BALANCE OF PAYMENTS CRISIS AND POLICY OPTIONS: THE CASE OF BARBADOS

by

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1. INTRODUCTION

In the period since floating exchange regimes (early 1970s), the Barbados economy has experienced two Balance of Payments "crises:" the first in 1982, the second in 1991. On both occasions, stabilization programmes with the IMF were negotiated; on neither occasion was an exchange rate devaluation implemented as the solution. This paper argues that, in the light of the Barbados experiences, the IMF's orthodox recommendation of devaluation is not necessarily a first-best solution to foreign exchange crises in small open economies. Section 2 looks at the merits and demerits of a devaluation. Section 3 presents an overview of the two foreign exchange crises in Barbados. Section 4 reviews a select theoretical and empirical literature and, in the process, identifies the key variables necessary to analyze these two periods of foreign exchange hardship. Section 5 revisits the Barbados experiences in light of the theoretical and empirical suggestions ensuing from that literature. Section 6 presents a "smorgasbord" of issues, and Section 7 summarizes and concludes the paper.

2. A PRIMER ON DEVALUATION

Currency devaluations have been pervasive in the developing world as a key element in the stabilization programmes. They are usually aimed at correcting a balance of payments deficit. The basic mechanism is to alter relative prices in the economy, that is, to make the domestic price of imports higher and the foreign price of exports lower, ceteris paribus. By implication, the price changes caused by the devaluation should result in a reduction of domestic demand for imports. Import-competing industries would become more competitive and foreign demand for exports would increase.

Hence, by reducing imports and increasing exports a devaluation is supposed to reduce the trade deficit thereby, improving the balance of payments.

The reality sometimes does not accord with orthodoxy. The impact of a currency devaluation on the trade balance depends on the combined result of the changes in export and import demand. In theory there are two traditional approaches: the elasticities and the absorption.

In the former case the *Marshall-Lerner Condition* gives the critical values of demand elasticities for devaluation to improve the balance of trade[1]. The elasticities are determined by the economy's structure. In small open economies (SOEs) the structural features are such that the Marshall-Lerner Condition does not hold. On the import side, the demand elasticity is very low since in small open economies imports are usually necessities. On the export side, these countries find it difficult to expand sales/output without lowering price. As a result inelastic foreign demand means that foreign exchange earnings tend to decline if price is reduced.

It must also be noted that the Marshall-Lerner Condition is based on two very restrictive assumptions- that the supply elasticities of exports and imports are infinite and that the trade account is initially balanced. Even though the assumption of infinite elasticity of import supply is applicable to the SOEs, the supply elasticity of exports tends to be low.

[1]The Marshall-Lerner condition states that the absolute sum of the elasticities of demand for imports must be greater than unity for a devaluation to have a positive effect on that country's trade balance.

This is because in many SOEs a lot of primary and agricultural products are exported, the supply of which cannot be easily increased in the short-run. This reduces the likelihood of devaluation improving the trade balance.

3. BACKGROUND TO TWO BALANCE OF PAYMENTS CRISES

Prior to the first significant OPEC price shock in the Fall of 1973, the consequences of external conditions for the Barbados economy were generally favourable, innocuous, at the worst. The first "energy crisis" imposed a period of economic hardship which manifested itself on the demand side in the substantial outflows of foreign exchange reserves to finance necessary imports. On the supply side, the decline in international tourism (see Chart 1 for Barbados' arrivals reduced Barbados' capacity for foreign exchange earnings.(For a general pattern the first crisis see Table 1)

Fortuitously, however, the price of the next most important export commodity, sugar, increased significantly in the 1974-75 period, effectively dampening the effects of the oil price increase. Unfortunately, the second oil price shock of 1979-80 did not coincide with such favourable circumstances. In 1981, external precipitants were exacerbated by domestic problems. The sugar industry was beset by bad weather and labour shortages. In addition, the high level of government expenditure was not matched by growth in revenue and hence the deficit grew to be the largest on record at that time.[2]

[2]see Central Bank of Barbados Annual Report 1982

Therefore, the combination of global economic recession, rising international interest rates, and the rapidly declining sugar prices placed severe pressures on Barbados' balance of payments position, resulting in the crisis of 1982. Domestic output contracted 3% following a decline of 5% in the previous year. In 1982, there was a substantial decline in foreign exchange earnings as sugar exports declined and visitor arrivals fell. Balance of payments problems persisted and with such low external demand for domestic goods, the government had to negotiate a medium term Standby Arrangement with the International Monetary Fund (IMF) of BDS$50.5 million to stabilize the foreign currency situation.[3]

