CARIBBEAN DEVELOPMENT BANK

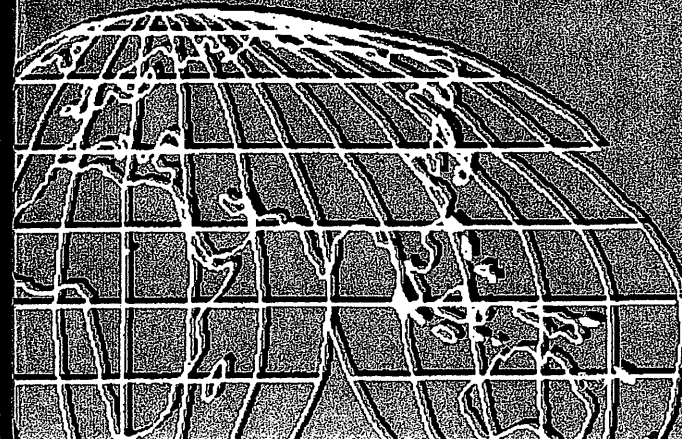## TWENTY-FIFTH ANNIVERSARY

Whither the Caricom Region:
Whither CDB in its Support?

EDITED BY

KEITH WORRELL

&

ANTHONY GONZALES

As part of the 25th Anniversary Celebrations of the Caribbean Development Bank, the bank's management mandated its Economics and Programming Department to organise a seminar for the occasion of the 25th Annual Meeting of the Board of Governors in Kington, Jamaica

The Proceedings of that seminar are the contents of this book. The seminar was arranged as a symposium on the subject of the future economic development of the Caribbean and the way the CDB should fit into that development. The six invited authors and four discussants have together proffered an array of advice to both the Region and to CDB that should be carefully evaluated and where found to be valid, quickly acted upon. For as all of the contributors emphasised in their various ways, we have very limited time for adjustment at our disposal.

I wish to take this opportunity to thank all of the participants in the seminar for a very timely and enjoyable discussion. CDB is pleased to make their deliberations available for a wider public.
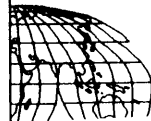
Neville V. Nicholls

12 April, 1996.

4:
FINANCE, INVESTMENT, AND GROWTH:
ECONOMIC POLICY FOR CARIBBEAN ECONOMIES IN THE NEXT (QUARTER) CENTURY

BY

DONALD J. HARRIS

PROFESSOR OF ECONOMICS,
STANFORD UNIVERSITY

CARIBBEAN
DEVELOPMENT
BANK

FINANCE, INVESTMENT, AND GROWTH: ECONOMIC POLICY FOR CARIBBEAN ECONOMIES IN THE NEXT (QUARTER) CENTURY

TWENTY-FIFTH
ANNIVERSARY

EXECUTIVE SUMMARY

In examining recent performance of Caribbean economies, the record presents a very uneven picture for different countries, dismal in some cases, impressive in others. For the former group of cases, there is widespread concern over the persistent low rate of growth and the slow pace of economic recovery from the sharp decline that occurred in the late 1970s and early 1980s. The performance of the latter group, impressive as it is in many dimensions, raises questions about whether it could not have been better still if certain adjustments had been made and whether it is sustainable in future, given the narrow productive base on which it is founded.

The ongoing debate about the factors involved in this mixed record of economic performance points to a number of different possible causal factors, with correspondingly different emphases and implications for economic policy.

The purpose of this paper is to emphasize that there are, indeed, multiple causal factors involved, such that simple one-dimensional accounts cannot tell the whole story and may be misleading in terms of economic policy. The focus of attention here is on the nexus of relations between growth of output, conditions of supply of finance for investment, and factors underlying the demand for investment. The aim is to try to clarify the specific role of the component factors within this particular area and the implications for economic policy directed to improving future growth performance of Caribbean economies.

The argument is constructed both by empirical analysis of various performance characteristics of a cross-section of twelve Caribbean countries (borrowing members of CDB) and by a more abstract and formal analysis.

The empirical analysis examines the correlation between GDP growth and a number of other variables representing economic size, export growth, rate of investment, financial conditions, and economic instability. Some of the empirical results are consistent with commonly held views. But, as to the role of the financial variables and economic instability, the results obtained do not sit very well either with some of the positions taken in the policy debate or with theoretical presumptions.

In an effort to sort out the different issues involved, four different possible scenarios are constructed, each tied to specified conditions regarding the struc-

ture of the capital market, the nature of the mechanisms that work to channel credit to investors, and the response of investors to perceived opportunities and incentives for investment. Different policy approaches are appropriate to deal with the situation, depending on the specific factors at work in each scenario. On this basis, it is possible to make a sharp identification and separation of the specific role of the following factors which determine the outcome in terms of investment and growth:

* government borrowing activity (as reflected in the T-bill rate)

* the spreads of the commercial banks

* the "riskiness factor" in investment

* credit rationing by lenders (facing information and monitoring costs)

* long-term profitability conditions (related to costs and returns on investment)

* the state of investor expectations and responsiveness (investment inertia)

* the quality of entrepreneurship and management

From this analysis, it emerges that the cost of credit (interest rate) does matter. But that is itself indicative and symptomatic of other factors. It has to be considered, not only in relation to the usual macroeconomic variables and government financial leveraging (crowding out), but also in relation to the prevailing structure of financial markets and conditions of access by different groups of borrowers (credit rationing). Moreover, the demand side for investment also matters at least as much (the two blades of the scissors). On this side, the crucial factors are both internal to the business sector (quality of entrepreneurship, management, and technology of production) and a part of the environment in which firms operate (uncertainty and credibility of macroeconomic policy, quality of infrastructure, and public services).

Specific policy proposals emerging from the analysis centre on: increasing the supply of long-term credit, risk reduction at the level of the macroeconomy and at the level of targeted sectors, risk-sharing schemes, provision of adequate infrastructure, technical assistance in production and marketing, design of an integrated and coherent structure of fiscal and other types of incentives, and efficient operation of government services.

More generally, attention must be given to possibilities for institutional innovation in the capital markets of the Caribbean to provide for deepening in the following areas: long-term credit institutions, venture capital funds, and institutions that provide funds for small firms and the informal sector. Furthermore, financial policy by itself is not enough. A strong complementary role must be played by industrial policy.

FINANCE, INVESTMENT, AND GROWTH: ECONOMIC POLICY FOR CARIBBEAN ECONOMIES IN THE NEXT (QUARTER) CENTURY

1. INTRODUCTION

The twenty-fifth anniversary of the Caribbean Development Bank is an occasion to ponder on the question of the appropriate economic policy to be pursued in the Caribbean to take us into the next (quarter) century, given the experiences of both success and failure that we have just now passed through in the last quarter century.

In seeking answers to this question, one has to make informed judgements about the factors which have governed economic performance during the recent past up to the present, in order to determine what can and needs to be done now, to take us from here to there, so to speak, if the goal is to improve current and future economic performance in terms of relevant indices. This requires some hard work of analysis and interpretation of the facts of our own experience.

In examining recent performance of Caribbean economies, viewed simply in terms of indices of growth, the record presents a very uneven picture for different countries, dismal in some cases, impressive in others. For the former group of cases, there is widespread concern over the persistent low rate of growth and the slow pace of economic recovery from the sharp decline that occurred in the late 1970s and early 1980s. The performance of the latter group, impressive as it is in many dimensions, raises questions about whether it could not have been better still if certain adjustments had been made and whether it is sustainable in future, given the narrow productive base on which it is founded.

