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The Implications of Pegging the Botswana Pula to the U.S. Dollar

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INTRODUCTION

The practice of pegging the currency of one country to another is widespread in the world: of the 141 countries in the world considered as of March 31, 1979, only 32 (23%) national currencies were not pegged to other currencies and in Africa only 3 out of 41 were unpegged (Table 1); so that the fundamental question of whether to peg a currency or not is already a decided matter for many countries, and what often remains to be worked out is, to which currency one should peg one's currency. Judging from the way currencies are moved from one peg to another, it seems that this issue is far from being settled. Once one has decided to peg one's currency to another, there are three policy alternatives to select from: either a country pegs to a single currency; or pegs to a specific basket of currencies; or pegs to Special Drawing Rights (SDR).

Pegging a weak currency to a single major currency seems to be the option that is most favoured by less developed countries. The ex-colonial countries generally pegged their currencies to that of their former colonial master at independence, and afterwards some have sought independent actions. The former British colonies seem to have been more independent in this matter so that by March 31, 1979, only three out of an "empire where the sun never sets" still pegged their currencies to the Pound Sterling. The USA dollar was the main beneficiary. The French seem to be more successful in retaining the loyalty of their former colonies.

T A B L E 1

WORLD EXCHANGE ARRANGEMENTS
(number of Countries pegged to each currency)

CURRENCY PEGGED TO	10 July 1976	31 October 1978		31 March 1979	
	AFRICA	WORLD	AFRICA	WORLD	AFRICA
US Dollar	13	41	10	40	10
Pound Sterling	4	5	3	3	2
French Franc	15	14	14	14	14
SDR	6	13	9	12	8
Own basket of currencies	5	18	4	20	4
Cooperative exchange Arrangement	0	6	0	8	0
Exchange rate Adjusted According to a set of indica- tors	0	5	0	4	0
Unpegged or other	1	28	2	32	3
TOTAL	44	130	42	141	41

SOURCES: (1) "Africa Guide 1977" African Guide Co.
Essex (p.9)

(2) IMF "International Financial Statistics"
Vol. XXXI No. 12 Dec. 1978 (p.11)

(3) IMF "International Financial Statistics"
Vol. XXXII No. 5 May 1979 (p.11)

The net result of pegging the local currency to a single foreign one is that the local currency depreciates and appreciates vis-a-vis other currencies as that foreign currency depreciates and appreciates. In other words, the economic performance in the foreign country is the sole determinant of the value of the local currency vis-a-vis other currencies. The external trade of the local country has no effect at all on the external value of the local currency. There are several other disadvantages of

pegging to a single currency. The need for reserves may increase because movements in the pegged exchange rate of the LDC will not reflect actual developments in its balance of payments but the balance of payments of the industrial country. Since the fluctuations of the exchange rate are exogenous and independent of government policy, they may interfere with the pursuit of internal policy objectives. Exchange rates between the currencies of the LDCs will be subject to variations since they all do not peg to one currency - this may discourage intra-regional trade. Lastly pegging to a single currency may lead to a tendency towards higher import prices. There are some advantages of pegging one's currency to that of one's major trading partner; it reduces fluctuations of exchange rates between the LDC and the developed country; it should facilitate more trade between the two countries; capital flows for investment may increase; there may be increase in the confidence in the LDC's currency; and it provides a clear criterion for intervention.

Pegging one's currency to a basket of currencies attempts to minimize the disadvantages and retain the advantage of pegging to a single currency. The most comprehensive measure of a country's effective exchange rate would take into account its trade and payments structure. The closest approximation of this measure is the IMF's Multilateral Exchange Rate Model¹ for industrial countries which requires such data that the LDCs do not have. Other simpler indices are:

(a) the import weighted index defined by formula:²

$$E_{ik} = \sum_j \left(\frac{M_{ji}}{\sum_j M_{ji}} \right) R_{jk}$$

Where E_{ik} = the index of import weighted exchange rates relative to a numeraire currency k .