The second "Balance of Payments crisis" in 1991, was precipitated primarily by massive fiscal expansion during fiscal Year 1990/91; this was manifested in the deficit to GDP ratio rising to 8%. Barbados recorded declines in real GDP of 3.3% and 4% during 1990 and 1991 respectively. Long stay tourist arrivals declined by 6% and 9% in 1990 and 1991 respectively, and the other major sectors- agriculture, manufacturing and services- contracted, not unaffected by increases in direct and indirect taxes in 1990.(See Table 2)

Fiscal expansion in Barbados would probably not have had such deleterious consequences were it not financed by government's domestic borrowing. The Barbados government opted to monetize the fiscal deficit, despite high levels of liquidity in the domestic banking sector, and the economy's good international credit rating (the best in all of Latin America and the Caribbean).

[3]See Central Bank of Barbados Annual Report 1983

The rapid expansion in the domestic assets eroded foreign reserves and by July 1991, available reserves were at a low- equivalent to one and a half weeks' worth of imports.(Chart 2)

The erosion of the reserves was correlated with a substantial increase in imports- up 23% during the fourth quarter of FY 1990/91, compared with a 10% increase for a similar period in the previous year. As fears of a devaluation heightened, the government announced its intent to defend the exchange rate parity with the US dollar; this was an attempt to stem capital flight. It appears to have restored some confidence in the currency domestically. Barbadians, despite their inclination to hoard foreign exchange, continued to trade the domestic currency for US dollars at BDS$2 = US$1. With no history of a noticeable parallel market, and a history of willingness to respond to moral suasion during periods of economic recession, there is little evidence of a parallel market having developed in 1991.

The shortage of foreign reserves mentioned above led Barbados to seek another (18 month) Standby Arrangement with the IMF. In order to successfully defend the exchange rate parity, the government announced its intention to decrease public sector emoluments by 8% and to reduce the fiscal deficit from 8% of GDP, previously mentioned, to a mere 1% in one year, whilst the Balance of Payments was temporarily aided by an IMF loan[4].

[4]There was also some credit restriction, intended to dampen imports.

It is not unreasonable to suggest that these two crises were sponsored, to some significant degree, by the ruling governments' fiscal imprudence. Important to this hypothesis is the political cycle; in both 1981 and 1991, the fiscal deficit reached 8% of GDP. In both these years, there were national elections in which the ruling parties retained power.

Apart from the obvious domestic fiscal expansion which occured in the economy in both crises a more silent but probably more potent cause of the crises was external debt. From as early as the late 1970's it was a stated policy decision to raise the level of foreign debt with a view to developing the country, primarily in terms of its infrastructure, hence much of the borrowing was project related. In the 1980s this trend continued and the debt burden of Barbados increased. According to Boamah (1988), Barbados' external debt relative to GDP nearly quadrupled in a relatively short period between 1972 and 1986. During this period debt servicing increased more than sixfold. It is this rapid expansion in external debt and its consequent servicing that contributed to the severe shortage in foreign exchange particularly in the second crisis.

After 1986 the complexion of external borrowing changed significantly. There was less borrowing for investment purposes and significantly more for consumption purposes. The sources of the loans changed too; from concessionary project loans to short-term high interest loans negotiated on the international capital markets. Total external Central Government debt stood at BDS$584.8 million in 1986 of which 34.9% was multilateral , 13.4% bilateral, 27.7% commercial and 22.9% bond placements In the years following, there was a marked decline in the amount of bilateral and commercial contribution to the debt with a somewhat concommitant increase in the multilateral and bond placements' contributions. This is no doubt reflective of the usurious rates charged by the international capital markets, especially with respect to commercial debt. During the lead up to the 1991 crisis, the multilateral contributions accounted for 37.6%, bilateral 14.1%, commercial 24.4% and bond placements 23.8%.

4. REVIEW OF A SELECT LITERATURE ON BALANCE OF PAYMENTS CRISIS

Edwards and Montiel (1989) [hereafter E&M] have examined, in some detail, the price of postponed adjustment. They argued that "the longer the delay in adjusting to shocks, the more volatile the movement of macroeconomic indicators and the larger the eventual adjustment." Their most important findings were that the effects of postponed adjustment depended on the source of the original shock and that fiscal expansion was frequently responsible for devaluations. E&M identified ***six conditions*** characteristic of small open developing economies preceding and following adjustment. They posited that:

(1) devaluations are usually stepwise or of the crawling peg variety, hardly ever is the currency floated;

(2) crises are preceded by loose and inconsistent macroeconomic policies;

(3) crises are marked by a worsening in the international terms of trade immediately before the crisis (some collapses may be due to exogenous shocks);

(4) prior to crises the economies have real appreciations in the real exchange rate, the depletion of foreign reserves, a deterioration of the current account deficit and a decline in the ratio of net foreign assets to the money supply;

(5) crises are usually preceded by very steep rises in the black market premium;

(6) real wage increases often in the year preceding the crisis, with declines in the years following.

