

**NATIONAL ECONOMIC FORECASTS FOR
THE BAHAMAS AND BARBADOS**

by

DeLisle Worrell
CENTRAL BANK OF BARBADOS

August 1994

National Economic Forecasts for The Bahamas and Barbados

ABSTRACT

The Bahamas and Barbados are small tourism oriented economies whose growth has slowed because of intensified competition from other Caribbean tourist destinations. The response has been product differentiation, diversification and quality enhancement. The economic prospects are evaluated using a forecast methodology that allows judgemental input to reflect these elements. We use a model of a differentiated export sector (goods and services) driving a non-tradable sector with constraints on fiscal and monetary policy imposed by the balance of payments, a fixed nominal exchange rate and policies to maintain a competitive real effective exchange rate. The economic strategy seems to lead to a recovery in the Bahamas but the prospects for Barbados are uncertain.

KEYWORDS: JUDGEMENTAL FORECAST

National Economic Forecasts for the Bahamas and Barbados

1. Introduction

Models commonly in use for the analysis of small open economies use a real effective exchange rate (REER) as the measure of international competitiveness "World Bank (1994)". Although the deficiencies of this measure are well known "Marsh and Tokarick (1994)" they are used in the absence of appropriate indicators. Unfortunately, they prove to be unhelpful, even misleading, where countries are challenged by non-price competition such as product differentiation, changing tastes, new technologies and new products and services. The economic difficulties of mature Caribbean tourism economies such as The Bahamas and Barbados illustrate this point. Tourism has been the main engine of steady growth in The Bahamas and Barbados for over two decades but in recent years both countries' share of Caribbean tourism has been declining. The emergence of low-cost accommodation elsewhere in the Caribbean was only part of the reason. The major factors have been a shift towards cruise ship tourism and new ways of marketing tourism services, for example, sports, health, "all-inclusive packages", etc. "Poon (1993, p. 13)". Analyses based on REERs fail to capture these developments, revealing what appears to be a surprising lack of association between patterns of tourism growth and domestic prices relative to those of competitors "IMF (1992)". They offer no guidance as to the policy response that might arrest the decline in tourism.

Tourism specialists in the Bahamas and Barbados have determined that the best response focusses on measures to raise productivity, build customer loyalty, differentiate the product from other Caribbean destinations and improve the quality of service "Laventhol and Howarth (1989)" and "Inter-American Development Bank (1992)". For purposes of macroeconomic management we need a model which incorporates the effects of these sectoral policies so as to permit inferences about growth, employment, fiscal policy and the balance of payments. This paper reports on the structure and use of such a framework.

2. The Model

Two-sector models with separate output determination for tradables and non-tradables are the models of choice for small open economies "Khan, Montiel and Haque (1991, p. 235)". Small economies are price-takers on the international markets for tradables but even in the most open of economies there are goods and services such as government, distribution and public utilities which are tradable only with great difficulty. In these sectors, domestic prices may go way out of line with the prices of comparable services elsewhere with no tendency for equalization over time.

The model is based on a variant of the two-sector models of Khan, Montiel & Haque where the labour and capital markets are unified across the tradable and non-tradable sectors. There are no relative price effects deriving from differential wages or profit rates. The supply in both sectors depends on relative price of tradables to non-tradables. Whereas the tradable sector faces an infinitely large world demand, the demand for non-tradable goods

varies with the national output and relative prices. The demand for non-tradables may also be boosted by expansionary fiscal and monetary policies. However, such expansion weakens the balance of payments by increasing the demand for imports so fiscal and monetary policies are constrained by a decision to maintain a fixed exchange rate. The model allows us to measure the degree of fiscal discipline required to sustain a fixed exchange rate strategy.

The model is designed to accommodate an export-led strategy and the tradables sector is the point of departure. Separate forecasts are developed for tourism, manufacturing, fishing, agriculture, and other tradable services, incorporating both price and non-price factors. The output of non-tradables is derived from the output of tradables and from fiscal and monetary targets set with the balance of payments outturn in mind.

