteworthy that Stanbic Bank Botswana Ltd. used the short and medium term government bonds as reference when issuing their bonds in March 2004. The idea of referencing non-government bonds to the existing government bonds is that investors are able to clearly quantify the credit and liquidity risk premium relative to the government bonds, as the interest rate risk is similar. As investors already hold a bond with similar cash flow characteristics, they may be persuaded to buy the non-government bond, if the compensation in terms of yield pick-up *vis-à-vis* the government bond is found to be adequate.

The Government's intention is clear, that public sector enterprises (parastatals) should tap the demand for bonds in the local market. As is detailed in Appendix 2, some bond issuers – Botswana Development Corporation (BDC) in 1997 and Botswana Telecommunications Company (BTC) in 1998 – issued bonds, although in rather small amounts. In 2004, BDC was the first semi-government institution that re-issued bonds and assisted the Government in its efforts to diversify the capital market. In fact, BDC went a step further, and introduced the first-ever bond with a coupon linked to the inflation rate in Botswana, thereby showing commitment to capital market development and appreciation for the Bank of Botswana's stated inflation target. This is so, since the funding cost (and investor return) on the inflation-linked BDC bond will reduce or increase in tandem with recorded inflation in Botswana.

To sum up on capital market development, good progress has been made and important milestones have been met. By the end of June 2004, investors are offered a range of fixed income instruments, including three government bonds, eleven public sector bonds and eight bonds issued by commercial banks (see Appendix 2). Bonds are available with both fixed and floating coupons and with maturities ranging from 2005 to 2025. This is arguably good progress on capital market development. A lack of issuance from other parastatal issuers and the non-existence of corporate bonds are areas with potential for further development, as will be discussed further in the Section 4.

The Significance of the Pension Sector in Botswana

Having addressed the potential for bond issuance, it is worth considering the investor perspective. A notable feature is the increasing role of the pension fund industry in Botswana, which has grown significantly in recent years. While private and parastatal sector pension funds have been in existence for some time, the pension fund industry has had a major boost following the conversion of the Government's pension fund from an unfunded defined benefit fund to a funded defined contribution fund. The defined contribution fund is backed by the existence of underlying financial assets, whereas the liabilities related to the previous defined benefit pension funds are payable out of future revenues. Therefore, the Government has significantly reduced its assets at the Bank of Botswana and transferred significant amounts to private sector pension fund managers in recent years.

Particular attention may, therefore, be drawn to the increased role of the pension sector investor

[8] Full auction results are available in the press release from the Directors of DPCF of May 31, 2004

community in Botswana. According to MFDP (2004), total pension fund assets in Botswana stood at P14.1 billion at the end of 2003. Of this amount, P10.3 billion was related to the Public Officers Pension Fund (POPF) alone. Based on available data, the asset allocation of the aggregate pension fund industry in Botswana can be estimated, as shown below.

TABLE 5: ASSET CLASSES – BOTSWANA PENSION SECTOR (END OF 2003)

Asset Class	Domestic Investments		Foreign Investments		Total Investments	
	Pula (Million)	Percent	Pula (Million)	Percent	Pula (Million)	Percent
Cash and Money Market Instruments	2 961	21	1 128	8	4 089	29
Bonds and Commercial Paper	2 538	18	1 128	8	3 666	26
Equities	2 115	15	4 089	29	6 204	44
Property	141	1	0	0	141	1
Total	7 755	55	6 345	45	14 100	100

Source: MFDP (2004)

According to the pension fund investment regulations, a minimum of 30 percent of the pension assets should be invested in domestic assets. By the end of 2003, 55 percent of the P14.1 billion pension fund assets were invested in the domestic capital market. On the one hand, pension fund managers find a natural hedge for their Pula-based liabilities by investing in Pula assets. On the other hand, although more bonds have been issued, the potential demand for bonds still exceeds the amount of bonds available to investors. In addition, the Pula denominated bonds suffer from the fact that liquidity in the domestic market is limited compared to that of international investments. This may explain the "buy and hold" tendency of many pension fund investors in the domestic capital market.

Tables 4 and 5 show that a very large proportion of the available domestic bonds are held by the pension sector. This highlights two important aspects of the domestic capital market. First, there seems to be significant demand for further bond issuance, especially long-dated instruments. Table 5 reveals that by the end of 2003, 29 percent of the pension fund assets were invested predominantly in domestic cash and money market instruments (BoBCs), compared to only 26 percent in bonds. Given the long-dated nature of the pension fund liabilities, this allocation may be quite inappropriate, as pension funds have long-dated future liabilities rather than current liabilities. Internationally, pension funds allocate only a small amount (below 5 percent) of their funds to cash and money market instrument. Arguably, a re-allocation from money market instruments (BoBCs) to bonds would bring about a significant demand for further bond issuance in Botswana, especially in the long end of the yield curve. The international bond markets offer a liquid alternative, but since international bond yields are generally quite low and international investments expose the pension funds to undesirable currency risk, the investor preference would arguably be for fixed income securities denominated in Pula.

Given the significant presence of the pension fund industry in the domestic bond market, another important observation can be made, namely that the domestic bond market is likely to be driven by market segmentation. In a segmented bond market, the price discovery mechanism may be challenged by the fact that some investors are unwilling to sell their bond holdings, which are "locked up" to match long-term liabilities, as the case seems to be in respect of the pension fund industry in Botswana. The result can be that the yield curve, rather than reflecting market participants' expectations for future short-term rates (the pure expectations theory), reflects the desired maturity segments of certain investors (the market segmentation or "preferred habitat" theory). For instance, the current inversion of the yield curve would under the pure expectations theory imply that market participants expect that monetary policy will be eased going forward. However, such a conclusion may be incorrect in segmented bond markets, where an inversion of the yield curve would simply reflect that a large investor group (i.e. pension fund managers) prefer long-dated bonds, which better match their liabilities, and are willing to pay a price premium to hold these assets, i.e. accepting lower bond yields than would otherwise be appropriate. Similar situations appear in the United Kingdom bond market, where long-dated bonds trade at yields below medium-term bonds for similar reasons.

Arguably, more research should be conducted in this area, but at present the bond market in Botswana seems to be a clear example of a segmented bond market, and hence analysts and policy makers should be cautious in respect of drawing conclusions from what expectations are priced into the current yield curve.

