

The Savings/Investment Environment in the Caribbean

Emerging Imperatives



Edited by
Ramesh F. Ramsaran

That saving and investment are critical to development is not in dispute. We cannot, however, claim to understand all the factors that affect what are enormously complex processes. We are not even sure whether saving cause growth or growth causes saving. What has been observed, however, is that fourteen of the world's twenty fastest growing economies over the past ten years had a saving rate of over 25 percent.

This volume pulls together a varied collection of studies focussing on both policy and institutional behaviour. It underlines the need to get behind savings and investment aggregates and to improve the links between the financial and real sectors. It also draws attention to areas where departures from current policies are needed and to the ramifications of certain changes taking place in the financial environment.



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SAVINGS AND **I**NVESTMENT IN THE **C**ARIBBEAN - **E**MERGING **I**MPERATIVES

Edited by:
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Contents

	<i>Page No.</i>
PREFACE AND ACKNOWLEDGEMENTS	vii
INTRODUCTION <i>Ramesh Ramsaran</i>	1
SECTION 1	
THE MACRO-ECONOMIC FRAMEWORK	5
1. Orienting Caribbean Investment Policy to the Capital Needs for the Turn of the Century <i>Sir Neville Nicholls</i>	7
2. A Desirable Macro-economic Framework to Encourage Savings and Private Investment in a Liberalized Environment <i>Trevor Harker</i>	25
3. Capital Flight and Caribbean Economic Policy <i>Karl Bennett</i>	43
4. Exchange Rate Liberalization and Foreign Portfolio Management: The Case of Trinidad and Tobago <i>Roopnarine Oumade-Singh</i>	61

Contents - Continued

Page No.

SECTION 2

DETERMINANTS OF SAVINGS AND INVESTMENT IN THE CARIBBEAN

		81
5.	Savings and Investment in the Commonwealth Caribbean: Empirical Evidence and Policy <i>Augustine Nelson</i>	83
6.	Estimation of Savings Functions for the Organization of Eastern Caribbean States <i>Patrick Watson</i>	183
7.	Savings and the Distribution of Income Between Capitalists and Workers in Trinidad and Tobago: An Econometric Approach <i>John Martin</i>	227
8.	Investment Behaviour in Jamaica <i>Wayne Robinson</i>	243
9.	An Overview of Financial Sector Savings in Jamaica, 1983-1993 <i>Novelette Panton-Davis</i>	297

Contents - Concluded

Page No.

SECTION 3

INSTITUTIONAL ISSUES 337

- | | | |
|-----|--|-----|
| 10. | An Economic Evaluation of Credit Unions in Trinidad and Tobago, 1972-1989
<i>Glenn Khan</i> | 339 |
| 11. | National Insurance: A Means of Savings Mobilization for Social and Economic Development in Trinidad and Tobago
<i>Sandra Beckles-Fontenelle</i> | 385 |
| 12. | Belize: Social Security Board Operations and Their Impact on the Belizean Economy
<i>Mr. Sydney Campbell</i> | 443 |

SECTION 4

CONCLUDING OBSERVATIONS 465

- | | | |
|-----|--|-----|
| 13. | Towards a Savings/Investment Policy in the Caribbean
<i>Ramesh Ramsaran</i> | 467 |
| 14. | Notes on Contributors | 489 |

Preface and Acknowledgements

Failure to fully mobilise savings or to use savings productively has serious consequences for capital accumulation and growth. In Caribbean countries there is evidence of not only inconsistencies and serious shortcomings in the policy-framework, but that certain institutions in the business of savings are not functioning as they are intended to do. The pace of policy review and change must quicken. This book grew out of a concern that fundamental and rapid changes in the financial environment and increasing competition for global savings require a critical review of saving and investment policy as well as the functioning of financial institutions. It seeks to present a blend of perspectives and ideas coming from the minds of both academics and practitioners in a context where financial liberalisation and the removal of currency controls are becoming inevitable, and where the investment rate needs to pick up significantly.

It is difficult to undertake a collaborative exercise of this kind without incurring great debts of gratitude. First of all I am extremely grateful to the contributors who responded to the challenge. They know it is an on-going task. Some of my colleagues in the Monetary Studies Programme assisted by reading and commenting on some of the papers. In this regard I could not ask more from Augustine Nelson and Dave Seerattan.

People who write and know a little about publishing will never underestimate the role and importance of support staff. With-

out them the exercise could be a nightmare. In this regard I am greatly indebted to Ms Pat Sampson for co-ordinating the various activities related to the physical production of this volume. Mrs. Marlene Jones, Miss Savitri Pargass and Mrs. Gloria Lawrence shared in the typing, editing and typesetting, and to them I express my gratitude.

*Ramesh Ramsaran,
October, 1995*

Introduction

Ramesh Ramsaran

This study brings together selected papers from an outgoing study on savings and investment within the framework of the Regional Programme of Monetary Studies (RPMS). While some of the papers are original contributions to the volume, a few others have been discussed at seminars and workshops organized by the RPMS. The ongoing exercise is intended to highlight economic and regulatory changes taking place in the national, regional and international environments and to provide guidelines for policy-making. In a period of rapid global liberalization and technological changes it is difficult, if not impossible, for Caribbean countries to formulate policies in isolation from developments which are bound to influence the behaviour of both residents and non-residents. Policies quickly become irrelevant if they do not take account of such changes.

In an attempt to encourage development in a nationalistic setting, governments in the Caribbean came to rely heavily on a whole gamut of controls, some of them producing very perverse effects. Two sets of questions eventually emerged. One related to the effectiveness of these measures in relation to the objectives sought; and the other came to focus on whether the direct cost of the bureaucracy overseeing these controls was really worth it. While there is growing consensus that the old approaches to control need to be reviewed, there is at the same time a well founded view that new forms of influence and surveillance need to come

into play. No government could afford to completely abandon its financial system, or for that matter its economy, to market forces. The market place is not only far from perfect, but may be non-existent in some places.

The changes taking place in the area of economic, monetary and financial policies in the Caribbean need to draw heavily on mistakes of the past. They also need to take account of new horizons and the changing policy framework at home and abroad. There is no single set of policies that one could advocate as having the same effect everywhere. There has to be a period of 'feeling' towards a mix that encompasses policy changes, institutional reforms and the fashioning of an environment that generates confidence. In a situation where individuals are putting their own economic well-being high on the list of their priorities, and given an environment of greater freedom of choice, people have to be persuaded rather than coerced. Management has to develop greater skills and sensitivity in influencing the composition of portfolios.

The papers in this volume focus on policy, institutions and empiricism. They provide some revealing insights into the challenges facing policy-makers in the Caribbean. The first paper in the volume is an address delivered by Sir Neville Nicholls at the opening of the seminar '*Caribbean Economic Policy, Foreign Investment and Capital Flight*' held at the Institute of International Relations, The U.W.I., St. Augustine in October 1994. In this paper Sir Neville takes a retrospective view on savings/investment performance in the Caribbean in recent years in the context of the growth experience of the region and assesses the kind of climate necessary to improve this performance. The paper by Trevor Harker complements the insights provided by Sir Neville. Mr. Harker focusses on the need for appropriate macro-economic policies in a liberalized environment. He emphasizes the need not only for well thought out fiscal and monetary policies, but for sound economic management not only to encourage domestic savings, but to attract foreign capital.

Many countries see the discouragement of capital flight as an important part of the process of encouraging domestic savings. Even with exchange and other forms of control capital moved abroad either in search of higher returns and to maintain real value, or out of concern with safety. Inept domestic financial management was a major contributing factor to this situation. The liberalized environment allows greater movement of funds within a legal framework. Prof. Bennett does a fine job in outlining the concerns governments must keep in mind in articulating policies in a more liberalized environment. Like Harker, he recognizes the strong links between domestic policies and capital flight. Mr. Oumade-Singh is a banker specializing in portfolio management. Using Trinidad and Tobago as an example he discusses the risks inherent in exchange rate liberalization and the techniques, strategies and products that can be used to manage these risks.

A great deal of work has been done (in the Caribbean and elsewhere) on savings and investment functions. Mr. Nelson does an excellent job in summarizing the results of the Caribbean studies and outlining the implications for policy. Dr. Patrick Watson adds to the existing literature by examining savings functions in the Organization of Eastern Caribbean States. Using modern econometric techniques, John Martin addresses the question of class and examines the savings performance of workers and capitalists in Trinidad and Tobago in the postwar period. Developments in Jamaica are always watched with keen interest by the rest of the Caribbean, given the innovations taking place in that financial system. Wayne Robinson examines recent investment trends in Jamaica and some of the factors affecting these trends. The issue of savings, of course, is closely tied to investment. Mrs. Panton-Davis' piece on savings provides interesting insights on savings behaviour in Jamaica.

The third section of the volume concentrates on the operations of what may be called working-class organizations. Mr. Glenn Khan examines the structure of the Credit Union movement in Trinidad and Tobago and assesses their potential as

4 / *Ramesh Ramsaran*

savings organizations. At a time when National Insurance in the Caribbean is coming under increasing scrutiny, Mrs. Beckles-Fontenelle's analysis of the arrangement in Trinidad and Tobago is a useful contribution to the review taking place. The information provided by Sydney Campbell on Belize's National Insurance Scheme allows for an interesting comparison of the Trinidad and Tobago experience with the Belize experience. The investment of funds is a major challenge facing both schemes.

In the final section, Dr. Ramsaran touches on some of the elements that need to be taken into account in reviewing savings and investment policy in the Caribbean.

Section 1

The Macro-economic Framework

Orienting Caribbean Investment Policy to the Capital Needs for the Turn of the Century*

Sir Neville Nicholls

Introduction

Mr. Chairman, ladies and gentlemen.

It is a distinct honour for me to address you on this occasion.

I have chosen to speak on the matter of "*Orienting Caribbean Investment Policy to the Capital Needs for the Turn of the Century*". My slight modification of the topic on your programme is intended to acknowledge, as we shall see later on, that it is not merely the quantum of capital that we install, but as much also, its nature and the accompanying policies that determine economic performance.

***Editor's Note:** Address delivered at the Workshop on **Caribbean Economic Policy, Foreign Investment and Capital Flight** held under the auspices of the Institute of International Relations and the Monetary Studies Programme, at The U.W.I., St. Augustine on October 28 and 29, 1994.

The turn of the century is a very good time to take stock of where we are and to use our experience, observation, analysis and wisdom to forge accelerated progress for our peoples. This turn of the century is particularly important because it is also the turn of the millennium. That gives us the opportunity to use, without odds, the chance of one in a thousand. Those of us who live at such times are greatly privileged compared with all of mankind's history. We should make sure that we acquit ourselves well and prove that, by our thoughts and actions, we can so wisely shape the future that we who are alive at this time may put in doubt the view that "the dead are more powerful than the living".

The first section of my address will give a synopsis of economic performance of our Caribbean economies compared to a group that performed much better. I will also allude to the possible policy factors that were important in this outcome and make some points about some of those Caribbean economies that did better. Hopefully, this will set the stage for the directions that we will need to consider pursuing in future.

Synopsis of Comparative Economic Performance Over the Past Two Decades or So

A brief look at the comparative economic performance of the Commonwealth Caribbean over the past two decades or so suggests that our countries as a whole did not perform nearly as well as they appear to have had the potential to do. Moreover, as other countries and even some of ours demonstrated, they did not lack the opportunity to do better. These two points have often been used in reviews of our Region. They seem particularly relevant to the purposes of this gathering.

Our Caribbean countries have been shown as low performers versus those popularly termed the Asian tigers or the East Asian NICs. I sometimes disagree with aspects of this comparison. Some analysts do not take enough note of our different cul-

tural norms and attitude to matters of certain basic freedoms and to the institutions that implement our concepts of social justice (like the labour unions). These exact a price against the mere indicators of high per capita income growth, economic diversification and macroeconomic stability. Some of us may even debate about the comparatively small geographic size and narrowness of the resource base of our countries. However, Singapore and Hong Kong compare in size with St. Lucia and Dominica and are perhaps even more limited in their natural resources. In fact, they could also be seen as over-crowded city states. Yet they boast a vibrant business tourism sector. But if we are to learn from our experiences and the experiences of others, we will have to admit to some incontrovertible components that really seem to have made most of the difference between our Region's performance and that of the Asian NICs. So let us look at some of the comparisons.

The East Asian NICs were able to attain real GDP growth rates of just below 8 percent per annum from 1966-1992 and over 7 percent during 1980-1992. Our Region (taking the independent countries only) did not do even half as well during the latter period for which we have reasonably comparable data. We fell behind just about as badly in per capita terms. It is tempting to expect that these differences in performance are determined by differences in saving and investment levels, but we need to be cautious in that conclusion.

The East Asian NICs had average gross domestic investment (GDI) at 28 percent of GDP during 1965-1992 and 31 percent during 1980-1992. On the whole, our Region's GDI ratio was quite similar to the levels of the Asian NICs in the latter period. Using comparable World Bank data, some of our countries even had investment ratios ahead of the East Asian NICs. So the East Asian NICs had high investment (similar to ours) and also very high growth individually and on average. By contrast, our Region had comparably high investment ratios but quite low income growth on average, although there were some significant differences in performance within our Region too. We shall return to that later.

It seems appropriate to point out that the investment of the Asian NICs was far more efficient than that of the Caribbean and to ask why this was so. Economists hold different views on this question. Two differing views are brought to attention here. They are both relevant to the formulation of policies for the future even if we do not make a judgement on which is nearer the true position. [Some of the differences in views may well arise from the considerable difficulty of getting very reliable data series over longer periods and assessing peculiarities that affect significant variations of incremental capital output ratios (ICORs)].

Delisle Worrell of the Central Bank of Barbados, in his article "Investment in the Caribbean" (published in *Social and Economic Studies* in 1993), concludes that over 50 percent of investment in each country during the mid 1970s to 1980s went towards building construction with a great part going in the region of 80 percent. He adds that much of the rest went to investment in non-tradeable activities. He opines that "the proportion of investment that financed additional capacity for earning foreign exchange was quite insufficient" and asserts, "that, and not the amount of investment per se was the reason for poor economic performance".

Sarath Rajapatirana of the World Bank states a different view in his paper "*The East Asia Experience and its Relevance to the Caribbean Within the NAFTA Environment*" (March 1994). He asserts, "The investment ratios between the two groups of countries were not that different. What seemed different, however, was the high proportion of private investment in total investment in the east Asian countries".

I think that both of these explanations are only partial accounts of the whole story. Worrell's analysis should perhaps be extended to deal with the internal rate of return on the investments. If the rates of return to much of our investments are low, even if they are oriented to earning foreign exchange, the GDP growth rate will be slow. For example, airports and cruiseship ports may be built at great cost but do not induce significant tour-

ism flows. If we add to these hotels that are unprofitable, then we just worsen the situation despite the fact that they are all capacity-intended to earn foreign exchange. But behind this conclusion by Worrell, my view is that there must be something that fundamentally distorts investment decisions - attracting investment in non-tradeables versus tradeables. There has to be a set of policy distortions of large proportions which provide incentives of higher return and lower risk to the non-tradeables, and especially to buildings, than to export of goods or services. There may also be problems related to the institutional deficiency of capital markets and the historical attractiveness of capital gains in the ownership of buildings as an investment opportunity.

Rajapatirana's view seems specific to the generally presumed inefficiency of public sector investment decisions. These include both public enterprise activities and infrastructure that are not appropriate to private investment plans. The economic malaise in the Caribbean over the last two decades or so clearly saw too many governments attempting to do too much that the private sector should have been expected to do better. It does not seem to me, however, that it is only the inherent tendency of governments to be immune to market forces that retarded progress in our Region. The complementarity of types of investment is the key to the efficiency of investment, be they in private housing or office infrastructure or public sector investment. The Region did need investment in housing and other buildings. But those investments needed complementary ones that would have met the export production needs that Worrell saw. Public Sector infrastructure investment also needs directly productive counterparts in order for growth to accelerate. If policies are sound, if there is no public sector crowding out of private activity, and if the rhetoric is appropriate, the imbalances seen by both Worrell and Rajapatirana could be expected to be much less.

The national savings rates of the Asian NICs essentially matched their investment rates. Their public sector deficits were small both on current and overall bases. Direct foreign investment was strong and not volatile and it emphasized export pro-

duction. Foreign reserves could thus grow strongly and inflation kept low with a few short exceptions. These favourable macro-economic features encouraged currency stability and capital flight was insignificant or even virtually unknown.