M_{ji} = the import of country i from country j in one year

R_{jk} = the value of currency j in terms of currency k where $R_{jk} = 1$ at the beginning of the year.

(b) the export weighted index (defined in a similar way)

(c) the bilateral trade index.

It has been argued elsewhere that the index of import weighted exchange rates provides the closest approximation to the effective exchange rate index.³

To overcome the drawbacks to construction of separate baskets for each country, some countries have chosen to peg on a common numeraire - the SDR. Pegging to SDR reduces cross-rates variability between LDCs, may promote intra-regional trade and is convenient. The disadvantage of SDR is that it does not reflect movements in the effective exchange rate, though to a less extent than a single currency peg.

Recently divergent views have been expressed about the rationality of pegging the Botswana Pula to the "depreciating USA dollar" in the Botswana Daily News.⁴ This provoked my own interest in the subject which has resulted in my writing this short note as a small contribution to the healthy and fruitful exchanges.

The result of pegging the Pula to the depreciating USA dollar is that the Pula has depreciated in value vis-a-vis major European currencies. Table 2 shows that between 1976 and 1978 the Pula had depreciated against major currencies as follows: DM 19%, Yen 30%, £ 13%, Swiss Francs 31%, Netherlands Guilders 16%, SDR 6%. What effects does this have on Botswana and Batswana as a whole? The effects depend on who Botswana trades with and in what currency; Botswana's international lenders; sources of private foreign investment and expatriates; and the foreign currencies Botswana holiday makers wish to take. We shall therefore first see what theory predicts and then concretise the matter with examples from the Botswana situation.

T A B L E 2

RATES OF EXCHANGE BETWEEN BOTSWANA PULA
AND OTHER CURRENCIES 1976-78

CURRENCY	1976	1977	1978	% Change
South African Rand	1.000	1.050	1.050	+5%
USA dollar	1.1500	1.2075	1.2075	+5%
German Deutsch Mark	2.7091	2.5328	2.1961	-19%
Japanese Yen	336.75	289.67	234.44	-30%
Swiss Francs	2.8181	2.4047	1.9562	-31%
Netherlands Guilders	2.8256	2.7531	2.3788	-16%
British Pound Sterling	0.6763	0.6292	0.5912	-13%
SDR	0.9898	0.9940	0.9267	-6%

SOURCE: Bank of Botswana, "Annual Report 1978" (p.45)

EXTERNAL TRADE

When a domestic currency depreciates in terms of a foreign currency, it has certain effects on the prices, quantities and values of exports and imports of that country. Clearly the quantities of imports should fall and the quantities of exports should rise. As far as prices and values are concerned it will depend on whether they are expressed in foreign or domestic currency.⁵

Under conditions of fair trade i.e. trade between "equal partners", the price of a commodity is determined in the currency of the country of origin; so that, for example the prices of all Botswana's exports should be determined or fixed in Pula. In which case if the Pula depreciates in relation to a foreign currency; in terms of Pula the price of Botswana's exports will remain unchanged but the price of her imports will rise; and in terms of the foreign currency the price of Botswana's exports will fall but the price of her imports will remain unchanged.

But less developed countries have certain characteristics which make the price reaction move in quite a different direction; they have high specialisation in production i.e., depend on few homogenous primary products for exports, they are unable to affect the export or import prices in foreign currency through their exchange rate policies because of the inelastic nature of the demand for imports, and in the short run of their supply of exports, i.e. they are price takers; lastly their financial markets are rudimentary and so capital flows to and from less developed countries are probably less responsive to conventional yield considerations. The net result is that the "pass through effect" of the exchange rate adjustment (the extent to which exchange rate changes are transformed into changes in the prices of imports-denominated in the local currency, and exports-denominated in foreign currency) is minimal or zero.

Therefore, since the prices of both Botswana's exports and imports are fixed in foreign currencies, a depreciation of the Pula in relation to a foreign currency would produce the following results: in terms of the foreign currency, there is no price change in either imports or exports; but in terms of Pula, the prices of both imports and exports rise, the value of exports should definitely rise, while the value of imports may rise, remain constant or fall depending on the elasticity of domestic demand for imports.