In addition to E&M many authors have sought to model the collapse of exchange rate regimes, among these are Salant & Henderson (1978); Krugman (1979); Flood and Garber (1984); and Dornbusch (1987). In Salant & Henderson (op. cit.), they show that commodity support programmes will collapse under speculative pressures. This occurs because future sales by Government depresses the price of the commodity faster than the interest rate. Given that there is perfect foresight there are no capital gains. The instant the price of the commodity falls below the free market price, speculators will buy up the available stock thus forcing the price above the government's peg.

Krugman (op. cit.) applied the Salant and Henderson model (op. cit) to exchange to rate management and shows the outcome of a crisis arising out of a situation where the Government is unable to defend a fixed exchange rate parity. He states that if an economy loses its reserves then speculators who expect the exchange rate to float will acquire the remainder of the country's reserves and this will certainly result in an end of the fixed exchange rate parity.

Krugman's model was a basic model but Flood and Garber (1984) created two models to detail what Krugman (op. cit.) discussed. The first model- a continuous time model- assumes that all agents have perfect foresight and that the exchange rate collapse can be due to macroeconomic reasons or speculative behaviour. On the other hand, the discrete model assumes that agents know the exact time of the collapse.

Obstfeld (1986a) advanced the work of Flood and Garber (op. cit.) to show that exchange rate collapse arise from unsustainable and radical shifts in Government macroeconomic policies[5].

The restrictive assumptions of purchasing power and interest rate parities of the basic Flood and Garber model were relaxed in the Goldberg model (1986). With the introduction of currency substitution and income sensitive demand it was shown that the Flood and Garber model overstated the likelihood of an exchange rate collapse.

Buiter (1987) paid particular attention to the effect of Government being able to borrow abroad on the exchange rate. He stated that a Government's ability to borrow abroad had significant effects on the timing and magnitude of the speculative attacks.

The basic model, as set forth in Dornbusch (1987), is premised on the assumption of too rapid an increase in domestic credit. When this occurs, domestic economic agents not desirous of holding excess domestic currency, seek to substitute the latter with foreign currency, resulting in a deteriorated foreign reserve balance domestically. To the extent that this places excessive pressure on the prices of foreign exchange, the monetary authorities must consider an explicit devaluation or a floating exchange rate.

The simple model identifies the process via which money creation can lead to a depletion of

[5]This paper assumes that domestic credit follows a random walk.

foreign reserves[6]. While the balance of payments might, for monetarists, be"everywhere a monetary phenomenon" (hence Dornbusch's focus on the monetary side of the economy), omission of the real side of the economy precludes analysis of the effects of anticipated depreciation on output and, perhaps, on the current account. In a small open economy, this aspect of the economy probably merits a more explicit examination.

Turning to the literature for the small, open economy of Barbados, three studies which examine balance of payments consequences of economic expansion have been discovered; these are Bourne (1989), Looney (1991), and Coppin (1994)[7]. Since the shortcomings of Looney's study are presented elsewhere (see Coppin (1994)), only the other two will be elaborated on here.

Via some *ad hoc* theorizing, Bourne (1989) specified models of "foreign exchange market pressure" and balance of payments for Caribbean economies. These were hypothesized to depend on foreign prices (p*), domestic output (y), growth in the money multiplier (m), growth in domestic credit (D/H), changes in interest rates (r), and changes in inflation rates (inf). The balance of payments equation, he tested the following model for the period 1965-83, obtaining significant coefficients with the following "partial correlation" signs (the definitions apply in the same sequence as the determinants mentioned above

$$BOP = f(p, *y, m, D/H, r, inf)$$

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Bourne concluded that since economic growth was not sustainable in the absence of strong balance of payments performance, "economic policy must seek to restrain aggregate demand during economic growth phases within the limits set by exogenous net capital inflows and export growth"[8].

Since Bourne's theory was for the most part a monetarist perspective on the balance of payments, the detrimental consequence for economic growth on the balance of payments was a result contrary to the theory's prediction. This led Coppin (1994) to revisit the monetary approach to the balance of payments (MABP) for Barbados, focussing on a period since the establishment of that country's central bank in 1972.