The Caribbean was broadly the opposite of this picture. Our national savings rates generally fell short of investment needs by around 10 percent of GDP. Public sector savings were generally small and the overall public sector balance heavily negative. One country [Guyana] ran a current deficit averaging 25 percent of GDP during 1980-92. Inflation was very high and persistent in at least two of our larger countries. There was too much dependence on foreign borrowing in response to external shocks such as the three oil crises in 1973, 1980 and 1989 which were treated as if they were very temporary.

Adjustment was delayed and personal consumption cushioned unrealistically in a populist approach. Then when foreign borrowing became unavailable because foreign lenders saw the potential (or actually experienced) debt default, borrowing from the Central Bank made the bad situation worse and worse with massive loss of foreign reserves, high inflation and interest rates that punished investors in real capital. Even some of our Central Banks made heavy losses and called on the exchequer instead of lining its coffers. Eventually, adjustment had to be made severe and exchange rate instability was either realized or widely expected. Capital flight became the order of the day and then the entrepreneurial and technical skills joined their foreign currency accumulation. Social conditions deteriorated and criminal activity pushed heavy investment into personal security instead of productive capital - a contributor to the Worrell view.

Mr. Chairman, this is the dominant comparison that we see. In my view, it is valid with minor reservations. But we may console ourselves on two counts. First, while the Caribbean countries were well behind the East Asian NICs, the indications are that our countries did relatively better on GDP growth compared with other developing countries in the rest of the world. That

should put us in a favourable position to keep ahead if we use our lead wisely.

Secondly, Mr. Chairman, differential performance in the Caribbean also has some strong lessons for us, and a comparison among our group of countries may give those who feel that comparison with the Asian NICs is not quite appropriate, something to think about. Of our independent countries, the Bahamas and the so-called LDCs in our Region led the way in growth and stability especially over the last decade or so. The per capita incomes of the LDCs have surpassed some of the so-called MDCs and their general macro-economic and social conditions reflect this superior performance despite their smaller size. The Bahamas has been a success comparable somewhat to the Asian NICs although it can be seen as a less diversified economy.

In my view the OECS countries achieved their better performance essentially by sounder macro-economic policies. The critical component of this was the two-way connection between monetary and fiscal policies. Their constraints under a currency board type of monetary system prevented them from running large and persistent fiscal deficits. That has constrained inflation and conserved the foreign exchange resources of their common currency. The macro-economic stability has encouraged investment by the private sector and attracted foreign investment. Capital flight by any measure has been negligible.

The Bahamian success was based essentially on conservative fiscal and monetary policies and a vigorous pursuit of its natural advantage in tourism. The authorities also carved out a niche in financial services to become an early and prominent player among the smaller countries in this type of activity. Liberal tax and foreign exchange regimes and an open foreign investment policy ensured that there was no capital flight. For the most part, Barbados shared some similarities, to a more limited extent, with the Bahamas. These two differed on fiscal management somewhat and on government external borrowing. Foreign exchange management became a significant threat in the case of Barbados more

recently. But the earlier per capita GDP growth in Barbados was also quite good in comparison with the rest of the Region.

The Evolving Economic Environment - Challenges and Opportunities

The Commonwealth Caribbean has had a long period of legitimately and durably devised mechanisms to cushion our production for export and to postpone the severe effects of change. The protection afforded has often kept us in production well beyond marginal efficiency conditions for some items like bananas and sugar. This system protects export volumes and values, employment levels and incomes. It also provides us with scope to learn the process of dealing with foreign markets and of developing entrepreneurial skills.

Unfortunately, special privileges generally do not last forever. There is now a massive assault against preferences in international markets for goods and services and for the opening up of domestic markets to foreign competition. Our recent experiences with bananas in the European Union (EU) mark only the beginning of this relentless thrust towards freer trade and investment opportunities on a world-wide basis. The establishment of the single market of the EU and of NAFTA combine with the agreements under the Uruguay Round to put our countries into a totally new arena of international competitiveness. In this new setting which is already largely operational, only the fittest enterprises, the competitive ones, will survive. The uncompetitive, whether their production be for export or domestic sales, will go to the wall. These facts require of us production and timely delivery of top quality at low price which means exacting cost efficiencies. These are things our Region will have to learn quickly.

The operation of NAFTA and the Uruguay Round will have the effect of eroding tariff preferences accorded to the Caribbean under the CBI and the Lomé Convention. Some of the affected products could have quite large export losses. But others

could eventually see potential for strong gains as the tariffs that the Caribbean producers now face get whittled away under the provisions of the Uruguay Round. Caribbean exporters of items such as footwear, textiles and clothing could see opportunities gradually arising here. A similar situation could arise for sugar, textiles and clothing as the Uruguay Round nibbles at the liberalization of non-tariff barriers (NTBs). One-sidedness of NTBs is always a possibility if past experience is to guide future actions. Power will be unequal, but if the new institutional arrangements for the World Trade Organization (WTO) are made to work fairly, the weak should find right on their side.

Risks are inevitable in business. Risk insurance is a necessary feature. The greatest risk insurance that the Caribbean could possibly have in this rapidly changing milieu is the strong development of opportunities that attract direct foreign investment (DFI). The owners of industries are usually the ones that lobby for obstacles to imports. If, as DFI owners, they face themselves simultaneously as origin and host country interests, they can evolve ways to accommodate host country trading interests. It is therefore in our interest to grasp the opportunity of the new surge in foreign investment which is partly based on the relatively slow growth in the OECD countries with excess capacity retarding the outlets for financial capital. But others are pressing ahead to get these resources and we should ensure that we do not let this wave pass us by.

In the not too distant past our Region has been too much opposed to DFI. Even when we did not have overt policies to exclude DFI, we have too often, at the political, trade union, business and academic levels, made statements that made foreign investors wary. Not all our countries had such attitudes, but the whole Region can very easily be tarred with the brush that should apply to only one or two countries. Attitudes to DFI are changing, but if we are to face the challenges and grasp the opportunities to get capital, entrepreneurship, technology, know-how, markets and marketing expertise that will fit us to compete, we will

need to be at least more guarded in what we do and say about investors - domestic or foreign. And our actions on policies and administrative procedures will speak even louder in our quest to compete for foreign investment. Whatever we do, we must become investor friendly.

The Demand for Investment and Savings

Mr. Chairman, the situation I have just described calls for massive savings and investment in the years ahead. Our single most intractable and politically pressing problem is that of structural unemployment. Prof. Compton Bourne in his landmark study, *“Caribbean Development to the Year 2000 - Challenges, Prospects and Policies”*, published in 1988, starts his discussion on employment policy issues by stating “The absolute number of jobs required to either maintain existing unemployment rates or to achieve full employment by the year 2000 is a major development problem”. Prof. Bourne saw the Region requiring real GDP growth beyond 6 percent per annum as “an imperative if the Region is to cope with the backlog of heavy unemployment and the looming unemployment problems implied by the demographic change between 1980 and 1990” (page xv). His more detailed scenario was for GDP growth of 11 percent per annum between 1985 and 1990 and approximately 6 percent per annum between 1990 and 2000 for an average of 7.7 percent per annum during 1985-2000 (page 48).

We all know that the Region fell far behind the growth needs described between 1985 and the present and that many of the countries have had increased rather than reduced unemployment in the past few years. So the growth needs are now higher or the target period is pushed out well beyond 2000. Time did not permit for a re-run of Prof. Bourne’s methodology which he declared to be crude. Despite this, I will take an even cruder approach in order to illustrate that we have a most demanding saving and investment task ahead of us.

From the unemployment back-log and growth needs re-counted earlier, we can see that 8 percent per annum growth from 1995 to 2000 will not solve the problem, although it would improve the situation. Prof. Bourne gave three sets of ICORs in his Report. To be conservative I take the median of the ten-country array of his lowest set based on his net investment assumptions. That is an ICOR of approximately 5.5. At 8 percent growth and an ICOR of 5.5, the investment ratio is 44 percent of GDP.

This would require net investment of around \$59 billion (bn) for 1995-2000 starting from the 1992 GDP of \$15.8 bn for the 12 independent Caribbean countries. Can we see net investment of around \$10 bn a year on average for the next six years when we now run gross investment of around \$3.5 bn a year? The implied saving requirements are far beyond us given that our saving ratio which has generally improved over the last few years, had country averages for 1990-1992 ranging from -7 percent for Guyana to +25 percent for St. Kitts and Nevis. The median was approximately 15 percent of 1990-92 GDP. Jamaica, with by far the largest pool of unemployment, was at 14 percent. Therefore, unusually large foreign capital inflows would need to start immediately. But that would not include much of aid flows because of the current donor concentration on other regions that are perceived to have greater need than ours.

One thing that we must push for is more efficient investment with reduced ICORs. In this regard, we should note that the Asian NICs have ICORs of the order of 2.5. Like my predecessor in office, William Demas, I feel reasonably sure that we can gain much ground on this matter even if we were only able to improve the efficiency of existing installed capital by developing a more extensive system of operating in shifts. And that could help relieve the unemployment problem simultaneously. The incentives must be created by appropriate policies that foster competition and keen management. The companion need for managerial, supervisory and skilled personnel must be met by our education

and training programmes. Transportation and crime control would also have to improve.

The Major Policy Needs to Face the Challenge

Mr. Chairman, if we are to effectively meet the challenge that faces us, the Caribbean has some major policy decisions to take and they must be put into practice urgently as I pointed out in my statement to the Board of Governors of the Caribbean Development Bank at their Annual Meeting in May this year. That statement dealt with "Putting Policies into Practice". I would like to briefly mention *some* policies that I see at this stage as appropriate for orienting us to the investment needs for the turn of the century. In doing so, I do recognize that several of the defective policies that plagued our Region over the last two decades or so have recently been changed.

The results of these policy changes that have been implemented are beginning to look quite encouraging. The stabilization and structural adjustment pain to our peoples has not been easy to bear, and our experience shows that there is a risk of untimely policy adjustments or reversals that could give premature pain relief. That approach has to be very stoutly resisted, as experience also shows that worse pain is likely to follow policy vacillation. Part of the policy process will have to be a clear public education programme that will help our people to distinguish between the effects of the policy medicine and the root cause of the economic malaise which required the policy prescription. This is clearly difficult for our system of government. It might be effective competitive politics to leave the confusion and even feed it. But statesmanship requires that our leaders stay the course that gives necessary policy changes the chance to work. This is most necessary in our prevailing macro-economic situation. I think that the University and the media could find a challenging role to play in this matter. The role would have to be carefully played because it is always difficult to manage public advice without responsibility for results and, at the same time, to be accepted as impartial and sound.

Our macro-economic policies must be geared to sustained stability with growth. Nothing will be more investor friendly than that. Investment is buoyant with price stability, low interest rates, balance of payments stability accompanied by growing exchange reserves, foreign exchange rate stability and manageable external and domestic public debt levels. These macro-economic conditions require that there be no worse than a low overall fiscal outturn on a sustained basis. When these conditions hold, there will be very little or no incentive for capital flight. All owners of financial capital, domestic and foreign, will see such a macro-economic situation as a permanent invitation to and welcome for their capital. Our governments must take and maintain this fiscal stance for the turn of the century and beyond, for the reverse of any of the stability conditions stated earlier is a warning signal to owners of capital.

Shocks may cause fiscal imbalance from time to time, but such imbalance should be promptly corrected. External and domestic shocks must not be treated as temporary when they are not clearly temporary. Private consumption must not be unduly cushioned against them by fiscal action. We must also guard against the strong tendency for a populist approach to treat our structural unemployment problem as if it were seasonal. The history of the last two to three decades has shown us that if we try to do too much social improvement in too short a time, we cause serious set-backs and fritter away the chances of achieving our potential. In the end, the poor, whose plight we had set out to ease, suffer more than before. That situation is worsened if the programmes were accompanied by a hostile stance to owners of capital.

If our countries can attain the economic efficiency features I have outlined and persist with them, we won't need to worry about the new openness that is being pushed in the world economy. We will be able to work resiliently within that system. Our past has shown that we have the ability to achieve. At the outset, some of our countries are in the process of difficult adjustment. Some of them have not quite got the policy sequence right.

That has caused some trouble. Most of our countries have still to move through the liberalization of markets. Their first step should be to correct any fiscal imbalance. Then they can more easily liberalize the domestic financial markets without experiencing excessively high interest rates. [But incidentally, they should not forget that even the United Kingdom has very recently borrowed at real interest rates in excess of 6 percent per annum although its inflation rate is at a 27 year low.] When the domestic financial markets have adjusted to the liberalization, then the foreign exchange market can be brought into the process. In this regard, I hold the view that our foreign trade market has traditionally been quite open. The real need there is to devise appropriate tax reforms that will reduce fiscal dependence on foreign trade. In any case, the trade liberalization agenda is largely set already within the Uruguay Round and other trading arrangements that we are moving into.

When the macro-economic conditions stated earlier have the desired outcome, wage earners must get a fair share of the benefits of the progress engendered. They must not expect too much, because enterprise profitability is crucial to sustained competitiveness. Gain-sharing must leave a high proportion of total factor productivity gains to enterprises. The only way they will be able to compete effectively in the new economic order is to have their productivity growing at least as fast, and preferably faster, than that of their foreign competitors. That requires strong profitability and the capacity to keep modernizing and expanding on internally generated funds. This approach will require close cooperation between organized labour, employers and government. Labour/employer relations will have to become less confrontational and more consensual.

Our governments will have to keep the cost of their services very competitive. Public sector efficiency must become paramount. Infrastructure, taxes, charges and institutional practices must match the most efficient anywhere in the world. This will call for tax and administrative reform and for superior project

design and cost-effective implementation. Some reform is already proceeding. It has to be rapidly accelerated and made more pervasive in the Region.

The focus on productivity growth will demand accelerated technological applications. There will have to be a surge towards knowledge-based activities which will require that we diversify investment into new products and services at the same time that we streamline and modernize, at greater marginal efficiency, the older activities that we now engage in. For knowledge-based activity to quickly start to dominate our business response, we must cease being afraid to import the new skills and see their presence as an opportunity rather than a threat to or a displacement of our nationals. Reliance on knowledge, skill and technological capabilities must surpass our reliance on natural resources. We will need to accelerate our partnerships with efficient foreign producers who control markets and who can help us to develop our skills, ideas and insights and to embody them in the goods and services we sell.

It also happens that this suggests a strong orientation towards export production. That is appropriate because it is clear that our quite limited domestic and Regional markets are too small for the rapid growth needs ahead of us. And we have two lessons to support this approach. First, the Asian NICs had their superior growth performance strongly based on exports. Second, over the last several years, world trade has been growing about twice as fast as world output. So that is where our promising opportunities exist; and it is even more promising on services, because services constitute the fastest growing aspect of world trade. We should know, however, that other countries have been learning the same lessons and will be pouncing upon the same opportunities.

In order to equip ourselves for the required rapid technological change, and to improve our Region's chances of taking the lead in the opportunities, our education and training systems

must be reformed to emphasize the appropriate programmes. These programmes, while being focussed, must not be too narrow. Indeed, they should start at fairly low levels in the system and encompass matters such as information systems, finance and sales and marketing. They should emphasize values including social cohesiveness and workplace cooperation, because work attitudes will become increasingly important to investors who see them as part of the socio-economic stability and competitiveness processes which attract investment.

What CDB is Doing to Help

Mr. Chairman, there is much more that our governments will need to do. I can assure you that the CDB will continue to play a constructive role in the effort to help its borrowing members. For twenty-five years it has been funding physical infrastructure projects of almost every kind in order to help make complementary private investment thrive and become internationally competitive. Most of its private sector portfolio has been in tourism which directly assists in the export effort. Some of its public sector loans have gone to the development of export processing zones and to reshipment and postshipment funding of export production. About one-quarter of its loans has gone to small and medium scale industry, tourism and agriculture through national financial intermediaries. It has provided much technical assistance to those enterprises through the intermediaries. Its Caribbean Technology Consultancy Service has been giving training, information and hands-on assistance in problem-solving on the production floor. CDB has been working with the IDB on investment diagnostic studies to help remove the constraints to private sector investment in the OECS. It has also been providing technical assistance aimed at rationalization of banana production and diversification of agriculture in the Windward Islands.

For over twenty years it has been providing funds for student loans in technical and vocational education at the tertiary level in the LDCs. For over 15 years it has grant-funded other education projects within its Basic Needs Programme. Since 1980

it has run a programme of training mostly for public sector personnel in the whole project cycle. For about a decade it has provided training for senior government officials in macro-economic management to help in establishing the grounds for an appropriate policy framework. More recently it has become quite active in policy dialogue and advice to its BMCs and has actually been the lead agency in preparing a stabilization and adjustment programme for one LDC - also providing technical assistance in the implementation of that programme. Its recently adopted human resource development policy and programme of work has already resulted in a loan of \$9 million to the UWI for its distance education programme geared to the non-campus territories and the more remote areas of campus territories. We believe that these programmes have already had an important effect especially on the LDC members of the Bank.