SCOPE FOR FURTHER CAPITAL MARKET DEVELOPMENT IN BOTSWANA

Having reviewed progress on capital market development, the obvious question would be how the capital market could be further developed? This section will broadly review the areas of potential

future capital market development. There is no doubt that the Government has been very active, and has met many milestones, in its efforts to develop the capital market. Consequently, the focus should be on the role to be played by other stakeholders in the economy.

By the end of 2003, commercial banks had loans totalling P381 million to parastatals (i.e. semi-government institutions) and in excess of P3.3 billion in loans to resident businesses (i.e. corporations).[9] These loans could potentially be replaced by bond issuance, at least to some degree. Such bond issuance would potentially add significantly to capital market development. Arguably, the capital market would be able to offer attractive financing alternatives to commercial bank loans to corporations with strong credit credentials. Also, some parastatals may be able to access the bond market on favourable terms given the nature of their operations and strong balance sheets. Arguably, some issuers have shown commitment in the past (Appendix 2), and issuance activity could be considered again, perhaps in connection with the redemption of the existing bonds. The onus is now on corporations and parastatals, and their advisors in the banking industry, to sophisticate their funding activity and tap the strong investor demand in the domestic bond market.

Looking forward, another potential development could be the development of a mortgage bond market in Botswana. It is estimated that the pool of mortgage loans in Botswana stand at close to P2 billion in value. These mortgage loans are currently assets of commercial banks and the Botswana Building Society; these loans could potentially be pooled and offered as mortgage bonds to bond market investors, once the legal framework was in place. As a model on how this could be organised, in the United States, mortgage loans are standardized and pooled, sometimes with credit enhancements added, and offered to investors as Mortgage Backed Securities (MBS). In fact, the MBS market in the United States has a larger outstanding amount than the US Treasury market and is hence very liquid, securing US homeowner access to home financing at market-related terms. Obviously, a comparison to the situation in Botswana is not realistic, but the scope for further capital market development, to the benefit of the local homeowner gaining access to cost-effective mortgage financing is apparent and could also be researched further.

SUMMARY AND CONCLUSION

Botswana, with the best credit rating in Africa, introduced a P2.5 billion government bond programme in 2003, with demand exceeding supply by 70 percent. The bonds met a structural demand, especially in the pension fund industry, for fixed income instruments with longer-term characteristics. By the end of June 2004, domestic and foreign investors held 76.7 percent and 4.2 percent of the bonds, respectively. The Primary Dealers and Bank of Botswana held 14.8 and 4.3 percent of the bonds, respectively, to facilitate secondary market activity.

The success of the stated objectives of the government bond programme, i.e. capital market development and providing a reference for non-government bond issuers, was reviewed. Clearly, the government bonds broadened the set of available financial assets in the domestic capital market, and met a need for domestic fixed income securities, which is especially apparent in the rapidly growing pension fund management industry in Botswana. The pension funds found a suitable long-dated Pula denominated fixed income asset that better match their long-dated liabilities in terms of currency and interest rate risk.

Government bonds have successfully introduced a reference yield curve for other bond issuers. Several non-government bonds have subsequently been issued and this is noted as a positive development. By the end of June 2004, a total 22 bonds with up to 21 years to maturity are available in the Botswana bond market; investors can choose between bonds with floating and fixed rate of interest and even inflation-protected bonds exist. Having said that, a bond market with an outstanding amount of P4.5 billion (US$ 963 million) in total is quite small by international standards. Investor concerns regarding liquidity seem valid in this regard. Therefore, further bond issuance would be a step in the right direction, particularly by parastatals and corporations. It seems likely that further bond issuance may continue to benefit from the structural liquidity surplus in Botswana and the apparent appetite for fixed income investments in the local investor community.

The Botswana bond market appears to be segmented, as one predominant investor group, the pension fund industry, tend to buy and hold their preferred longer-dated bonds; the result is reduced market liquidity and secondary market turnover. The Botswana yield curve seems theoretically better explained by the market segmentation theory than the pure expectations theory. Consequently, information derived from the yield curve may be distorted. The current inversion in the yield curve should, therefore, not be misunderstood as market expectations of lower short-term rates in the future, as the yield curve inversion seems to be a result of investor preferences.

Having reviewed the government bond programme and other government initiatives, it was argued that corporations and parastatal issuers should put renewed focus on their capital structure

[9] See Botswana Financial Statistics, Table 3.17.

to ensure that the cost of capital is minimized, since the issuance of bonds may prove an attractive alternative to the historical reliance on loans from commercial banks and the Government. Also, at a later stage, the merit in introducing a mortgage market to the benefit of current and future homeowners could be subjected to further analysis.

It seems appropriate to conclude that the foundation for a prospering bond market to the benefit of all stakeholders in Botswana has been established. The Government has initiated an important development with the launch of government bond programme and seems committed to continuously improve the conditions for a successful capital market. Now, the onus is on non-government issuers – the commercial banks, corporations and parastatals – to follow the Government's lead and ensure further market development by issuing more bonds and enriching the market with capital market related initiatives and further sophistication.

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APPENDIX 1: BOTSWANA – SELECTED ECONOMIC INDICATORS

Financial year	2002/ 2003	2001/ 2002	2000/ 2001	1999/ 2000
Real GDP (% change, year-on-year)	6.7	2.1	8.6	6.6
Budget Balance (% of GDP)	–3.9	–3.0	9.0	6.2
Government Debt Outstanding (% of GDP)	6.0	9.1	8.5	9.7
Public Debt Interest (% of Revenues)	0.57	0.74	0.59	0.77
Domestic Credit Outstanding (% of GDP)	20.1	20.7	19.1	19.8
CPI (average % chg.)	9.2	8.0	6.6	8.5
Foreign Exchange Reserves (Billion, US$)	5.34	5.47	5.90	6.32
Foreign Exchange Reserves (months of import cover)	21	26	40	34