The forecast of tourism uses a three-step procedure. First, the demand for the Caribbean tourism is estimated and projected. The determinants are: real output in the visitors' home countries; a relative price variable to capture global substitution effects; a time trend to pick up changes in tastes, technology, etc.; and dummies to reflect oil price shocks, the effect of the Gulf War and other disturbances. Secondly, the Bahamas and Barbados' share of the Caribbean tourist market is estimated and projected. The determinants are: prices relative to those of other Caribbean destinations; a time trend to pick up the growth of capacity elsewhere in the region, the emergence of new destinations and other systematic changes in the Caribbean tourism market; and dummies to reflect the impact of hurricanes and other

disturbances which affect Caribbean countries to differing degrees. Thirdly, supply effects, non-price strategies and market specifics are introduced to modify the projection which is derived from steps one and two. Specific account is taken of expansion in hotel capacity in Barbados and the Bahamas, the upgrade of hotels and facilities, increases or decreases in airline seat capacity, intensification of marketing expenditures, changes in productivity and improved service quality. Exhibits 1 and 2 show the details of the estimates for the Bahamas and Barbados. The total effects are applied to the baseline forecast for tourism.

Barbados exports sugar under quota to the European Community; a restructuring programme is currently underway to increase the supply so as to fulfil the quota and the domestic market. The projections are based on data supplied by the sugar management company.

The projections for other agriculture and manufacturing are based on a two-step procedure. The forecast begins with a projection based on recent trends. This baseline projection is modified to take account of trade reform, productivity changes and net new investment. To estimate the impact of trade reform we calculate the effect of the reforms on prices for sub-categories of manufacturing and agriculture, estimate price elasticities of supply based on recent experience and infer the impact of the price changes on supply. To calculate productivity changes we estimate the impact of the changes on domestic costs, the resulting reduction in prices and the impact on supply, based on price elasticities. The effect of net new investment is estimated as net investment times estimated capacity utilization.

The forecast for non-tradable activities is derived from the forecast of tradables and targets for fiscal and monetary policy. The demand for non-tradables is determined by income generated by tradables, by fiscal and monetary expansion and by relative prices. The supply price changes according to demand and output adjusts with a lag. The demand for non-tradables is given by the equation:

$$Q_n^d = Q_n^d(Q, P/P_n, XMS)$$

Where Q_n is the output of tradables, the d refers to demand, Q is the total output of the economy, P is the price of tradables, P_n the price of non-tradables and XMS is an excess money supply variable, equal to the difference between the money demand and the money supply. The supply of non-tradables is:

$$Q_n^s = Q_n^s(P/P_n)$$

s refers to supply. The money demand is given by equation:

$$MO^d = MO^d(PQ, r)$$

where P is the GDP deflator and r an interest rate variable. The money supply is given by:

$$MO^s = MO^s(MB)$$

where MB is the monetary base. The monetary base is defined by:

$$MB = NDA + NFA$$

where NDA is the net domestic assets of the central bank and NFA are the central bank's net foreign assets. We specify NFA as a policy target, which leaves the NDA to be affected by changes in credit to government as follows:

$$\Delta NDA = \Delta CRG$$

Total output is defined by the equation:

$$Q = Q_i + Q_n$$

This entire system may be reduced to an equation which allows us to derive Q_n from a previously derived forecast of Q_i under assumptions about monetary policy and external variables:

$$Q_n = Q_n(Q_i, P_i, \Delta MB, MO(-1), r)$$

The forecast of retail prices is based on projections of import prices and wages according to:

$$RPI = RPI(P_m, W)$$

Wages are derived from retail prices and productivity changes:

$$W = W(RPI, Q/N)$$

These last two equations are estimated simultaneously. The deflator is derived from the national accounts identity using the retail price index as the price of consumption goods and the GDP deflator as the price of investment goods. The equation is:

$$PQ = RPI \cdot c + P \cdot i + P_x \cdot P_x - P_m \cdot m$$

where all the variables on the right hand side are in real terms and p_x and p_m are the prices of exports and imports, respectively.

Nominal GDP is forecast as the product of real GDP and the estimated deflator.

The employment forecast is based on recent elasticities of employment to output in each sector. Modifications are introduced when recent productivity changes seem to be unsustainable.

From the output projections we may derive projections for the balance of payments, and for fiscal and monetary variables using the relationships that we have estimated. Export growth will reflect the growth of tradables and the expected trends in the price of exports. Imports are estimated from the import equation:

$$m = m(Q, P/P_n, XMS)$$

where m represents real imports and the other variables are as defined earlier.

Government revenues are projected according to their buoyancies in recent years, adjusted for the impact of tax reform and divestment. Current expenditures may be projected to grow at the rate of inflation, though for some purposes one may wish to regard the current expenditure as a policy variable to be determined in the light of the foreign reserve target. Expenditures are adjusted for new programmes to which government is committed, for programmes which are to be wound up and for debt service projections. The capital expenditure may be derived from the public sector investment programme.