Coppin's two interesting additions to the standard MABP theory were the dichotomizing of aggregate output into tradable and non-tradable components, and the inclusion of the real fiscal deficit as a determinant of real foreign reserves. He found that real levels of both tradables and non-tradables were correlated positively with the real level of reserves, and that the fiscal deficit crowded out autonomous monetary policy as a determinant of the real level of foreign reserves in Barbados.

[6]It is instructive to note Dornbusch's admission (in his paper's concluding remarks) that the model's simplicity could well be the reason for its low explanatory power.

[7]A wider literature review for Commonwealth Caribbean economies is contained in Coppin (1994).

[8]Bourne(1989), pp.284.

The first of these two results is clearly contradictory to that of Bourne. This begs questions concerning the sensitivity of results to alternative specifications and their robustness to different time periods.

5. THE BARBADOS EXPERIENCES REVISITED

In the case of Barbados, the conditions identified by E&M (1989) seem accurately to reflect the conditions in the economy leading up to two Balance of Payments crises. These scenarios, as applied to the first crisis, are corroborated by evidence presented by Howard (1989) in his analysis of public sector financing during the period 1974-1984. Examining tax structures as well as deficit financing, Howard concluded that Barbados exhibited a structural shift in using indirect taxation; in addition, money creation as the primary source of deficit financing had serious implications for the Balance of Payments. Blackburn and Sola (1993), corroborates this view and states that if domestic credit expands at too rapid a rate and faster than the rate of money demand, there would be a drain on the foreign reserves. They further suggests that if monetary policy remains unchecked there would exhaustion of the foreign reserves, and ultimately the central bank would have to withdrw from foreign echange intervention.

Barbados employed what appeared to be inconsistent macroeconomic policies in the period leading up to the second crisis. In the preceding fiscal year (FY1989/90), the ambivalence of the government's tax policy -initially a reliance on indirect rather than on direct taxation- reveal attempts to shore up inadequate government revenues during an economic downturn. As the deficit worsened, another "loose" policy emerged- the reliance on the Central Bank to finance the fiscal deficit.[9] Indeed, the Central Bank of Barbados has publicly identified government's expansionary policy as the culprit in the decline of the foreign reserve position in 1991.[10]

Another source of explanation for the Balance of Payments crisis might be sought in the deterioration of the terms of trade. In the case of the second crisis, recessionary conditions in the major foreign exchange-earning sectors during 1990- agriculture, manufacturing and tourism- should have been early warning signs of pending balance of payments weakness. Beyond this, however, it is important to establish that the adverse movements in the terms of trade had their genesis in the mid 1980s when the economy was growing at an average of 3.3% a year. In 1985, the manufacturing sector (led by export of electronic components) virtually collapsed. In addition, sugar production was on a steady decline from its decade high of 111,000 tonnes in 1986, to 52,600 tonnes by 1991. During this period, Barbados was becoming increasingly dependent on tourism for its survival.[11]

Two of the conditions highlighted by E&M (1989) as being characteristic of balance of payments crises in small, open economies (see previous section) did not apply directly to the Barbadian experience: these are the nature of devaluations and the intensity of the parallel market premia. In examining the issue of whether or not to devalue, E&M argued against floating the currency

[9]See e.g., Gillis et al.(1987); Blackman (1989) for a discussion of the impudence involved in such a policy.

[10]See Central Bank of Barbados(1992).

[11]According to Howard(1989), the ratio of tourism receipts to total GDP was close 30% and receipts to total export earnings exceeded 50% during this period.

as a first option. In the absence of efficient capital markets, a foreign exchange rate float can be a bold step into uncertainty.[12] With respect to the black market premia, these are often very high and can render redundant the small, open economy's central bank.

With respect to Dornbusch's (1987) simple model, a key assumption was that the "rate of credit expansion is exogenous and unrelated to deficit finance". In the case of Barbados, Coppin's (1994) empirical investigation showed that money creation was largely a consequence of deficit financing. It is not too surprising, however, that fiscal policy crowded out monetary policy in the period since the Central Bank of Barbados was established[13].

Perhaps the most interesting and intuitive observation coming of Dornbusch's paper is the following:

> "If reserves fall to low levels the public might attribute a higher probability to an abandonment of deficit finance and to exchange rate stability. It is particularly this uncertainty about various alternatives--floating, crawling, budget stabilization which would enhance the realism of collapse models".

This comment validates the view that if peculiar circumstances arise especially for which there is no precedent, it may be possible even in a situation of low foreign exchange reserves to exercise some choice in policy because the policy alternatives are risky. The choice should be between the one which is least beneficial to the economy on the whole- devaluation- and the most far reaching and sustainable- budget stabilization. Barbados chose the latter. Dornbusch's comment also underscores the need for a better model to capture the salient points which have been omitted.