Having indulged in a bit of theoretical gymnastics, let us now try to infer what it implies for the case in point. Table 3 shows the direction of trade in Botswana in 1977, for mainly two major currency areas: the dollar area and the European currency area.

T A B L E 3
DIRECTION OF TRADE : BOTSWANA 1977

CURRENCY AREA	IMPORTS		EXPORTS	
	P. Million	% of Total	P. Million	% of Total
Dollar Area ¹	209.5	87.5	60.1	38.4
Europe	5.3	2.2	82.8	52.9
All other	24.8	10.3	13.8	8.7

SOURCE: E. O. Ochieng, "Botswana's Foreign Trade : Dependence Vs. Diversification" Table 5. Seminar on Botswana's External Trade in the light of the Lome Convention NIR 30-31 October, 1978

Note 1: (a) Includes exports to and from USA and the Common Customs Areas (South Africa, Lesotho, Swaziland).

(b) In January 1979 South Africa freed the Rand from its fixed shackles to the USA dollar as part of a new growth-through-freedom economic policy. Although there was no immediate devaluation or revaluation of the rand, it has since then been appreciating in relation to the USA dollar: between January 1979 and May 1979 the rand appreciated by 3% in relation to the USA dollar from 1R = US \$1.1500 to 1R = US \$1.1840.⁶ We shall limit our analysis to mainly periods before January, 1979 because trade data after that period is not available. It is however enough to note that the appreciation of the rand vis-a-vis US dollar has the effect of increasing the price of imports from South Africa.

The depreciation of the USA dollar and consequently the Pula should not affect trade within the dollar area. This means that 87.5% of Botswana's imports and 38.4% of her exports should not be affected (Table 3). As far as Europe is concerned, Botswana gets 2.2% of her imports from there, and so in approximate terms, we shall assume that the impact of changes in its value, price and quantity is small enough to be ignored.

Botswana exported 52.9% of her total exports to Europe in 1977 and so let us try to see how a Pula depreciation due to a dollar depreciation is likely to affect the quantity, price and value of the exports to Europe. To reiterate what I have already mentioned for the purpose of emphasis, when the Pula depreciates vis-a-vis European currencies:-

(A) Expressed in European Currencies:

The prices of Botswana's exports should remain unchanged and therefore the quantities and values of exports should remain constant.

Botswana's main exports to Europe are beef 28.4% of total, precious stones 27.8% and base metals - copper/nickel - 30.0%.⁷

The sale of Botswana beef to EEC is subject to quota systems and the prices are determined by those ruling in the EEC market; therefore a Pula depreciation should not have any effect on the prices, quantities and values of beef exported to the EEC. After all, most of the beef was sold to UK, whose currency depreciated even more than the dollar between 1971 and 1978. (Table 4).

As for diamonds, it is mined by De Beers which also mines South African diamonds. Diamonds are sold in London by the Central Selling Organization which is monopolistic in character. It should be able to influence the prices and/or quantities sold, as it indeed increased prices in April 1977 by 15%, in December 1977 by 17% and in August 1978 by 30%⁸ so a depreciation of the Pula should have little or no effect on the prices, quantities and values of diamonds.

T A B L E 4

THE RELATIONSHIP BETWEEN SDR AND 3 OTHER MAJOR CURRENCIES 1971 and 1978

	<u>1971</u>	<u>1978</u>	<u>1978/71</u>
SDR per USA dollar	0.997	0.787	79%
SDR per UK pound	2.351	1.529	65%
SDR per German Mark	0.282	0.396	140%