Source: Bank of Botswana

APPENDIX 2: BOTSWANA BOND MARKET – JUNE 2004

Issuer	Short name	Maturity	Coupon (%)	Interest Due	Outstanding (P million)	Year of Issuance
Republic of Botswana	BW001	1 June 2005	10.75	30/4 & 30/10	750	2003
Republic of Botswana	BW002	1 March 2008	10.25	31/5 & 30/11	850	2003
Republic of Botswana	BW003	31 October 2015	10.25	31/5 & 30/11	900	2003
Government bonds (subtotal)					**2 500**	
Debt Participation Capital Funding Limited (DPCF)	DPCF001	2 June 2007	10.34	2/6 & 2/12	170	2004
Debt Participation Capital Funding Limited (DPCF)	DPCF002	2 June 2010	10.17	2/6 & 2/12	195	2004
Debt Participation Capital Funding Limited (DPCF)	DPCF003	2 June 2013	10.31	2/6 & 2/12	225	2004
Debt Participation Capital Funding Limited (DPCF)	DPCF004	2 June 2016	10.45	2/6 & 2/12	220	2004
Debt Participation Capital Funding Limited (DPCF)	DPCF005	2 June 2019	10.60	2/6 & 2/12	100	2004
Debt Participation Capital Funding Limited (DPCF)	DPCF006	2 June 2022	10.75	2/6 & 2/12	55	2004
Debt Participation Capital Funding Limited (DPCF)	DPCF007	2 June 2025	10.90	2/6 & 2/12	35	2004
Botswana Development Corporation (BDC)	BDC001	30 November 2004	14.00	31/5 & 30/11	50	1997
Botswana Development Corporation (BDC)	BDC002	1 June 2011	CPI + 3.75%	1/6 & 1/12	75	2004
Botswana Development Corporation (BDC)	BDC003	1 June 2011	11.00	1/6 & 1/12	125	2004
Botswana Telecommunications Company (BTC)	BTC001	30 November 2008	13.75	31/5 & 30/11	50	1998
Public Sector / Parastatal bonds (subtotal)					**1 300**	
Barclays Bank of Botswana Ltd. (BBB)	BBB001	30 October 2014	BoBC + 0.85%	30/4 & 30/10	100	2002
Barclays Bank of Botswana Ltd. (BBB)	BBB002	26 May 2009	10.50	26/5 & 26/11	200	2004
Stanbic Bank Botswana Ltd. (SBB)	SBB001	12 December 2013	BoBC+ 1.25%	12/3, 12/6, 12/9, 12/12	30	2001
Stanbic Bank Botswana Ltd. (SBBL)	SBBL001	1 June 2005	10.75	1/6 & 1/12	100	2004
Stanbic Bank Botswana Ltd. (SBBL)	SBBL002	1 March 2008	10.75	1/3 & 1/9	50	2004
Standard Chartered Bank of Botswana Ltd. (SCBB)	SCBB001	15 October 2012	BoBC+ 0.70%	15/1, 15/4, 15/7, 5/10	75	2002
First National Bank of Botswana (FNBB)	FNB001	1 December 2016	10.50	1/6 & 1/12	100	2003
Botswana Building Society (BBS)	BBS001	30 November 2005	14.25	31/5 & 30/11	50	2000
Bank bonds (subtotal)					705	
Bonds outstanding, total					**4 505**	

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Electronic Money Developments

Keith Jefferis, Julia M. Kgoadi, Sebego M. Kgosi and Mike Robotham[1]

Introduction

In recent years technological innovations have stimulated the development of various electronic payment mechanisms. Some of these, such as credit and debit cards, are now well-established payments instruments, and others, such as electronic transfers, internet banking, and payments by mobile phone are experiencing rapid growth and gaining increasingly wide acceptance as integral components of the banking and payments system. More generally, electronic payment mechanisms are replacing traditional "physical" payments instruments; as a result, the use of cheques is in steady decline in many countries, and even bank notes and coins, while still widely-used, are generally declining in relative importance (e.g., as a proportion of GDP).

One particular electronic payment innovation that has attracted considerable attention is that of electronic money, or e-money. E-money may be considered to be an electronic substitute for cash, generally held as a prepaid balance on a smart card.[2] Although the use of e-money schemes has grown significantly in recent years, they still account for a relatively small proportion of payments transactions and their use remains low compared to cash and traditional non-cash payments instruments (BIS, 2004:1). Nonetheless, e-money schemes have generated significant interest by consumers, financial institutions generally and central banks in particular. For central banks, the use of e-money raises a number of policy issues regarding the implications for central banks' revenues, the implementation of monetary policy and the oversight of payment systems. There are also a number of issues related to the prudential regulation of the financial system and consumer protection, which are relevant to regulatory authorities, whether they be central banks or other institutions.

In light of these potential policy concerns, in 1996 the G10 Central Bank Governors[3] undertook to monitor the evolution of electronic money schemes and products on a global basis, and since that time the Bank for International Settlements (BIS), in co-operation with the Committee on Payment and Settlement systems (CPSS), has been regularly surveying e-money developments around the world. The subsequent reports provide a useful record of e-money developments globally and of emerging regulatory and policy issues (BIS 2000, 2001, 2004). While there are considerable differences in the way in which e-money issuance is regulated (or not) in different countries, regulatory authorities are increasingly involved in the monitoring and supervision of e-money issuance, with regulatory regimes aiming to strike a balance between the benefits of competition and innovation that e-money schemes can bring, while limiting the potential adverse effects. Nevertheless, it should be noted that the wide variety of e-money schemes in operation around the world, and their embryonic nature, coupled with a range of regulatory environments and a relative lack of statistical data, means that there is some uncertainty regarding the evolution of e-money schemes and difficulties reaching definitive conclusions.

The aim of this paper is to provide a preliminary review of recent e-money developments and to highlight the policy issues that the emergence of e-money raises. It highlights specific implications for Botswana, and discusses how e-money might develop in the country. The paper is structured as follows: following the introduction, Section 2 defines and discusses the different forms of electronic money. Section 3 examines the key policy issues that arise as a result of the emergence of e-money, which include the impact of e-money on monetary policy and seignorage revenues; regulatory issues, payments system oversight security and law enforcement issues. Section 4 considers the potential for e-money developments in Botswana, while section 5 concludes.

