CHAPTER 8

Forecasts of Caribbean Economic Performance

Within the group of countries that share characteristic Caribbean features we may distinguish four broad categories, based on recent performance. They are (1) countries with no adjustment problem, for example the Bahamas and the Netherlands Antilles; (2) countries with intermittent difficulty, for example Barbados, Belize and the countries of the OECS; (3) countries with persistent disequilibria, for example Jamaica, Trinidad & Tobago and the Dominican Republic; and (4) countries with prolonged crises, for example Guyana, Suriname and Haiti. The circumstances of countries in each group are shown in Table 8.1.

This chapter illustrates the problems and prospects of a selection of countries drawn from categories 2, 3 and 4. A very much condensed version of the model of Appendix I is used to project output, inflation and the balance of payments for the period 1991-1995. The effects of an increase in the relative price of tradables (a "real" devaluation), of monetary contraction and of interest rate policies are explored, to illuminate the choices facing policy makers. Observations are made on the prospects for improving performance. The tests are still at a very preliminary stage and the forecasts are intended for illustrative purposes only. In particular, the reported test statistics are biased because we do not make allowance for the possibility of spurious correlation between variables which move upwards together over time. While we may accept the relationships as indicators of a general tendency we do not lay great store by the reported significance tests.

Barbados

The Barbados results offer few surprises, though we have lost important structural features in aggregating relationships so as to use a small model that may be applied in comparable fashion across countries. (For example, although the tradable sector on the whole has been supply driven for the period of the tests, there is reason to believe that tourism markets are segmented and respond to demand changes.) The results are set out in Table 8.2. As expected, production of tradables increases when their prices rise, while wage and interest rate increases have adverse effects. Aggregate demand has a strong impact on non-tradables and imports, and an increase in the relative price of tradables will depress the demand for imports. Contrary to expectations, that relative price increase also depresses the demand for non-tradables, a phenomenon which deserves further examination. Increases in tradable prices, wages and interest rates all drive up the prices

of non-tradables, but there is an inverse relationship between the price and output of non-tradables, implying a downward sloping supply curve. We doubt that there are significant economies of scale; more probably, the relationship conceals changes in quality or in the mix of products. The elasticity of wages with respect to the lagged value of prices (at the mean values of the variables) is about equal to unity, suggesting that wages just keep pace with the rate of inflation in the previous period. Our test for the determinants of investment is not a satisfactory explanation of the variance, though rising tradable prices do seem to encourage investment while rising wages depress it, as one might expect. (The test is based on annual observations; as we suggested earlier, longer observation periods are probably more appropriate for the investment equation.)

The model has a rather indifferent tracking performance on the actual data during the sample period. The maximum error on the simulation of the growth rate is seven percentage points, while for inflation it is as high as 20 points on one occasion. The largest percentage error for the in-sample forecast of tradables is 15%, for non-tradables 13%, for non-tradable prices 20%, for imports 25% and for wages 25%. However if we were to omit the outliers the general forecast is reasonable for this level of aggregation, except for the forecast of foreign exchange reserves.

Table 8.1 Classification of Economic Circumstances

	Category of Country			
	1	*2*	*3*	*4*
Growth	+	+(-)	-	-
BoP	+	-(+)	-	-
Debt Arrears	NONE	NONE	MINOR	LARGE
Social Services	OK	OK	DOUBTFUL	POOR
Infrastructure	OK	OK	DOUBTFUL	INADEQUATE
Confidence in Govt	STRONG	STRONG	STRONG	LOW

Table 8.2 The Barbados Model

1. $q_t = 396.87 + 134.54p_t - 0.20w - 9.82r$
   (17.62) (1.41) (-0.23) (-2.90)
   Adj.R^2=0.7326, SEE=34.72, DW=0.89, F=22.83; 1960-88

2. $q_n = 239.98 + 0.20a - 169.50p_t/p_n + 0.63q_n(-1)$
   (2.96) (3.42) (-3.09) (7.05)
   Adj.R^2=0.9586, SEE=30.44, DW=1.90, F=193.02; 1960-88

3. $p_n = 0.06 - 0.00q_n + 0.38p_t + 0.01w + 0.00r$
   (0.84) (-1.72) (6.50) (11.54) (1.73)
   Adj.R^2=0.9988, SEE=0.02, DW=2.32, F=4982.58; 1960-88

4. $m = 496.40 + 0.75a - 810.07p_t/p_n$
   (1.67) (6.21) (-3.96)
   Adj.R^2=0.7696, SEE=120.99, DW=1.43, F=43.43; 1960-88

5. $w = 5.33 + 104.42p(-1) - 1.06dq$
   (4.23) (64.26) (-0.06)
   Adj.R^2=0.9935, SEE=4.37, DW=1.00, F=2073.07; 1959-88

6. $i = 318.86 + 86.59p_t - 0.88w + 3.42r$
   (4.45) (0.44) (-0.51) (0.41)
   Adj.R^2=0.0501, SEE=62.60, DW=1.08, F=0.23; 1972-88

7. $a = q_t + q_n + dmo$
8. $dR = (q_t.beta - m)p_t + K$
9. $q < q(-1) + i/ICOR$

Note: *Variables are defined in Appendix I*

The base forecast for 1991-95 is based on tradable prices that expand on the trend line of 1980-90, with net non-trade inflows at the 1990 level of approximately BBD$200 million each year. (Tourism is included in the trade category.) Interest rates are projected to remain at their end-1990 levels, and there are no monetary injections to raise the level of absorption above the level of income. The result is virtual stagnation of output, with very low inflation – a maximum of 4% – but with an unsupportable loss of foreign exchange reserves. Imports rise faster than exports, and by 1995 they are 13% higher than in 1989, while exports are only 7% higher. The loss of reserves would soon lead to a depreciation of the nominal exchange rate.