SOURCE: IMF, International Financial Statistics, Vol. xxxii No. 3, March 1979

on the effects of a depreciation on the prices, quantity and value of copper/nickel. All the copper/nickel by agreement was sold to MG and so a depreciation would not have effect on the quantity exported. For many years before 1977 most nickel including Botswana's was sold at prices closely related to those set by the dominant producer, the International Nickel Company of Canada (INCO) and price movements, when they occurred were upwards only. In 1977 and after INCO lost the dominant role, there was weak demand for nickel, world output actually increased - and the system of pricing was destroyed. Prices began to decline through 1977 and 1978. There was no longer a single dominant price and for competitive reasons many sellers were unwilling to reveal their prices. As for copper 1977 began with an exceptionally high level of stocks and since producers failed to agree on cuts in production, prices continued to decline through 1977 but in 1978 the demand for copper picked up and the prices for copper began to rise again. (Table 5)

T A B L E 5
COPPER AND NICKEL PRICES IN 1977 AND 1978
(US cents/lb)

	<u>Nickel</u>	<u>Copper</u>
January 1977	222	63
June 1977	232.5	60
December 1977	190	50
January 1978	200	57
June 1978	205	58
December 1978	183	70

SOURCE: Bank of Botswana, Annual Report 1977 (p.6) and 1978 (p.2)

Since prices in table 5 are quoted in USA dollar and it depreciated by about 5% in 1977 and by another 5% in 1978 against SDR, this means that the prices would have been lower by about 10%¹⁰ if expressed in SDR. The prices of copper/nickel is externally determined and is quoted in dollars, and the demand for Botswana copper can be expected to be perfectly elastic so the value of copper/nickel exports in European currencies should decline at the same rate as the depreciation for the dollar.

(B) Expressed in Pula:

- (1) the price of exports should rise
- (2) the quantity of exports should rise except if the foreign demand were perfectly in-elastic (which is the most likely situation and so the quantity should remain constant)
- (3) the value of exports should definitely rise.

Without going into further detail it is obvious that the depreciation of the Pula results in definite gains from exports to Europe when expressed in Pula.

In the final analysis it depends on the main problem at hand: whether one is interested in the value of exports and imports in terms of Pula (domestic currency) or European currency (foreign currency). When a country has a balance of payments deficit, the usual problem is the task of eliminating the deficit of foreign currencies, hence what matters is the value of exports and imports in terms of the foreign currency. On the other hand, if we are interested in stimulating the domestic economy and eliminating unemployment then export and import values in Pula are relevant.

FOREIGN LOANS

If an European country gave Botswana a loan in the form of cash and it spent it in that European country, the Pula depreciation has no effect on it; but if it was spent in the dollar area e.g. USA or South Africa, then Botswana would stand to gain. Similarly, if Botswana received dollar loans and it is spent in dollar area her position would not change but if she spent it in a European currency notably marks she would stand to lose. The fact is that most loans, grants and other aid are usually spent in the donor country anyway. For example, for Britain over 2/3 of her aid money never actually leaves Britain.¹¹ When it comes to repayment of the loan it will depend largely on the source of the foreign exchange used for the repayment of the loan. The effects can be expressed in form of a matrix (Table 6).

T A B L E 6

SOURCES OF FOREIGN EXCHANGE TO REPAY LOANS

To \ From	Dollar	Marks
Dollar	1	3
Marks	2	4

NOTE: the columns show the currency in which foreign exchange is earned and the rows show the currency in which the loan is to be paid.

Botswana should remain unaffected if she were in boxes 1 and 4, it should lose if it were in box 2; and should stand to gain if it were in box 3.

A typical example is the copper/nickel project which put Botswana in Box 2 for one of the loans.¹² The Bamangwato Concessions Ltd. borrowed DM. 222 million from Kreditanstalt For Wiederaufbau (KfW) in West Germany. Although the copper and nickel were sold in Germany, they were sold for USA dollars. The continuing appreciation of the Deutschemark imposed financial strains on the project and BCL had to prepay a portion of the KfW loan during the reorganisation of the financial arrangements in March 1978 to lessen the impact and reduce the exchange risk of the appreciation of the Mark.

Table 7 shows the summary of outstanding external public debt by foreign currency as at 31st March 1978. We should note several things about this table:-

- (a) most of the loans were in USA dollars (68%)
- (b) the second biggest loan was in Pound Sterling (21%)
- (c) the rest contributed 11% of the total external public debt.