In closing, Mr. Chairman, the challenges before us are not going to be easy. Each sector of our society will have to strain for efficiency and cost-effectiveness with a generally hospitable attitude to investment and owners of capital. We will have to demonstrate that investment will not be subject to the risk of persistently over-valued domestic currencies, volatile inflation and balance of payments crises; and that both macro and micro-economic policies will be predictable, transparent and fair. Moreover, we will have to assure due process and justice before the law and respect for the sanctity of contracts. If, with these stability factors, our infrastructure is good and is cost-effective, and we show the will and ability to keep crime in check, then we would have given ourselves the chance of grasping much more effectively the opportunities that have largely eluded us so far.

We cannot afford to fail the next generation.

Thank you.

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A Desirable Macroeconomic Framework to Encourage Savings and Private Investment in a Liberalized Environment

Trevor Harker

Why a Liberalized Environment?



Questions inflame the mind and hopefully they stimulate answers. Sometimes they provoke supplementary questions which need to be resolved before grappling with the central issue. So it was with this topic, which is replete with questions. Time will, therefore, be taken to consider some of them before trying to address the main topic.

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The public is somewhat bewildered by the current emphasis on liberalization. It wonders whether its leaders are merely following a new fashion imposed from outside, or whether something has changed to justify greater convertibility of currency and market-related exchange rates, opening domestic markets for goods and services to foreigners, allowing them liberal rights of establishment, simplifying the regulatory framework and reducing barriers to the entry of new competitors while attempting to reduce the power of monopolies, whether they be national, State-owned or foreign. It might, therefore, be useful to reflect briefly on the regional and global environment that is encouraging such policies.

The development problems of Caribbean countries are too familiar to need detailed discussion here. Nevertheless, it is perhaps useful to re-evaluate the sources of Caribbean economic growth. Traditionally, these have been agricultural staples, mineral exports for some, faltering attempts at manufacturing for all, tourism for most, or offshore financial services for a few.

The agricultural staples now survive on preferences which are being removed because of the global trend towards the liberalization of trade. Earnings from minerals have been erratic and have been passing through a long trough of depressed prices. Anyhow, they are no longer seen to be the engine of growth in most Caribbean countries.

Earnings from services have sustained most countries throughout the decade of the 1980s. While potential remains for expansion, the same rate of growth is unlikely to persist indefinitely. All services are likely to be subject to greater competition and ecological constraints might soon limit the continued boom in tourism.

Manufacturing has failed to live up to expectations. It has stagnated since the first blush, which was stimulated by the early, easy stages of import substitution. Caribbean domestic markets have proved too small and conditions since the 1980s have proved

too hostile to the growth of a manufacturing sector based on domestic or regional markets alone. Producers have not been able to expand production on the platform of regional policies and markets to reach global consumers.

The strong flows of multilateral and bilateral finance evident in the 1970s have contracted significantly. Multilateral flows fell from US\$546m in 1982, to US\$72m in 1992. Bilateral flows also contracted, from US\$597m in 1982 to US\$-44m in 1992. Private lending also declined from US\$202m in 1982 to record net outflows of US\$-207m in 1992. Conversely, private transfers from Caribbean nationals abroad increased significantly, from US\$350m in 1992 to US\$860m in 1992, although a significant portion of these flows went into financing consumption of family members to whom much of these remittances were sent.

The Caribbean is not only facing declining or stagnating traditional sources of growth within the region, but the global environment is also changing. ECLAC recently identified four trends in the global economy.¹ The first two illustrate impending shifts in global economic power, away from Europe toward Asia. This shift is of relevance to the Caribbean. It will sharpen the debate about the sources of Asian prosperity and cause further reflection about whether, and if so which, lessons derived from this experience are applicable to the Caribbean. It might also cause policy makers to reflect on the premises on which our traditional relations rest, especially the preferential regimes to which we have become accustomed and which we strive to extend.

However, the second two trends are even more germane to this discussion. They relate to the globalization of manufacturing activities and capital markets, respectively.

Strong trends toward globalization and technological change are expected to continue. This trend is currently illustrated by the growth of trade in relationship to output, the boom in Foreign Direct Investment (FDI), the increased importance of transnational corporations, and the new modes of organizing pro-

duction and trade, stressing subcontracting, intra-industry and intra-firm trade. Production is increasingly free to locate wherever labour productivity is highest. These trends are expected to strengthen. Because of these developments, manufacturing is the fastest growing area of merchandise trade globally and is the chief means for introducing technological modernization to developing countries. So far the region has missed this burgeoning area of international trade and has been bypassed by the vehicle that is doing most to transform the global economy. *The Caribbean clearly needs to foster manufacturing in this new mode, if it is to absorb the growing body of unemployed in activities that are remunerative.*

The impressive expansion in international capital mobility, which allows it to locate where conditions are most favourable,² is another potential benefit for the region. Concomitant with this mobility is the creation of new mechanisms to facilitate such mobility. Accordingly, Foreign Direct Investment (FDI) is increasingly moving to the developing countries. Since 1985, over 60 per cent of new employment by multinational corporations has been in developing countries. The value of FDI into developing countries increased from US\$31 billion in 1990, to US\$80 billion in 1993, 60 per cent of it going to Asia.³ *The Caribbean needs to ensure that it implements policies which are attractive to this capital.*

Simultaneously, the demand for capital is growing rapidly in the developing countries. It is estimated that over the next decade an extra US\$300 billion per annum will be needed to finance new investment plans in the developing world. This is three times the capital that flowed from the developed to the developing countries in 1993. Competition for capital is expected to increase and as a result so is the cost, through increased interest rates and long-term bond yields. *The Caribbean, therefore, needs to increase efficiency in its use of capital.*

These developments in investment and capital flows are, therefore, of relevance to us in the Caribbean. Tradables dynamise

our economies. Our manufactures have been shielded from change and are essentially not tradable outside of the protected market. As trade barriers are removed they will not be viable even there. Since manufactures are the fastest growing area of international trade, we need not only to increase our presence in tradable manufactures quickly but also in tradables in the other sectors, including services. It is estimated that the Joint Factor Productivity (JFP) gap between Latin America and the developed countries is 2.5 to 1.⁴ It may be greater for the Caribbean and springs from outdated equipment and production methods, deficient organization of labour, vertical and confrontational industrial relations, quality problems, inadequate marketing techniques, indifferent after-sales service and so on. The productive transformation necessary for Caribbean manufacturing and other sectors to close this gap will require high levels of investment with strong and sustained inflows of technology and market information. Only in this way can we emulate global best practice in those things we hope to trade. A strong case can be made here for foreign direct investment, since it often incorporates all these factors although other portfolio capital flows need also to be encouraged. The infrastructure to sustain productive activities is still deficient in all areas including the range of communications and telecommunications facilities not to mention adequate and reliable water and electricity supplies. Ways need to be found to ensure this investment thrust without incurring burdensome international debt.

This leads us to the discussion of savings and investment. Since investment is only possible through the savings of nationals or foreigners, both sources will need to be encouraged to remain or locate in the territory of focus. Appropriate macroeconomic policies, including the removal of barriers to capital flows and stable macroeconomic policies, are essential to encourage and retain domestic savings, induce foreign inflows, both from nationals abroad and from foreigners, and to ensure that these resources are used efficiently. These should preferably be in the form of long-term flows and, where possible, they should be accompanied by technology, management and market access.

In Latin America the recent shift from a scarcity of external finance to one of abundance has not been reflected in significantly higher investment levels. Despite these flows, Gross Fixed Capital Formation has grown only from 17 to 18 per cent of GDP. This compares with 24 per cent for the period 1976-1980.⁵ They have also had some adverse effects: on the exchange rate and policies for tradables; increased imports; the money supply; and increased vulnerability to shocks. Policy should seek not simply an increase in inflows, but should focus on the quality of such flows, their time horizon and their use.

The links between growth, savings and investment are easily illustrated in the Caribbean. Those countries such as Antigua and Barbuda, Dominica, St. Kitts/Nevis, St. Lucia and St. Vincent and the Grenadines, where growth exceeded 4 per cent per annum, also registered investment to GDP ratios of about 30 per cent.⁶ Conversely, Haiti (12), Suriname and Barbados (17) had average growth rates of less than 2 per cent and investment ratios of less than 20 per cent. Jamaica and Trinidad and Tobago had investment ratios of almost 20 per cent, but private investment was quite low, at 12 and 11 per cent, respectively.

In all countries savings trailed investment except in the Bahamas, which may be because it is an international financial centre. The fastest growing were also best able to attract foreign investment, as shown by the gap between domestic savings and investment in these countries. Savings exceeded 15 per cent in Trinidad and Tobago, Guyana, the Dominican Republic, Barbados and Jamaica. But those with the highest savings rates, Belize excepted where investment was 26 per cent, were not those with the greatest investment. Fiscal deficits exceeded 15 per cent per annum in Guyana and Suriname and averaged 5-15 per cent in Haiti, Barbados, Jamaica, Grenada and Antigua and Barbuda. These deficits represented investment foregone in debt repayments and in excessive current expenditures.

The lessons are that the fastest growers had the highest investment, though not necessarily the highest rates of savings.

Two conclusions might be made. Those with the most stable economies could attract foreign inflows and they did not (or could not) print money. The others, despite high rates of saving, needed further resources, difficult to obtain with the debt overhang of the early 1980s. Accordingly, they resorted to printing money which further destabilized prices and exchange rates.

In summary, recent developments suggest that new opportunities are available to those who are able to create effective links with the global economy. Evidence is provided by countries successfully making these links and the rapid growth, with equity, which they have achieved; the increased pace of regional cooperation arrangements and the transitional arrangements which they can provide; rapid integration of global activities in finance and manufacturing with opportunities to acquire incremental capital to enter into new manufacturing activities; and the potential for greatly increased transparency and openness of markets in goods and services, since the conclusion of the Uruguay Round. In this context, open markets supported by appropriate macroeconomic policies can increase efficiency, promote export growth and create a more resilient economy in the face of changing circumstances. Simultaneously, those countries which are unwilling or unable to open their economies to these global developments and apply appropriate macroeconomic and trade policies run the risk of greatly reduced welfare for their people. What then are the macroeconomic policies conducive to bringing all these ingredients together?

A Desirable Macroeconomic Framework

A precondition for solid sustained economic growth is a stable economic platform in which such macroeconomic imbalances as may exist are held within sustainable limits. Imbalances are costly and so are the measures to remedy them. The major symptom of imbalance is inflation which disrupts both savings and investment in productive activities. A combination of policies is required which should be coordinated over time on a sustain-

able equilibrium path. These policies include a convertible currency, high and stable real exchange rate, moderation in wage rates so that they are in line with productivity gains, aggregate demand policies especially to curb the consumption of non-essential goods, and ultimately the maintenance of positive real interest rates which are also higher than real international rates.

One would also seek to create a policy climate in which these fundamentals rested on broad national consensus, so that they would not be threatened by significant policy reversals, consequent on freely competing political parties. Predictability and confidence are essential to the process of savings and investment.⁷ Since the economy is a system, various policies, while acting on specific parts of it, are likely to generate responses in areas other than the original point of stimulus. Policies have, therefore, also to operate like a system. In general, they have to be coordinated and internally consistent and, where departures are made, they have to be appropriately sequenced. The discussion of discrete instruments which follows is adopted for convenience and should not be seen to contradict the above.

The examination of policy fundamentals might begin with fiscal policy, since it is the single most important cause of economic instability over which we have control. Any policy package to stimulate savings and investment in a liberalized framework should begin by giving a high priority to conservative fiscal policies. This will be defined as a primary surplus, that is before debt service expenditure, or an operational deficit⁸ of no more than about 2 per cent of GDP.⁹

To achieve these targets, within a manageable tax framework, great care will be needed in selecting expenditure priorities. These should be placed on areas such as primary health and education, since they make the most lasting contribution to both equity and efficiency. Adequate, but not excessive, infrastructure also needs to be created and maintained, but ways should also be explored to develop this without overburdening the public purse.

Unnecessarily large bureaucracies, which absorb disproportionate amounts of trained people and skew salary structures away from productivity gains, should also be resisted. Indiscriminate transfers to individuals or public enterprises, the utilities or the Central Bank, should also be eliminated. In sum, large governments siphon funds away from investment and increase expectations of future tax increases.

Taxes, nevertheless, need to be sufficient to maintain the society in accordance with the expenditure priorities and fiscal targets outlined above. Overall, they should not absorb more than perhaps 30-35 per cent of Product. This seems to be a threshold, in the Caribbean, where the tax take starts to lag behind the tax rate, and where taxation starts to become a disincentive to enterprise. The structure of taxation should aim at being progressive and should be broad based so that revenues will not be unstable. Reliance on trade taxes should be reduced for this reason but also for other reasons which will be discussed later. Improved tax administration is also necessary in the context of liberalization. Changes in tried tax structures make greater demands on collectors. Slippage in this context can be expensive to economic equilibrium since the margins between the taxes levied and the objective needs of the society should be narrow. Also, as cross-border trade and employment opportunities increase the income accruing to nationals from foreign activities should become subject to tax.

If a country is serious about increasing savings and investment some degree of financial liberalization is necessary, in part because most of the external alternatives available to both savers and investors operate within a liberalized framework. Denial of this flexibility will confer a severe disadvantage on local savers and investors alike, which they will seek to circumvent. Essentially, liberalization seeks to extend the scope of the market in deciding interest rates, the exchange rate and the acquisition and allocation of funds at the micro-economic level. There are several areas where sensitivity and judgement will, however, be neces-

sary. These include the *extent* of liberalization and its *pace*. Some premier considerations in this calculus would be the degree of confidence and stability in the economy. Where they are lacking, a cautious and progressive deregulation might be preferable to a more radical approach, since this will limit market instability. Nevertheless, gradualism will take a longer time to impact on a business psychology long mired in stagnation and if it is not to engender the perception of policy uncertainty, timetables should be provided in advance and adhered to.

One issue that is linked to pace is the *phasing* of new financial policies, also their relationship to other macroeconomic policies. While linked to pace, phasing is conceptually different. It is essentially a technical matter related to the systemic nature of policy. Finally, there is the issue of monitoring and sufficient flexibility in the use of instruments. This might in exceptional circumstances justify the reimposition of some controls, commensurate with maintaining confidence.

Ideally, in a liberalized system interest rates should be market determined. In transition, especially where confidence has not yet returned to the system, market rates might need to be so high as to choke off investment or threaten existing private and public entities. Even if some controls are necessary on the capital account to sustain a non-market rate, sufficient incentive should be provided through a positive real rate to encourage domestic savings. Selective credit policies should be eschewed.¹⁰

Exchange rate policy should aim at achieving sufficient stability so as not to introduce undue uncertainty into business transactions. It should be maintained over the long term, with the assistance of other appropriate policy instruments, at a real rate that will encourage investors to take long run investment decisions in non-traditional exports. This formulation is intended to acknowledge those who advocate fixed nominal rates of exchange. Nevertheless, most Caribbean countries are subject to the possibility of strong external shocks, high levels of unemployed

resources especially unskilled labour, rigid nominal wages, weak national consensus and fragile fiscal discipline. Any decision to eschew changes in the nominal exchange rate by such countries will probably incur a higher cost in savings investment and growth foregone than if nominal rates changed.

Simultaneous with measures to deregulate the financial sector, there is need to operate at the institutional level to increase the efficiency and flexibility of the financial institutions and capital markets. Allocational efficiency is substantially covered by those macro policies discussed above. Operational efficiency is measured by the cost, in real resources, to provide financial services. The closeness of fit between the needs of clients and the services provided to them requires innovation and flexibility as these needs change over time. Some deregulation has been necessary to allow innovation and flexibility in tailoring financial instruments to local needs. Simultaneously, it is necessary to strengthen prudential regulation. Briefly stated, the new orientation must give transparency to the solvency of financial institutions and limit the risks of loss which financial institutions can assume. Obviously, these are crucial conditions to reduce uncertainty in both savers and investors and to become important in the more fluid financial atmosphere that is encouraged by liberalization. These issues are only mentioned for completeness, since they fall outside the terms of reference of this discussion.

In sum, international capital flows are now considered a powerful tool for economic development. Nevertheless, macro policy must be managed with great care to ensure stable access to foreign capital flows without destabilizing key prices, such as the exchange or interest rate. Policy should try to ensure that these flows are channelled to efficient investments. Supervision and prudential regulation of financial institutions need also to be increased to ensure that increased activities do not undermine the future solvency of financial institutions.