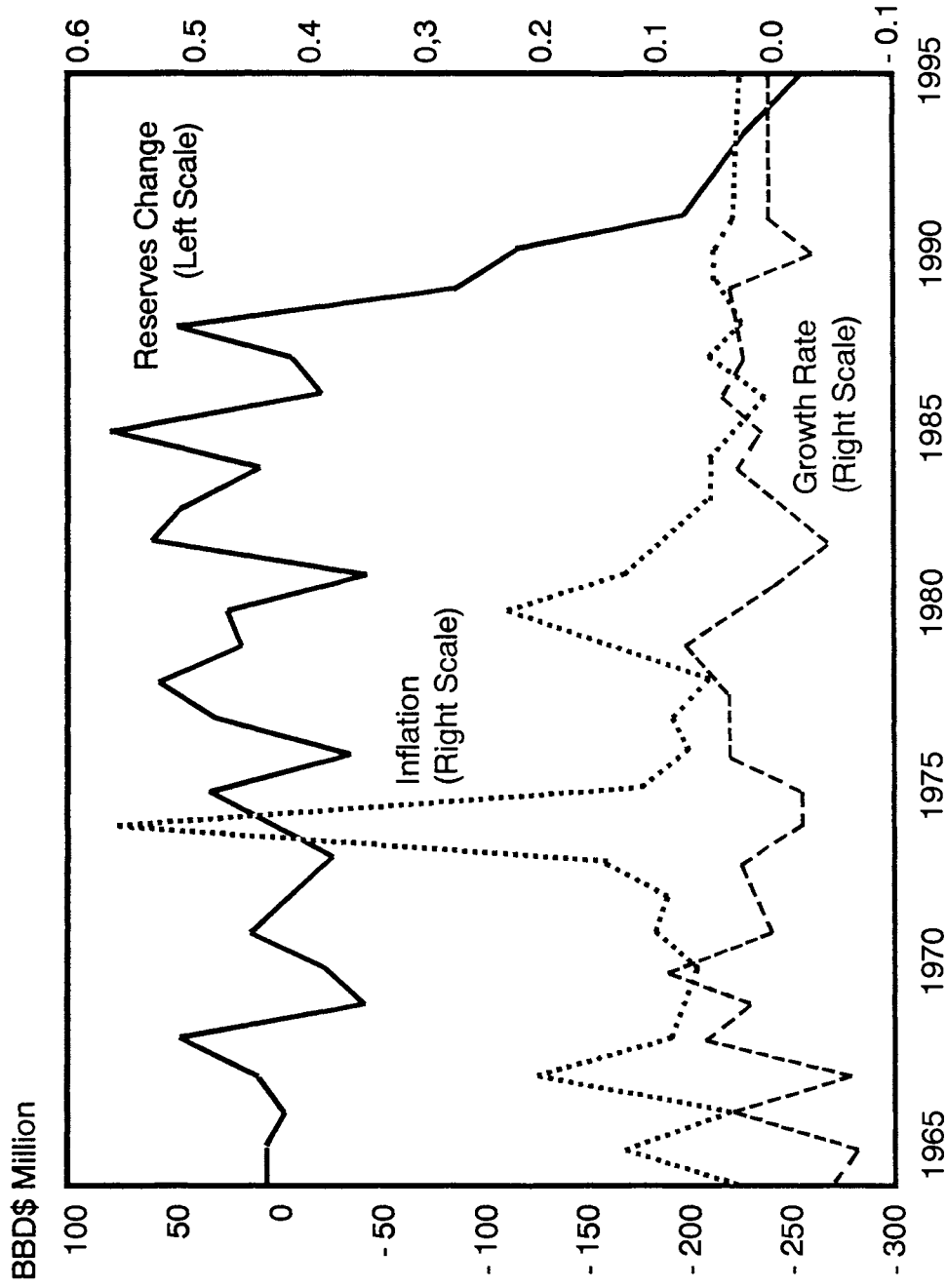
An increase in the relative price of tradables in 1991 causes a turnaround in the balance of payments in that year, and reserves increase. The reserve loss for the next three years is less than in the base scenario, but the advantage diminishes each year. In 1994 and 1995 the reserve loss is greater than for the base projection. Export growth is consistently stronger than in the base forecast; but whereas import growth is dampened initially, imports expand more rapidly in later years.

Monetary expansion in 1991 – with the money supply held at the higher level in all subsequent years – results in a modest acceleration in the growth rate up to 1993. (Although not explicitly represented in the model, monetary expansion can take place only via fiscal expansion, as discussed in Chapter 3.) The faster growth is entirely due to additional output of non-tradables. The gain is 2.5 percentage points in 1991, with the effect wearing off over time to less than one point in 1993. The cost is a dramatic widening of the foreign exchange deficit, and an earlier and more drastic fall in the exchange rate. A corollary is that monetary contraction (or rather fiscal contraction to reduce the supply of money) is the best way to rectify the external imbalance. For a small sacrifice of output growth there are major economies in the use of foreign exchange. A simulation of modest interest rate increases had no measurable effect.

On the present economic course the model sees virtually no growth in the Barbados economy, and the prospect of a balance of payments crisis (Chart 8.1). Unless there is monetary contraction by means of fiscal cutbacks the exchange rate is likely to depreciate. Exchange rate depreciation leads to inflation, an equal increase in wages after a lag of one year and no improvement in the growth rate. A nominal devaluation, whether deliberate or as a result of exhaustion of foreign exchange reserves, should boost foreign reserves immediately, but its effects wear off after some years. (Our simplified model does not measure the impact of nominal devaluation on the relative price of tradables. We assume there will be some effect, but that the relative price change will be smaller than the devaluation.) To achieve meaningful growth in the medium term it will be necessary to lift the rate of investment. We have not attempted to estimate the extent of spare capacity, but activating spare capacity could speed up the rate of growth for a year or two at most.

Changes will be needed in management, technology, organisation and marketing so as to lift export performance. Tourism levelled off in 1990 after a short

Chart 8.1 Barbados: Actuals (64-90) and Forecasts (91-95)



period of buoyancy. Careful marketing is needed to create a loyal clientele and to develop speciality tourism products which will enhance the appeal of Barbados to potential visitors. Environmental protection is also crucial to reduce noise and nuisance, to maintain water quality and to enhance the landscape and architecture. In the manufacturing sector, a capability must be developed for consistent high quality of output. Large-scale export marketing needs to be developed and much lost ground in production is yet to be recaptured. The decline in agricultural production will only be arrested with an entirely new marketing strategy, more efficient processing techniques and a new product mix. International business services is a new area of activity for Barbados and its development depends crucially on the availability of knowledgeable personnel in this area.

Economic performance in Barbados in the 1970s and 1980s was quite reasonable, with modest growth (interrupted by two recessions), very moderate rates of inflation and generally sustainable balance of payments deficits. In the mid-1980s external borrowing to maintain the balance of payments position was rather excessive, however. The economy's capacity for further sustained growth is questionable. The balance of payments is expected to deteriorate as the growth of exports fails to keep pace with a rising demand for imports. The recommended policy focusses on the reform of institutions and the enhancement of human capital so as to restore growth to a sufficiently diverse range of export activities. A contraction in the size of the fiscal deficit to reduce the need to borrow from the central bank and to contain aggregate demand and imports is suggested to avoid a balance of payments crisis.

The Dominican Republic

In Table 8.3 we report the results of the test on the Dominican Republic. The description of the output of tradables is poor, with none of the explanatory variables affecting output in the expected fashion. We shall accept the results for the time being as the way things actually turned out, but an explanation has to be sought by disaggregating the sector. Evidently there are important differences in the markets that determine the heterogenous products that comprise tradables. Aggregate demand effects on imports and non-tradables are strong, but relative price effects are quite small, and, in the case of imports, the reverse of what we might expect them to be. The cost variables have the expected effect of pushing up the price of non-tradables, but the relationship between the price and the quantity produced suggests another downward sloping cost curve. There is some danger of an explosive wage–price spiral, with the elasticity of wage response to the previous year's price index estimated at 1.1, at the mean values of wages and prices.

Within the sample period the model tracks the non-tradable market quite well, with errors of less than 5% for forecasts of output and less than 10% for prices. The model is much less successful with respect to tradables, where the maximum

error is 41%, and for imports, where the errors reach a maximum of 87%. Wages are faithfully tracked.