Generally, government's options in a balance of payments crisis are to stand firm against the parallel market, to re-peg, or float the currency so as to eliminate the parallel market or to reduce the premia. In the case of Barbados, the absence of a parallel market immediately eliminates the two of these options. It is interesting to speculate as to whether a float would have given rise the current *official* rate.

6. A SMORGASBORD OF ISSUES

In the absence of a formal structural model for Barbados' avoidance of a devaluation in the height of such a serious Balance of Payments crisis, some suggestions are offered as conditioning factors.

6.1 *Why not a devaluation? - Credibility and Reputation*

One of the arguments in favour of a fixed exchange rate is that it imposes discipline in the fiscal and monetary sectors. From a Government perspective it is supposed to restrain them and maintain their credibility, Blackburn and Sola (1993). In addition businessmen believe that a fixed exchange is a more conducive environment.

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[12] The experiences of two other Caribbean economies (Jamaica and Trinidad and Tobago) with crawling peg system subsequent to devaluation are informative in this regard.

[13] As Coppin and others have noted, the subservience of the Central Bank to the fiscal authorities is enshrined in the Central Bank of Barbados Act.

As outlined previously country a narrow resource base should not devalue. In the case of Barbados, sugar exports to the EEC and there is a guaranteed quota each year at a predetermined price prior to shipment. There clearly exist some inelasticity in the market for at least one of the tradables.

6.2 *Wage cut versus a devaluation*

At the time of the policy debate a wages policy was suggested as a *de facto* devaluation without the disruptive elements of changes in relative prices throughout the economy. (E&M 1989) suggests that a devaluation does not necessarily lead to a cut in real wages. Goodhart (1989) supports this view as well. In Barbados in 1991 wages and salaries accounted for 50% of government expenditure (the largest item). Cutting this item and subsequently downsizing the private sector established some order to the public sector. In addition, a strong message was sent to the private sector to follow suit and this served to rein in aggregate demand and contain import demand.

6.3 *The timing of the adjustment process*

The adjustment process occurred at the start of an election cycle. The government having postponed the process by one year (in the previous cycle), was left with no choice but to adjust the economy. It was suggested that a sudden sharp adjustment would pay political economic gains since it was felt that the authorities could bear the brunt of criticism, litigation, etc. and be able to have the economy grow and jobs created by the end of a 5 year cycle.

In retrospect, it almost worked: the economy recovered; foreign reserves were rehabilitated; the public sector was right-sized, and the government won the litigation--but lost the election.

6.4 *Heterodox versus Orthodox policies of the IMF?*

Traditionally, orthodox IMF policy prescription is indicative of a devaluation for a countries which find themselves in the Barbadian situation of 1991. However the alternative of a wages policy and a dismal record of devaluation in developing economies, the IMF tried more heterodox (though not painless) policies. The evidence of Caribbean neighbours (Jamaica, Guyana and Trinidad and Tobago) did not provide encouraging scenarios. It did not go unnoticed that these countries were endowed with abundant (untapped) natural resources and yet found it extremely difficult to adjust. The first and second round effects of devaluations wore off relatively quickly, and prices of goods escalated whilst prices for exports were depressed or fixed in elastic markets or quantities fixed in inelastic export ones. It became clear that Barbados, with no noticeable "natural resources", would not benefit from a devaluation.

The reputation of Barbados as a country having sound economic management may have helped in realizing a heterodox approach. One year prior to the crisis in 1991, the country was ranked as the number one credit worthy nation in Latin America and the Caribbean by Institutional Investor.

In addition, the World Bank and the United Nations gave Barbados high marks for its macroeconomic performance and management. These reports, in my estimation, could have helped in arguing the case that 1991 was an aberration and that the country needed to be given another chance.

7. CONCLUDING REMARKS

The events that gave rise to Barbados' BOP crisis of 1982 and 1991 were not unusual. These are well documented in such sources as Edward and Montiel (1989) and Krugman (1979). The events that followed were of somewhat greater interest. It is noteworthy that no parallel market developed in Barbados, and that the country did not devalue its currency.

The alternative policies worked. The external sector recovered and liquid reserves, with an upturn in the traded sectors, rose to seven weeks of imports compared to one week at the time of the second crisis. The fiscal deficit came down to 2%, economic growth averaged 2-3% between 199-1994 and unemployment fell from 27% to 21%.

The analysis in this paper has ranged from the theoretical to the empirical, to the speculative (but relevant). It is hoped that, out of this effort, a realistic formal model can be developed to describe some of the events that occurred in the foregoing analysis.

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