In the area of savings, most Caribbean countries have turned in a respectable performance. The biggest savers in the

region, as we have seen earlier, have not for the most part benefitted from their efforts. Their savings have not been channelled into productive investments. They have evaporated in disequilibrium. Many policies outlined above, at the macroeconomic and institutional levels, will contribute to increased savings, and as the population ages it will tend to save more given the proper framework. Nevertheless, better instruments will need to be evolved for the purpose, especially to entice small savers.

Trade policy should ensure that incentives falling under it are not skewed to favour non-tradables. Tariffs are the least distorting of the trade instruments, but any tariff in excess of zero, without a countervailing subsidy for exports, maintains a bias against them. Other instruments to limit imports such as stamp duties, import surcharges, non-tariff barriers and the range of quantitative restrictions provide a high rate of effective protection for non-tradables. Ideally, therefore, import taxes should be limited to low and uniform tariffs, although some variation might be justified because of market imperfections. In this way the differential rates of protection between tradables and non-tradables and between traditional and non-traditional sectors can be limited.

Logically an argument can also be made for some export incentives, to compensate for previously mentioned protectionist biases. Incentives can also be justified to pioneer exporters, who bear higher costs in penetrating a new market and provide uncompensated benefits to emulators. But incentives, if used, should only deviate moderately from neutrality, be subject to specific criteria and be limited in time. Further policies might be justified to promote exports, ease the restructuring of non-tradable sectors and increase systemic efficiency, especially in services. Other micro-economic and administrative supports need also to be provided, though they fall outside the purview of this presentation.

Trade policy has been shifting from an import substituting to an export-oriented paradigm, but lags in the regulatory apparatus hinder the process. This is due in part to the difficulty in

changing the CARICOM CET, where the network of regional interests is even more complex than those at the national level. It should be recognized, however, that as global markets consolidate, investors seeking an export platform will favour those countries that discriminate least against exports. Even where geography is important, adjacent countries or groups can gain an edge with less biased trade policies.

Previously the need to integrate policy was stressed.¹¹ Several examples come to mind. Tariff reductions are a central part of any programme of policy reform in the Caribbean. They must, however, be preceded by policies to vary the real exchange rate, otherwise the result will be rapid erosion of the external account and disincentives for the production of exportables. Whether trade liberalization is gradual or rapid, exchange rate appreciation should be avoided.

The challenge of maintaining trade liberalization with a stable or depreciating exchange rate is further complicated where financial sector reform stimulates large capital inflows. Use of the interest rate to sterilize the monetary effect of inflows and curb inflation can have further perverse effects. If rates are increased for the purpose, but are already high enough to cause destabilizing inflows, the effect is likely to be further inflows. If rates are decreased, prices are likely to rise and the current account is likely to be eroded.

Capital inflows provide some indicator of the soundness of economic management. But they must also be seen in relation to the supply of global capital and the capacity of domestic policy makers to maintain economic stability and the incentives for medium- to long-term investment. Intervention to manage capital flows might become desirable since, as discussed above, flows complicate the management of the real exchange rate and the real interest rate. Intervention might take place at three levels. The Central Bank can purchase foreign exchange to increase its reserves. Beyond purchase, the bank could also sterilize the monetary impact of reserves' accumulation. Finally it can use other

incentives and controls to influence the composition and volume of flows.

The first non-sterilization option increases the money supply, which in turn creates inflationary pressures and an appreciation in the real exchange rate. The second sterilization option has financial costs for the Central Bank, though they may be mitigated over the medium term. Other costs are conflicts between exchange rate and monetary policies if the latter cannot be supplemented by quick and flexible fiscal policies. Resort to the third option of direct controls might therefore be justified. They might give short term capital inflows lower priority than long term inflows. Outflows might favour export-stimulating activities such as export credits or direct investments abroad by national firms wishing to improve their export platform. All three measures can be used in combination.

Since the macroeconomic landscape is quite complex, reform needs to take place on many fronts. Some areas have been explored where policies need to be coordinated to minimize conflicts. Something needs also to be said about their sequencing. Macroeconomic stabilization is a priority. This should be followed by private incentive policies to bring forth expanded activity including trade reforms to eliminate the bias against exports, and interest rate policies, including credit policies. Beyond this, markets should be opened so that they can function more effectively; for example, the power of domestic monopolies or oligopolies might be reduced and competition increased. Action needs also to be taken on labour markets. Public regulatory policies need also to be simplified, so that the overheads and delays suffered by enterprise can be reduced. The overall objective should be to make policies transparent and subject to market signals instead of being discretionary. These policies also reduce barriers to entry thus expanding economic activity and increasing competition. Some of these actions go beyond the purely macroeconomic but are included for completeness.

The title for this presentation seemed to presume that liberalization would cause drastic change in the tasks entrusted to the policy makers and in the techniques available to them. But what will the policy maker really lose with deregulation, besides the illusion of control? Will the tools be redundant? Previously, policies were made in an environment of controls, intended to provide the policy maker with the greatest latitude. Yet such regulatory policies frequently left the economy facing the worst of both worlds. They so bound up the economy that, in times when dynamism and flexibility were needed, paralysis was the result. Simultaneously, where they were supposed to be defensive, to guard against instability in times of crisis, they were often powerless and unenforceable. This was most notable with respect to capital flight.

Has the role of the policy maker in a liberalized environment been sacrificed? The common perception is that markets will obviate the need for intervention. Based on the suggestions made in this paper it is clear that, instead, the levels of intervention will need to be more sophisticated and timely than ever before, although, hopefully, many arbitrary micro-decisions will disappear. Caribbean societies are currently in the throes of this discussion which, of course, has a bearing on the role of the State in a liberalized environment. Its conclusion must, however, await another time and place.

End Notes

¹ECLAC, "Policies to improve linkages with the global economy". ILC/G 1800 dd. April 1994.

²This is not simply being able to derive the best returns but also, where the macroeconomic climate is predictable and, therefore, where risk is capable of fairly accurate assessment. Currency convertibility and a credible exchange rate regime are essential considerations.

³Source: UNCTAD, World Investment Report, 1994.

⁴Joint Factor Productivity is the production component which is not the result of either the quantitative or the qualitative accumulation of the factors of production, capital or labour. ECLAC "Policies to improve linkages with the global economy", op. cit. P.141 quoting from Hoffman. A, "Capital accumulation in Latin America, a six country comparison for 1950-1989".

⁵ECLAC, "Policies to improve linkages with the global economy", op. cit.

⁶These indicators, on growth, investment, savings and fiscal deficits, relate to the percentage of GDP per annum, on average, over the period 1980-1992. Source:IMF, World Bank.

⁷It can be logically argued that uncertainty is the greatest stimulator of savings. Whether these savings are put into precious metals, land or constitute capital flight is germane to the discussion, since the objective of savings here is to secure productive investment in the territory. At the least, lack of confidence will translate into higher interest rates which will inhibit investment.

⁸Disregarding that portion of the interest bill which simply compensates for inflation.

⁹In 1993, Jamaica achieved a primary surplus of about 3 per cent of GDP, but an overall deficit of about 7 per cent.

¹⁰These have been justified in various countries. As with other subsidies, however, strict criteria should apply, differentials should be low and they should be limited in time.

¹¹ECLAC, "Policies to improve linkages with the global economy", *op. cit.*

Capital Flight and Caribbean Economic Policy*

Karl Bennett

Introduction

The last two decades have witnessed a major expansion in international capital flows associated with the global trend towards deregulation of financial markets. This development has been associated with a commensurate increase in the competition for international capital. Insofar as CARICOM countries are concerned, policy makers will be obliged to keep abreast of developments in international markets as a means of ensuring that financial policies are framed in such a way as to make the region a competitive location for international investment. Over the past two decades CARICOM countries have realized minimal success in attracting private capital inflows. In addition, countries such as Guyana, Jamaica and Trinidad and Tobago, have experienced significant outflows of both financial

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and human capital. The financing required to support an improvement in material living standards will be that much the greater, in light of the need for physical capital, as well as the need to restore and build up the stock of human capital. CARICOM countries are faced with a major challenge of mobilizing adequate levels of financing to meet investment needs. Success in this regard will be determined by their ability to create an environment conducive to attracting and retaining private capital from domestic and foreign sources. In this paper an attempt will be made to highlight the type of policy initiatives required for the creation of such an environment.

The first section of the paper will be devoted to an assessment of the magnitude of financial and human capital outflows from the three CARICOM countries, Guyana, Jamaica and Trinidad and Tobago, where such outflows are believed to have been significant over the course of the past two decades. In the second part of the paper, attention will be directed towards the requirements for the creation of an appropriate climate for the attraction and retention of capital.

The Magnitude of Capital Flight

As Cumby and Levich (1987) have pointed out, economic principles do not provide a guide to a unique or natural definition of capital flight. As a consequence, there is an unavoidable element of arbitrariness involved in an estimation procedure which might be used. The estimates, which are reported here, are based on a procedure used by the World Bank. Capital flight is measured as the difference between capital inflows in the form of increases in external debt and net private capital inflows, and the deficit on the current account and increases in official reserves. In this method, all recorded capital movements, supplying or using foreign exchange, would be exempted from the estimate of capital flight. In Table 1 estimates of capital flight for the three countries are reported for the period from 1976 to 1990.

The estimates reported in the table indicate that there were major outflows of capital from the three countries, between 1976 and 1986. In the case of Guyana, the heaviest outflows occurred between 1981 and 1986, when they amounted to more than US\$600 million. During this period, external public debt inclusive of arrears, increased by approximately US\$915 million. The estimate of capital outflows reported for Jamaica between 1981 and 1986, US\$837 million, was much higher than the US\$487 million for the period between 1976 and 1980. For both of these countries, there was a significant reversal in the direction of capital flows in the post 1986 period. Estimated outflows for Guyana were insignificant, while Jamaica experienced net inflows of approximately US\$380 million. Trinidad and Tobago, on the other hand, experienced heavy outflows throughout the decade of the eighties.

Table 1
Estimates of Capital Outflows¹ :
Guyana, Jamaica, Trinidad and Tobago (US\$ millions)

Country	1976-80	1981-86	1987-90	1976-86	1976-90
Guyana	124.2	645.7	31.7	769.9	801.6
Jamaica	486.7	837.1	-376.8	1323.8	747.0
Trinidad and Tobago	359.4	896.1	784.6	1255.5	2040.1

(-) Capital inflows.

¹The World Bank method amended by substituting net private capital movements for net direct investment.

Sources: Estimates for 1976 - 1986 (Bennett, 1991, p.293) Estimates for 1987 - 1990 calculated from IDB *Economic and Social Progress in Latin America*.

During this period there was a major expansion in the underground or informal economy in both Guyana and Jamaica. A significant part of this economic activity involved trading in imported consumer goods. These activities would not be reflected in official statistics. It has been estimated that the value of informal sector activity in both countries amounted to at least one third of that reported for the formal sector (See Thomas, 1989 and Bennett, 1994a).

The deficits on current account reported in official statistics, on which the estimates reported in the table were based, would likely be lower than the true deficits. Consequently, our estimates of capital flight for those countries might be overstated by a significant margin. Nevertheless, although a part of these funds might have re-entered the respective economies, they would have been used primarily to support consumption as opposed to investment.

Although the technique used is subject to a number of shortcomings, it is our contention that even allowing for possible upward biases in the estimates, there were significant capital outflows from the region over the past two decades. Further evidence of the significance of these outflows can be found in sources such as the reports on non resident holdings of bank deposits in off-shore financial centres, reported in the IMF publication *International Financial Statistics*. For example, between 1981 and 1986, the value of such deposits held by Guyanese residents increased from US\$70 million to US\$120 million. In the case of Jamaican residents, the value of deposits increased from US\$360 million over the corresponding period (IMF *International Financial Statistics Yearbook*, 1994).

Human Capital Outflows

Emigration of individuals falling within the occupational categories of managerial, professional, technical and skilled workers over the period from 1976 to 1986, accounted for a significant share of graduates from tertiary institutions in the three coun-

tries (Bennett, 1991). Estimates of the number of emigrants falling within these categories, as well as the costs to the respective countries associated with the emigration, is set out in *Table 2*.

Table 2
Total Emigration to North America and the
Replacement Costs (1976 - 1986)

Country/Occupational Group	Emigrants	Costs ¹ (US\$000's)
Guyana:		
Managerial, professional, technical & skilled workers	14,421	94,729
Jamaica:		
Managerial, professional, technical & skilled workers	38,582	630,802
Trinidad & Tobago:		
Managerial, professional, technical & skilled workers	8,795	177,607

¹The procedure adopted for estimating replacement costs is set out in Bennett (1991, pp. 297-299).

Source: Bennett, 1991, Tables 18.2 and 18.3.

Jamaica had the largest number of emigrants in these categories. The total cost of replacing these emigrants would be US\$630.8 million. Given the earlier estimates of financial outflows, the inclusion of human capital would raise the value of outflows by at least 40 percent. Alternatively, the cost would amount to 26 percent of GDP for 1986. In the case of Guyana, which ranked second in terms of total number of emigrants, the total replacement cost was US\$95 million. This represented 15 percent of estimated capital outflows for the period and 43 per-

cent of the value of GDP in 1986. The replacement cost of US\$ 178 million also amounted to 15 percent of the estimated value of financial outflows between 1976 and 1986 in Trinidad and Tobago and approximately 4 percent of GDP in 1986.

The Causes of Capital Flight

It is usually the case that when consideration is given to the causes of capital flight, attention is directed to differentials in rates of return to capital in the home country, as opposed to foreign centres. The following factors are most often cited as accounting for the differentials. The existence of financial repression, as reflected in interest ceilings on loans and deposits, might result in a situation where the real rates of return on financial assets could be zero or negative. In all of the countries in the region, commercial banks are the dominant financial institutions. A question might then be raised as to whether the regulatory framework within which the banks operate led to low or negative rates of return on bank deposits. In all of the countries savings deposit rates were regulated during the decade of the eighties. It was reported above that the highest capital outflows occurred in Guyana and Jamaica, between 1980 and 1986. During this period, the real rate of interest on deposits were negative in Guyana in every year except for 1986. In Jamaica, interest rates were negative in all but two years during the period. There was a similar pattern of negative real rates of interest in Trinidad. In *Table 3*, it can be seen that Barbados was the only country in which the real deposit rates were positive in most years. It is also interesting to note that real deposit rates in Jamaica were positive after 1985, a period during which there appeared to be net inflows.

Another factor which is held to be a major determinant of capital flight is the potential risk of loss of asset value. This risk is related to such factors as unanticipated inflation and currency devaluation, the imposition of limits on the convertibility of domestic assets, confiscatory taxation, as well as the possibility of outright confiscation of assets (Williamson and Lessard, 1987).

Table 3
Real Interest Rates on Deposits:
Barbados, Guyana, Jamaica, Trinidad and Tobago

Year	Barbados	Guyana	Jamaica	Trinidad/ Tobago
1980	-9.2	-1.7	-18.5	-11.2
1981	-7.1	-12.2	-2.7	-7.7
1982	-1.4	-7.2	4.2	-5.5
1983	1.4	-0.2	1.3	-8.4
1984	1.4	-12.2	-12.6	-6.6
1985	1.5	-2.1	-7.1	-1.3
1986	2.8	5.1	2.3	-1.7
1987	0.4	-15.7	8.3	-4.7
1988	-0.5	-27.0	6.5	0.9
1989	-1.3	..	2.2	-8.3
1990	3.2	..	1.7	-5.5

Interest rates on time deposits for Barbados, Guyana and Jamaica.
 Weighted average deposit rate for Trinidad and Tobago.

Sources: Central Bank of Barbados, *Annual Statistical Digest*; Bank of Guyana, *Statistical Bulletin*; Bank of Jamaica, *Statistical Digest*; Central Bank of Trinidad and Tobago, *Quarterly Statistical Digest*.

Capital flight will occur when the risk adjusted rate of return on assets is not sufficient to encourage residents of the country to hold domestic financial assets. The individual's perception of the degree of risk will be inversely related to confidence in the government's ability to manage the economy effectively. Most empirical studies on the determinants of capital flight in countries such as Argentina, Mexico, Uruguay and Venezuela, have found that the factor of overwhelming importance is a perception of

economic mismanagement by government (Williamson and Lessard, 1987, p. 25).