The forecasts for 1991-95 are based on the trend of tradable prices for 1971-90. The trend in more recent years (i.e. omitting the 1970s) would have produced a more optimistic forecast, but it is unlikely that this rate will be sustained. The model suggests that the process of wage formation constitutes a major adjustment problem for the DR economy: when first simulated, with wages endogenous, the model produced an explosive increase in wages which depressed output severely. The base forecast assumes instead that wages rise on the trend path of the 1980s. Interest rates are proxied by the US prime rate and are held constant at their 1990 value. Net non-trade foreign exchange inflows are set at 3,000 million pesos per annum, a conservative figure in light of the record of the 1980s, though the year-to-year fluctuations have been extreme.

The forecast indicates healthy growth of output, beginning at 8% in 1991 and slackening gradually each year to 4% in 1995, with low inflation in the region of 3% per annum. However, the foreign reserve losses are unsustainable, so this scenario cannot in fact be realised, and instead the exchange rate can be expected to depreciate. By itself a devaluation does not serve to close the foreign exchange gap. A devaluation which increases the relative price of tradables in 1991 worsens the external balance in the short run, and provides only modest improvement from 1992 onwards. The effect of devaluation is weak because of the poor explanation we have of the output of tradables. Devaluation is not inflationary, because of the inverse relationship we find between the prices of non-tradables – which are driven up by a devaluation-induced rise in the price of tradables – and the output of non-tradables.

The combined effect of a 50% increase in the relative price of tradables and a 10% reduction in aggregate demand does close the balance of payments deficit, and allows some build up of foreign reserves. Growth may still be expected, but at a much slower rate. The balance of payments tends to deteriorate over time. The reserve accumulation between 1991 and 1993 would be sufficient to cover the projected deficits to 1995, but unless export growth were speeded up it would become necessary to repeat the devaluation and monetary contraction (Chart 8.2).

The results offer little insight into the determinants of investment and the ways that export growth may be stimulated. Rising tradable prices have the expected positive effect on investment, but both increasing wages and rising interest rates are associated with increasing investment. In the case of interest rates our inexact proxy could be at fault, and it may be that wages and investment are both responding in the same way to economic cycles.

The Dominican Republic experienced severe external imbalances and contraction of major exports in the 1980s. The loss of an assured market for sugar in the US and the decline in the production of minerals depressed foreign earnings severely. After some hesitation the government introduced orthodox stabilisation policies, with flexible exchange rates, interest rate increases and higher prices for public services in order to cut government's deficit. The social costs of the

Table 8.3 The Dominican Republic Model

1. q_t = 926.22 - 1823.14p_t + 15.47w + 73.38r
   (4.37) (-1.89) (2.53) (3.29)
   Adj.R^2=0.7783, SEE=318.88, DW=0.71, F=21.07; 1967-88

2. q_n = - 66.52 + 0.25a + 69.14p_t/p_n + 0.60q_n(-1)
   (-0.20) (4.19) (0.20) (6.02)
   Adj.R^2=0.9951, SEE=91.61, DW=1.51, F=1202.19; 1964-88

3. p_n = - 0.01 - 0.00005q_n + 0.65p_t + 0.003w + 0.01r
   (-0.31) (-2.04) (3.81) (2.80) (1.90)
   Adj.R^2=0.9965, SEE=0.05, DW=1.51, F=1202.19; 1968-88

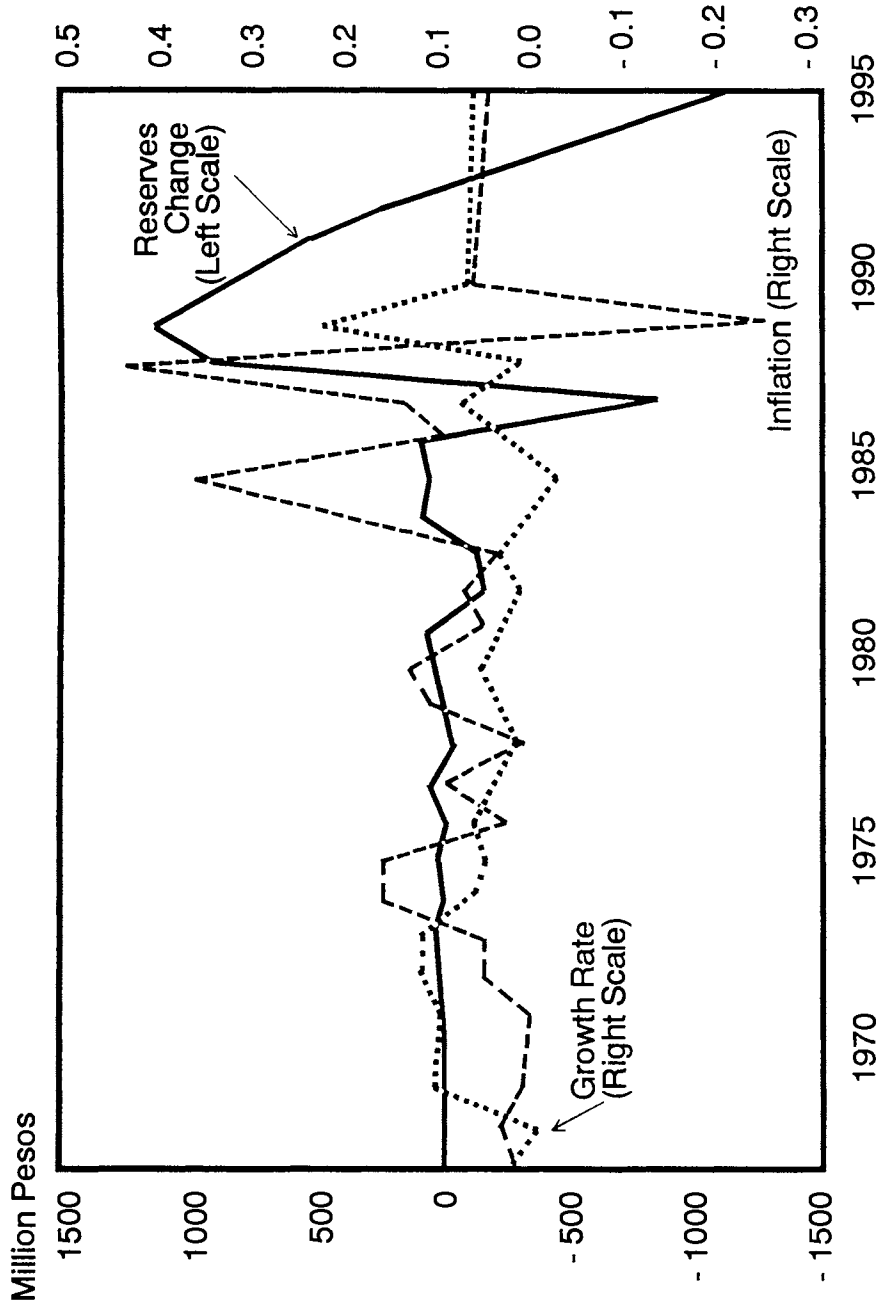
4. m = - 1250.00 + 0.34a + 773.79p_t/p_n
   (-0.80) (8.05) (0.48)
   Adj.R^2=0.7400, SEE=428.31, DW=0.98, F=32.74; 1963-88

5. w = - 8.57 + 194.23p(-1) - 69.89dq
   (-0.75) (25.51) (-0.66)
   Adj.R^2=0.9776, SEE=18.06, DW=1.52, F=414.63; 1967-88