The ongoing debate about the determining factors involved in this mixed record of economic performance moves between three different poles, with correspondingly different emphases and implications for economic policy.

At one pole, the focus is on external shocks, associated with exogenous movements in the terms of trade, demand factors in commodity markets, and changes in supply and cost of foreign investment and loan capital. Related to these is the matter of the debt overhang which continues to plague some countries.

At another pole, is the view that ties performance to the role of financial factors derived from fiscal and monetary policies of the state and operating through interest rate and exchange rate changes by way of inflationary movements in wages and prices and to the role of uncertainty and risk associated with economic instability arising from these sources.

There is a third pole that looks at "structural" factors linked to characteristics of the internal production structure and supply conditions: small size, specialization in a narrow range of export commodities and services, use of outdated equipment and technology, managerial and entrepreneurial weaknesses, low rate of national savings, and deficiencies in physical infrastructure and supply of skilled labour.

These views are, of course, not necessarily mutually exclusive. One would have to grant that, in a complex world, there must be multiple causal factors at work. Each of us, being in some way Bayesians at heart, no doubt has priors on the weights to be attached to the various factors. That, perhaps, is part of the reason for the policy debate. Evidently, also, much more work needs to be done, in terms of detailed and systematic analysis, to sort out and clarify exactly what is the role of different elements of the picture. Meanwhile, however, the policy-making process itself must move along and cannot wait upon the results of such work.

The purpose of this paper is to emphasize that there are, indeed, multiple causal factors involved, such that simple one-dimensional accounts cannot tell the whole story and may be misleading in terms of economic policy. Nevertheless, within the set of relevant factors, there are some that stand out above the rest. These may be considered priority areas for economic policy. The argument is constructed both by reference to empirical correlations among some relevant economic variables for a cross-section of Caribbean countries and by a more abstract and formal analysis.[1]

The focus of attention here is on the nexus of relations between growth of output, conditions of supply of finance for investment, and factors underlying the demand for investment. It is assumed that this is a priority area for economic policy. The aim is to try to clarify the specific role of the component factors within this particular nexus and the implications for economic policy directed to improving growth performance.[2]

2. SOME STYLIZED FACTS

It is useful to consider, first of all, what the empirical record shows.

For this purpose, empirical measures of variables indicating growth performance and other relevant economic characteristics of a sample of twelve Caribbean countries were constructed from available data. These measures were cal-

---

[1] I am grateful to Mushtaq Khan for helpful research assistance in preparation of this paper.

[2] In Harris (1995b), an analytical model is constructed which develops an integrated conception of the role of a broader set of factors, including those examined here, that are considered to influence investment and growth. In Harris (1995a), a detailed econometric analysis is presented, using empirical data for a sample of five Caribbean-Basin countries over the past thirty years or so, to test for the specific role and quantitative significance of a wide range of factors, both internal and external, affecting growth performance measured in terms of exports.

---

culated as averages (simple arithmetic means) or as coefficients of variation for each country over the period 1980-92 and for two sub-periods within this period: 1980-1986 and 1987-1992. The resulting data-set for all the countries is presented in Tables 4, 5, and 6. The variables are defined and data sources indicated in Table 7.

What is of interest here is the cross-country relationship among the variables. For assessing this relationship, the correlation coefficient is used.[3] The matrix of coefficients calculated for the full period and sub-periods is presented in Tables 1, 2, and 3.

Looking at the estimated coefficients for the full period, one finds a rather interesting pattern of relationships. Comparison of the estimates for the two sub-periods brings out additional features. Attention is focused here only on the full-period coefficients (see Table 1).

Economic size is negatively correlated with GDP growth. This leads one to question the traditional idea that small size is somehow a handicap. Here, at least for this group of countries, and within the range of sizes of this sample, it turns out to be a definite advantage in terms of economic growth. Of course, this result says nothing about the particular sources of this advantage, nor of the apparent disadvantage of large size. It does point to the existence of special country-specific features affecting growth performance which distinguish the smaller countries from the larger ones. This calls for further analysis to identify what are these features.

Export growth is positively correlated with GDP growth. This is as one would expect from the high share of exports in GDP in these countries. It suggests also that the view that export growth is a crucial factor driving overall growth of the economy (no doubt, with feedback effects in the opposite direction) may not be far off the mark.

The **share of investment in GDP** is positively correlated with GDP growth, and even more strongly with export growth. This is consistent with the widely

---

[3] This statistic provides a measure of the degree and direction of the relationship between any two variables taken together, without reference to their interaction with other relevant variables and without presumption of the direction of causality between and among them. In this limited sense, it is useful as a first step in analysis. Commonly used methods of multivariate analysis would enable more systematic testing of hypotheses of causality. This should properly be the next step in refining the analysis. Use of cross-country data raises questions about the *ceteris paribus* assumptions of partial correlation analysis. But since there is a high degree of homogeneity among this sample of countries with respect to various elements of their economic structure, if not to their respective policy regimes, use of the method of partial correlation makes sense in this context. Use of cross-country averages for long enough time-periods allows getting at elements of economic structure that are not well captured in year-to-year variation. But, on the negative side, it does serve to eliminate the time dimension of change and adjustment within each country. Comparison of the estimates for different sub periods helps somewhat to meet this objection. Multivariate analysis of pooled time-series and cross-section data (as in Harris, 1995 or Modeste, 1993) meets some of these objections, but raises other problems of its own.

held view, and the presumption in much growth theorizing, that capital formation is a key factor in economic growth.

The four financial variables are of special interest because they are at the centre of the contemporary policy debate, as well as of much theorizing, regarding the role of financial conditions in affecting economic performance. It turns out, on this first pass at examining the data, that the empirical results obtained here do not sit very well either with some of the positions taken in the policy debate or with theoretical presumptions.

The level of the **real rate of interest on treasury bills** (the real TB rate) reflects the outcome of government funding activity in the capital market. If there is a "crowding out" effect of such activity, as is sometimes argued, it should presumably reduce private-sector investment and, consequently (unless compensated by government investment), the overall rate of investment. Correspondingly, it should negatively affect export growth and GDP growth. It turns out that the correlation coefficient of the TB rate with these variables is, in all cases, positive and, hence, of the wrong sign.

The **real lending rate** represents the interest rate on loanable funds to the private sector. From the standpoint of investment, it measures the cost of capital. The conventional view is that it negatively influences investment, and this holds both for individual borrowers and for the total of all investment. It should therefore be negatively related to growth of exports and GDP. But it turns out, again, that the correlation coefficient is, in all cases, positive and of the wrong sign.

The ratio of the lending rate and deposit rate is a measure of the **financial spread.** It reflects the margin of income accruing to the banks. There are different ideas about what accounts for the level of this spread. It is variously attributed to high cost and inefficiency of banking operations, to monopolistic market structure of the banking system, and to the role of government regulations governing reserve requirements of banks. It is usually presumed that, other things equal, a widening of this spread, for whatever reason, would push up the lending rate and adversely affect investment and growth. A contrary result is obtained here. The spread is positively correlated with investment and growth in all cases. It does turn out to be positively correlated with the real lending rate. Note, however, that the size of the correlation coefficient for the spread is quite low all round.

The ratio of the **deposit rate** to TB rate may be supposed to measure the relative incentive to savers for saving in the form of saving deposits vis-a-vis government bonds. In the conventional view, a higher deposit rate represents "financial unrepression" which, by hypothesis, should give rise to a higher rate of private saving. This, in turn, it is assumed, should translate into a higher rate of investment and higher growth. Thus, this hypothesis entails a positive correlation between the deposit rate and investment and growth. The results obtained here show, on the contrary, a negative correlation.