The equations for monetary liabilities to the private sector:

$$LPS = LPS(PQ, r)$$

and credit to the private sector:

$$CRP = CRP(PQ, r)$$

enable us to deduce the liquidity changes in the banking system. From them we can infer the availability of non-inflationary financing for government.

In order to use the forecast system to inform government policy we may proceed as follows. First, we forecast output, the deflator and employment. Then we set a foreign exchange reserve target for the balance of payments and generate exports of goods and services from the forecast of the output of tradables. Imports are forecast and we derive the required net capital inflows which would satisfy the foreign exchange reserve target.

We then forecast liabilities to the private sector and credit to the private sector, deriving the change in bank liquidity and its impact on the monetary base. The difference between the change in the monetary base and the central bank's net foreign assets (which are identical to the foreign exchange reserve target) give us the change in the net domestic assets of the monetary authority. We will allow that change to be in the form of credit to the government. It sets the limit of credit to government which may be allowed without causing the economy to fall short of the authorities' target for foreign exchange accumulation.

The maximum allowable fiscal deficit is the total of this non-inflationary credit from the central bank and prudent levels of foreign borrowing - determined by the government's external debt service profile. The projection of fiscal revenues is based on tax buoyancies,

adjusted for the impact of any tax reform. The maximum allowable government expenditure is the total of the deficit and revenue.

The system offers a forecast of real output and employment based on sectoral plans, problems and strategies. It provides a guide for monetary and fiscal policies that will serve to attain balance of payments targets, conditional on the prospects for growth. It may be used to evaluate the effects of alternate policies, for example, the effect of a higher fiscal deficit on money supply, on output via non-tradables, the additional demand for imports and the shortfall it implies in the balance of payments target.

3. Economic Strategy in the Bahamas and Barbados

The Bahamas and Barbados are pursuing similar economic strategies aimed at restimulating tourism as the engine of growth. Their competitive edge in tourism is to be developed by the following policies:

- enhancing and marketing the unique features and culture of each island;
- building visitor loyalty and differentiating from other tropical destinations;
- enriching the menu of services and facilities offered to tourists;

- investing in the renewal of hotel plant and equipment and upgrading of hotels and facilities;
- increases in productivity partly by investment and re-engineering, partly by reorganization of work and partly by more intensive and comprehensive training.

The details are being worked out via institutions for private/public collaboration such as ministries of tourism, tourism associations and trade unions. Some aspects of the strategy are in place, others are still matters of contention. Some plans are well-devised and have been consistently implemented, others are of questionable efficacy. It is the forecaster's job to make the best judgement about the implementation, effectiveness and probable impact of each item.

The countries have also taken measures to reduce gradually the extent of export concentration in the tourism sector, though acknowledging that tourism will remain the principal foreign exchange earner. More vigorous promotion and additional incentives are being targetted to other traded services. Niche markets are being sought in fisheries, agriculture and manufacturing and these sectors are to be developed further as complements to tourism, to provide inputs and to produce goods and services that may be sold to tourists. This is a continuation of a strategy which has shown promise in both countries. There is substantial international financial services activity in the Bahamas and an important but very

much smaller sector in Barbados. A fledgling information services industry has grown up in Barbados in the decade of the 1980s. There has been considerable development of artistic services in association with the tourism industry, especially music and festival arts. A few firms in manufacturing have developed niches in pharmaceuticals, electronic assembly and a number of other areas. In all of these activities demand is infinitely large on the international market.

Both the Bahamas and Barbados are committed to a fixed exchange rate in terms of the US dollar, a policy which is recommended by theory and experience of small open economies. The forecast system indicates what fiscal limits must be observed to maintain the fixed exchange rate and free convertibility. Monetary policy is not very effective in the Bahamas and Barbados because interest rates are kept in line with trends in the US by actual and potential capital flows. Asymmetries, information costs and transactions costs mean that domestic interest rates may deviate somewhat from equivalent US rates. This provides a narrow corridor within which the central bank may effect some monetary adjustment (for example, by open market sales of government securities to reduce the money supply). However, if sales are large, exceeding the liquidity available in the banking system, rising government interest rates will tend to draw up general interest rate levels and attract capital inflows thereby frustrating the attempt to contain the money supply. In view of this very narrow scope for monetary discretion, forecasts are based on passive monetary policy. The increase in the money supply is fully determined by changes in the net foreign reserves and in the central bank's credit to the government.