A review of the conduct of economic policy by governments of countries in the Caribbean, where there appeared to be significant capital flight, would suggest that economic mismanagement was likely a major factor contributing to capital flight. The annual government deficit was, approximately, 40 percent of G.D.P. in Guyana during the period from 1980 to 1984, and remained around the 50 percent level over the next three years. In Jamaica, the deficit was never less than 12 percent of G.D.P., between 1977 and 1983 (*IDB Economic and Social Progress in Latin America, 1993*; *I.M.F. International Financial Statistics: Supplement on Government Finances, no. 11, 1986*). Furthermore, there was the repeated failure of both countries to complete successfully any of the financial support packages negotiated with the I.M.F. These are the kinds of factors which would help sustain an impression in the mind of the public that the government was incapable of managing the economy.

In summary, it would appear that in all of the countries there was evidence of the types of deficiencies in the administration and conduct of policy likely to create an atmosphere conducive to facilitating capital outflows. In the next section, we turn to a consideration of the policy initiatives required to create an appropriate environment for the attraction and retention of capital.

Policy Initiatives

If capital flight is to be avoided and CARICOM countries are to have success in attracting international investment capital, the following basic condition must hold. The risk adjusted rate of return on investments in the region must be comparable to that in alternative centres. Since the risk adjusted rate of return will be based on investor expectations, the issue as to what constitutes appropriate policy initiatives will be determined on the basis of their likely impact on expectations.

As indicated in the previous section, it is our contention that a major factor contributing to capital flight was a lack of confidence in government economic management and a commensurate concern about security in value of domestic assets. Governments in the region have all taken steps to address some of the glaring policy deficiencies which helped to sustain a climate of uncertainty and instability in earlier periods. For example, they have taken steps to reduce the level of the fiscal deficit and to transfer to the private sector a wide range of services which had previously been provided by government. These general initiatives have been associated with a commitment to creating an economic environment in which market forces would be allowed to play a dominant role. These are important initiatives; however, their effectiveness will depend on evidence that these initiatives are being pursued in a consistent fashion.

It is our contention that the primary determinant of whether the region will be able to attract and retain capital is the extent to which assets held in the region are easily convertible. Governments in the region will have to face up to the fact that the retention of limits on the convertibility of assets will not be conducive to creating an appropriate investment climate. A significant first step in this regard would be the abolition or significant modification of controls over the purchase and sale of foreign exchange. The changes in financial flows following the decision of the Jamaican Government to abolish exchange controls in September, 1991, are indicative of the importance of an assurance of convertibility on behaviour.

In 1984 the Jamaican government, in an effort to encourage a repatriation of funds, had introduced legislation permitting residents to hold local bank accounts denominated in foreign currency. These accounts could be opened by transferring funds from abroad through the banking system. All earnings on these deposits would be credited in foreign currency. Earnings on these accounts were not subject to tax. This initiative met with only limited success. In 1991, at the time of the decision to abolish exchange controls, balances in these accounts amounted to

US\$74.5 million. With the abolition of exchange controls in September 1991, residents were allowed to hold foreign currency accounts, but earnings on these accounts would be taxable. In the period of almost three years following the abolition of exchange controls, cumulative deposits to these accounts, as shown in *Table 4*, have exceeded US\$6,000 million and balances in these accounts, at the end of July 1994, were in excess of US\$500 million. The average monthly deposit was slightly in excess of US\$100 million in 1992, was almost US\$200 million in 1993 and for the first seven months of 1994, US\$300 million. The difference in the public response to these accounts is a strong indicator of the importance of convertibility. The rapid turnover of the accounts suggests a willingness on the part of residents to repatriate funds which were used to support economic activity.

Table 4
Transactions in Taxable Foreign Currency Accounts
(US\$ millions)

Year	Deposits	With- drawals	Balance
1991 (Sept.-Dec.)	248.90	202.35	46.55
1992	1412.97	1238.62	220.90
1993	2253.98	2057.23	417.65
1994 (Jan.-July)	2142.17	2033.00	526.82
Total	6058.02	5531.20	

Source: Bank of Jamaica, *Economic Statistics*, Various Issues.

A number of empirical studies on the causes of capital flight, e.g. Cuddington (1986), have cited exchange rate insta-

bility as a factor of importance. In open economies, such as those in CARICOM, movements in the exchange rate will be a major determinant of changes in the inflation rate. Expected currency depreciation will heighten expectations of losses in the value of assets and encourage capital outflows. This is of particular significance to financial assets denominated in CARICOM currencies, where there are no opportunities to hedge against exchange risk, as is the case with assets denominated in currencies of the major industrial countries. Expectations of currency depreciation are related to the extent to which there is evidence that the currency is overvalued. Evidence of overvaluation of the currency is held to exist when a country operates on the basis of a fixed exchange rate regime combined with the application of rigid exchange controls.

These CARICOM countries have over the past decade decided to adopt a market-based exchange rate regime in an effort to avoid overvaluation of the currency and stable exchange rates. However, the stability of the exchange rate under any exchange rate regime will be related to stability in the conduct of overall economic policy. In the CARICOM context, this will require government restraint in using the Central Bank to finance fiscal deficits and a determination to exercise control over the expansion of credit to the private sector. In other words, the adoption of a market-based exchange rate regime will not free government from the responsibility for developing an effective policy for managing the exchange rate. The Jamaican experience with its market-based regime, since 1991, lends strong support to this argument. The periods of greatest instability in the market, marked by a rapid depreciation in the exchange rate, the first quarter of 1992 and the third and fourth quarters of 1993, were both occasions where there was a sharp expansion in credit to the public and private sector (Bennett, 1994b). The relative stability of the currency over the past several months, as well as the relative stability of the Guyana and Trinidad and Tobago dollar, is indicative of the policy of fiscal restraint pursued by the respective governments in recent periods.

To this point we have devoted attention to those policy initiatives which might work to reduce the perception of the level of risk associated with holding domestic assets and in so doing might work to reduce capital flight. However, as was indicated earlier, the success likely to be realized in limiting capital outflows and in attracting inflows in the contemporary period will depend on the extent to which investors believe that there is an attractive climate for investment in the region. This leads us into a consideration of what would appear to be decisive factors which influence the perception of the climate for investment in any country. In a very general way, one might state that an assessment of the investment climate is directly related to the expected profitability of investments. Although expected profitability is important, there are other factors which will work to attract or retain investment. These factors along with profitability help in establishing the investment climate.

In so far as the question of profitability is concerned, it must be borne in mind that the knowledge as to what the potential for earnings might be requires information which might not be readily available. A well recognized and accepted role for government in this regard is in the collection and dissemination of such information. Governments all over the world do not wait for investors to come to them, but actively seek out investment and provide information designed to show the attractive opportunities for earning profits in their jurisdiction. All governments in the region do carry out such promotional activity. However, in order to cope with the increasingly sophisticated approaches being adopted, the costs of competing will grow and constitute a real burden on the financial resources of regional governments. This might be one area of activity where a pooling of resources on a regional basis might be the only way of meeting competition in this area, given the budgetary constraints of governments.

Apart from the matter of providing the information, there is the question of the role which government might play in influencing costs and earnings. In this regard one can think in terms of

some policy initiatives which would have an immediate impact and others which would be longer term in their effect. In so far as the former are concerned, one might point to the need to ensure that taxes are not out of line with those in other jurisdictions. In addition, the customs and labour standards regimes should not place investors in the domestic market at a disadvantage. A factor which will have a continuing influence is the quality of the labour force. This quality will be determined by the willingness on the part of governments to commit adequate resources to education and training.

The observations above relate more directly to investments in real assets. In so far as investment in financial assets are concerned, the potential role for government might be identified as follows. A commitment to monetary management geared towards the maintenance of price stability would help to ensure a positive real rate of return on financial assets. Beyond that the attraction and retention of investments in financial assets will be directly related to the range of assets available. This will most likely be assured through deregulation of the financial sector to provide maximum opportunity for innovative activity. Any approach to deregulation must be cautioned by the susceptibility of this sector to fraudulent activity and the need for appropriate safeguards.

An issue which is often raised by business people when evaluating the investment climate is the regulatory environment. Indeed, it is often the case that, in their promotional efforts, many jurisdictions point to the minimal number of restrictions in the way of receiving approval for investment and the so called 'one stop' shopping approach in securing official approval. Although CARICOM governments have taken some steps in this direction, there is a need for more to be done in light of complaints which are still heard about bureaucratic delays.

To this point we have discussed the issue of the importance of creating an attractive investment climate without addressing directly the role of the market size in affecting perceptions.

With an increase in the growth of regional economic groupings in recent years reference is often made to the favourable effect such a development can have in attracting investment flows. Given the small size of individual CARICOM economies, it is clear that in this regard they will be at a decided disadvantage. In order to overcome this disadvantage, CARICOM countries should pursue the following strategies.

Every effort should be made to speed up the process of Caribbean integration to permit the free flow of commodities, services and capital between members of the Caribbean Community. The establishment of a common convertible currency for the region and the integration of capital markets would widen the range of investment opportunities open to both residents and non-residents, while minimizing uncertainties with respect to the future value of assets. This would work to attract capital inflows and reduce outflows.

Consideration should be given to an assessment of the prospects for CARICOM establishing free trade arrangements with some of the South American economic groupings, which appear to be likely centres of rapid growth, in the coming decades. CARICOM countries could, potentially, derive spin offs in a manner similar to that received by countries such as Malaysia and Thailand, which benefitted from the rapid economic advances in Korea, Taiwan and Singapore.

Thirdly, CARICOM should continue to negotiate for a reaffirmation and continuation of the existing preferential trading arrangements with Canada and the United States and actively support efforts geared towards the establishment of a hemispheric free trade zone.

Conclusions

The collapse of the Soviet empire, along with the slow economic recovery in the major industrial countries following the

recession of the early nineties, has created an environment of unprecedented competition for capital. Moreover, the integration of capital markets which has taken place over the past two decades has made it much easier to transfer financial assets from locations deemed to embody an unacceptable level of risk. Governments of countries which pursue unorthodox economic policies are likely to find themselves in a situation where they will not only experience difficulty in attracting investment, but will also be hard-pressed to prevent significant capital outflows.

The implications of these developments for CARICOM countries are that they have no alternative but to continue along the path of economic liberalization which they have been pursuing in recent years. This also means that there cannot be a blind reliance on market forces to resolve their economic difficulties. There is a vital role for governments to play in establishing an appropriate fiscal and regulatory framework conducive to facilitating the effective operation of an economy in this new global environment.

It is also the case that in this highly competitive environment, investors are prepared to include as part of the decision as to where to invest, what might be considered quality of life considerations. This would include such factors as the level of public safety, overall standards of public health and the range and diversity of cultural activities. CARICOM countries will have to be careful to ensure that, in so far as the first two factors are concerned, acceptable standards are maintained.

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Exchange Rate Liberalization and Foreign Portfolio Management: The Case of Trinidad and Tobago

Roopnarine Oumade Singh

Introduction

In April 1993, foreign exchange controls were abolished in Trinidad and Tobago and the Trinidad and Tobago dollar was floated. The decision to liberalize the exchange rate and float the currency came after more than two decades of the operation of a fixed exchange rate regime and the operation of fairly stringent foreign exchange controls, particularly in the latter part of the 1980s. The liberalization of exchange rate controls and the adoption of a floating rate mechanism formed part of the new economic paradigm adopted by Trinidad and Tobago. The cornerstone of this paradigm is the removal of bureaucratic controls on economic agents from and the exposure of the economy to the competitive forces operating at the international level.

The liberalization of the exchange rate created an environment that has increased, quite significantly, the risks faced by economic agents who hold financial assets or liabilities denominated in a foreign currency. This paper identifies and analyses the risks inherent in the new environment of exchange rate liberaliza-

tion and the techniques, strategies and products that may be used to manage these risks in the context of Trinidad and Tobago. It also attempts to draw policy conclusions for the development of risk management techniques in Trinidad and Tobago.

The paper is structured as follows. Section II presents an analysis of the experience to date of exchange rate liberalization in Trinidad and Tobago. Section III identifies the risks faced by economic agents under the new regime. Section IV analyses the strategies and techniques for foreign exchange risk management. The conclusion is presented in Section V.

SECTION II

The Trinidad & Tobago Experience with Floatation

With effect from April 13, 1993 Trinidad and Tobago moved from a fixed exchange rate system to a floating exchange rate system. Under the new system the exchange rate of the TT dollar *vis-a-vis* other currencies would be market determined and would be free to adjust, that is either appreciate or depreciate in response to changes in market conditions.

In an attempt to maintain exchange rate stability and prevent speculative attacks on the currency, certain broad parameters for the operation of the market were established by the authorized dealers in consultation with the Central Bank. One of the transitional measures established was that dealers would continue to sell foreign exchange for trade-related purposes and limit, on the basis of availability, sale of foreign exchange for investment purposes. This was done in order to give priority to the demand for foreign exchange for trade related activity and to reduce speculative pressures on the currency. As the market developed and US dollar liquidity improved, those transitional

measures that limited the availability of foreign exchange were removed.

The opening US dollar buying and selling rates on April 13, 1993 were TT\$5.60 and TT\$5.768 respectively. The opening US Dollar offer rate by authorised dealers reflected a depreciation of the TT dollar against the US Dollar of approximately 26% from the closing price of the previous trading day. The initial period of trading under the new system of rate determination was characterized by a very high level of stability; the weighted average buying and selling rates on the last trading day in May 1993 were 5.6119 and 5.7639, respectively. In large measure this stability was due to the success of the transitional measures put in place by authorized dealers at the inauguration of the system.

The initial period of the new regime was characterized by an appreciation in the exchange rate; the weighted average selling rate at the end of August 1993 was 5.6511, representing an appreciation of 2.1% from April 13, 1993. As the demand for foreign exchange increased towards the end of 1993 as part of the normal trade cycle the exchange rate of the TT dollar against the US dollar depreciated. At the end of December 1993 the weighted average selling rate was 5.8779 reflecting an overall depreciation of 1.8% from April 1993. As at August 30, 1994 the weighted average selling rate of the TT dollar against the US dollar was 5.9345; this represents an overall depreciation of 2.8% from the rate existing on April 13, 1993. Movements in the exchange rate of the TT dollar against the US Dollar are presented in Figure 1.

For the period April 13 to December 31, 1993, the sales by authorised dealers amounted to US\$900 million; purchases by the system amounted to US\$855 million, yielding an excess of sales over purchases of US\$45 million. This deficit position was covered through the holdings of commercial banks and support from the Central Bank. Table 1 presents data on the monthly volume of US dollar transactions on the foreign exchange market and the net long or short position for the period April 13, 1993 to August 30, 1994.

FIGURE 1
Daily USS/TTS WTD. Average Buying and Selling Rates

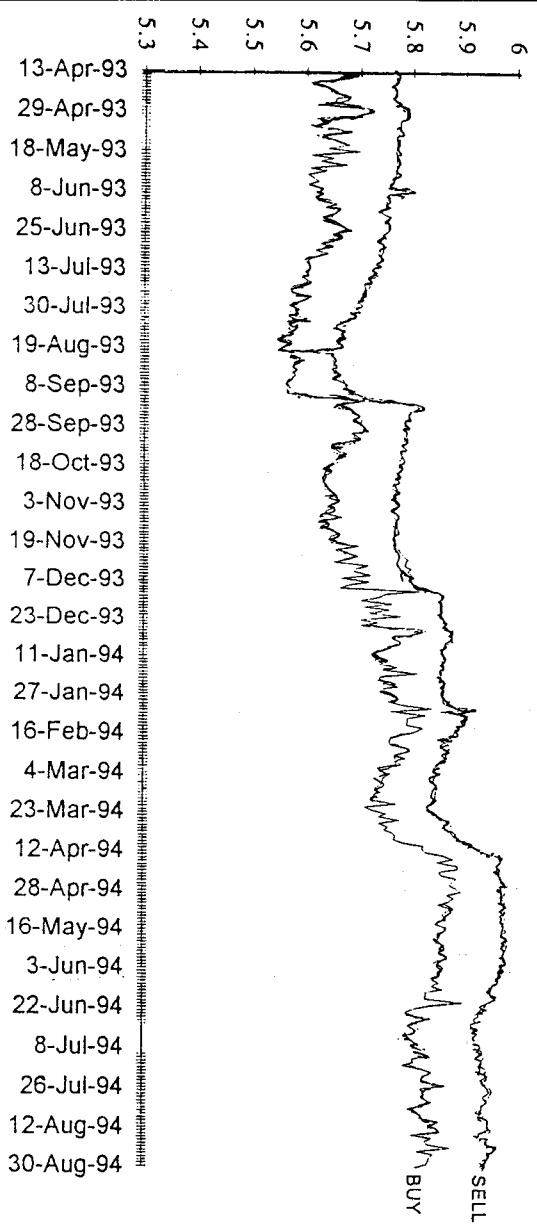


Table 1. Foreign Currency Purchases and Sales by Commercial Banks US\$ Millions

Date	Purchases from Public	Sales to Public	Net Sales to Public
April 1993	87.20	94.60	(7.40)
May 1993	110.00	114.00	(4.00)
June 1993	142.20	126.70	15.50
July 1993	86.50	89.20	(2.70)
August 1993	77.40	81.60	(4.20)
September 1993	84.10	89.40	(5.30)
October 1993	71.70	84.70	(13.00)
November 1993	90.80	116.30	(25.50)
December 1993	106.70	105.10	1.60
January 1994	69.70	69.80	(0.10)
February 1994	72.60	65.90	6.70
March 1994	70.00	99.10	(29.10)
April 1994	68.90	71.50	(2.60)
May 1994	65.20	75.60	(10.40)
June 1994	80.10	74.20	5.90
July 1994	80.10	86.20	(6.10)
August 1994	76.30	88.80	(12.50)
TOTAL	1439.50	1532.70	(93.20)

Simultaneous with the removal of foreign exchange controls in April of 1993, local residents were allowed to hold foreign currency deposits at local commercial banks. At the end of March 1993, foreign currency deposits held at local commercial banks amounted to approximately US \$50 million; at the end of August 1994, these balances totalled US \$211 million. Figure 2 presents data on the growth of foreign currency balances within

the domestic banking sector. As can be seen from the data, the liberalization of the foreign exchange market has resulted in a very rapid growth of foreign currency balances within the commercial banking system.