The remaining two variables, the coefficient of variation in the nominal exchange rate and in the inflation rate, are intended to capture the effect of macroeconomic instability.

There was actually little or no variation in the nominal exchange rate (both official and market rates) in most of the countries during the whole period. Only three countries (Guyana, Jamaica, and Trinidad & Tobago), and these are coincidentally the largest countries, had significant adjustments in this area. It turns out that the exchange rate variation is significantly and negatively correlated with both GDP growth and export growth, but less so with the share of investment. This result suggests that instability of the exchange rate, hence exchange-rate risk, is a negative factor in growth performance. It may therefore provide a possible clue to explaining the higher growth performance of the smaller countries.

Exactly the opposite result holds, however, for variation in the inflation rate. It is positively and weakly correlated with growth, strongly with the investment share. Furthermore, the highest variation in the inflation rate during the period was actually in the smaller countries (Antigua & Barbuda, Grenada, St. Kitts & Nevis, and St. Lucia).

Thus, the results on the role of economic instability, as measured by these variables, are ambiguous. To resolve this ambiguity, one may infer that there is a certain asymmetry involved. In particular, instability in the foreign exchange market (hence, exchange rate risk) matters more than instability in domestic prices. Furthermore, there is room here for supposing that high variance in the nominal exchange rate does not automatically translate into high variance in domestic inflation, and vice versa. In any case, these results suggest that one must be duly cautious about interpreting the link between size, instability, and growth performance.

The failure to find significant correlation or the right sign of the relationship between the financial variables and investment and growth, as predicted by conventional wisdom, is a matter of some significance for both analysis and policy. On the one hand, it points to a need for more refined analysis to identify and estimate the specific role of the various factors involved.[4] On the other hand,

---

[4]Two recent contributions are of much interest in this respect. Modeste (1993) applies some of the refinements necessary, to test the "financial unrepression" hypothesis directly for causality using data for four Caribbean countries. It is found that financial unrepression does have a positive effect on economic performance, with a feedback effect from the real sector to the financial sector. However, the specific model tested, consistent with much of the financial repression literature, assumes that all saving translates into investment in productive assets (though the data actually used define saving as equal to investment plus change in money holdings). This leaves no room for an autonomous investment function. Hence, it leaves unanswered some basic questions on the investment side of the picture that are a source of concern in the discussion presented here. Worrell(1993) goes further into this side of the problem, through detailed empirical analysis of various features of investment behaviour in the Caribbean, disaggregating different forms of investment (foreign, domestic, exports, import substitutes, non-tradeables, but leaving out government investment). As to the specific role of the interest rate, the results from a test with data for three countries, though inconclusive, suggest that it is a weak or insignificant factor in determining investment in non-tradeables.

it raises serious questions about some of the policy prescriptions that are currently proposed or in practice in the Caribbean. It follows that the matter cannot simply be put to rest at this point.

Meanwhile, there are alternative perspectives on the matter which appear to offer constructive possibilities both for reconciliation with the stylized facts and for getting a better handle on the policy issues. In the next section, an attempt is made to try to sort out the meaning of the different perspectives and to bring out their implications for economic policy.

3. ALTERNATIVE MODELS AND POLICY PERSPECTIVES

Differences in the approach to both analysis and policy formulation in the area of finance and investment turn essentially on the underlying conception of the structure of the capital market, the nature of the mechanisms that work to channel credit to investors, and the response of investors to perceived opportunities and incentives for investment.

Four different approaches are distinguished here. The differences are sketched schematically by reference to a familiar and simple diagram of the relations of demand and supply in the capital market.

3.1 THE CONVENTIONAL WISDOM: PERFECT CAPITAL MARKET

The conventional wisdom supposes that there is a perfect capital market, in the strict sense that there are large numbers of both lenders and borrowers, lenders are unable to influence the price of credit (the interest rate), and all borrowers have unrestricted access to a standardized loan on specified terms where the price of a loan is independent of the amount borrowed.

Lenders issue loans at a price, enforced by competition among them, which allows them just to cover their costs. Costs consist, in the first instance, of the opportunity cost of lending funds, which is the rate that could be earned by investing in the next best alternative, typically government bonds, hence the T-bill rate. The other component of costs is operating cost, assumed to be the same for all entrants and constant per unit of loan, hence is constant as the quantity of loans increases by entry of new lenders. It follows that the supply of loans to the market as a whole is perfectly elastic at the given price equal to the T-bill rate plus a uniform allowance for operating cost.[5]

Borrowers, on their part, are supposed to have a menu of investment projects that yield an expected future stream of returns and can be ranked uniquely in accordance with the rate of return over the investment cost of each project (using a straightforward capital-budgeting formula). The amount of investment planned increases by going down the list of projects from the highest to the lowest, so that investment by each borrower is a decreasing function of the expected rate of return. The aggregate investment function, representing the total market de-

---

[5]This condition is explicitly assumed in Worrell (1993. p.251).

mand for investment funds, is the sum of the individual functions for all borrowers.

Given this specification of demand and supply (and some further required assumptions about the dynamics of adjustment on both sides of the market), it can be shown that the market for loanable funds clears at the amount of investment which just equalizes the expected rate of return on investment with the interest rate at which lenders supply funds to the market.

This situation is depicted in Figure 1. $I(q)$ is the aggregate investment function uniquely related to the expected rate of return q. The supply price of funds to the market is initially i_0. At that interest rate, the market clears with the amount of investment equal to I^*. Suppose, now, the interest rate rises to i_1. This could happen for essentially two reasons. One is that operating cost rises uniformly for all lenders (because of, say, increase in an input price). The other is that government funding activities push up the T-bill rate. Then, a new market-clearing equilibrium would occur at interest rate i_1 with investment at I^{**}. In comparing the two positions, one finds that the equilibrium interest rate is negatively correlated with investment and growth of the economy.
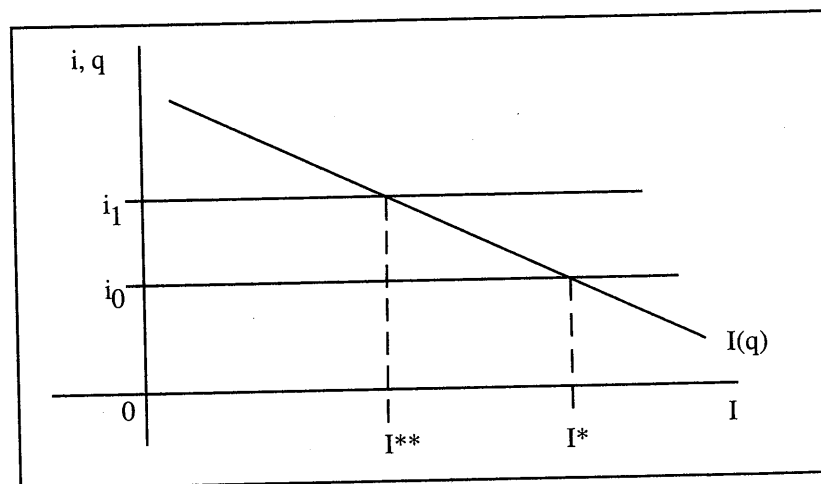
Figure 1. Perfect Capital Market

Evidently, in this approach, the main source of the action that drives the capital market on the supply side is government activity in the bond market (and, by extension, in the issue of new money). That activity produces ups and downs in the interest rate. Investment of the private sector fluctuates in response to such changes. Stagnation comes from having a high interest-rate regime which cuts off some amount of private investment and offers lenders the incentive of putting their funds instead into high-yielding government paper.