6. i = 190.84 + 281.59p_t + 1.72w + 53.27r
   (1.21) (0.91) (1.05) (3.18)
   Adj.R^2=0.7846, SEE=237.81, DW=0.91, F=21.86; 1967-88

7. $a = q_t + q_n$ + dmo
8. $dR = (q_t.beta - m)p_t + K$
9. $q < q(-1) + i/ICOR$

Chart 8.2 The Dominican Republic: Actuals (67-88) and Forecasts (89-95)



programme proved too high for the tolerance of the population, and the administration which championed the programme was rejected at the polls in 1986. The external disequilibrium remains, and when the orthodox programme was abandoned, the exchange rate was fixed and a regime of trade and exchange controls put in place. Economic infrastructure has deteriorated badly, and electricity services in particular are in a desperate state of disrepair. A remarkable surge in investment in the tourism sector, together with expansion in the DR's free trade zones, has revived economic growth, providing an economic platform from which adjustment policies may be launched. Our simulations suggest that a reduction in the money supply (through the fiscal mechanism) is the most effective way to relieve the excess demand for foreign exchange, and that it might be combined with exchange rate adjustment.

Guyana

Guyana has suffered severe economic contraction and ongoing balance of payments crises since the mid-1970s. Per capita income is now considerably below the early 1970s value and there has been a breakdown of essential services, public utilities and infrastructure. The country has large arrears of foreign debt payment and a severe excess demand for foreign exchange. Economic activity has been diverted to the parallel market largely because of unrealistic government controls. Many believe that the value of parallel market activity exceeds that of documented transactions. (See Thomas, 1989, for estimates of parallel market activity.)

The characteristics of the Guyanese economy, as estimated from the model, are summarised in Table 8.4. The estimates are based on formal economic activity. Tradables react as expected to changes in their prices (positively) and to changes in the interest rate (negatively). Aggregate demand effects account for much of the variation of imports and of the output of non-tradables. An increase in the relative price of tradables has the expected positive effect on non-tradables, but it is also associated with an increase in imports, contrary to expectations. Prices for non-tradables behave in a fashion similar to our observation for other countries, with increases in tradable prices and interest rates driving them upwards but an inverse relationship with output of non-tradables. Investment increases with increases in the prices of tradables, and falls with rising interest rates.

The base projection of economic performance for 1991-95 assumes that foreign prices rise on their historical trend, that interest rates remain at 1990 levels, that public sector domestic borrowing is limited to the funds available from the non-bank private sector, and that capital inflows are G$500 million per year (about US$5 million, at exchange rates of early 1991). The projection yields a sharp contraction in output for 1991, and continuing decline at a less rapid rate for the next five years. There is a balance on external payments before debt service but debt service produces a balance of payments deficit (Chart 8.3). Because of the arrears of external payments no deficit can be sustained and the exchange rate is expected to depreciate. Inflation is largely confined to the parallel market and documented

Table 8.4 The Guyana Model

1. q_t = 456.72 + 1.29p_t - 1.00p(-1) - 49.61dq - 10.10r
   (18.36) (1.59) (-0.91) (-0.25) (-1.97)
   Adj.R^2=0.5142, SEE=31.25, DW=0.82, F=6.02, 1966-85

2. q_n = 27.02 + 0.002a + 1.00p_t/p_n + 0.76q_n(-1)
   (1.01) (0.07) (4.59) (10.16)
   Adj.R^2=0.9411, SEE=17.84, DW=2.67, F=102.12, 1966-85

3. p_n = 43.61 - 0.15q_n + 0.18p_t + 1.23p(-1) - 12.13dq + 0.90r
   (2.31) (-3.02) (0.95) (4.86) (-0.27) (0.59)
   Adj.R^2=0.9674, SEE=6.50, DW=1.34, F=113.78, 1966-85

4. m = 62.74 + 0.48a + 5.20p_t/p_n
   (0.27) (2.24) (2.81)
   Adj.R^2=0.4528, SEE=154.37, DW=1.60, F=8.86, 1966-85

5. e = 2.03 + 0.004dR
   (26.66) (8.73)
   Adj.R^2=0.7506, SEE=0.34, DW=1.38, F=76.24, 1960-85

6. i = 259.64 - 0.23p_t + 5.45p(-1) + 437.34dq - 29.61r
   (5.13)(-0.14) (2.45) (1.08) (-2.83)
   Adj.R^2=0.5623, SEE=63.62, DW=1.08, F=7.10, 1966-85

7. $a = q_t + q_n$ + dmo
8. $p_t = p_f.e/e(-1)$
9. dmo = dR/p + dmb
10. $dR = (q_t.beta - m)p_t + K$
11. $q < q(-1) + i/ICOR$

price increases are negligible. A 50% increase in relative prices in 1990 improves output somewhat, but not strongly enough to arrest the decline. The balance of payments outcome worsens because of a short term rise in imports. At projected investment levels full capacity output is not much in excess of the expected level. To achieve a faster growth rate capacity will have to be increased.

Considerable investment and reorganisation is necessary to increase capacity in traditional export activities. For the bauxite industry, the challenge is to recapture a major share of the market in calcined bauxite, a product which only Guyana and China export in significant quantities. Bauxite production has recently been hard hit by technical bottlenecks. Technical assistance is needed for the rehabilitation of production and investment is required to replace run-down and derelict equipment. Guyana has ceased to produce alumina altogether. Recent management contracts with international companies are only the beginning of what needs to be done to revive bauxite and alumina production.