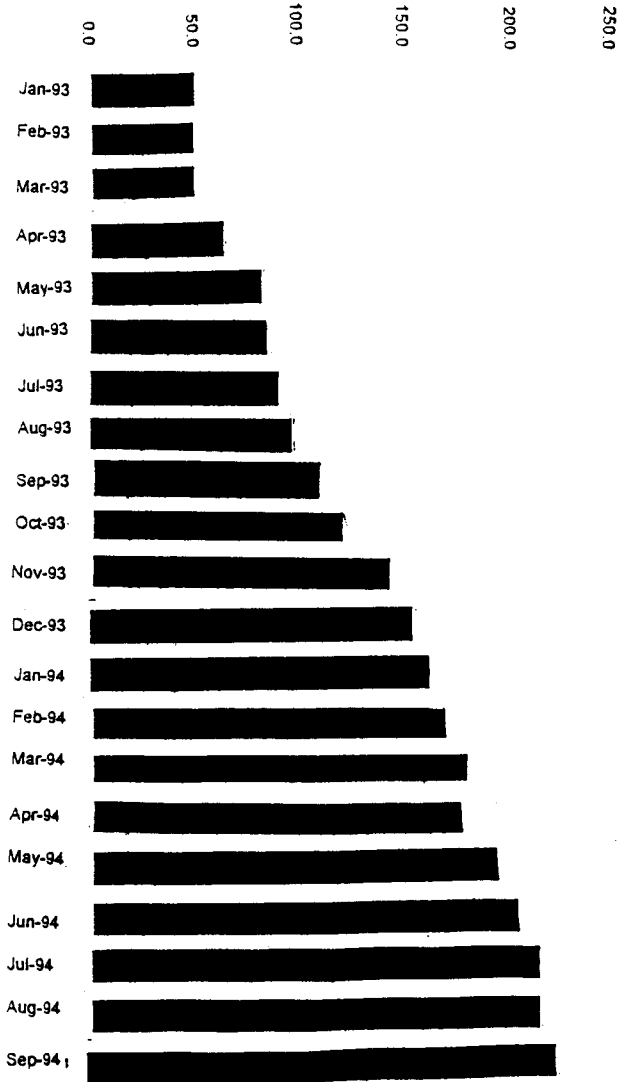
SECTION III

Foreign Exchange Exposure

A number of studies have dealt with the issue of foreign exchange exposure. Hekman (1985) developed a model of foreign exchange exposure defined as the sensitivity of an investment value in reference currency to changes in exchange rate forecasts; this sensitivity is because some share of the cashflows from the investments are denominated in foreign currency. Also, a share of cashflows denominated in a reference currency affected by future exchange rates will generate sensitivity. Kaufold and Smirlock (1986) measure uncertainty about the domestic currency value of a firm's position as a function of the duration of the cashflows and unanticipated changes in foreign interest and exchange rates. They assert that it may not be possible to completely eliminate net foreign exchange exposures of firms.

Adler and Dumas (1984) take a market approach to currency risk exposure. They reason that exposure to exchange risk is essentially the same as exposure to market risk. They propose that a portfolio's average exposure to exchange risk measured on a historical basis can be gauged by regressing its total dollar value on a vector of exchange rates. The resulting partial coefficients will represent the exposure to each currency. In principle, if the same relationships hold in the future, these exposures could be hedged. However, as exposures change over time it may be necessary to develop multiperiod hedging rules.

FIGURE 2
Foreign Currency Deposits



Having reviewed some of the empirical studies of foreign exchange exposure we now formally define foreign exchange exposure and analyse techniques, strategies and products for managing such exposure.

The exposure of a business firm to foreign exchange risk is determined by the pattern of its cash flows and asset stock positions, which in turn depend on the pattern of flow of future receipts and payments and the pattern of the firm's net monetary position. Monetary assets are those assets denominated in a fixed number of units of money such as cash, marketable securities and accounts receivable. Monetary liabilities are those liabilities expressed in fixed monetary terms such as accounts payable and notes payable.

A firm that is long in foreign currency would derive a gain from a depreciation in the exchange rate and a loss from an appreciation in the exchange rate. Conversely, a firm that is short in a foreign currency would derive a loss from a depreciation in the exchange rate and a gain from an appreciation in the rate. More formally, the effects of a net monetary position exposure may be formulated as follows:

$$\begin{aligned} C_p &= [(MA - ML)/X_0 - (MA - ML)/X_1] \cdot (1 - t) \\ &= (E_0 - E_1) (MA - ML) (1 - t) \\ &= NMP (E_0 - E_1) (1 - t) \end{aligned}$$

where

C_p = cost of net monetary position (NMP) due to exchange rate changes,

MA = monetary assets,

ML = monetary liabilities,

X_0 = exchange rate at the beginning period = $1/E_0$,

X_1 = exchange rate a period later = $1/E_1$,

t = tax rate,

The effects of a decline (i.e. an appreciation of the local currency) in foreign currency value are that a net monetary debtor gains and a net monetary creditor loses. On the other hand if there is an increase in foreign currency value (i.e. a depreciation of the local currency), a net monetary debtor loses and a net monetary creditor gains. Thus, unless payments and receipts in relation to the future net monetary position balance exactly the firm is exposed to fluctuations in the value of foreign currencies.

Ordinarily, the normal pattern of operations of a firm engaged in international trade may put such a firm in an exposed position that it can limit only by taking certain steps, all of which involve a cost. One strategy may be to rearrange the pattern of payments and the pattern of holdings of monetary assets and liabilities in foreign currencies so that the net exposure is zero. However, changes in the flow of receipts and payment on the holdings of such monetary assets and liabilities may represent departures from the firm's normal operations. Moreover, such departures from normal operations will involve costs. To compare such adjustments with alternative methods of risk management requires the determination of the costs of altering the patterns of cashflows or the net monetary position. In practice, this may turn out to be a complex undertaking for individual firms.

One measure of currency risk exposure is the volatility of exchange rate changes. To estimate the volatility of the exchange rate empirically, the exchange rate is observed at daily time intervals.

Define:

n = number of observations

E_i = exchange rate at the end of the i th interval
($i = 0, 1, \dots, n - 1$)

u_i = $\ln(E_i/E_{i-1})$

Since $E_i = E_{i-1} e^{u_i}$, u_i is the continuously compounded return (not annualized) in the i th interval for $i = 1, 2, \dots, n$. An unbiased estimate, s , of the standard deviation of the u_i 's is given by

$$s = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (u_i - \bar{u})^2}$$

or

$$s = \sqrt{\frac{1}{n-1} \sum_{i=1}^n u_i^2 - \frac{1}{n(n-1)} \left(\sum_{i=1}^n u_i \right)^2}$$

where \bar{u} is the mean of the u_i 's.

The standard error of this estimate can be shown to approximately $s^*/\sqrt{2n}$.

This measure of volatility has been calculated for the Trinidad and Tobago dollar against the United States Dollar, the Canadian Dollar, the Japanese Yen, the Pound Sterling, and the Deutsche Mark. The 'volatilities' were calculated for the period April 13, 1993 to August 30, 1994 and are presented in Table 2. Monthly estimates of volatility were derived and plotted for the major currencies. These are presented in Figures 3 to 10. These statistics provide evidence of high levels of volatility in exchange rate movements of the TT dollar against those of its major trading partners. Consequently, economic agents in Trinidad and Tobago

engaged in international trade transactions would be exposed to significant foreign exchange risk.

SECTION IV

Strategies for the Management of Currency Risk

One of the choices available to a firm facing foreign exchange risk exposure is to do nothing. This type of action reflects one of two possible attitudes by the firm with respect to risk: either it is not aware of the foreign exchange risk it faces or it has taken a reasoned view as to future currency movements. In principle, such a view would require the firm to develop information about and formulate expectations with respect to future exchange rates on the basis of current spot rates and other macroeconomic variables.

In the case of Trinidad and Tobago the majority of foreign exchange transactions are done on a spot basis. Having regard to the nascent nature of the TT market, this suggests that a large number of economic agents hold exposed positions. To the extent that this behaviour derives from a lack of awareness on the part of economic agents of the risks they face there is a need for a certain amount of education and dissemination of information in order to develop the expertise of economic agents to identify the risks they face in the liberalized foreign exchange environment. This would be useful for the development of a certain minimum level of sophistication among the various players in the market, the deepening of the money and capital markets, and ultimately, for the ability of all players in the market to more effectively manage their foreign exchange risk exposures.

Hedging Through the Money Markets

It may be possible to hedge a foreign exchange exposure through the use of the money markets. Consider a business entity with a three-month liability in a foreign currency. The company can borrow the local currency on the money market and purchase the present value of the foreign currency on the spot foreign exchange market. This amount is then invested at prevailing interest rates on the money markets and will equate the foreign liability amount due three months hence. The ability of firms to use this strategy would depend on their success in raising financing through the money markets. In the case of Trinidad and Tobago this is perhaps the most widely used technique of managing foreign exchange risk exposure. Locally, firms with US dollar liabilities generally draw on existing credit lines or use their own TT funds to purchase US dollars on the spot market. These US funds are then invested in short term instruments until they are required to meet the existing liability. In this way US dollar purchasers would have effectively covered their foreign exchange exposure. Generally, this technique is used not only for TT dollar liabilities, but is theoretically possible for liabilities incurred in any foreign currency.

Table 2
Volatility Estimates of Major Currencies Against the TT Dollar

	Buying Rate	Selling Rate
	%	%
United States Dollar	8.47	3.80
Canadian Dollar	9.9	2.6
Great Britain Pound	11.5	18.7
Deutsche Mark	20.0	18.3

Note: Estimates based on daily weighted average exchange rates published by the Central Bank.

FIGURE 3

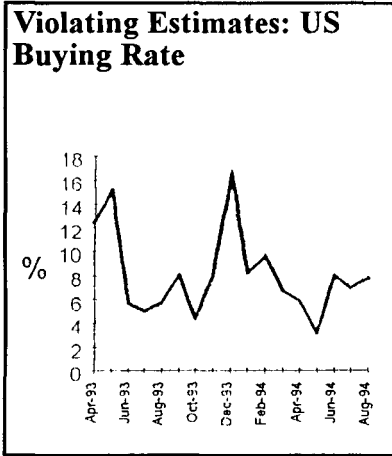


FIGURE 4

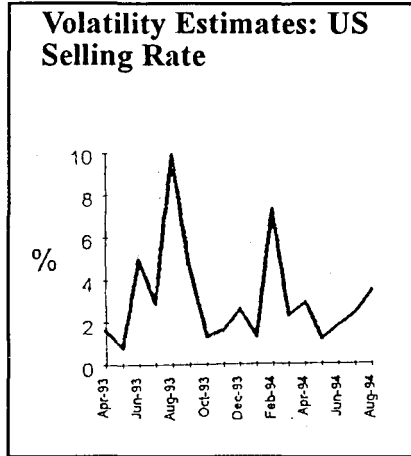


FIGURE 5

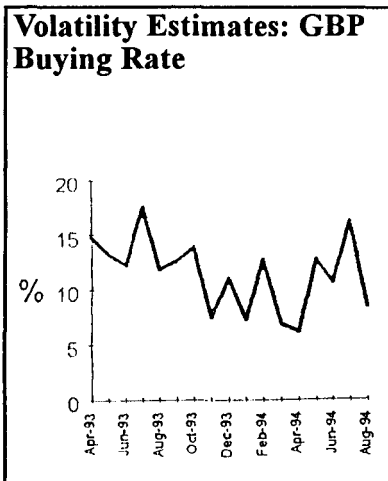


FIGURE 6

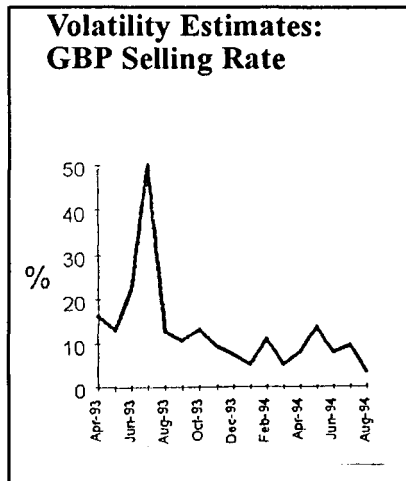


FIGURE 7

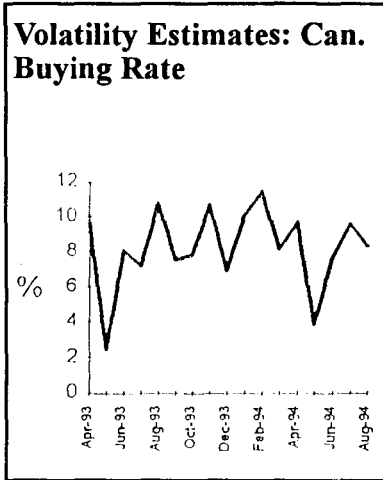


FIGURE 8

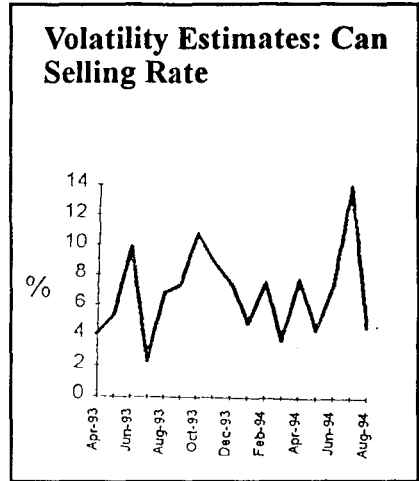


FIGURE 9

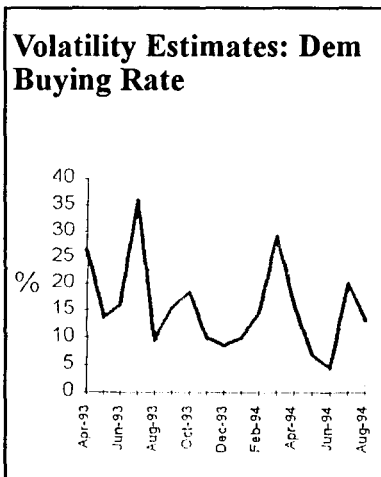
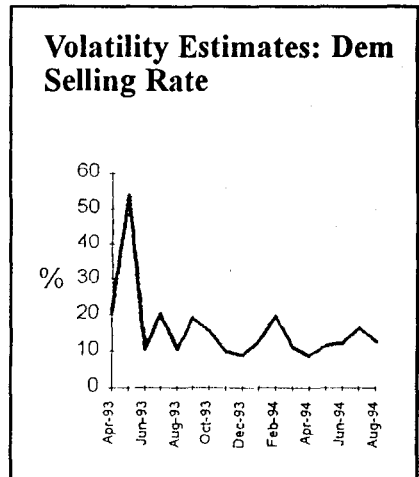


FIGURE 10



Foreign Exchange Forward Contracts

Economic agents seeking protection against foreign exchange risk exposure may potentially employ a number of alternative methods. One method of hedging is through the use of forward contracts. A foreign exchange forward contract is a particularly simple instrument. Basically, it is an agreement to buy (or sell) one currency against another at a specified price at a specified future date. Theoretically, a currency is priced in such a way that the customer should be indifferent between hedging through a forward contract or through the money market; that is, it is assumed that the forward parity theorem holds.