Evidently, also, this approach allows for the possibility that the financial sector as a whole could grow rapidly, on the basis of a continuing expansion in the issue of high-yielding government paper, while other sectors stagnate. This is a scenario that has been observed in some countries of the Caribbean.

The policy problem, in this case, must then be seen to lie in stabilization and control of government issue of credit and new money in order to keep the interest rate at a low level to stimulate a high rate of investment in the productive sectors of the economy.

3.2 IMPERFECT CAPITAL MARKET

A fly in the ointment of the conventional wisdom comes from recognizing that, in practice, the capital market is imperfect. This is, in part, for reasons related to the structure of ownership, control, and size of incumbent lender-firms and barriers to entry of new firms. It is related also to intrinsic properties of the market for loans, derived from such factors as risk of default, moral hazard, adverse selection, information costs, and monitoring costs.

For these reasons, it is reasonable to suppose that the structure of the capital market differs from that assumed by the conventional wisdom, in at least two important respects, as represented in Figure 2.
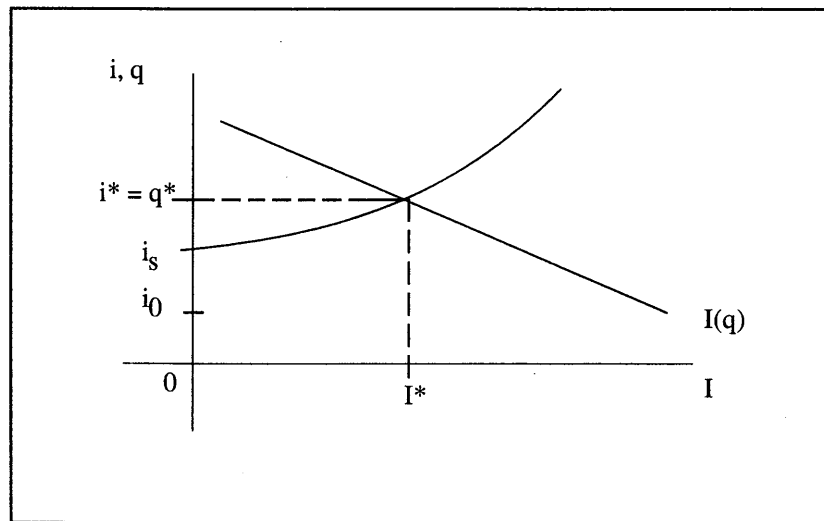

Figure 2. Imperfect Capital Market

One difference concerns the spread between the T-bill rate and the lending rate charged by lenders. In the previous case, competition among numerous lenders ensures that all lenders adopt the most efficient (least cost) methods of

operation and the spread is kept at a level that just covers costs. In this case, on the other hand, the spread may rise above that level, because of inefficiency in the operations of lenders that are large enough to have the market-power to pass on higher costs to borrowers. If lenders have enough market-power to pass on costs, they may also be able to raise price above costs and gain thereby a monopoly rent. These factors account for an increase in the spread which pushes up the initial offer-price of lenders from i_0 to i_s.

The other difference concerns the supply curve of loanable funds. The supply price of loans now rises as the quantity of loans increases because lenders, naturally and rationally, seek to safeguard their income against losses from default by borrowers (and against increased costs of collecting information and monitoring to ensure performance and minimize losses) by charging a risk premium that increases with the size of the loan. They may also, and in practice do, insist on securing the loan by writing the loan contract in terms of collateral requirements, which legally allows them to seize the property of the borrower in the event of default. This is rational behaviour on the part of lenders and follows naturally from the factor of risk.

It follows from these two conditions that the equilibrium interest rate will be higher in this case, and the amount of investment lower, than in the previous case (other things equal). These results could complicate the picture that one observes in looking at the data for different countries so as to make the correlations that one finds inconsistent with the presumptions of the conventional wisdom.

There are correspondingly two new factors that drive the capital market in this case. One is the existence of **market-power** which protects inefficiency in the operations of lenders and pushes up the price of loans. The other is **risk**, an intrinsic property of lending, associated with the likelihood of default by borrowers, which also pushes up the price of loans.

The policy problem is also different in this case. It is:

1. to design an appropriate system of rules and regulations so as to ensure competition among lenders, efficiency in their operation, and prudential behaviour;

2. to pursue a focused strategy of risk-reduction at two levels:

   a. at the level of the macroeconomy, through stabilization of the macroeconomic variables, e.g. exchange rate and inflation, that impact on the observed "riskiness" of borrowers as indicated by their track record of performance; and

   b. at the microeconomic level of individual firms and sectors,

      i. by providing adequate infrastructure, information, technical assis-

tance, social services, and other aids to enhanced investment-performance, and

ii. through schemes of risk-sharing, such as various forms of joint venture.

The need for a two-level strategy of risk-reduction comes from the fact that there are two levels of risk involved in the problem.

One is **general or average risk,** affecting all borrowers, such as is associated with macroeconomic instability, political changes, or weather conditions (though, even here, some borrowers may be more affected than others).

The other is **specific risk.** This is associated with conditions that are specific to the sector or industry in which the borrower operates, such as technology, supply of inputs, labour market conditions, demand, and marketing requirements. Insofar as there are significant elements of specific risk involved in key sectors of the economy, as for instance in the case of exporters, the policy approach cannot escape the need for targeting those sectors in order to deal with their specific risk. It is in this context that **industrial policy** may be seen to play a necessary role.[6]

3.3 CREDIT RATIONING

This case overlaps with the previous one, but with essential differences that make an important difference for the outcomes of the capital market and, correspondingly, for the focus of economic policy.

The basic conditions are the same, as regards the intrinsic properties of the loan market related to risk, moral hazard, adverse selection, information costs, and monitoring costs. But, interestingly enough, there is no need to assume the existence of large lenders with market power. Neither is there any necessary presumption of collusion among lenders. A striking feature of this case is that it is equally consistent with a capital-market structure of many small lenders that vigorously compete amongst each other as with a monopolistic or collusive structure.[7]

The crucial conditions are that (a) borrowers are differentiated in terms of unobservable characteristics, crucially, the probability of repaying their loan, so

---

[6]The specific rationale for intervention by industrial policy, in this case, may be seen to lie in the market failure associated with the information and monitoring costs involved in dealing with riskiness of borrowers.

[7]Stiglitz and Weiss (1981), the originators of the analytics of this case, go so far as to suggest (p.393) that "if markets were not competitive one would not expect to find rationing: profit maximization would, for instance, lead a monopolistic bank to raise the interest rate it charges on loans to the point where excess demand for loans was eliminated." But, in that example, the proposed solution for the monopolist is a corner solution which entails that there is no loss to the monopolist, e.g. in terms of "reputation", from going to the limit, or that there are no official restrictions on lending rates such as usury laws. Otherwise, the monopolist may well end up at some interest rate within the wide band that exists below the market-clearing equilibrium rate.

---

that lenders must adopt costly screening devices to weed out "good" from "bad" borrowers, and (2) at higher interest rates the behaviour of borrowers is different from that at lower rates, such that more risky projects with higher expected payoffs are selected (moral hazard) or borrowers with worse risk show up at the loan window (adverse selection). In such circumstances, every lender, seeking to maximize returns and faced with increasing costs and higher risk at higher rates as lending increases, would opt for picking an interest rate that attracts only borrowers at the low-risk end of the spectrum. That is the interest rate which is optimal for the lenders, but not necessarily for all potential borrowers.