Foreign exchange reserves have to be maintained at levels which provide insurance for the fixed exchange rate. We may infer from the macro forecast system what levels of money and central bank credit to government are consistent with the target foreign exchange reserves. This produces a range of combinations of money and credit not all of which are actually available, because of the impact of the money supply on imports. Beyond a certain level of the money supply imports absorb so much of the foreign exchange receipts that the foreign exchange target cannot be achieved. Therefore, by superimposing the balance of payments constraint on the fiscal constraint the allowable level of credit to the central bank and therefore of increase in money supply is uniquely determined.

4. Economic Prospects for the Bahamas and Barbados

The point of departure is the forecast of tourism growth. Based on the elasticity of Caribbean tourism with respect to output in the visitors' home countries and on recent trends in the Bahamas' and Barbados' share of Caribbean tourism, the projected growth rate for tourism is between 2% and 3% for the Bahamas and between 2½% and 3% for Barbados. If the exchange rates are kept fixed and inflation is contained as well as it has been in the recent past, cost competitiveness should improve by about 1% per year in both countries, relative to other Caribbean destinations. It is unlikely that Jamaica and the Dominican Republic - the competitors suffering from high inflation - will be able to reduce inflation to rates comparable to those for the Bahamas and Barbados for the time being. Estimates are made of the improvement in prospects that result from efforts to improve non-

price competitiveness in tourism. They are reported in Exhibits 1 & 2 and applied to the base projection.

Other traded services in the Bahamas are expected to grow in line with recent trends, at about 1% per year. This sector is still relatively small in Barbados accounting for less than 4% of GDP. Growth rates are also expected to be in line with recent trends.

Manufacturing accounts for 9% of GDP in Barbados and 4% in the Bahamas. Growth is expected in electronics and food processing, based on recent trends. However, Barbados is undertaking a major trade reform which is likely to slow the growth of manufacturing. The growth rate for manufacturing is projected at 1% for the Bahamas but manufacturing is not expected to grow at all in Barbados.

There are no initiatives underway that give confidence of an increase in recent performance in fisheries in Barbados and in the Bahamas. In both countries, output is projected to grow at the current rate. Non-sugar agriculture is projected on recent trends. Efforts to expand production of non-sugar agriculture in both countries have had little success. In the Bahamas attempts were made to estimate the improvement in trends that might be expected from planned land distribution, marketing reform and promotion campaigns to increase the use of local agricultural produce in the hotel industry.

The growth of the traded sectors should stimulate the non-tradables sufficiently to produce an overall growth rate of 2% for the Bahamas, but only 0-1% for Barbados. There should be jobs for about half the new entrants to the labour force in the Bahamas and the rate of unemployment may rise to a projected 20% by 1998 from 13% in 1993. For Barbados the current unemployment rate of 23% may be reduced to 17% by 1998. Rates of inflation in both countries are expected to be at or near international levels.

In order to maintain a level of foreign exchange reserves which will ensure continuation of the fixed exchange rate and a convertible currency both countries need to secure very low fiscal deficits, of less than 0.5% of GDP for the Bahamas and about 1% of GDP for Barbados. The Barbados Government will have to reduce or eliminate some services or activities so as to reduce current expenditure. Unless this is done, there will be insufficient current account savings to finance essential capital works for maintaining infrastructure and environmental protection. An increase in the already high tax burden is not acceptable, especially as recent tax reforms intended to reduce the tax burden fell short of intentions.

The Bahamas may achieve their fiscal targets by slowing capital expenditure. However, this will inhibit government's policy to reduce disparities of infrastructure between the very well-developed northern islands and the under-developed southern islands of the Bahamas archipelago. Also, it may slow vital investment in environmental protection.

Neither government has much fiscal leeway if it wishes to maintain the exchange rate. If the Bahamas' fiscal deficit rises to 2.5% of GDP and remains at that level the erosion of foreign exchange reserves would make the fixed exchange rate untenable by the end of 1996. A deficit of similar proportions in relation to the Barbados GDP would undermine the fixed exchange rate in 1995.

Stagnation of the US economy reduces the options for both countries but the impact on the Bahamas is greater. If real output in the United States remains unchanged real output in the Bahamas is projected to decline while in Barbados there is a slowdown. Both countries could maintain the fixed exchange rate strategy by holding fiscal deficits to the limits of the base scenario. However, this would require a reduction in government expenditure as government revenues would now be lower because of the lower national income. The contraction in expenditure would be much more severe for the Bahamas than for Barbados. Both countries would also require additional net capital inflows to achieve foreign exchange reserves targets. The economic contraction would cause a worsening of the current account.