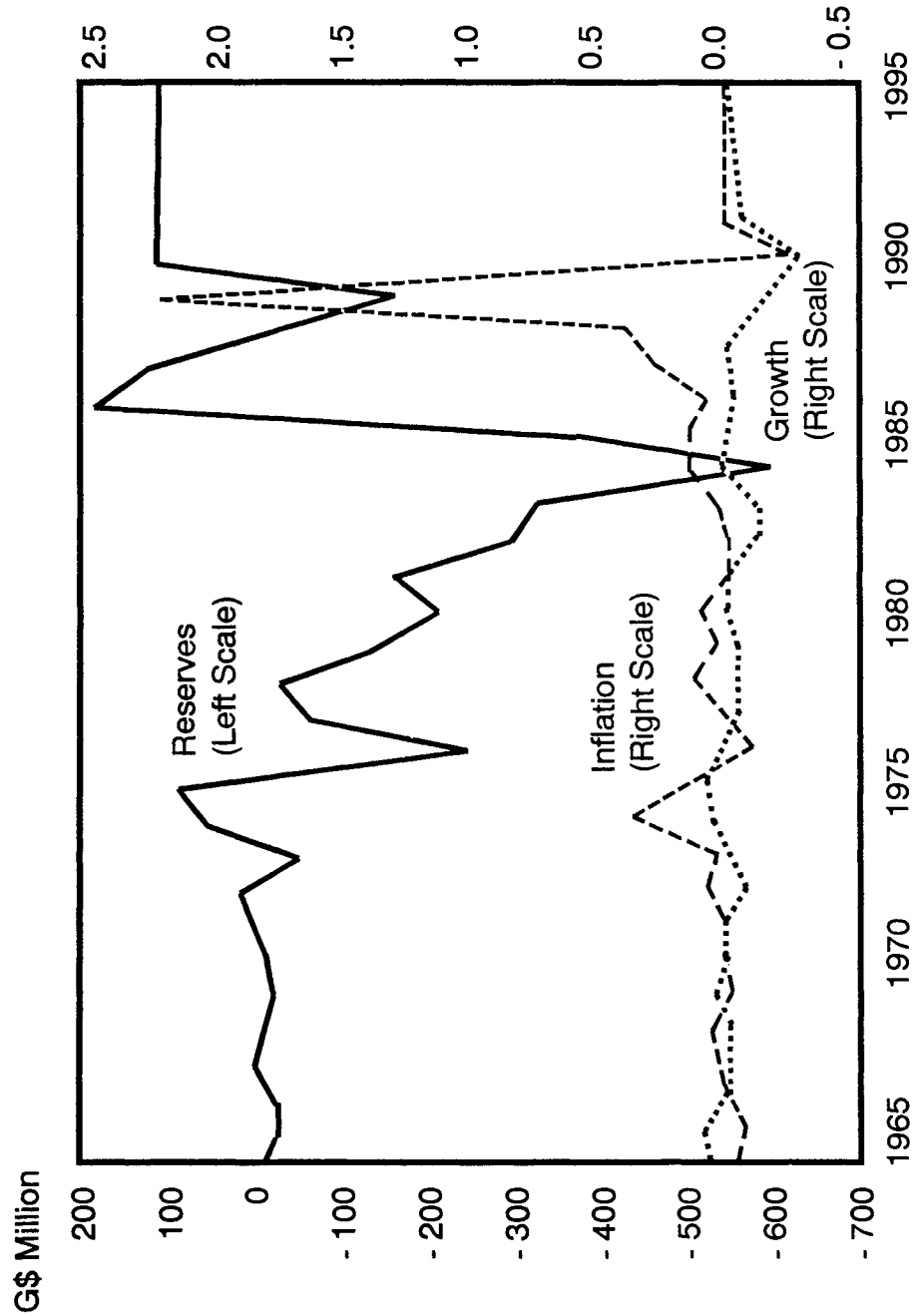
The decline in sugar output has been attributed to labour shortages, industrial unrest and bad weather. Investments will be needed to mechanise production and harvesting. Industrial relations problems will persist so long as the overall economic performance imposes continuing hardship on Guyanese and the present sense of political disenfranchisement persists. To increase rice production technical assistance and investment is needed in the rehabilitation of facilities. Research is also needed in the control of disease.

Additional human resources and revitalised institutions are needed to develop potential in non-traditional activities such as timber, gold mining and fisheries. Production in all these minor activities has been declining in recent years. They depend on the restoration of reliable electric supply and on the provision of foreign exchange for materials and spare parts.

There are a number of general issues which must be addressed as a foundation for new investment and capital expansion. The existing political and social climate does not nurture the growth of human resources; people with skills continue to migrate because of the unacceptable quality of life. In addition to the scarcities of essential goods and services, and the inconveniences to which Guyanese are subjected in the normal course of activity, there remains a sense of social unease. Investment is urgently needed to restore public utilities and infrastructure to functioning levels. Unrealistic government controls have reduced the efficiency of markets for goods, labour and finance.

The recommendations for Guyana begin with institutional arrangements for better articulation of popular opinion and the development of a national consciousness. Exchange rate, price, import and credit restrictions should be relaxed so as to make it easy for people to carry out the transactions they can afford, with no legal impediment. Our preference is for an official exchange rate which matches the supply of foreign exchange available to the Bank of Guyana to the demand for a limited range of essential goods. This might be done through the use of a managed foreign exchange auction. All other supply and demand for foreign exchange would be handled by the private sector at freely negotiated rates. The

Chart 8.3 Guyana: Actuals (64-89) and Forecasts (90-95)



Bank of Guyana issued licences for foreign exchange trading in March 1990 and requires licensed traders to supply information on their transactions. Since January 1991 the official rate has been tied to the average of the rates reported by the licensed foreign exchange dealers.

Divestment of most public corporations would provide funds for essential government activity and the provision of public goods. Government needs to cut back its target for the provision of public goods until the planned provision matches the availability of resources. Tax rates can hardly be increased and borrowing prospects have been exhausted. Allowance must be made for debt service payments. Public service wages ought to be set at the level required to secure the services of competent staff. This determines the size of the civil service after allowance is made for the purchases and equipment needed to carry out government functions. A priority listing of government activity will have to be undertaken and the available staff allocated to government services according to their priority.

Foreign debt restructuring will have to be undertaken. It should be done on a basis which provides the authorities with a plan on which they may reasonably be judged. For example, a certain proportion of foreign exchange earnings might be paid for debt service each year, allotted among creditors on a pre-arranged basis. There might be a write-off of a proportion of the foreign debt after some period of satisfactory servicing. Guyana should expect to live without foreign payments financing and trade credits for the foreseeable future. Capital inflows will be in the form of direct private investment and project loans to government on concessional terms.

Jamaica

Economic output in Jamaica has been on the decline since the mid-1970s with only occasional years of growth. The balance of payments has remained in disequilibrium throughout this period in spite of substantial foreign borrowing for balance of payments support. Episodes of serious inflation have been interspersed with more moderate price rises. According to our forecast, growth is possible but the external accounts remain unbalanced.

Our tests for the Jamaican economy indicate that wage increases depress the output of tradables and inflate the prices of non-tradables. Wages are driven by inflation, with a lag, but the response is less than in proportion to the inflation. International prices do not have significant effects on the output of tradables or on the prices of non-tradables. Their direct effect on domestic inflation is rather small. There is also little switching to the consumption of non-tradables when international prices rise. Increases in the interest rate inflate the prices of non-tradables but they have a benign effect on the output of tradables. This is rather surprising and we can only speculate that higher rates may have provoked greater efficiencies in the production of tradables. Increases in non-tradable prices are the main sources

Table 8.5 The Jamaica Model

1. $q_t = 880.3 + 1.53p_t - 5.61w + 13.08r$
   (14.6) (3.09) (-5.62) (1.56)
   Adj.R^2=0.7957, SEE=46.43, DW=2.08, F=20.47, 1972-87

2. $q_n = -210.4 + 0.08a + 1.67p_t/p_n + 0.88q_n(-1)$
   (-1.30) (1.10) (2.17) (6.95)
   Adj.R^2=0.9151, SEE=58.0, DW=2.07, F=94.38, 1961-87

3. $p_n = -17.43 - 0.01q_n + 0.17p_t + 0.64w + 4.53r$
   (-0.44) (-0.56) (2.61) (5.49) (5.15)
   Adj.R^2=0.9972, SEE=4.30, DW=1.17, F=1320.5, 1972-87

4. $m = 961.72 + 0.72a - 5.67p_t/p_n$
   (1.48) (3.90) (-1.81)
   Adj.R^2=0.4900, SEE=285.37, DW=1.38, F=13.49, 1961-87

5. $w = 32.72 + 0.75p(-1) - 0.74dq$
   (7.01) (20.29) (-1.02)
   Adj.R^2=0.9669, SEE=10.58, DW=0.65, F=220.35, 1972-87

6. $a = q_t + q_n + dmo$
7. $dR = (q_t.beta - m)p_t + K$
8. $dmo = dR/p + dmb$

9. $\log rr = 4.24 + 0.13\log p_t - 0.07\log w + 0.01\log r$
   (9.68) (0.62) (-0.25) (0.03)
   Adj.R^2=0.3652, SEE=0.08, DW=1.24, F=3.88, 1972-87

10. $\log i = 7.44 - 0.26\log rr$
    (1.07) (-0.17)
    Adj.R^2=-0.06, SEE=0.61, DW=0.65, F=0.02, 1970-87

11. $q < q(-1) + i/ICOR$

of inflation and non-tradable prices are mainly driven by wage increases. The output of non-tradables does not significantly influence their prices. The relationships are illustrated in Table 8.5.