The central analytical result in this context is that the credit market does not clear, in the Walrasian sense, at the lending rate which is optimal for lenders. The lending rate and corresponding loan volume which allows lenders to maximize expected returns for a given pool of borrowers rations out some borrowers with investment projects that are expected to be profitable at that lending rate. In this strict sense, credit is rationed.

The existence of credit rationing in this sense implies that the supply curve of capital becomes vertical at an interest rate below the market clearing equilibrium rate. This case is shown in Figure 3, where i* is the optimal rate for lenders.[8] At that rate, I* is the amount of loans to borrowers that are rationed "in" and other potential borrowers with a residual demand for loans are rationed "out".

Under these conditions, the amount of investment and corresponding growth of output that would be observed are independent of factors on the demand side (given the pool of borrowers) and wholly dependent on the conditions of supply of credit and the structure of the capital market. Any variation of the interest rate within the wide band of the line-segment **ab** would have no effect on the equilibrium amount of investment. Consequently, the data would then show zero correlation of the interest rate with the rates of investment and growth.

Figure 3. Credit Rationing

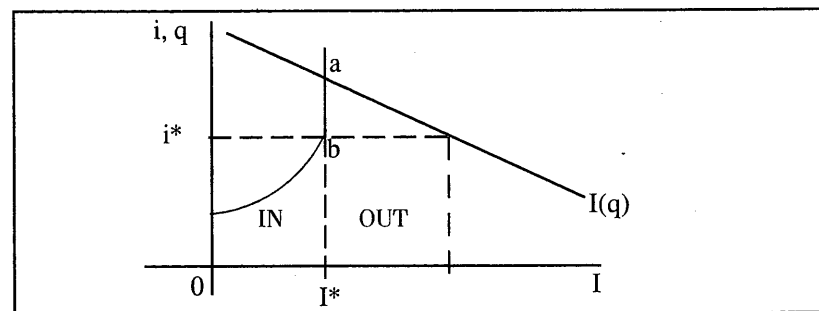[8]Strictly speaking, when there is credit rationing, the supply of loanable funds depends on the expected mean return on loans, which in turn depends on the interest rate and risk factors. The mapping of this relation, which is typically non-monotonic, into a relation with the interest rate may yield peculiar results compared with the standard supply curve of funds without credit rationing.

This is the situation that would prevail in the formal market. Some borrowers that are rationed out of the formal market could end up getting access to loans in the informal market. If such borrowers are truly "high-risk", one would find that the interest rate is higher in the informal market, with a correspondingly higher probability of default due to both adverse selection and moral hazard. A differential in costs of information and monitoring between the two markets could make a difference for the rate, but this could go either way — it is not obvious that costs per unit of loan are lower in the informal market.

This case poses a basic dilemma for economic policy.

The dilemma is that, for a given pool of borrowers, an increased supply of loans to the market (going beyond I*) would bring in high-risk borrowers, and that would involve incurring the losses that are likely to come from their high-risk projects. Clearly, private lenders would be reluctant to put their own capital at risk by exposure to that segment of the market. Some of the slack may be taken up by the informal market. But some borrowers may get left out altogether. Some of the projects left out are likely to be those with a high social return, for the reason that private lenders take account only of private return. But if the "objective risk" is high on such projects, then, even after taking account of the social benefit, the losses may turn out to be high too and these losses would have to be met by the lender, whether public or private.

The way out of this dilemma, if the aim is to stimulate investment and growth, is to adopt policies which seek to **increase the pool of borrowers at the low-risk end of the market.** In this respect, the policies of generalized and specific risk-reduction adopted for the previous case would evidently serve well for this case too, by lowering risk all round for all types of borrowers. Policies for promoting risk-sharing schemes are also applicable.

However, this case indicates a special need, in addition, for targeted programmes of risk-reduction aimed at borrowers that are rationed out of the market because of special "high-risk"characteristics. These would include small enterprises and firms with collateral assets that are judged to be less liquid than average because of cumbersome legal procedures involved in liquidation or absence of a second-hand market.

3.4 INTEREST-INELASTIC INVESTMENT

Interest-inelasticity of investment exists when, as in the case shown in Figure 4, the number of incremental investment projects forthcoming from the investors add up to very little for a large reduction in the lending rate. The incentive of a lower cost of funds does not suffice to induce them to come up with more than the small amount of additional investment equal to $I^* - I^{**}$. This situation could conceivably exist even in a perfect capital market or in any of the previously described cases, so it does not necessarily derive from the conditions governing any of them.
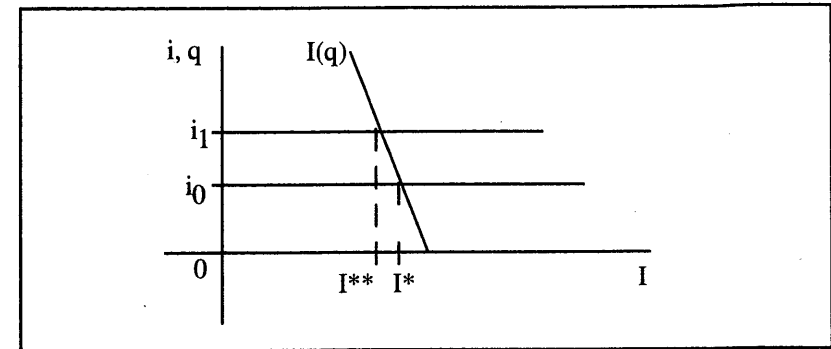
Figure 4. Interest Inelastic Investment .

What, then, could account for this sort of behaviour

In general, it conforms to what Keynes described as "weakness of the animal spirits". Unfortunately, he left us in the dark as to any explanation for it so that, from the standpoint of policy, there is no clue to what can be done about it. Here in the Caribbean, it is customary to talk about it in terms which suggest a sort of basic incompetence of the entrepreneurial class or segments of it (the merchants mostly, but also some industrialists of an earlier generation). But here, too, there is little that is offered to account for it, other than that it is a personality trait or an intrinsic "class" characteristic. If it is that, and only that, there is little that policy can do about it except for costly attempts at retraining, which may not work. If it is more a matter of managerial incompetence, then there is more hope for successful policy initiatives, such as expanding access to the business schools.

There are other ways of accounting for this situation that would point to meaningful and workable policies. In general terms, one could view it as a kind of inertia, I call it "investment inertia", produced by a variety of possible underlying factors affecting the investment decision.[9] The key question for policy is whether the factors that account for it are internal to the firm or a part of its external environment.

An earlier literature located the problem inside the firm, in **behavioral norms** ("bounded rationality") and managerial practices that result in "managerial slack" and "X-inefficiency" (see Cyert and March, 1963; Leibenstein, 1966). Policies to deal with these aspects must be specific to the firm and its internal requirements for change. Such policies are not well administered by "state intervention" and may be rejected as interference in the prerogatives of management, except insofar as they provide external support, for instance in the form of technical assistance in production, marketing information, and fiscal incentives. If the

[9]A generalized case of inertia as a model of the economic process applicable to the Jamaican experience is presented in Harris (1994).

interest rate does not work, purely financial incentives may not have much effect either, and so it is necessary to look to other mechanisms of support.

An interesting recent literature on the theory of investment under uncertainty locates the determining factors jointly in intrinsic properties of investment itself, i.e. its irreversibility as "sunk costs", and in various forms of risk and uncertainty arising from the environment in which the investor operates (see Pindyck, 1991: Dixit, 1992). A heavy emphasis is placed on the link to the environmental factors of uncertainty and credibility in macroeconomic policy (see Rodrik, 1991). As Pindyck (1991, p. 1110) puts it: "if a goal is to stimulate investment, stability and credibility could be much more important than tax incentives or interest rates."