E-money – the Basics

E-money is part of a broad category of "electronic commerce". As Figure 1 shows, e-money is distinct from e-banking, which refers to the provision of banking products and services through electronic delivery channels such as the internet or telephone. Electronic banking, in its most basic form, provides a method of obtaining balance and statement information via a telephone or a computer, together with services that give consumers the ability to generate payment instructions. Both computer and telephone banking products and services involve the use of passwords to provide adequate security

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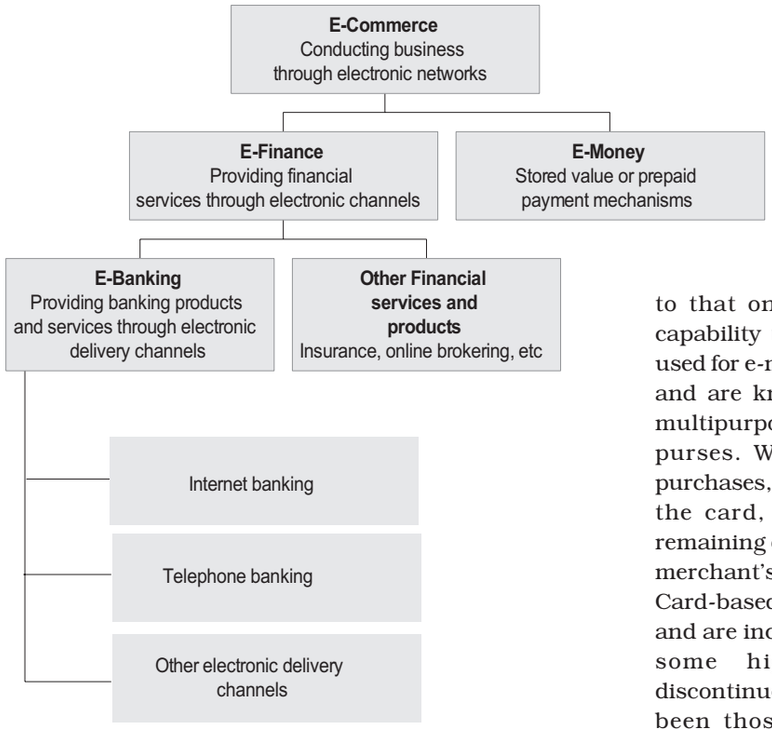
[1] At the time of writing, Julia M. Kgoadi was the Manager, Payments System Unit in the Banking Department, and Sebego M. Kgosi was the Director of the Banking Department of the Bank of Botswana; both have since retired from the Bank. Mike Robotham is the Payment Systems Advisor in the Banking Department, and Keith Jefferis is the Deputy Governor of the Bank of Botswana.

[2] A more precise definition of e-money is given in section 2.

[3] The G10 Central Bank Governors are those of Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Sweden, Switzerland, United Kingdom and the United States of America.

measures that allow access to the customer's accounts. In developed countries, telephone banking proved popular initially, although it is increasingly being superseded by internet banking, due to the latter's wider range of services, convenience and ability to substantially reduce the costs of undertaking payments and accessing other account information, thus enabling more efficient account management. In developing countries, limited computer access means that internet banking remains a specialised product. However, the widespread adoption of mobile phones has opened up a new channel through which consumers can access the payments system, which is of particular relevance to low income consumers given the low costs of mobile phone-based banking relative to conventional "bricks-and-mortar" branch-based banking.

FIGURE 1: E-COMMERCE, E-BANKING AND E-MONEY



Note: The difference between e-money and e-banking is that, with e-money, balances are not kept in financial accounts with banks.

Source: Nsouli, S.M. and Schaechter, A. (2003)

Electronic money, by contrast, has no direct link to bank accounts, or indeed to banks. It is designed to be utilised as a multipurpose means of payment, generally for low value payment transactions. Various definitions of e-money are available. The European Central Bank has defined it as an "electronic store of monetary value on a technical device that may be widely used for making payments to undertakings other than the issuer without necessarily involving bank accounts in the transaction, but acting as a prepaid bearer instrument" (ECB, 1998). A more recent, and widely used definition is that used in the European Union,[4] which states that: "electronic money shall mean monetary value as represented by a claim on the issuer which is:

(i) stored on an electronic device;
(ii) issued on receipt of funds; and
(iii) accepted as a means of payment by undertakings other than the issuer."

Essentially, consumers transfer conventional money to an issuer in return for the facility to store the value paid in a secure device held by the consumer. E-money then provides a stored-value or prepaid-payment product that enables the cardholder to undertake transactions, using the electronic value to make payments for goods and services. As e-money is essentially cash in an electronic form and does not exist physically, there is a need to make it portable/transferable between one entity and another. There are two such approaches that facilitate the transfer of value, namely smart cards and network-based media.

A smart card resembles a credit card in size and shape, but inside it contains an embedded microprocessor chip in place of the usual magnetic stripe on a credit card or debit card. The chip can hold similar information to that on a credit or debit card but has the capability to hold significantly more data. When used for e-money purposes, smart cards are prepaid and are known as Stored Value Products (SVP), multipurpose prepaid cards (MPC) or electronic purses. When smart-cards are used to make purchases, the value of the purchase is debited from the card, which keeps a record of the value remaining on the card's chip, and is credited to the merchant's (seller's) account, via an intermediary. Card-based e-money schemes are fairly widespread and are increasingly gaining acceptance, although some high-profile schemes have been discontinued.[5] The more successful schemes have been those operated or supported by public transport operators or telephone companies.[6]

As an alternative to card-based e-money, there

[4] This legal definition of electronic money is included in Article I of European Parliament and Council Directive 2000/46/EC (BIS CPSS 2004:2). A similar definition has been adopted by the UK Financial Services Authority (FSA 2004:E4)

[5] According to the BIS (2004), card-based e-money schemes were in operation in 34 of the 95 countries surveyed, while Arnone and Bandeira (2004) list 37 countries with card-based e-money schemes.

[6] One reason for this is that multipurpose smart cards represent a logical development of the single purpose smart cards widely used by mobile phone and public transport operators.

are also network-based products, which work via computers and telecommunications networks such as the internet or mobile phone networks. In this case, the value is stored on a computer rather than on the card itself, and is accessed via specialised software. Network-based schemes are much less widespread than card-based e-money schemes. Further details of smart cards and network-based e-money are provided in Appendix 1.

It is important to note that e-money products and services are distinct from the more well understood and accepted "access products" that include debit and credit cards. These cards are commonly utilised to allow consumers access to conventional payments system and banking (including credit) services, to undertake electronic payments.

As noted above, e-money is generally used for relatively low value transactions. Most issuers place a "cap" on the value that can be loaded onto a single e-money instrument, whether by choice or by regulation; such caps are typically the equivalent of US$500 or less.