Output in Jamaica is driven by wages, interest rates and domestic demand. Inflationary pressure arises from wage increases via the prices of tradables. The balance of payments is adversely affected by wage increases which depress the output of tradables, by falling interest rates and by rising aggregate demand which raises the demand for imports. Changes in the relative price of tradables seem to have relatively small effects. Money financed government deficits may raise the overall growth rate but at the expense of the balance of payments. The model does not give a particularly acceptable description of actual performance in the 1970s. In the 1980s it is usually in the right direction though the magnitudes of changes are exaggerated.

The forecast for 1991-95 is based on a constant price of tradables, foreign prices increasing on the trends of 1960-90, interest rates constant at 21% and increases in real base money of about 20% of real output. This produces a forecast of virtually stagnant output with a growth rate of less than 1% per year. Inflation falls over time from the region of 12% to about 4% by 1995. The loss of foreign exchange reserves implied by the balance of payments deficit is not sustainable (Chart 8.4).

Output has not been limited by capacity during the historical period and it seems that capacity will be in excess of projected output during the forecast period. Capacity is calculated on the basis of expected investment.

The model was simulated to determine whether a reduction in money creation would serve to stabilise the economy. A sufficiently large contraction by means of a reduced fiscal deficit lowers the foreign exchange reserve losses to manageable proportions. However, considerable relief on debt servicing projections would be needed for a sustainable balance of payments. The reduction in money creation eliminates the little real growth that was expected in the initial forecasts, however. The rate of inflation is not affected.

A small increase in the relative price of tradables (of about 10%) in 1991 with no change thereafter has a barely discernible effect on foreign exchange reserves and no significant effect on output or prices. A major increase of a little over 30% results in much stronger growth in 1992 but the effect does not last. The growth for the remainder of the period is much the same as before. Inflation is somewhat lower because of the unexplained inverse relationship between the prices of tradables and non-tradables. The balance of payments is weaker after a large relative increase in tradable prices and foreign exchange reserve losses much larger unless, simultaneously, monetary policy is tightened by means of a reduced fiscal deficit.

An increase in the interest rate in 1991 boosts output in that year but has only a one-shot effect. The increase is quite inflationary: even though the impact decays over time it is still noticeable by 1995. The balance of payments improves slightly in 1991 but worsens a little thereafter.

There appears to be scope for the Jamaica Government to reduce the supply of money by means of fiscal contraction. The government recently embarked on a fiscal reform programme which may have dampened the buoyancies of tax response. Even so, surpluses may be achieved on government accounts if bauxite sales hold up and if expenditure is frozen in real terms, with government employment kept at the levels of 1990. A projection based on the growth of income, imports, prices and wages generated by the forecast model produces fiscal surpluses rising from 1% to 4% of GDP provided that expenditure remains constant in real terms and the wages bill increases at the same rate as the general wage rate. With surpluses of this magnitude, enough money could be mopped up from the financial system to eliminate the projected foreign exchange reserve losses.

The turnaround in fiscal fortunes may not be quite so dramatic. The 1990 levels of expenditure reflected an unacceptable deterioration of health services, education services, internal transport and communications. Public utilities had not grown sufficiently to accommodate the level of economic activity. Real expansion in spending is planned through a "social well-being programme" devised by the Jamaica Labour Party administration of Edward Seaga. It is being put in place in modified form by the present People's National Party administration. Some expansion in government activity is therefore necessary and to be expected.

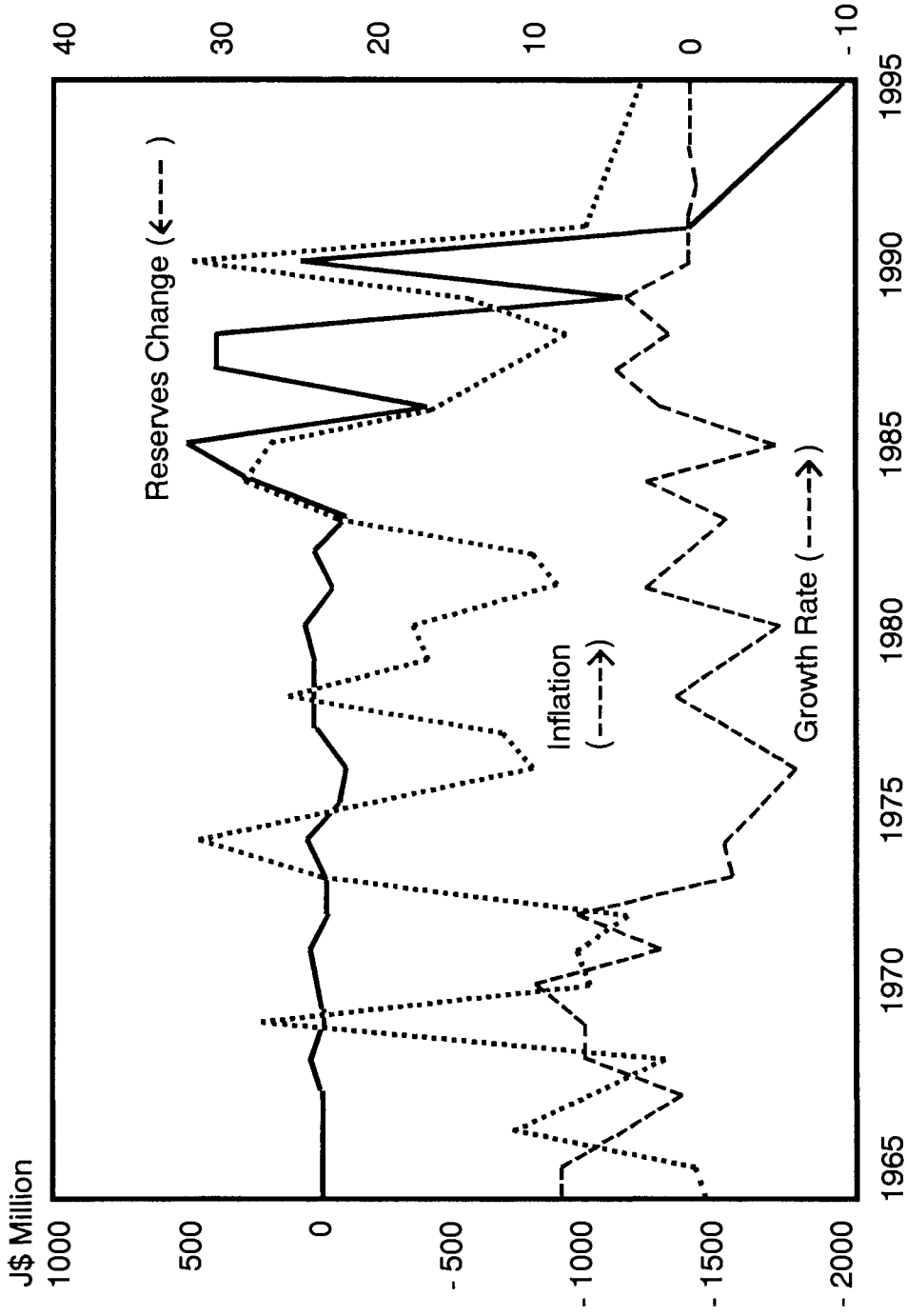
Marketing, organisational and developmental efforts will be required to stimulate the growth of exports. The production of bauxite and alumina has been in decline since 1974. The losses in the 1970s resulted from conflicts between government and the industry. In the 1980s the world market has been soft and Jamaica has been unable to recapture its market share. In 1987 levels of output were 40% lower than in 1980. On the current trend alumina may decline only slightly and the prospects for bauxite in 1991 are a little more encouraging. New arrangements with the producers of bauxite and alumina and the reactivation in 1988 and 1989 of works which were closed during the eighties may allow for some increase.