So far as the recent experience of the Caribbean is concerned, some may wish to argue, and it is commonly asserted, that it is precisely in this area of macro-policy stability and credibility that the smaller economies have had one advantage that explains their superior growth performance. But this proposition is difficult to prove. Certainly, the empirical results presented in this paper suggest that the situation is at least ambiguous. This is not to say that macroeconomic instability does not matter. It is to say that the specific role that it plays is complex and difficult to extricate from other relevant factors.

Another environmental factor worth considering is what I have called elsewhere "public goods failure" (Harris, 1995b). This is tied to factors that are commonly regarded as constituting external economies to the firm and or industry but which, when they break down, actually become external diseconomies that are internalized as costs to the firm. Examples are the public transportation system, the education system, sewage facilities, government bureaucracy, and security services of the state. It is in the nature of all such services that, if operated efficiently and effectively, they are an essential precondition for investment to prove profitable. When they break down, they constitute a barrier to investment such as to inhibit other incentives from working. Policies must be designed to address them directly in order to get investment going.

4. CONCLUSION

What is the way forward from these seemingly divergent policy approaches?

It is probably too much to expect that there will be full policy-convergence any time soon. Meanwhile, it may be possible to pursue a workable combination of different approaches, provided that the logic of the different positions allows it and there is consistency in the menu of policies so as to maintain credibility and prevent confusion.

To start with, we can all agree that finance does matter, though it is obviously not the only thing that does. It matters in terms of the specific factors that the analysis presented here has shown to influence the outcomes in the capital market (albeit in different ways, depending on the particular model): interest

rates, financial spread, market power, competition among lenders, supply of credit, credit rationing, government borrowing, risk, information costs, investment inertia. In turn, finance itself may be influenced by the specific pattern of development of the economy.

A multi-sided approach to policy would seek to focus sharply on dealing with a range of different factors within this broad menu, while establishing priorities among them and pursuing them in an ordered sequence. There is no general formula for solutions that would work for all countries in the region. Therefore, attention has to be given to developing a strategy specific to the needs of each country.

Within the set of factors that matter, and as a general strategy for the region, I would want to propose as a current priority the need to focus on **mechanisms and institutions for increasing the supply of long-term credit.**

The long end of the market is evidently one of the market segments that gets rationed out by the existing structure of financial institutions. These are especially likely to be the projects with a high social rate of return derived from the complementarities and externalities that they create through linkages among sectors, e.g. processing of agricultural products (raw materials and food) and industrial minerals (limestone, silica, clays), information technology, transportation systems (by road, rail, sea, and air), irrigation systems, energy. "Public goods failure" is associated with the current breakdown in some of these areas and this acts as a barrier to new investment across the board.

Lengthening the term structure of credit towards the longer term instruments that would facilitate long-term investment-projects requires an anchor in a long-term instrument that is widely acceptable. Long term government bonds would provide one solution. To be workable, this solution requires a reasonably stable macroeconomic environment with reduced foreign-exchange risk as well as better financial management within the public sector.

So far as the institutions that support long-term credit are concerned, the domestic capital market in all countries in the region is extremely thin. Most such credit comes from outside the region, via the international lending institutions. The largest institution in the region is the Caribbean Development Bank. From its published data (**Annual Report, 1993**), I calculate that its contribution (total loans, contingent loans, equity, and grants approved) to the aggregate gross domestic investment (GDI) of all borrowing member countries was a minuscule 1.8 percent in 1993. Over the entire twenty-year period 1973-1993, its contribution amounted to just under 30 percent of the same one-year GDI for 1993. Within individual countries there are local Development Finance Corporations (DFCs). Bourne (1989) presents data for six countries which show that, in the 1980s, "DFCs loans are no more than 12% of the loan balances of commercial banks alone, not to mention the entire commercial loan system."

In the move towards a more market-oriented system, and under pressure

from the international lending institutions, DFCs have been mostly stripped of their ability to engage in direct lending. This is attributable in part to failures of the previous set-up which resulted in some notable cases of illiquidity. However, in the process of adjustment and restructuring, it is important not to lose sight of the rationale for which these institutions were originally created, namely, to meet the gap in the market for long-term credit. It is important also not to confuse directed credit programmes at subsidized lending rates with the institutional function of providing long-term credit. The two became equated because, in the old set-up, DFCs carried both functions, one of them (the subsidy component) unsuccessfully. Everyone would presumably agree that the other function has been carried quite successfully, so far, and for the past twenty-five years, by at least one DFC, the Caribbean Development Bank.

If commercial banks are inherently inclined towards short/medium term credit (their short term structure of liabilities makes this so), the gap in the long-term market would tend to increase when DFCs are restricted solely to indirect lending. Some schemes of risk-sharing by DFCs are worth exploring as a possible middle ground between the two extremes of direct lending and indirect lending. Moreover, if the nonperformance of DFC loans that drove them into illiquidity in the past was attributable in any significant degree to the severe environmental risk factors of the 1970s and 1980s, one might find that their performance-record improves with implementation of successful risk-reduction programmes at the macro- and micro-level. To improve performance, it would of course be necessary to address also the issues of management, control, and the incentive and regulatory structures needed to ensure prudential behaviour and efficiency.

So far as increasing the supply of funds for long-term credit goes, some thought might be given to the workability in the Caribbean context of mechanisms developed in Asia (Japan, Malaysia, Singapore) for using earmarked pension funds for this purpose (see Packer, 1994; World Bank, 1993). The key feature of such funds is not that they increase the pool of aggregate savings, which is in dispute (they are also frowned on as "forced savings"). Rather, it is that their tenure and maturity, being long-term, allow them to be retailed as long-term finance. They provide thereby a way of getting around the maturity transformation problem of commercial banks arising from the fact that their short-term or demandable (floating) debt does not allow them to make longer term loans.

More generally, and looking toward the long term horizon of the next quarter century, I see a need for serious thinking about possibilities for **institutional innovation** in the capital markets of the Caribbean. This goes beyond current thinking about an integrated regional capital market and a single currency. I refer to the component institutions that make up the capital market and the linkages among them, which perform various complex functions of financial intermediation necessary to facilitate the capital accumulation process. There

are significant gaps in existing institutions. Long-term credit institutions is one area, as just mentioned. Venture capital funds is another. A third is institutions that provide funds for small firms and the informal sector.

Finally, one may note that **financial policy** by itself is not sufficient. In this connection, I would want to propose that a strong complementary role must be played by **industrial policy.**

The need for an industrial policy as a complement to financial policy follows from recognizing the key role of the two blades of the Marshallian scissors in the analysis presented here. As much as financial conditions matter, in the sense of the supply side of the capital market, so also do the expectations of profitability by the investors on the other side of the market. As I have argued elsewhere (Harris, 1995c), industrial policy is properly aimed at shoring up the investors' expectations and realizations of profitability by providing the targeted support systems that allow dynamic firms and sectors of the economy to expand through investment in production of tradeable goods and services.

Some of the specific requirements of such targeted support systems emerge sharply from the present analysis. They take the form of: risk reduction at the level of the macro-economy and at the level of individual firms and sectors, risk-sharing schemes, provision of adequate infrastructure, technical assistance in production and marketing, an integrated and coherent structure of fiscal and other types of incentives that are performance-based, and efficient operation of government services.

BIBLIOGRAPHY

Bourne, C. *"The role of development finance corporations in the Commonwealth Caribbean,"* paper presented to the Conference on Financing Development in the Caribbean, Barbados, December 1989.