5. Conclusion

The use of a suitable macroeconomic framework enables us to bridge the gap between theory and policy-making in small open economies. Our model preserves features which reflect the structure of small open economies including the ruling international price in tradable markets, the critical importance of fiscal discipline and the limitation on monetary discretion. At the same time, it incorporates non-price factors which alter the prospects for

the growth of tradables. We are able to quantify the impact of policies and the expected impact of competitive strategies. Because so much of what goes into the forecast of tradables is judgemental we cannot determine margins of error ex ante. Nevertheless, the forecasts are useful if they are carefully compared with performance as it evolves as a guide to the modification of strategies and policies.

References

1. Inter-American Development Bank, 1992, "Socio-Economic Report The Bahamas", November.
2. International Monetary Fund, Western Hemisphere Department, 1992, "Competitiveness of the Tourism Industry in Barbados", December 30.
3. Khan, Mohsin, Peter Montiel and Nadeem Haque, eds., 1991, *Macroeconomic Models for Adjustment in Developing Countries* (IMF, Washington D.C.).
4. Laventhol and Howarth, 1989, "Barbados Tourism Study", September.
5. Marsh, Ian and Steven Tokarick, 1994. "Competitiveness Indicators: A Theoretical and Empirical Assessment", *IMF Working Paper*, March.
6. Poon, Auliana, 1993, *Tourism, Technology and Competitive Strategies* (CAB International, Oxford).
7. World Bank Caribbean Division, 1994, "Coping with Changes in the External Environment", May.

Exhibit 1

ADJUSTMENT FOR TOURISM FORECASTS: BARBADOS

	1993	1994	1995	1996	1997	1998
ADJUSTMENTS TO ARRIVALS						
Airline Capacity						

US, Winter (92/93)						
Seat Capacity	119151	103160				
Load Factor	66.26					
Max. Load Factor	100					
Est. Chng. Arr.		0				
Can., Winter						
S.C.	39764	36277				
L.F.	86.3					
M.L.F.	100					
E.C.A.		0				
UK, Winter						
S.C.	33009	35464				
L.F.	81.28					
M.L.F.	100					
E.C.A.		0				
Cont. Eur., Winter						
S.C.	8532	7579				
L.F.	106.07	100				
M.L.F.	100	100				
E.C.A.		-1626.85				
US, Summer						
S.C.	156898	121908				
L.F.						
M.L.F.						
E.C.A.						
UK, Summer						
S.C.	38023	43739				
L.F.						
M.L.F.						
E.C.A.						
Can., Summer						
S.C.	27216	30808				
L.F.						
M.L.F.						
E.C.A.						
Cont. Eur., Summer						
S.C.	8050	10557				
L.F.						
M.L.F.						
E.C.A.						
Marketing						

Special Promotions						
\$m						
Expected Gain Arr.						
Hotel Upgrade & Expansion						

Expansion (rooms)		350				
Upgrades		1001				
Avg Occup. Rate		0.529				
Best Occup. Rate		0.75				
Add. Bednights		176558.2	176558.2	176558.2	176558.2	176558.2
Length of Stay (Days)	7	7	7	7	7	7
Add. Arr.		25222.6	25222.6	25222.6	25222.6	25222.6
Total Arrivals						

Forecast	428500	467300	500000	511000	523000	533000
Adjusted Forecast		465673.1	525222.6	536222.6	546222.6	558222.6
						0

Exhibit 4 Barbados: GDP Projections

	1994	1995	1996	1997	1998
TRADED SECTOR	5.3	(2.4)	(0.8)	1.1	1.7
Sugar	6.4	(13.3)	(13.3)	(13.3)	(13.3)
Non-Sugar Agriculture & Fishing	3.5	2.5	5.7	4.2	3.8
Manufacturing	0.0	(1.5)	(0.8)	(0.7)	1.1
Tourism	8.9	(2.4)	(0.8)	3.2	3.2
NON-TRADED SECTOR	2.0	0.8	0.2	0.5	0.5
Mining & Quarrying	(5.5)	0.6	0.6	0.6	0.7
Electricity, Gas & Water	2.9	3.3	3.2	3.1	3.1
Construction	1.4	1.3	(25.9)	0.0	0.0
Wholesale & Retail	4.1	0.7	(9.3)	(1.5)	0.9
Government	0.0	0.0	0.0	0.0	0.0
Transportation, Storage & Communications	2.5	1.3	1.9	1.8	1.8
Business & Other Service	1.4	0.7	1.0	1.0	0.0
Total	3.0	(0.2)	(0.1)	0.7	0.9