T A B L E 7

OUTSTANDING EXTERNAL PUBLIC DEBT AS AT 31 MARCH 1978

LOANS	Foreign Currency	Exchange rate (1P=)	Pula	% of Total
Sterling	£ 14 657 874	0.6472	22 648 136	21
US dollar [†]	US \$ 79 252 572	1.2075	70 335 604	66
African Development	U.A. 1 471 146	1.039	1 415 925	1
Danish Kroner	D.Kr.14 696 625	6.7137	2 189 050	2
Deutsch Mark	D.M. 6 640 977	2.4484	2 712 263	3
Rand	R. 1 890 700	1.05	1 800 667	2
Swedish Kroner	S.Kr.26 236 959	5.5475	4 729 681	5
			105 831 326	100

SOURCE: Ministry of Finance and Development Planning: Annual Statements of Accounts 1977/78, Government Printer, Gaborone (p. 287)

[†]The IBRD Loans of US \$36 749 262 (46% of total US \$ loans) are expressed in US dollars but represent a Basket of Currencies. The dollar amounts shown are the dollar equivalents of the loaned currency at the time of withdrawal and represent the dollar by which the loan is negotiated and controlled. At the year end the Pula value of currencies outstanding has therefore been adjusted in the table 7 to reflect this.

T A B L E 8

OUTSTANDING PUBLIC DEBT AS AT 31ST MARCH, 1978
EXPRESSED IN EXCHANGE RATES OF 31ST MARCH, 1979 (PULA)

Sterling Loans	25 119 999	(+10%)
US dollar Loans	70 335 604	
African Development Loans	1 415 925	
Danish Kroner Loans	2 344 445	(+ 7%)
Deutsch Mark Loans	2 944 870	(+ 8%)
Rand Loans	1 852 356	(+ 3%)
Swedish Kroner Loans	4 970 439	(+ 5%)
TOTAL	113 946 077	(+ 8%)

SOURCE: Worked out from Table 7

Expressing the outstanding Public Debt as at 31st March, 1978 in exchange rates of 31st March, 1979 we see that the debt expressed in Pula has increased from P105 831 326 to P113 946 077,

an increase of 8% in one year (tables 7 and 8). Therefore the dollar depreciation has the effect of increasing the external debt of Botswana expressed in Pula.

Tables 9 and 10 show Botswana's external trade and payments structure by currency for 1978 and the first quota of 1979. The outflows i.e. payment for imports and "other" were overwhelmingly in South African Rand - 88% in 1978; and the inflows i.e., receipts for exports and "other" were also overwhelmingly in USA dollars - over 83% followed by British Sterling - 10%. So as far as repayment of European loans are concerned, Botswana is in Box 2, which means she stands to lose.

T A B L E 9

SUMMARY OF SALES RETURNS BY CURRENCY 1978

CURRENCY	IMPORTS		EXPORTS	
	P'000	% OF TOTAL	P'000	% OF TOTAL
US Dollars	1 839	2	85 389	83
Canadian Dollars	16	-	14	-
Deutsch Marks	194	0.2	34	-
Danish Kroner	12	-	-	-
Swiss Francs	553	0.5	-	-
British Sterling	1 623	1	10 873	10
S. African Rand	99 253	88	3 783	4
Rhodesian Dollars	9 080	8	4	-
French Francs	142	0.1	2 871	3
Others	201	0.2	9	-

SOURCE: Bank of Botswana

NOTE: Export figures exclude earnings of BCL

T A B L E 10

OUTFLOWS AND INFLOWS JANUARY-MARCH 1979

Currency	Outflows			Inflows		
	Imports	Other	Total	Exports	Other	Total
US Dollars	452	1 605	2 167	17 924	5 097	23 058
Canadian Dollars	1	2	26	4	117	121
Deutsch Marks	64	169	243	2	267	269
French Francs	38	19	57	499	6	505
Danish Kroner	7	15	22	-	46	46
Swiss Francs	162	488	651	-	59	59
British Sterling	596	2 321	1 945	174	2 398	2 586
S. African Rand	22 524	21 596	44 746	1 072	464	2 046
Rhodesian Dollar	2 416	969	3 390	1	63	64
Others	222	25	257	-	372	372
TOTAL	26 285	27 707	54 773	19 676	8 892	29 142

SOURCE: Bank of Botswana

- NOTE:1) Excludes government (loans, grants, customs revenue)
 2) Exports do not include BCL earnings
 3) Outflows include amounts transferred to approved Rand retained accounts.