Caribbean Development Bank, *Annual Report,* Barbados, 1993.

Cyert, R. and March, J. *A Behavioral Theory of the Firm,* Englewood Cliffs, N. J.: Prentice-Hall, 1963.

Dixit, A. "Investment and hysterisis," *Journal of Economic Perspectives,* 6(1), Winter 1992, 107-132.

Harris, D. J. "The Jamaican economy in the twenty-first century: challenges to development and requirements of a response," in *Jamaica, Preparing for the Twenty-first Century,* Kingston: Ian Randle Publishers (for Planning Institute of Jamaica), 1994, 13-52.

Harris, D. J. "Determinants of aggregate export performance of Caribbean countries: a comparative analysis of Barbados, Costa Rica, Dominican Republic, Jamaica and Trinidad and Tobago," *Working Papers,* No. 201, Washington, D. C.: Inter-American Development Bank, January 1995a.

Harris, D. J. "A model of output and investment for a small export economy with trade preferences, imperfect capital market, and transaction costs," processed, May 1995b.

Harris, D. J. "An approach to industrial policy for Jamaica," Kingston: Planning Institute of Jamaica, May 1995c.

Leibenstein, H. "Allocative efficiency v X-efficiency,"*American Economic Review*, 56(3), June 1966, 392-415.

Modeste, N. "An empirical test of the McKinnon model of financial unrepression and economic growth: the experience of some Caribbean countries," *Social and Economic Studies*, 42(2/3), 1993, 81 -93.

Pindyck, R. S. "Irreversibility, uncertainty, and investment," *Journal of Economic Literature*, 29(3), September 1991, 1110-1148.

Rodrik, D. "Policy uncertainty and private investment in developing countries," *Journal of Development Economics*, 36(2), October 1991, 229-242.

Stiglitz, J. E. and Weiss, A. "Credit rationing in markets with imperfect information," *American Economic Review*, 71(3), June 1981, 393-410,

World Bank, *The East Asian Miracle*, New York: Oxford University Press, 1993.

Worrell, D. "Investment in the Caribbean," *Social and Economic Studies*, 42(2/3), 1993, 243-259.

Table 1

Correlation Coefficient Matrix for Country Characteristics

Period: 1980 — 1992

	Correlation Coefficients				
	Real GDP Growth Rate	Export Growth Rate	GFCF/ GDP	TB Rate -CPI	Lend Rate -CPI
Real GDP (Level)	-0.55				
Export Growth Rate	0.72				
GFCF/GDP	0.39	0.65			
TB Rate — CPI	0.58	0.41	0.33		
Lending Rate — CPI	0.56	0.05	0.03		
Lending/Deposit (%)	0.24	0.36	0.14	0.01	0.22
Deposit/TB Rate (%)	-0.46	-0.39	-0.52	-0.36	-0.17
Coef. of Variation:					
Exchange Rate	-0.69	-0.62	-0.02		
Inflation (CPI)	0.26	0.48	0.74		

Table 2

Correlation Coefficient Matrix for Country Characteristics

Period: 1980 — 1986

	Correlation Coefficients				
	Real GDP Growth Rate	Export Growth Rate	GFCF/ GDP	TB Rate -CPI	Lend Rate -CPI
Real GDP (Level)	-0.47				
Export Growth Rate	0.79				
GFCF/GDP	0.41	0.68			
TB Rate — CPI	0.58	0.44	0.14		
Lending Rate — CPI	0.56	0.45	0.26		
Lending/Deposit (%)	0.42	0.42	0.28	0	0.14
Deposit/TB Rate (%)	-0.43	-0.28	-0.26	-0.36	0
Coef. of Variation:					
Exchange Rate	-0.65	-0.54	-0.04		
Inflation (CPI)	0.66	0.77	0.79		

Table 3

Correlation Coefficient Matrix for Country Characteristics

Period: 1987—1992

	Correlation Coefficients				
	Real GDP Growth Rate	Export Growth Rate	GFCF/ GDP	TB Rate -CPI	Lend Rate -CPI
Real GDP (Level)	-0.56				
Export Growth Rate	0.52				
GFCF/GDP	0.45	0.54			
TB Rate — CPI	0.36	0.14	0.42		
Lending Rate — CPI	0.51	0.54	0.51		
Lending/Deposit (%)	0.26	0	0	0.01	0
eposit/TB Rate (%)	-0.50	0	0	-0.01	-0.01
Coef. of Variation:					
Exchange Rate	-0.01	-0.02	-0.01		
Inflation (CPI)	0.32	0.61	0.46		

Table 4
Country Characteristics
Period: 1980 — 1992

	Real GDP Growth	GDP Level US $m Current	Export Growth	GFCF/GDP	TB-CPI	Lend-CPI	Lend/Dep %	Dep/TB rate%	Coef. of Var. Nominal Exchange Rate	Coef. of Var Inflation Rate (CPI)
Antigua & Barbuda	5.53	222.82	20.01	42.34	0.02	5.46	165.04	113.08	0	0.09
The Bahamas	7.00	2171.13	4.98	20.02	-0.02	3.62	147.91	118.89	0	0.04
Barbados	0.84	1321.74	5.48	18.43	0.41	5.28	193.46	153.36	0	0.61
Belize	5.25	280.05	10.3	23.46	5.01	10.89	155.88	113.63	0	0.68
Dominica	5.26	118.59	14.77	32.57	1.64	5.22	213.23	73.31	0	1.58
Grenada	3.88	139.03	7.07	35.98	0.32	4.43	187.91	88.04	0	1.02
Guyana	-0.84	446.02	-0.96	29.23	0.65	3.39	123.38	96.81	1.52	0.72
Jamaica	1.14	2825.86	5.54	22.42	-5.41	0.01	122.61	105.33	0.89	0.83
St. Kitts & Nevis	5.45	90.11	11.31	39.63	1.93	7.37	170.18	97.75	0	1.02
St. Lucia	4.67	221.72	13.66	50.06	1.18	6.29	182.86	98.72	0	.96
St. Vincent & The Grenadines	5.87	127.81	11.97	29.55	1.01	6.17	234.07	77.87	0	0.85
Trinidad & Tobago	-0.71	5990.44	1.95	20.03	-5.95	1.72	202.89	143.64	0.25	0.35

Table 5
Country Characteristics
Period: 1980 — 1986

	Real GDP Growth	GDP Level US $m Current	Export Growth	GFCF/GDP	TB-CPI	Lend-CPI	Lend/Dep %	Dep/TB rate%	Coef. of Var. Nominal Exchange Rate	Coef. of Var Inflation Rate (CPI)
Antigua & Barbuda	5.65	139.88	26.68	42.34	0.02	5.46	154.65	121.22	0	0.09
The Bahamas	7.02	1614.43	8.02	18.83	0.44	3.87	152.96	103.43	0	0.47
Barbados	1.12	1073.06	8.52	20.33	-0.95	4.62	179.21	215.96	0	0.63
Belize	1.69	197.96	2.49	20.93	5.83	10.99	134.04	110.33	0	0.62
Dominica	6.33	82.05	19.99	32.66	1.41	4.69	198.67	74.51	0	1.74
Grenada	3.54	97.75	10.07	35.55	-2.43	1.06	189.66	87.69	0	1.82
Guyana	-2.14	506.01	-0.96	25.93	-4.93	-2.7	124.23	95.28	0.02	0.32
Jamaica	-0.49	2491.54	2.27	19.23	-4.67	-1.98	114.23	108.32	0.52	0.45
St. Kitts & Nevis	5.18	65.62	11.24	32.97	1.53	5.56	158.01	92.97	0	1.96
St. Lucia	4.35	140.07	15.07	50.06	1.17	6.57	168.95	117.61	0	0.09
St. Vincent & The Grenadines	5.61	93.03	15.96	29.02	-0.44	4.11	205.87	82.86	0	0.08
Trinidad & Tobago	-0.54	6955.86	-0.57	24.37	-9.13	-0.72	194.41	188.54	0.16	0.28