The production of sugar, the most significant agricultural export, has been in decline since 1965. By 1980 output was only one-third of the 1965 volume. Sugar production has stabilised since 1980 and a contract with an international producing firm has restored efficiencies in selected major sugar producing areas. More extensive rehabilitation is however needed if sugar production is to increase.

In the 1980s tourism output was restored to its levels of the early 1970s. Investment plans currently under way provide for continuing expansion into the nineties and the market prospects are reasonable.

Jamaica continues to face a troublesome adjustment problem. No growth is predicted for the economy and it is not certain that an acceptable compromise can be found between the need to expand government expenditure for the rehabilitation of infrastructure and fiscal contraction to secure an acceptable balance of payments outcome. The recommendations for Jamaica are for export promotion, particularly institutional and organisational developments required to accelerate the growth of exports. Fiscal adjustment is needed to simultaneously repair

Chart 8.4 Jamaica: Actuals (64-90) and Forecasts (91-95)



infrastructure and contain government borrowing from the Bank of Jamaica below projected levels.

Trinidad and Tobago

Trinidad and Tobago, the Caribbean's major oil exporter, enjoyed a period of extreme prosperity during the 1970s when oil prices were high. In the 1980s the economy has undergone a period of contraction. The estimates of the structural equations for Trinidad and Tobago appear in Table 8.6. The price of oil, the major tradable, has an overriding influence on the output of tradables. Although the sector has not been disaggregated in this analysis, it is fairly certain that wage and interest rate increases depress the output of non-oil tradables without much affecting oil output. The output of non-tradables is driven by aggregate demand and by relative price changes. Prices of non-tradables are determined by tradable prices and wages, and once again we notice an inverse relationship between the output of tradables and their prices. The relationship between wages and prices tends towards an explosive spiral, with an estimated elasticity of 1.1 at the mean values. Imports (net of imported crude oil for processing and re-export) are mainly determined by aggregate demand, with little response to relative price changes. Tradable prices account for about 40% of domestic price inflation.

Growth depends on oil prices, which stimulate the output of tradables and increase demand for non-tradables. Oil prices also cause some inflation and therefore drive up wages, slowing the output of tradables in sectors other than oil. This is evidence of the so-called "Dutch disease" which is typical of countries with a boom in the export of a major commodity. The balance of payments remains healthy so long as oil revenues are sufficient to accommodate a strong increase in demand for imports.

The base forecast for 1991-95 is based on the trend of tradable prices in the 1980s, which was downward, though it may be overly pessimistic to assume that oil prices will fall continuously, albeit slowly, over the next five years. Capital inflows are assumed to be just sufficient to cover amortisation and capital repatriation. Nominal wages in government service have been reduced by about 20% since 1986, by a combination of a 10% cut in the standard wage and the elimination of a "cost of living allowance". Other wages in the economy have stagnated. The base forecast assumes that wages remain frozen for five years, which may be unrealistic, even if inflation is as low as is projected. The projections show output declining at between one and two per cent per annum for the five-year period, but inflation is negligible and the balance of payments is in surplus. If the price of tradables were to remain constant the decline in output is arrested by 1995 and there is no significant change from the base scenario in inflation and the balance of payments.

Table 8.6 The Trinidad and Tobago Model

1. $q_t = 781.80 + 308.13p_t - 1.03w - 29.79r$
   (11.07) (4.58) (-2.48) (-2.46)
   Adj.R^2=0.6615, SEE=42.18, DW=1.12, F=12.37; 1966-88

2. $q_n = -55.43 + 0.14a + 255.95p_t/p_n + 0.72q_n(-1)$
   (-0.96) (4.57) (2.48) (16.83)
   Adj.R^2=0.9773, SEE=66.26, DW=1.85, F=258.85; 1967-88

3. $p_n = 0.52 - 0.0006q_n + 0.62p_t + 0.009w + 0.02r$
   (2.44) (-5.86) (3.70) (13.03) (0.76)
   Adj.R^2=0.9906, SEE=0.07, DW=0.96, F=476.39; 1966-88

4. $mno = 2668.78 + 0.85a - 1031.50p_t/p_n$
   (4.14) (2.36) (-0.76)
   Adj.R^2=0.2549, SEE=866.29, DW=0.87, F=3.42; 1966-88