The definition of e-money given above provides a useful guide as to what is and what is not e-money. This is important when regulatory issues are involved, and where e-money providers have to be licensed, as is increasingly the case. It is important to note that e-money involves general acceptance; this does not mean that e-money has to be accepted everywhere but, crucially, it is accepted by parties other than the issuer. Two of the most common uses of prepaid smart cards are for mobile phones and public transport; such "single use" smart cards would not qualify as e-money, as they are limited to use on products sold by the issuer. However, once such smart cards can be used to purchase other products, they may qualify as e-money. Given the rapid growth of smart cards for mobile phone and public transport usage, and the lack of technological barriers to multiple purpose use of prepaid cards, it is likely that single purpose cards will, over time, evolve into multiple purpose e-money cards.

Although smart card usage has grown for some forms of payments, e-money as a more generalised, multipurpose form of payment has not grown as rapidly as some commentators had anticipated (Smith, 2003). There are various reasons for this, one being the difficulties of securing a sufficient critical mass of merchants and consumers to make the use of e-money attractive to both. This is typical of any product that is characterised by "network benefits", i.e., its usefulness increases with the number of users. Therefore, without a large number of users, e-money is less convenient than cash, and consumers are unlikely to be interested until e-money is widely accepted by merchants; at the same time, merchants are unlikely to show interest until there are a sufficient number of consumers. This problem may be compounded by perceptions that e-money offers no benefits over cash for retail transactions; that it has the disadvantage (relative to cash) of not being anonymous and requiring a high level of trust in the e-money issuer; and a perception that the use of cash is costless. A lack of systems standardisation and problems of incompatibility may also slow down the roll-out of infrastructure and consumer take-up. As a result, more recent thinking is that e-money will be of more interest where cash is difficult and/or inconvenient to use, e.g. public transport, vending machines, parking meters, and telephones, or where there are potential cost savings in cutting down on the handling of large amounts of cash, e.g. wage and salary payments, and welfare payments.

Policy Issues

This section of the paper discusses some the major policy areas of concern that have been expressed by central banks and other regulatory authorities globally.

Monetary Policy and Seignorage

Besides facilitating an important component of the payments system, the issuance of money by central banks has other important dimensions. Central banks generally have a legally-sanctioned monopoly (on behalf of the government) over the issuance of legal tender, generally bank notes and coin. This confers important privileges or powers. First, the central bank (and indirectly, government) gains seignorage income.[7] While seignorage is not an important source of revenue for governments in most developed countries, it can be important in countries where cash accounts for a significant proportion of transactions and/or the storage of value, and where inflation is high.

Second, the central bank's legal monopoly over the issuance of bank notes and coin, along with its legal powers to require commercial banks to keep reserves on deposit with it, give the central bank control over the monetary base. Although the exact mechanisms of monetary policy implementation vary from country to country, at the root of a central bank's ability to implement monetary policy lie its ability to expand or contract the monetary base (or, equivalently, the size of the central bank's own balance sheet).

These important powers have led some commentators to question whether the emergence of e-money might undermine the central bank's ability to implement monetary policy (see, for instance, The Economist, 2000). It has been argued (e.g. by Friedman, 1999 and 2000; King, 1999) that e-money could make bank notes and coins obsolete,

[7] Seignorage can be defined as the capital gain that accrues to monetary authorities from their ability to issue notes and coin, which essentially represents an interest-free loan from the public.

and furthermore, that it could even make banks obsolete, if the exchange of balances at e-money issuers came to replace the exchange of claims against banks (such as cheques) as the predominant form of money in general use. Friedman (1999) raises the possibility that an entire alternative payment system, outside of the control of the central bank, may emerge. Without bank notes and coin, and without banks whose reserve deposits must be held at central banks, the monetary base would disappear and without base money, central banks would lose their ability to implement monetary policy.

There have been a number of rebuttals of these arguments (e.g. Freedman, 2000; Woodford, 2000), which essentially contend that the central bank can always find ways to retain the power to implement monetary policy. This may be through the state's power to regulate e-money providers should they prove disruptive to monetary stability, through the central bank's continued provision of the payment system of choice, or through finding alternative ways to control short-term interest rates.[8] In addition, Goodhart (2000), argues that there will always be a demand for currency (bank notes and coin) due to its inherent advantages – primarily simplicity and anonymity – over alternative monies and, furthermore, that the specific attributes of banks will always be needed and hence that banks are unlikely to disappear. The general conclusion, therefore, is that concerns about e-money undermining the ability of central banks to implement monetary policy are most unlikely to be borne out in practice.

Nevertheless, monitoring trends with regard to e-money use, and the extent to which it is being substituted for bank notes and coin, is important. Some central banks have started collating statistical data relating to the usage of e-money issued by banks and, to date, no central bank has indicated an adverse impact on the size of its balance sheet that could be attributable to the possible decline of bank notes and coin in circulation as a consequence of the widespread adoption of e-money (BIS, 2004:5). A general consensus is that central banks can adequately maintain the size of their balance sheets by imposing minimum reserves on e-money issuers or by issuing e-money themselves, if necessary. However, given the limited amount of e-money transactions that are currently undertaken, the low average individual transaction value, coupled with the relatively small cap on the value that may be maintained on stored value cards, the actual float value of e-money is considered to be very low. The seignorage revenue losses that may be ascribable to the issuance of e-money are considered to be negligible at this juncture.

[8] One suggestion is that governments could require tax payments to be settled with central bank money, thus preserving a role for base money.

Regulatory Framework

The issuance of e-money raises a range of regulatory issues, for a number of reasons. First, e-money issuance has close links to banking activity; for instance, there is a question as to whether e-money issuance constitutes the acceptance of deposits, in which case the regulatory authorities have to consider whether e-money issuers should be authorised as "deposit-taking" companies under the appropriate legislation for the explicit purpose of issuing e-money, alongside the more traditional credit institutions. Even if e-money issuance is deemed not to constitute banking per se, it is likely that banks will be among the major potential issuers of e-money. Second, the standard justifications for the regulation of financial markets – systemic risk and consumer protection – may justify the regulation of electronic currency substitutes (Fullenkamp and Nsouli, 2004: 6). Third, as a new payments instrument, e-money has potential implications for the operation of the payments system, which may have regulatory implications. Fourth, the potential use of e-money for money laundering purposes needs to be guarded against. Fifth, as noted above, regulation may be necessary to prevent the widespread emergence and adoption of e-money from undermining the effectiveness of monetary policy.