Table 6

Country Characteristics

Period: 1987 — 1992

	Real GDP Growth	GDP Level US $m Current	Export Growth	GFCF/GDP	TB-CPI	Lend-CPI	Lend/Dep %	Dep/TB rate%	Coef. of Var. Nominal Exchange Rate	Coef. of Var Inflation Rate (CPI)
The Bahamas	6.76	2820.62	1.44	21.81	-0.56	3.33	142.02	136.93	0	0.15
Barbados	0.46	1611.86	1.93	16.21	2.00	5.95	207.71	80.32	0	0.27
Belize	9.04	376.81	12.91	26.41	4.18	10.86	166.62	117.48	0	0.61
Dominica	4.02	160.69	8.68	32.47	1.87	5.75	230.22	67.74	0	1.03
Grenada	4.27	187.19	4.19	36.48	3.52	7.72	185.27	89.23	0	1.67
Jamaica	4.01	3215.09	9.35	26.14	-6.28	2.53	132.04	101.85	0.64	0.86
St. Kitts & Nevis	5.72	132.96	11.04	51.27	3.56	9.18	182.26	103.33	0	1.61
St. Vincent & The Grenadines	6.17	168.07	7.32	30.16	2.69	8.59	266.97	72.05	0	0.61
Trinidad & Tobago	-0.94	4864.12	4.09	14.59	-1.49	4.57	213.07	89.75	0.06	0.32

Table 7

Description of Variables and Sources

Abbreviation	Variable	Source
GDP Real Growth	Growth Rate of Gross Domestic Product 1990 Prices Domestic Currency	International Financial Statistics (IFS) IMF 1994. Line 99b.p
GDP Level US$ Current	GDP in Current US$	IFS 1994 (Line 99b)/ (Line rf or ac)
Export Growth	Growth Rate of Exports (Merchandise & Non-factor Services) in US$	IFS 1994 Line 77aad + Line 77ahd
GFCF/GDP	Growth Fixed Capital Formation as a fraction of GDP (Nom Domestic Currency)	IFS 1994 (Line 93e)/(Line 99b)
TB — CPI	Real Interest Rate: Annual Treasury BdI Rate Annual CPI Growth Rate	IFS 1994 Line 60c — % Change Line 64
Lend — CPI	Real Interest Rate: Annual Lending Rate — Annual CPI Growth Rate	IFS 1994 Line 60p — % Change Line 64
Lend/Dep	Financial Spreads: Lending Rate/ Deposit Rate	IFS 1994 (Line 60p)/(Line 601)
Dep/TB	Financial Spreads: Deposit Rate/ Treasury Bill Rate	IFS 1994 (Line 601)/(Line 60c)
Coef of Var Nom Exchange R	Coefficient of variation Nominal Exchange Rate	IFS 1994 Standard Error/Mean Line rf or ac
Coef of Var Export Growth	Coefficient of variation Export Growth Rate	As above Line 77aad + Line 77ahd
Coef of Var Inflation (CPI)	Coefficient of variation Inflation Rate (CPI)	As above % Change Line 64

COMMENTS ON PAPERS BY WEINTRAUB, HEWITT AND HARRIS

DR. PAUL CHEN YOUNG (DISCUSSANT)

I agree with Professor Weintraub and Adrian Hewitt that the Caribbean is being discarded in this new era. I am particularly concerned with the role of prices in economic policy and development as raised by Professor Donald Harris. According to his finding, irrespective of the real price of money, higher real interest rates have not affected investment. I find this to be a provocative finding requiring further work. When that work is done and the data disaggregated, we may not necessarily come to that conclusion since it defies economic principles. Furthermore, Ministers of Finance will be encouraged to raise interest rates since they have no effect on borrowing.

We also need to look at the effect on other financial instruments. As nominal interest rates go up, what would be the impact on the price of government bonds? Also what is the significance of this phenomenon for foreign financing? Credit is being priced differently. The price of credit on the local market was 50-60%. It is 12% in the foreign exchange market and a fair amount of financing is done on the foreign exchange market. The tourism sector is a good example of such financing. This finding should therefore be the basis of further work.

In the future, we in the Caribbean must adopt a bootstrap approach irrespective of how the EU and NAFTA see us. This approach relates especially to the question of savings mentioned by Professor Harris. In Jamaica, the improvement in public sector came at great cost through aggressive taxation (GTC) to build up reserves and compensate for the deficit with Central Bank. The implication of this is that if we are to move more aggressively at private sector growth, to what limit can the public sector cream-off credit at private sector expense?

The experiences of Chile and Colombia with voluntary private sector savings (pension funds) have been successful. Can we afford not to introduce these national schemes to boost personal savings? Long-term savings for long-term investments can come from pension funds. Venture capital is not the answer. Investments cannot cover the interest costs of such funds. Venture Capital Funds will have problems if this question is not resolved.

Since aid will decline, local DFCs which have built up capital bases will have to tap international capital markets. US$600 million has been amassed in private financial institutions. We have to supplement domestic savings by our own efforts in order to tap international capital markets.

The CDB has served the public sector well. It has not equally served the private sector. A combined effort is needed in the region to tap international capital. 936 funding has not been adequately accessed. Guarantees and letters of credit have not been forthcoming. CDB should address this.

Direct Foreign Investment must also play its part since local non-indigenous banks cannot take foreign exchange risks without the approval of headquarters.

We also need a new banking model which facilitates the taking of risks by entrepreneurs and under which greater responsibility is assumed for financing our development. Local banks should take a greater role in promoting entrepreneurship and investment as the Germans and Japanese do.

MR. ELON BECKFORD (DISCUSSANT)

I find the papers generally cautious in concluding on the issues. My comments are mainly limited to Professor Harris' paper. His conclusion about higher growth in the smaller economies of the region should not be since a stable macroenvironment is responsible for this growth. Furthermore, according to Global Paradox (John Nesbitt), small and medium-size economies should have a bright future in the larger global economy. The following other points were stressed.

The issue of internal efficiency is not developed in the paper. If we must compete we cannot leave this on the sideline. We are more inefficient in the services sector than in the production of goods.

The question of local versus foreign investment has not been dealt with and that would have added another dimension.

It is no surprise that exports are correlated with GDP. We need to look at the adjustment programmes to see if we are getting it right and especially to see if countries are successfully moving resources into the export sector.

The use of reserves to support monetary policy rather than a prudential policy could be distorting. This issue should be revisited.

The issue of how you get entrepreneurs to respond to resources is just as important as the availability of resources.

There is need for more competition in the financial services sector. Too many barriers still exist in this sector.

Don Harris has been cautious about the DFCs. The DFCs' approach failed since there was a tendency to merge subsidies with the overall programme. We have the ability to do quality assessment of projects and take professionally objective positions. The performance of DFC loans is the same as those of the commercial sector. If we do not use these DFCs to pass on subsidies, they can perform well.

The CDB has an excellent opportunity to raise capital from corporate and individual investors. Its reputation is good and it can cause these investors to bring back capital from outside.

Policy makers are too cautious in terms of putting in place long-term saving instruments such as pension funds. The size of the self-employed suggests that such a programme should be put in place.

I congratulate Professor Harris on a good paper.