FOREIGN INVESTORS, EXPATRIATES, AND HOLIDAY MAKERS

A foreign investor usually brings in his money in foreign exchange, invests it in a project in Botswana in the hope of getting a stream of returns in Pula. He will then want to repatriate the profits, dividends and interest in foreign exchange. If the investor wants to repatriate his earnings in Marks, he will need many more Pula under the present arrangement resulting in a saving in foreign exchange on the part of Botswana.

Expatriates and Botswana residents who would like to repatriate their earnings in foreign exchange are similarly hit by this arrangement. This entails one danger though: that it

might discourage private foreign investments and expatriates from Germany. But the fact is there has so far been little foreign investment from mainland Europe and because of language and other barriers the few expatriates from there are usually under some form of aid scheme. Talking of expatriates in Botswana generally, most of them tend to come from Anglophone areas especially Britain, Rhodesia, South Africa, and to a less extent USA. Although there are no details of repatriation of earnings I am confident to make a guess that most of it goes to Britain and South Africa.

CONCLUDING REMARKS

From the foregoing several points have come out clearly:-

- (a) Because of the smallness of their economies and because of their colonial history, most less developed countries tend to peg their currencies to those of industrialised countries to provide a clear criterion for intervention.
- (b) Because the less developed countries are price takers on the international market they are unable to affect the export and import prices in foreign currency through their exchange rate policies.
- (c) Once one has decided to peg, one should choose a measure that takes account of one's trade and payments structure to ensure that the measure is as close as possible to the country's effective exchange rate.
- (d) Pegging to a single currency and to a less extent to the SDR does not fulfil point (c) above and that pegging to own basket of currencies especially the import weighted index would be the best alternative.

Following from the above points and from tables 3, 8, 9 and 10 which show that:-

- (a) 87.5% of Botswana's imports came from the dollar area i.e. South Africa in 1977;
- (b) most of Botswana's exports were paid for in dollars;
- (c) most of her aid was in USA dollars;
- (d) most foreign private investment and expatriates came from South Africa, Britain and USA,

I am confident to conclude that the pegging of Botswana Pula to the USA dollar was prudent at that time.

Now that the South African Rand was freed from the USA dollar and 88% of Botswana's imports were paid for in South African Rand in 1978 and the USA dollar has continued to depreciate; and if we follow the same arguments, Botswana should now be called upon to revise her trade and exchange rates policies.

In winding up, I would like to identify two policy areas that Botswana should investigate and take action on:-

- (1) Form of payments for exports: Although most payments for exports were in USA dollars (83% in 1978), only a tiny amount of exports actually went to USA, therefore Botswana should investigate the possibilities of getting her exports paid for in other currencies other than USA dollar.
- (2) Alternative peg: Our arguments so far would point to the South African Rand as an alternative peg but this is politically unpalatable. Another possibility is to continue pegging to the USA dollar but periodically adjust the rates to take account of the dollar depreciation in relation to other major currencies especially the South African Rand;

this may encourage speculation and create instability. Lastly, Botswana could peg to the SDR but as already mentioned it will not reflect movement in the effective exchange rates of Botswana.

In conclusion I would say that whatever policy is adopted should reflect as much as possible the trade and payments structure of Botswana.

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ACKNOWLEDGEMENTS

I would like to thank Emeritus Professor E. L. Furness of the Bank of Botswana for his valuable comments on an earlier version of this paper, and Miss Thornhill also of Bank of Botswana for providing me with vital data.