A variety of regulatory frameworks are being developed to deal with the regulation of e-money issuance. Some countries have no regulations guiding or restricting the issuance of e-money, while others have already defined stored value cards as the taking of a deposit, so that only banks may issue them. However, this is not the approach that is generally being followed in Europe, where steps have been taken to develop a harmonised regulatory framework for the issuance of e-money. The European Union (EU) has issued directives on e-money that have to be enacted into national law by EU members, making the issuance of e-money a "regulated activity".[9] Essentially, this approach permits the issuance of e-money both by banks and a new class of "Electronic Money Institutions" (ELMIs), licensed specifically (and exclusively) for this purpose. These ELMIs will be regulated primarily from a consumer protection perspective, minimising the risks that e-money consumers are potentially exposed to. As an example, in the UK, regulations issued by the Financial Services Authority applicable to e-money issuers require that (FSA 2001):

(i) an e-money issuer is limited to issuing e-money and providing closely related

[9] Some countries envisage the need to make changes to existing legislation or develop new statutes, and are planning specific legislation for the regulation of e-money issuance, while others feel that existing legislation is robust enough to adequately deal with the issues relating to e-money.

services; in particular, an e-money issuer may not make any loan or grant any form of credit;

(ii) e-money issuers must be run by approved "fit and proper" persons, and must have appropriate systems and controls in place; there are also minimum capital requirements;

(iii) e-money issuers must hold liquid assets at least equal to the value of outstanding e-money balances attributable to customers;

(iv) the payment of interest on e-money is prohibited;

(v) e-money issuers must set individual "purse limits", not exceeding £250. These limits are meant to restrict individuals' financial risk in the event of a firm's failure or loss of the purse. They also restrict the opportunities for using e-money systems for money laundering purposes;

(vi) e-money holders may ask for e-money balances to be redeemed at par into cash or by transfer to a bank account.

The UK approach, as illustrated above, and the European approach more generally, is designed to strike a balance between encouraging e-money issuance for its potential benefits to consumers, stimulating innovation and reducing transactions costs, while at the same time minimising potential risks to consumers and the financial system.

These regulations apply to non-bank e-money issuers. With regard to banks, regulatory authorities in Europe and the USA are updating their examination procedures to include e-money developments and their associated risks.

Oversight and Supervision of E-money Schemes

Central banks typically perform an oversight function with respect to payments systems. As a new payment instrument, e-money potentially falls under the purview of such oversight, independently of any regulatory requirements such as those outlined above. Given the relatively recent introduction of e-money schemes, and their small size, e-money schemes do not yet generally have major payments system implications. However, several central banks have started to monitor and analyse developments within their jurisdiction and externally with regard to e-money activities and progress, including regular collation of statistical data and meetings with e-money issuers. In other instances a wider range of activities are undertaken to study the organisational, legal, administrative, technical and security features of the products and operators. These activities are designed to ensure that e-money schemes are as safe and efficient as possible and issuers are sound. Central Banks in the EU, as part of the oversight role with regard to e-money schemes, are working in unison towards establishing a harmonised approach in the development of standards and assessment methodologies relating to the technical security of e-money schemes.

Security and Law Enforcement Issues within E-money Schemes

An important element of introducing e-money schemes is addressing security issues. From a consumer protection perspective, schemes with weak security could lead to unacceptable losses to consumers. From a business perspective, confidence and credibility – and hence the prospect of widespread adoption – depends on successfully addressing potential security concerns.

A number of measures have been employed in order to address the area of security within e-money schemes which include the use of tamper-resistant microprocessor chips coupled with the use of sophisticated encryption techniques, including biometrics and algorithms. In many cases, the imposition of limits on the amount of value that can be stored on consumers' and merchants' devices so as to limit the value of individual transactions, and the use of Personal Identification Numbers (PIN), biometrics, or both to allow for the authorisation to either load or transfer funds, have been adopted in an endeavour to limit potential losses in the event of a breach of security. Regulatory authorities have typically included an assessment of the robustness of the security measures put in place by any potential e-money issuer to mitigate the opportunities for committing counterfeiting and fraud in their evaluation of applications for licensing.

Many of the security features of e-money schemes, including the limits on value that can be stored on the cards, make them unattractive for the purposes of money laundering and other criminal activities. Laws combating money laundering are applicable to e-money schemes, as they are to banks and other credit institutions. As part of the oversight function, emphasis is laid on studying the features of e-money schemes to ensure that they do not broaden the opportunity for potential criminal abuse. Measures that may be undertaken to minimise money laundering opportunities include the maintenance of an audit trail in order to ensure that there are no anonymous transactions being undertaken, ascertaining the identity of the customer and restricting the issuance of cards to account holders at the relevant credit institutions.

THE PROSPECTS FOR E-MONEY DEVELOPMENTS IN BOTSWANA

The Potential for the Evolution of E-money

Until recently, the Botswana payments system has been primarily cash- and paper-based, with a high

proportion of individual payment transactions taking the form of cash, cheques or other paper credit payments. The majority of individual payment transactions involve goods and services being exchanged for cash face-to-face, i.e. both buyer and seller being physically present. Furthermore, substantial volumes of individual non-cash payments continue to involve the exchange of paper in one form or another. Electronic payments in their purest form, where the instructions to pay are generated and received electronically, are at an embryonic stage.

However, there has been a noticeable increase in the use of electronic payment technologies, such as automated teller machines (ATMs), credit cards, electronic funds transfers at point of sale (EFTPOS), debit cards and credit transfers, which now account for a significant volume of non-cash payments undertaken in Botswana. E-money facilities, in the sense of an electronic purse, have not yet arrived in Botswana, although it is likely that e-money products and services will arrive sooner or later.

Internationally, the use of e-money products is more advanced in developed countries than in developing countries, as would be expected. However, the usage of card-based e-money products is increasing in developing countries; of the 37 countries listed by Arnone and Bandiera (2004) as operating card-based e-money schemes, 21 are in Europe or North America, 8 are in Asia, 4 are in Africa, and 4 are in Central/South America and the Caribbean. It is likely that e-money products will develop somewhat differently in developing countries than in developed countries, with an emphasis on bringing the unbanked into the financial sector. An e-money card could work as part of payroll system, with employees having their salaries loaded onto a card by their employer rather than being paid cash. In South Africa, a similar type of card is used for social security and pension payments (Paulson et al, 1998). More generally, it is likely that e-money will develop in association with the rapid growth of cellphone usage, given the close affinity between the prepaid smart cards used in cellphones and those for e-money stored value products (SVPs); Korea provides an example of widespread cellphone usage providing the basis for new forms of electronic payments (Financial Times, 2003b).