Using a forward contract to hedge a US dollar position is very simple. A firm with an inflow of US dollars in say, three months' time wishing to hedge against an appreciation in the exchange rate would enter into a short position (i.e. undertake to sell the foreign currency) in a three month forward contract with an authorised dealer. Alternatively, a firm requiring to settle a US dollar liability in say, three months' time would take a long position (i.e. contract to buy the foreign currency) in a US dollar forward contract.

In the case of Trinidad and Tobago the forward market is in a very nascent stage. Most of the commercial banks operating in Trinidad and Tobago are quoting forward prices for selling or buying US dollars against the Trinidad and Tobago dollar. However, at present, there is no interbank forward market in US dollars. Individual banks entering into forward contracts with their customers would do so from their own forward book and would not be able to manage their positions by entering into offsetting forward contracts with other banks. As a result the forward market is very thin with wide divergences in quoted swap points. One of the institutional features that may add liquidity to the forward market is the development of an interbank forward market.

Currency Futures

Another risk management product available for hedging currency exposure is currency futures. Futures contracts are standardized agreements to buy or sell a specific commodity at a specific time and place in the future, at a price established through open outcry in a central regulated marketplace.

A financial futures contract is a contract to deliver, or take delivery of, a financial instrument at a future date. Foreign currency futures are available on organized exchanges such as the Chicago Mercantile Exchange and the London International Financial Futures Exchange for specified contract amounts, with specified delivery dates. For example, the Chicago Mercantile Exchange contract for Great Britain Pounds is for GBP62,500, with contracts for March, June, September and December. Delivery date is the third Wednesday of the contract month, and delivery is made by payment of Great Britain Pounds against dollars paid by the buyer of the contract. The major contracts traded are on British pounds, Canadian dollars, Japanese Yen, Swiss Francs, West German marks, French Francs and the European Currency Unit.

In general, hedging with currency futures simply involves taking a futures position that will generate profits equal to the losses associated with an adverse spot exchange rate move. Two different cases exist. A long hedge, i.e. buying futures contracts, protects against a rise in a foreign currency value and a short hedge, i.e. selling futures contracts, protects against a decline in a foreign currency value.

A long hedge would be used by an entity that has US dollars but a foreign currency liability, for example, by a borrower who generates US Dollar cash flows but has incurred an obligation in a foreign currency. A short hedge would be used by an entity that generates US dollar cash flows but has a receivable denominated in a foreign currency. This hedge would be appro-

priate when a fixed amount of foreign currency is expected to translate to fewer US Dollars at some future settlement date.

Currency Options

While a forward foreign exchange contract may be used to hedge currency risk, it may be restrictive in the sense that it is a binding agreement locking the company into a currency transaction at a fixed rate. It therefore prevents a company from taking advantage of spot exchange rate movements favourable to its underlying exposure. A more flexible risk management instrument is the currency option. A currency option gives the holder the right, but not the obligation, to buy or sell a specific amount of currency at a specific rate on or before a specific future date.

The currency option provides the corporate treasurer with an instrument which can insure his company against adverse foreign exchange movements. If the exchange rates move in favour of the company's underlying foreign exchange position, the currency option will not be used and the company will take advantage of this favourable movement by transacting in the spot foreign exchange market. The company would be required to pay a premium for the privilege of being able to buy or sell the currency without a commitment to do so.

There are two basic types of currency options. A call option gives the holder the right to buy a specified amount of the underlying currency at the specified price during a specified time. A put option gives the holder the right to sell a specified amount of the underlying currency at a specified price during a specified period. The specified price in the option contract is known as the exercise or strike price. The last day in which the option may be exercised is called the expiry date or the maturity date. Currency options may be described as being American or European. Under an American option, the holder of the option has the right to exercise this option at any time before maturity. European options may only be exercised at the time of expiration.

The payoff from a long position in a European option may be characterized as follows. If X is the exercise price and S_T is the final price of the underlying currency, the payoff to a holder of a European call option is $\text{Max} [S_T - X, 0] - c(t)$ where $c(t)$ is the option premium. This reflects the fact that the option will be exercised if $S_T > X$ and will not be exercised if $S_T < X$.

The use of currency options to hedge against exchange rate risk may be illustrated as follows. Suppose a pension fund manager is due to receive JPY 10 million in 3 months' time and the JPY/USD spot exchange rate is JPY 100 = USD 1. If the dollar appreciates in value against the Yen then the fund manager will receive less US dollars on conversion in 3 months' time. He can hedge this risk by buying a USD call with a strike price of say JPY 101 = USD1. If at maturity the spot selling rate of JPY against the USD is less than 101, the fund manager will sell his yen in the spot market; if, however, the spot selling rate is greater than 101, he will exercise his option. The net effect is that the fund manager would have guaranteed the fund a rate of at least JPY 101 against the USD.

In the case of Trinidad and Tobago, currency options are not normally available for TT dollars against US dollars. The limiting factor here is the lack of depth or liquidity in this market.

SECTION V

Conclusion

The liberalization of the foreign exchange market in April 1993 has significantly increased the currency risk exposure faced by economic entities. The overall depreciation of the TT dollar against the US dollar for the period April 13, 1993 to August 30, 1994 was 2.8%. While this suggests relative stability of the ex-

change rate, there have been substantial daily fluctuations in the exchange rate of the TT dollar against major currencies, in particular the US dollar, the Canadian dollar, the Great Britain pound and the Deutsche mark. As a result of this volatility in the rates, economic agents face both transaction and translation exposure.

A number of risk management products have been identified as being potentially useful for managing foreign exchange risk. These include hedging through the money markets, the use of forward contracts, futures contracts and currency options. The techniques most widely used locally are hedging through the money markets and forward contracts. As the market develops it can be expected that more sophisticated techniques would be employed in the management of currency exposure.

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Section 2

Determinants of Savings and Investment in the Caribbean

Savings and Investment in the Commonwealth Caribbean: Empirical Evidence and Policy

Augustine Nelson

Introduction

Poor economic performances throughout the Commonwealth Caribbean have been attributed to insufficient investment in new activities. It is the low saving rates that are generally assumed to be the factor hindering investment, ultimately leading to low rates of economic growth. Acceleration of the saving and investment rates therefore constitute an essential pre-condition for realizing better Caribbean economic performances. The ability to influence the savings and investment variables assumes critical importance. This requires an identification of the determinants of savings and investment to facilitate the formulation and implementation of effective policies. A growing body of empirical studies examining saving and investment behaviour in Caribbean economies have sought to identify savings and investment determinants.

This study surveys the empirical studies seeking to isolate the basic findings on saving and investment determinants in Caribbean economies and to evaluate the policy relevance. It also examines the direct investment component of foreign savings, not-

ing the implications of international economic developments and assessing the efficacy of Caribbean investment incentive regimes.

The study first reviews Commonwealth Caribbean savings and investment trends over the decade of the 1980's. Secondly, the empirical studies of saving behaviour are examined on a country basis and the implications for savings policy explored. Thirdly, the savings and investment nexus is examined and the notion of a shortage of investment projects explored. Fourthly, the empirical studies of investment behaviour are examined, comparisons are made with select empirical findings for a non-Caribbean high growth economy and policy implications are explored. Finally, issues relating to foreign direct investment are examined and the implications of international economic development for investment incentives regimes scrutinized. A summary of the main policy conclusions ends the study.

TRENDS IN INVESTMENT AND SAVING

Investments

The ratio of gross investment¹ to GDP over the period 1981-92 appeared to have trended upwards for Belize, Jamaica and Guyana. Table 1 reveals that the gross investment ratio of Belize increased from 20 percent in the early 80's to near 30% in the early 90's. After an initial decline from 30 percent in 1981 to 20 percent in 1985, the ratio for Guyana increased to 35 percent and higher by the early 90's. Starting from around 20 percent in the early 80's, the gross investment ratio climbed to a near 27 percent by the early 90's in the case of Jamaica. The gross investment ratio displayed opposite trends for Barbados and Trinidad. In both cases, starting from 27 percent in 1981, the gross investment ratio fell to under 20 percent, reaching 8.5 percent and 18 percent for Barbados and Trinidad respectively in 1992. However, the Bahamian gross investment ratio appeared relatively stable, around 20 percent, throughout the period.

The gross investment ratios of the OECS countries initially declined in the early 80's, increased throughout the mid-80's and subsequently declined over the early 90's. The only diverging patterns were displayed by Dominica and St. Vincent. In both cases, the gross investment ratio declined and later increased, finally steadying around the initial values in the early 90's.

The average gross investment ratio over the 1981-92 period (see Table 3) for Belize, Guyana and the OECS countries, with the exception of St. Lucia, varied between 28 percent and 44 percent. The average for Barbados, The Bahamas, Jamaica, Trinidad and Tobago and St. Lucia varied between 17 percent and 25 percent. The OECS countries had the highest average gross investment ratio, some 30 percent and higher.

Domestic Savings

The domestic savings to GDP ratios displayed upward movements by the second half of the 80's for the bulk of Caribbean countries (see Table 2). The savings ratio for Belize increased from under 10% in the early 80's to around 20% and higher over the second half of the 80's and early 90's. Guyana for the same period moved from 13 percent and under to 25 percent and over, while Jamaica's ratio moved from 16 percent and under to 20 percent and over. The OECS countries displayed movements from negative savings ratios in some cases and ratios mostly less than 10 percent to positive ratios mostly greater than 10 percent over the same periods. In the case of the Bahamas, the savings ratio declined from 30 percent and over, in the early 80's, to under 13 percent in the late 80's and early 90's. Trinidad's savings ratio registered a decline in the early 80's and subsequently tended to alternate yearly without any pronounced trend. A slight increase occurred towards 1985 in the Barbadian savings ratio, followed by fluctuating decline up to 1991 and a sharp increase in 1992.

TABLE 1. INVESTMENT RATIOS¹ 1981-1992

Country	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Barbados	27.0	22.6	19.9	16.2	15.5	16.0	16.0	17.5	19.1	18.8	16.8	8.5
The Bahamas	20.5	21.0	17.7	19.1	21.1	20.9	22.7	20.9	24.1	22.2	20.5	20.9
Belize	20.5	19.5	27.6	24.6	26.4	29.7	29.4	24.8	34.1	30.7	32.1	29.8
Guyana	33.2	26.3	26.9	22.9	20.9	26.4	33.4	21.5	34.2	42.3	35.3	37.6
Jamaica	20.3	20.9	22.2	23.1	25.3	18.5	22.3	25.7	28.8	27.9	27.3	28.5
Trinidad & Tobago	27.6	28.2	26.9	21.7	21.4	23.1	19.3	13.0	19.2	16.5	18.2	10.0
Antigua & Barbuda	43.4	39.4	20.4	23.6	27.8	35.7	45.8	39.7	41.4	32.2	36.6	35.0
Dominica	33.9	31.0	28.1	36.8	28.5	22.3	23.2	31.1	41.2	40.8	31.6	33.0
Grenada	45.2	44.7	40.2	29.7	29.5	33.2	36.9	37.4	38.5	42.0	43.6	34.5
Montserrat	45.3	39.2	29.2	26.2	34.3	42.3	38.4	43.7	60.7	70.6	46.1	41.4
St. Kitts & Nevis	30.1	34.0	37.1	30.2	30.3	27.3	33.6	55.9	58.2	55.2	42.7	40.1
St. Lucia	34.2	29.1	18.8	19.5	21.0	21.2	20.7	25.0	29.1	25.8	25.5	24.0
St. Vincent & the Grenadines	32.7	28.4	24.7	27.9	28.3	29.6	32.5	31.0	29.4	31.7	31.3	31.2

Notes: ¹Gross Domestic Investment to Gross Domestic Product (Current Market Prices).

Source: Caribbean Development Bank, *Social and Economic Indicators*, 1992.

TABLE 2. DOMESTIC SAVINGS RATIOS¹ 1981-1992

Country	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Barbados	17.7	20.0	21.1	21.0	23.1	18.3	16.3	18.0	19.1	16.2	13.8	26.1
The Bahamas	43.3	37.9	31.2	30.8	35.7	36.5	53.5	41.9	9.8	12.2	8.6	11.2
Belize	4.1	-1.8	4.3	15.1	25.8	20.5	25.2	27.0	26.3	37.6	21.9	20.3
Guyana	12.8	9.3	6.9	13.0	10.6	15.5	20.5	16.8	25.6	25.5	33.0	34.6
Jamaica	10.0	9.3	10.2	16.4	15.1	20.6	22.6	21.2	19.3	23.8	26.5	30.8
Trinidad & Tobago	36.2	22.1	15.8	22.4	22.9	14.5	20.7	17.9	24.5	29.5	21.8	23.2
Antigua & Barbuda	16.5	26.7	25.5	11.7	10.2	9.8	18.3	25.7	28.6	29.3	34.6	29.6
Dominica	-10.2	2.6	8.7	4.1	5.1	13.5	11.2	15.3	7.7	12.3	11.5	14.0
Grenada	-3.8	-1.2	5.2	0.9	1.0	9.5	12.4	16.4	14.2	18.0	17.4	12.9
Montserrat	-23.2	-21.5	-17.2	-10.5	-5.6	-1.7	5.8	13.5	12.3	16.5	5.4	8.4
St. Kitts & Nevis	1.0	3.2	-7.2	2.2	7.8	10.6	12.1	29.8	29.2	22.6	20.7	26.7
St. Lucia	0.5	6.5	12.4	8.9	12.7	14.2	10.9	18.6	11.6	14.2	13.1	13.6
St. Vincent & the Grenadines	0.7	-1.7	0.5	14.0	22.5	22.4	14.7	22.5	10.4	19.6	10.4	16.2

Notes: ¹Ratio of Domestic Savings to Gross Domestic Product (Current Market Prices).
Domestic Savings = Gross Domestic Product - Consumption Expenditure

Source: Caribbean Development Bank, *Social and Economic Indicators*, 1992.

The average domestic savings ratio for the period 1981-92 was under 13 percent for the OECS countries, with the exception of Antigua and Barbuda whose ratio stood at 22 percent. In contrast the average savings ratio for Barbados, Belize, Guyana and Jamaica stood near 20 percent, while Trinidad's ratio was 24 percent and The Bahamas had an average ratio of 28 percent. Caribbean savings performance, throughout the 80's, can be characterized as inadequate, given savings ratios of less than 20 percent for 10 out of 13 countries.² Further, domestic savings was estimated as a residual from national income accounts; to a large extent such estimates may overstate actual savings.

Foreign Savings

A comparison between realized average domestic investment and domestic savings, as percentages of gross domestic product, vividly reveals inadequate Caribbean savings performances. In Table 3 the excess of realized domestic investment over domestic savings is starkly evident. For example, Jamaica possessed the smallest excess with an average domestic investment ratio that was 22 percent larger than its average domestic savings ratio. As such, Caribbean countries depended heavily on foreign savings to finance investment and to engender associated economic growth throughout the 80's. The Bahamas, Barbados and Trinidad proved exceptions, with mean realized investment ratios being 33 percent, 8 percent and 15 percent less than mean domestic savings ratios respectively, indicating net capital outflows. Heavy debt servicing obligations were undoubtedly a major contributor to these bouts of capital outflows.

Over the decade of the 80's the gross investment ratio for Caribbean countries demonstrated possible sustained upward movements only for Belize, Jamaica and Guyana, though it was mainly in the second half of the 80's that Guyana's trend swung upwards. For most Caribbean countries the trend headed downwards, held steady or followed a sequence of initial decline, then increase, and final decline or steady by the early 90's. The

domestic savings ratio displayed upward movements with the possible exception of The Bahamas, Trinidad and Barbados, increasing from negative values in the early 80's in the case of some OECS countries.

TABLE 3. PERIOD-AVERAGE INVESTMENT AND SAVINGS RATES 1981-1992 (% GDP)

Country	Investment	Domestic Savings
Barbados	17.8	19.2
The Bahamas	21.0	27.9
Belize	28.3	18.8
Guyana	30.1	18.7
Jamaica	24.2	18.8
Trinidad and Tobago	21.1	24.3
Antigua & Barbuda	35.1	22.2
Dominica	31.8	8.0
Grenada	37.9	8.6
Montserrat	43.1	-1.4
St. Kitts/Nevis	39.5	13.2
St. Lucia	24.5	11.4
St. Vincent & The Grenadines	29.9	12.7

Source: Calculated from Tables 1 and 2.