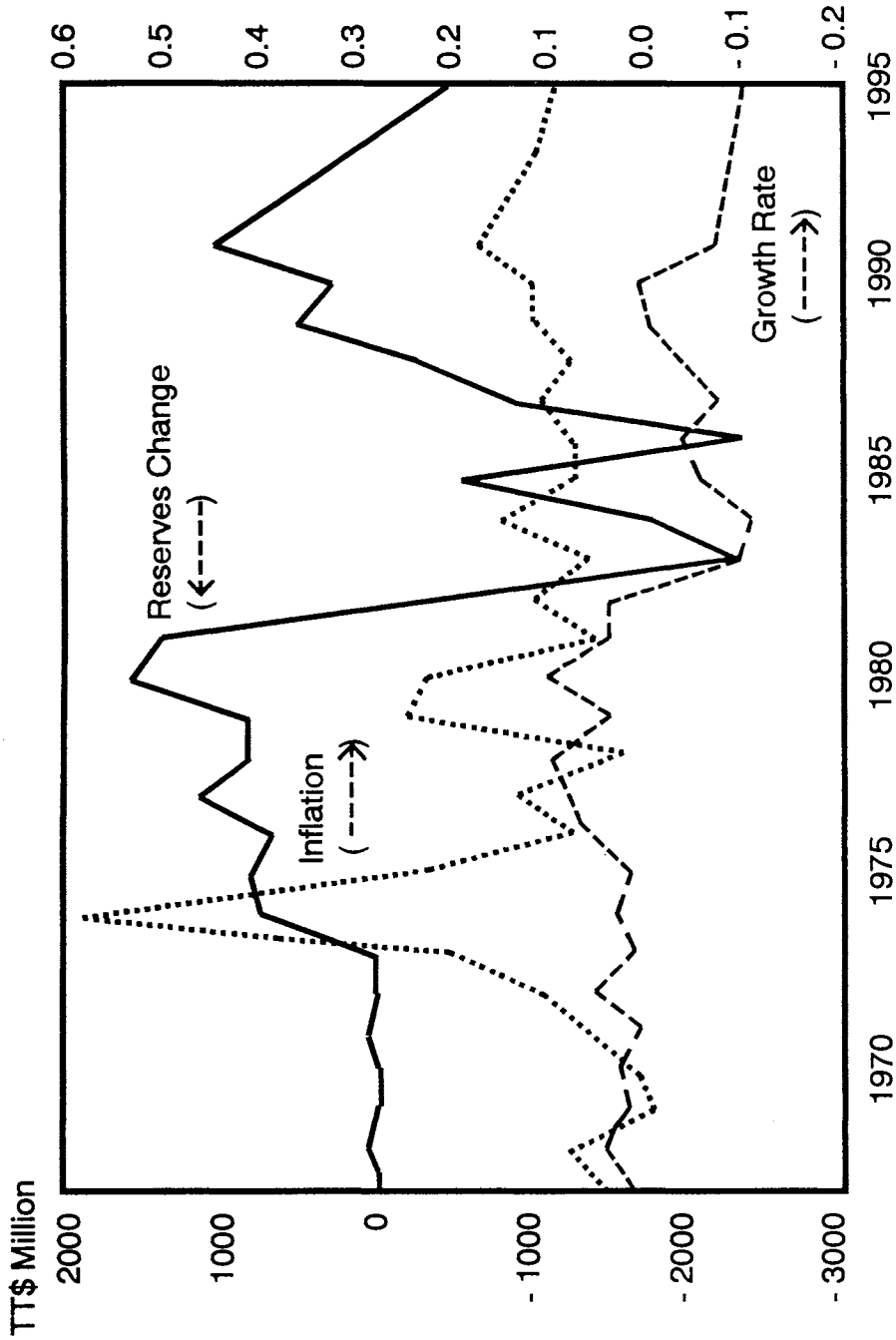
5. $w = -3.43 + 124.89p(-1) - 62.04dq$
   (-0.48) (15.54) (-0.92)
   Adj.R^2=0.9561, SEE=14.56, DW=0.73, F=207.20; 1967-88

6. $i = 5824.48 + 3018.47p_t - 2.21w - 826.09r$
   (5.89) (4.62) (-0.54) (-4.84)
   Adj.R^2=0.8308, SEE=408.71, DW=1.86, F=29.47; 1966-87

7. $a = q_t + q_n + dmo$
8. $dR = (q_t.beta - mno - mop)p_t + K$
9. $q < q(-1) + i/ICOR$

Note: *mno = non-oil imports*

Chart 8.5 Trinidad and Tobago: Actuals (67-90) and Forecasts (91-95)



Raising the interest rate in 1991 depresses the growth rate and inhibits investment, but it is not inflationary and the external accounts are still in surplus. An expansion in the money supply equivalent to 10% of income gives only a small boost to output growth and generates little inflation, but the external accounts deteriorate. If wages are made endogenous to the model the wage rate rises very rapidly, even at the relatively modest rate of inflation, creating an upward spiral of wages and prices. There is a severe contraction of output, both of tradables and non-tradables. Reserves increase between 1991 and 1993, but each year's surplus is lower, and deficits appear in the balance of payments in 1994 and 1995 (Chart 8.5). This wage reaction is typical of the high-growth period of the 1970s, which dominates the estimation period. It is possible that recent fiscal action has altered wage behaviour such that this outcome is not very likely. The economy is not expected to operate much below capacity, at the expected rate of new investment. Most of apparent excess capacity now existing is in outmoded and inefficient plant which is not productive at the projected prices and it must therefore be discounted.

The fiscal prospects depend entirely on oil revenues. If tax receipts from oil companies can be restored to the nominal levels of 1985, a fiscal deficit of 3-5% of GDP is possible. We assume that non-oil taxation will maintain its buoyancy of the 1966-85 period. Though the system is currently under reform, the target is to maintain or even to improve the buoyancy of taxation. No real expansion in government services is contemplated. The wages bill expands at the general rate of wage increase and other expenditure at the rate of inflation.

If oil revenues hold up, it might be possible to adjust the budget without serious harm to social services and infrastructure, but careful allocation and monitoring would be necessary. An analysis of the cost of maintaining the current government provision of services should be made, including data from historical trends. For example, a detailed measurement should be made of educational achievement and comparisons done of spending on education by government, private agencies and households, out of their own budgets. Overall, the social indicators in Trinidad and Tobago remain acceptable and the focus should be on maintenance, enhancement and the adjustment of priorities.

The prospects for non-oil exports are not encouraging. Agriculture is in decline and there is no prospect that exports of agriculture will make any meaningful contribution to foreign exchange earnings during the forecast period. The contribution of export agriculture is in the region of 2-3% of export receipts. Considerable investment has been made in manufacturing to process raw materials, concentrating on the raw materials of the oil industry and energy-intensive production. Most of the firms established under the programme are yet to secure dependable export markets, but devaluations may have improved their competitive position.

Summary of the Prospects, 1991-95

Output is likely to be stagnant or declining in every country except the Dominican Republic, according to our exploratory forecasts. Balance of payments deficits are likely to destabilise exchange rates in all countries except Trinidad and Tobago. Inflation is not a major problem, provided the exchange rate is stabilised. Devaluations are inflationary in Barbados, and in the DR, and possibly also in Trinidad and Tobago, there is an ever present danger of an inflationary wage–price spiral. In the DR in particular the inflation rate must be reduced if the inflation projections are to be realised.

Stabilisation of the balance of payments seems to be within reach, through a contraction in the supply of money, to be achieved by lower levels of finance for government. In the DR it might be helpful to combine this with a devaluation of the official exchange rate. The implications of further fiscal contraction for the delivery of government services have to be clarified in each country.

Countries must seek to achieve growth by means of sectoral and institutional policies to promote exports. Some of the issues that arise in accelerating the export drive have been mentioned in the discussion; they vary from country to country, and one requires a sound knowledge of the recent performance in specific activities to form a clear picture of the deficiencies to be remedied. Macroeconomic policies are of little assistance in speeding up or in restoring growth.

For countries in category 4, with the most severe economic crises, the problems are especially acute, involving the need to restore credibility to policy (in the eyes of the domestic population, most critically), the repair and renewal of deteriorated infrastructure, and making up for the depreciation of the human resource. The issues must be addressed at the same time that fiscal changes are made to ensure external balance and measures for export promotion instituted, so that the country may find a way to lift living standards. These are formidable tasks, requiring many years of application. Hence the importance of developing a sense of national purpose.

The difference between countries in category 2 and those in category 3 is in the severity of the fiscal adjustment to be made. Some countries face such tight fiscal limits that selection will be necessary on the eligibility for free government services, and limited targeted provision may well have to be substituted for global access. These choices are more likely to face countries in category 3, but the difference is one of degree.