E-money could also provide an alternative mechanism for savings, especially for low-income clientele who do not have ready access to banks. Smart cards could easily be provided with two "purses", one for cash (transactions use) and one for savings. Furthermore, smart card-based e-money can offer two of the most important attributes typically desired by the poor in financial products, that is, safety and accessibility (Lauridsen, 2003). Given concern about access to conventional banking services by low-income earners in Botswana as well as in other countries, e-money, whether provided by banks or non-bank institutions, may provide a means of filling the gap in the provision of financial services, especially savings products.

The emergence of e-money products and services in Botswana is likely to involve a range of parties, including commercial banks, non-bank financial service companies and perhaps cellphone companies. Although there have been no formal proposals as yet for pure e-money products, whether from banks or other service providers, new electronic payment products are emerging. For instance, payment for prepaid cellphone airtime can be charged to credit cards via text message. The close relationship between electronic payments in general, and e-money in particular, and cellphones is likely to continue, stimulated not just by technological affinity but also by the very high level of cellphone usage in Botswana.[10] For instance, a facility to use prepaid cellphone airtime to also pay for other goods and services, such as paying utility bills, could be of widespread interest. There have also been preliminary discussions of other products, including smart cards, to receive wage payments by employers and welfare payments by the Government, which would reduce cash handling in favour of e-money products.

The use of such products by the Government to facilitate the payment of wages, pensions or other benefits, as a means of avoiding large numbers of cash or cheque payments, could provide a major impetus for the development of e-money in Botswana, and provide outreach to rural areas that do not have access to traditional banking services. As the largest employer in Botswana, the Government could be involved in the establishment and provision of electronic payment services. Central and local government employ approximately one-third of the formal sector workforce, and although a significant number of these employees are paid by electronic transfer into bank accounts, many are paid by cheque; such cheques are typically immediately exchanged for cash, and indeed many of those paid by bank transfer make immediate and full cash withdrawals of their salaries. This indicates that e-money, as a close substitute for cash, may be a viable alternative payment mechanism. Similarly, Government regularly makes various kinds of welfare payments to large numbers of people, for which non-cash payments mechanisms could be explored. Such payments could be made directly by the Government or through third party service providers, such as the Post Office and the Botswana

[10] At the end of 2003, Botswana had cellphone penetration of 25 phones per 100 inhabitants, compared with Ghana (4), Kenya (5), Lesotho (4), Malawi (1), Mauritius (38), Namibia (12), Nigeria (3) and South Africa (36) (Source: International Telecommunication Union).

Savings Bank, using the telecommunications infrastructures for fixed line or mobile service providers. This could be considered to be a more efficient way of making pension payments or other payments, particularly in the rural areas where commercial bank services are lacking. Such e-money payments would have to be complemented by facilities to convert to cash as necessary (through ATMs or designated merchant outlets), as well as widespread acceptance of e-money payments. E-money would not completely replace cash, which would still be required for many transactions, but would economise on cash holdings, facilitate government payments, and improve the security of money holdings. At present, however, the technological innovations in computers and telecommunications that have been adapted to banking operations, and related infrastructures, are not yet readily available in the rural areas, although a commitment from the Government to provide such infrastructure would help to offer such services on an increased national basis, and the increased penetration of fixed line and mobile telecommunications networks will increasingly make this feasible.

Potential Regulatory Issues

The development of innovative electronic transactional networks raises numerous legal and regulatory issues that must be addressed if the potential of electronic money is to be realised. These include deciding if and how e-money is to be regulated, developing acceptable methods for authentication and protection of information, accommodating the special needs of law enforcement, and creating the requisite means for settling disputes. While the use of electronic payment methods has become increasingly prevalent, in particular the use of ATM and Point-of-Sale (POS) cards, the legal and regulatory framework for emerging products remains relatively underdeveloped. Specific questions raised include: How will issuers be regulated? Who will set the standards? How can payments transacted in an electronic environment be made secure? How will regulators police money laundering and counterfeiting?

The emergence of electronic money products may require the involvement of regulatory bodies due to risks inherent in their usage with in the financial market. Areas in which e-money developments may be of concern to regulators include, but are not limited to, the legislative framework in which e-money issuers operate, relationships with the banking system, potential monetary policy implications, prudential and security considerations, and consumer protection issues. At present, issuance of money, whether in the form of cash or bank accounts, is a regulated activity. That is not currently the case with e-money, as it is not covered by existing laws nor practices. This raises concerns that are prudential in nature relating to the safety and soundness of this development in the payments system and the reliability of issuers of e-money. Other relevant issues would be the monetary policy implications of e-money developments and related seignorage income, and the potential for money laundering activities to benefit from e-money developments.

Prudential concerns that may need to be considered from a regulatory perspective include the following:

Classification of e-money issuers: e-money schemes entail receiving money from members of the public and in return provide a means of payment in electronic form. This practice may be analogous to the taking of demand deposits (money paid in by card holders) and the issuance of currency (payment in electric form). To what extent, therefore, do they fall within the ambit of existing banking legislation?

Payments system oversight: e-money schemes and issuers have been known to encounter difficulties of one kind or another. In this event, there is the potential to undermine consumers' confidence in the overall payment systems. To avert such eventualities, it will be necessary to monitor the safety and soundness of such schemes and the issuers by subjecting them to some form of regulation and supervision.

Security of e-money: breaches of security may be difficult to detect which may result in losses by issuers or disruptions to services, much to the disadvantage of the public and merchants. On the other hand, inadequate security measures will contribute to making such schemes attractive to money laundering and other criminal activities. Other security related issues of concern include the potential for counterfeiting cards or tampering with them, issuance of fraudulent value, etc.

Potential monetary policy implications, given that e-money products have the potential to replace central bank currency as a means of making payments, there is a risk, therefore, of affecting money supply. Given the early stage of e-money development, it may be considered premature to focus on this concern directly, but nonetheless it will be necessary to monitor such developments.

Seignorage: with the potential for the substitution of cash by e-money, thereby reducing the volume of bank notes and coin in circulation, there may be a reduction in the interest earned on assets held for cash (seignorage revenue). Given the current extent of e-money developments in Botswana, and the relatively small proportion of the Bank's balance sheet that is represented by currency liabilities, the potential for loss of seignorage revenue is not considered significant at this point in time, but again, it is important to observe developments.

Legal and regulatory framework: it will be necessary to examine the need for a new legal framework and regulatory regime to regulate the issuance of e-money products and services, the objective being the establishment of a legal and regulatory framework that will facilitate maintaining the stability of the payments system as well as ensuring the soundness of e-money schemes and their issuers. Regulation should also provide adequate flexibility for service providers to take advantage of advancing technology to improve efficiencies on their service to the benefit of their customers.

Pricing and related behaviour: pricing behaviour on new products would have to be monitored to ensure that anti-competitive practices do not occur, which could be a particular risk in the event of a single new e-money issuer enjoying a monopoly position. Other issues to be addressed include how to classify "slippage", that is, the amount that will be left in the card issuer's account if small values cannot be redeemed from the cards, plus the value on lost cards. It is not clear if this amount would be deemed "unclaimed monies" and, therefore, become general revenue, as is the practice with bank accounts, or whether it will belong to the card issuer.

CONCLUSIONS

The development of e-money as a form of effecting low value payments is gradually gaining momentum and acceptance internationally. As part of the global village, Botswana cannot afford to be left behind and must, therefore, ensure that the environment and related infrastructures are conducive for the introduction of such facilities. The development of e-money would potentially benefit the consumer as it enhances the consumer's ability to effect low value payments electronically in a secure environment while reducing reliance on cash.

There are a number of factors that would support the use and acceptance of e-money products in Botswana. These include a willingness by the public to use such products; a wide (and growing) range of outlets for spending e-money (beyond telephones and electricity, as at present); a sound legal and regulatory framework surrounding their use; a reliable and extensive system of telecommunications and information technology infrastructure to facilitate their use; and an impetus provided by the Government facilitating payments through such a mechanism.

While product development is at an early stage, so is regulatory development, and much remains to be done. Many of the inherent risks will, however, have to be addressed as and when they arise since the precise nature of the impact of e-money cannot be determined ex ante. However, the risks associated with widespread use of e-money make it imperative that the regulatory framework be developed as well as a review of existing legislations to ensure legal recognition of electronic transactions. International experience suggests that there is no single "best" model for the regulation and oversight of e-money schemes, but does provide guidance as to the issues that must be taken into account when a regulatory framework is being designed. For instance, international experience does not generally suggest that e-money issuance should necessarily be restricted to banks, but it does suggest that e-money issuers should be regulated, to enable risks to be monitored and contained. The challenge for Botswana is to maintain pace with international developments and best practice, safeguarding the stability of the financial sector and the payments system, while facilitating the benefits, such as efficiency gains, that payments innovation can bring.

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APPENDIX 1: E-MONEY TECHNOLOGIES

Smart cards

Smart cards were first introduced into general use in France in 1984. They are now considered as a commodity that is expected to replace the more simple plastic cards that are now in general use, especially now that Visa and MasterCard are pioneering the way forward with smart card technologies.

The smart card is an innovative application platform that involves all aspects of cryptography (secret codes), not just authentication, as is the case with credit cards. A smart card has a microprocessor built into the card itself. Cryptography is essential to the functioning of these cards in several ways:

(i) The user must corroborate his or her identity to the card each time a transaction is made, in much the same way that a PIN is used with an ATM; this may be undertaken using biometrics such as a thumbprint and PIN.

(ii) The card and the card reader execute a sequence of encrypted sign/countersign exchanges to verify that each element is dealing with a legitimate counterpart.

(iii) Once this has been established, the transaction itself is carried out in an encrypted form to prevent anyone, including the cardholder or the merchant whose card reader is involved, from "eavesdropping" on the exchange and later impersonating either party to defraud the system.

This elaborate protocol is conducted in such a way that it is invisible to the user, except for the necessity of entering a PIN and to undertake perhaps thumb print the transaction.

The chips in smart cards are capable of many kinds of transactions and alternative applications. For example, purchases of goods and services could be paid for from a credit account, debit account or from a re-loadable stored value account. Smart cards can also be used as secure identity cards. The enhanced memory and processing capacity of the smart card is many times that of traditional magnetic-stripe cards and can accommodate several different applications on a single card.

Internationally acceptable smart cards are likely to be increasingly available over the coming years, as magnetic stripe credit and debit cards are superseded by "chip and pin" technology, whereby cardholders authenticate purchases by entering a PIN number rather than signing a paper slip. A global specification is being developed known as Europay/Mastercard and Visa (EMV). Increasing areas of the world are already utilising this technology but their outreach is still generally considered limited. The smart card will eventually be available to those who want one, but currently availability is generally restricted to those participating in special programmes.

NETWORK-BASED TECHNOLOGIES

Internet Based eE-money

Network-based products utilise specialised software applications that may be stored on a personal computer for the storage and receipt of value. The introduction and development of network or software-based schemes has been significantly slower than the card-based schemes, which may be attributed to the limited or non-availability of suitable operational hardware and software platforms that are required in order to provide secure and robust products and services on either a regional or national basis. Network-based schemes are currently operational, on a trial basis, in a limited number of countries globally, including Australia, Colombia, Greece, Hong Kong, Italy, Korea, Norway, Russia, Spain and Taiwan (BIS, 2004:3). However, it is recognised that such schemes are limited in their availability, scope and application.

Mobile Phone Technology Based E-money

Major financial institutions, together with the leading mobile phone providers and VISA have come together to encourage and facilitate the use of mobile phone technology for the provision of financial products and services to drive the adoption of "open" standards in this field. This development is intended to facilitate the worldwide creation of a financial services environment utilising mobile e-commerce. It is envisaged that this environment will allow new sustainable mobile commerce business models, due to the increased use of mobile phone technology and could facilitate the greater availability of financial services and products at a competitive price.

To date, mobile phone technology has so far been applied to providing e-banking and access services (linked to bank accounts or credit cards), and to use mobile phone balances (whether prepaid or account based) to send and receive money and pay for goods and services. Globally, it is likely that in the short to medium term, the mobile phone will surge ahead of competing terminals, including personal computers, to establish itself as the leading e-commerce terminal for personal use. However, it is quite feasible for mobile phone smart cards to incorporate prepaid e-money facilities that are not linked to bank accounts or credit cards.