A clear dependence on foreign savings surfaced when average realized domestic investment and savings ratios were compared. In the context of recent developments in international financial markets that significantly constrain foreign savings inflows into LDC's, (see Bourne 1988, a), Caribbean economic policy must confront the challenge of accelerating domestic savings rates while simultaneously increasing domestic financing of investment and impacting on economic growth. This imposes

two pre-conditions: firstly, a proper understanding of the dynamics of the domestic savings process is required; secondly, an identification of the critical determinants of domestic savings that may be susceptible to policy manipulation. Recent empirical research on savings behaviour in the Caribbean helps satisfy these pre-conditions. Examination of the empirical research is the focus of the next section.

THE EMPIRICAL FINDINGS ON SAVINGS DETERMINANTS

The theoretical and general empirical literature has identified a large number of variables as influencing the aggregate savings performance of countries. These include foreign savings, relative shares of labour and property incomes in total national income, the rate of interest, expected inflation, exports, the terms of trade, population dependency rates and the level of income. The evolving body of empirical research on savings behaviour in the Caribbean has invariably sought to determine the impact of these and other variables on national savings. We proceed below to extract the findings of the empirical literature by detailing country findings. These country findings are then used to derive implications for policies designed to raise the level of savings in Caribbean economies.

Trinidad and Tobago

Ramsaran (1988, a) conducted an exhaustive exploratory study of savings behaviour in post-war Trinidad and Tobago utilizing the following savings function:

$$S = f(Y) \quad (1)$$

where S is savings and Y is current income.

In the absence of published aggregate savings data for years beyond 1952, Ramsaran computed three measures of savings:

Gross Domestic Savings (GDS) obtained by subtracting government and private consumption expenditure from Gross Domestic Product; Gross National Savings (GNS_1) defined as GDS less the sum of net-investment income and net-transfer payments in the balance of payments account; and a second Gross National Savings (GNS_2) estimate defined as gross capital formation minus net-movements in the capital account (non-monetary sector) of the balance of payments.

By the method of Ordinary Least Squares (OLS) Ramsaran regressed aggregate and percapita GNP in real and nominal values on the published net national savings for the period 1952-62. The results yielded highly statistically significant and positive GNP coefficients. The coefficients of determination tended to be lower for the per capita estimates. Ramsaran further regressed GNP on the savings estimates GDS, GNS_1 and GNS_2 for the periods 1952-62, 1963-79 and 1952-79. The GNP coefficient was statistically significant and positive in all the estimated equations. Some of the estimated equations indicated a serial correlation problem, yet all equations had high coefficients of determination, the lowest being 0.89 for the equation with GNS as its dependent variable and estimation period 1952-79. Estimates were also obtained by regressing per capita GNP on per capita GDS and GNS, using real and nominal variables. The results yielded positive and significant relationships between per capita GNP and per capita savings. The percentage of variation in per capita savings explained by per capita GNP varied between 68 and 97 percent. However, the percentage of variation tended to be lower for estimates using real values. These results confirmed aggregate income as a major determinant of aggregate savings in Trinidad.

Household savings, as distinct from aggregate savings, were examined by Ramsaran using the published data for 1952-62. Ramsaran regressed personal savings on personal disposable income and per capita personal savings on per capita disposable income, in both real and nominal values, and the ratio of personal savings to disposable income on per capita GNP and per capita disposable income. The estimated equations with nominal per-

sonal and per capita savings and real per capita savings, as dependent variables, all had positive and significant personal income explanatory variables. However, the percentage of variation in savings explained was 62 percent for the nominal personal savings equation, 38 percent for the nominal per capita savings equation and 13 percent for the real per capita savings equation. When the ratio of personal savings to disposable income was treated as the dependent variable, both the per capita GNP and disposable income variables had negative impacts on the personal savings ratio. Personal disposable income appears to substantially explain variations in household savings.

Ekanayake (1991; a, b) examined household savings behaviour using household budget survey data for the years 1971/72, 1975/76, 1981/82 and 1988 for Trinidad. The following linear, semi-log and quadratic savings functions were estimated:

$$S_i = f(Y_i) \quad (2)$$

$$S_i = f(\text{Ln}Y_i) \quad (3)$$

$$S_i = f(Y_i, Y_i^2) \quad (4)$$

Where S_i is the average monthly savings, Y_i is the average monthly income of the i th income group and $\text{Ln}Y_i$ represents the logarithm of income. Savings were treated as the difference between monthly total household income and expenditure.

Estimates for the linear model, equation (2), by the method of weighted least squares, based on 1981/82 and 1988 data, were obtained. The household income coefficient had a positive effect on household savings and was highly statistically significant. However, only 32 percent of the variation in savings for the 1981/82 data and 21 percent of savings variation for the 1988 data were explained by household income. The estimated marginal propen-

sity to save (MPS) decreased from 0.36 in 1981/82 to 0.22 in 1988, reflecting the decline in the economy, after 1982, which was characterized by falling real and nominal income.

Ekanayake also estimated the semi-log function equation (3) which yielded poor results. The quadratic function equation (4) was estimated and it produced better results than the linear model equation (2). It explained some 87 percent of savings variation for the 1981/82 data and 72 percent of savings variation for the 1988 data. Values of the MPS were calculated using the quadratic model. These estimates revealed that the MPS of lower income groups were lower than those of higher income groups. Quadratic model estimates provided the best fits for the 1971/72 and 1975/76 data. The calculated MPS for all the periods, using the quadratic estimates, took values of 0.097 in 1971/72, 0.119 in 1975/76, 0.300 in 1981/82 and 0.178 in 1988. The MPS is higher during the boom period than in the pre-boom (1971/72) and post-boom (1988) periods.

Ekanayake's results confirmed Ramsaran's findings that household incomes (personal disposable income) substantially explain household savings. It also revealed that lower income groups possessed a lower MPS than higher income groups. Prompted to examine the survey data, Ekanayake noted that "lower income groups generally have negative savings and a gradual decrease in dis-saving is apparent as income increases, with the higher income groups always achieving positive savings". These results implied that savings policy must discriminate between low and higher income groups.

Ramsaran (1988, a) sought to examine the propensity of the recipients of labour and non-wage income to save. The following model was estimated:

$$PS = f(DT, WS, NLI) \quad (5)$$

Where PS is personal savings, DT is direct taxes on households less transfers, WS is wages and salary income and NLI is non-labour income.

The model was estimated by OLS using aggregate and per capita data for the period 1952-62. For both sets of data the DT coefficient had an incorrect positive sign and was statistically insignificant. The coefficients of the WS and NLI variables were statistically significant in both cases. However, the wages and salaries coefficients impacted positively on savings whereas the non-labour income coefficients impacted negatively. The size of the wages and salaries coefficients exceeded that of the non-labour income coefficients for the two estimates. These findings, Ramsaran concluded, failed to support the hypothesis of a distribution of income in favour of the non-wage sector as a necessary prerequisite for increasing personal savings.

Martin (1994) also examined the savings behaviour of labour and non-wage income recipients by estimating the following model:

$$RPS = f(RP, WWI, DUM) \quad (6)$$

where RPS is private sector savings, RP is capitalist income, WWI is worker income and DUM is a dummy variable to capture the effects of the oil boom.

The cointegration approach was used to estimate the model. This involved testing the series for stationarity and then estimating a long-run cointegrated savings function and a short-run error correction savings function. The Engle and Granger Test, the Trace Test and the Maximum Eigenvalue Test were used to test for cointegration.

Data covering the period 1955 to 1991 were utilized. Capitalist income was proxied by operating surplus reported in the national accounts and defined as the remuneration of the factors of production after all expenditures had been accounted for. Com-

compensation of workers, defined as the sum of dividends, rents, social security benefits, pensions payments and similar incomes, was taken to represent workers' income. The workers' income series was deflated by the consumer price index and all other variables by the GDP deflator. The GDP deflator values for the years 1955 to 1968 were obtained by backcasting, since values were missing for these years. Values for operating surplus and compensation of employees for the years 1963, 1964 and 1965 were obtained by averaging.

The capitalist and workers' income coefficients impacted positively on savings in the estimated cointegrated long-run savings function. The workers' income coefficient was statistically significant whereas the capitalist income coefficient was not significant. The propensity to save out of workers' income was also larger than that of capitalist income. The corresponding short-run or error correction savings function revealed that only the capitalist income variable had a significant impact on savings.

Martin proceeded to estimate the model with the capitalist income variable omitted. The cointegrated long-run savings estimate displayed a positive and significant workers' income effect on savings. The savings propensity exceeded that of the short-run savings propensity for workers' income. The corresponding short-run savings function yielded an insignificant workers' income variable. Based on these results Martin concluded that workers' savings were significant in the long-run but not in the short-run, that capitalist savings were significant in the short-run but not in the long-run, and the propensity to save out of workers' income exceeded that of capitalist income.

The impact of prices, dependency rates, exports and foreign savings on domestic savings was investigated by Ramsaran (1988, a). The consumer price index (CPI), personal income, and personal income lagged one year were regressed on personal savings for the 1952-62 period. The CPI coefficient was negative and statistically insignificant, whereas the lagged income coeffi-

cient was positive and statistically insignificant. The lack of statistical significance precluded the advancing of any conclusions on the impact of prices.

The ratio of net national savings to GNP, personal savings to disposable income, per capita personal savings to per capita disposable income and the ratio of gross national savings to GNP, were all regressed on per capita GNP growth, the proportion of population 14 years and under (P_1) and the proportion of population 65 years and over (P_2), in logarithmic form, to isolate demographic influences on savings for the period 1952-62. The estimated equation, with the net national savings ratios as the dependent variable, yielded coefficients for P_1 and P_2 with negative signs. The P_1 coefficient was also statistically insignificant. For the estimates with the personal savings ratio as the dependent variable, the P_1 coefficient was negative, the P_2 coefficient was positive and both coefficients were statistically insignificant. Finally, the estimate with per capita personal savings as the dependent variable produced a negative P_1 coefficient and a positive P_2 coefficient. The coefficient for the combined values was negative. All three coefficients were statistically insignificant. In all cases the proportion of population 14 years and under appears to reduce domestic savings while the proportion of population 65 years and over appears to have had no definite impact over the 1952-62 period. The general statistical insignificance of the coefficients and the low percentage of variation in savings explained, in all cases under 65 percent, render these findings highly suggestive.

Ramsaran, using data for the period 1963-79, estimated two additional savings equations to further test demographic influences. The first equation regressed the gross national savings ratio on per capita GNP, P_1 and P_2 . The estimated coefficients for P_1 and P_2 were both negative and statistically insignificant. The second equation included the rate of growth of per capita income as an added explanatory variable. However, the estimated coefficients for P_1 and P_2 remained negative with only P_1 statistically insignificant. The new data series did not advance any clearer insight into demographic influences on savings.

The export savings relationship was investigated by regressing the three measures of savings on GDP at market prices, export of goods and services and non-export GDP. All series were deflated by the CPI and split into two periods, to isolate the post-1973 oil revenue increases. The estimated export coefficient had a positive and statistically significant impact on savings over the period 1952-73. For the longer period 1952-79, the export coefficient had a negative and statistically insignificant impact on savings. Serial correlation plagued some of the estimates. Ramsaran, therefore, could offer no firm inference on the export and savings relationship.

The foreign savings effect was gauged by regressing national savings on GNP lagged one year and net capital movements in the non-monetary sector of the balance of payments. The estimated net capital movement coefficients were all negative for the periods 1952-62, 1963-72 and 1952-79. One of the coefficients was statistically insignificant and its estimated equation was afflicted by serial correlation. All estimated equations explained more than 90% of the variation in savings. On the basis of these results, Ramsaran inferred that foreign inflows may have had a negative impact on domestic savings.

Ramsaran examined the interest rate effect on savings by explicitly looking at financial savings. For the period 1978-79 nominal and real interest rates were regressed individually on total bank deposits. The nominal interest rate coefficient was positive and statistically insignificant, while the real interest rate co-efficient was negative and statistically insignificant. When nominal interest rate, per capita GNP and the total number of bank offices are jointly regressed on total bank deposits, the interest rate co-efficient is positive but statistically insignificant. The substitution of real deposits, for nominal deposits, in the joint regression yielded a positive and statistically significant interest rate coefficient. The individual estimates using total bank deposits held by individuals as the dependent variable produced a positive and statistically insignificant nominal interest rate and a negative and statistically insignificant real interest rate coefficient. The joint

estimate treating real interest rate, bank offices and per capita GNP as explanatory variables produced a positive and statistically significant real interest rate coefficient. Ramsaran interpreted these results as pointing to an uncertain interest rate impact on savings.

Bourne (1988, b) sought to determine the effect of foreign savings, the deposit rate of interest, prices and income growth on domestic savings. The following savings function was estimated:

$$SD/Y = f(\dot{Y}, SF/Y, r_D, \dot{P}^e) \quad (7)$$

where SD/Y is the domestic savings to GDP ratio, \dot{Y} is income growth, SF/Y is the foreign savings to GDP ratio, r_D is the deposit rate of interest and \dot{P}^e is the expected rate of inflation.

Bourne estimated expected inflation by a first order autoregressive scheme. Domestic savings were estimated as gross capital formation less foreign savings. Data covering the period 1953 to 1981 were utilized.

The estimated savings function explained 74 percent of the variation in domestic savings and displayed no clear evidence of serial correlation. The foreign savings variable impacted negatively on domestic savings and was statistically significant at the 1 percent level. The expected inflation rate coefficient had a positive sign and was statistically significant at the 5 percent level. Inflationary expectations seemed to induce higher rates of domestic savings, the computed elasticity being (0.19). The nominal deposit rate coefficient was positive and the income growth coefficient was negative; however, both were statistically insignificant.

Bourne's findings of a negative foreign savings impact on domestic savings corroborate Ramsaran's findings. The positive

expected inflation effect differs from the uncertain price effect obtained by Ramsaran. The statistical insignificance of the interest rate coefficient failed to reduce the uncertainty surrounding the interest rate effect.

Craigwell and Rock (1990) investigated savings behaviour in Trinidad using Diamond's (1965) overlapping generations model. The following equation was derived for estimation:

$$\Delta C_t = f(C_{t-1}, Y_t, Y_{t-1}, DR_t, \Delta DR_t, r_t, \Gamma_t, X_t) \quad (8)$$

where ΔC_t is the change in consumption, C_{t-1} is lagged consumption, Y_t is income, Y_{t-1} is lagged income, DR_t is the working age population, ΔDR_t is the change in the percentage of working age population, r_t is the real rate of interests, X_t is the degree of export orientation and Γ_t is the terms of trade.

Based on cointegration theory an 'error correction' model was derived from equation (8). The error correction model was estimated and a series of F-tests was then used to arrive at a parsimonious representation of the consumption relation. The estimation method was ordinary least squares.

The real interest rate variable was derived from 3-month savings deposit rates and defined as one plus the nominal rate of interest minus the (actual) rate of inflation. The working age population was defined as the proportion of persons between the ages of twenty and fifty-nine in the mid-year population. The terms of trade data was defined as the ratio of the relative prices of exports and imports. The ratio of nominal exports to nominal GDP was treated as the export orientation variable. All data were employed in annual observations and covered the period 1955-87. The GDP series and total private consumption expenditures in per capita terms deflated by the CPI were used.

Craigwell and Rock's estimated results revealed that the terms of trade had no effect on savings. The estimated coefficient

was statistically insignificant. Income growth had a positive effect on savings growth, whereas the real interest rate negatively affected savings growth. A positive effect of export orientation on savings growth showed up in both the short- and long-run, suggesting that increased export orientation induced a rise in savings levels. The age dependency variable showed no significant effect on savings in the short-run regression. However, the long-run regression indicated that the lower the dependency rate the higher the savings growth.

The positive income effect on savings supports the early income effect found by Ramsaran. The negative impact of real interest rate on savings is contradictory and heightens the uncertainty surrounding the interest rate variable. Where Ramsaran could offer no clear insight on the export and dependency variable savings impact, Craigwell and Rock found that increased export orientation induces higher savings and that in the long run lower dependency rates stimulate savings. They argued that “just as savings can lead to higher future growth through capital accumulation, higher current growth encourages savings by making young savers more affluent than the more aged dissavers”.

Watson and Ramlogan (1991), also drawing on the Cointegration approach, estimated the following savings function for Trinidad:

$$S = f(d-\pi, b-\pi, F, Y) \quad (9)$$

$$s = f(d-\pi, b-\pi, 1/Y^2, 1/Y^4, f) \quad (10)$$

where $d-\pi$ is the real deposit rate of interest, $b-\pi$ is the real treasury bill rate, F is foreign savings, S is gross national savings, f is the foreign savings to GDP ratio, s is the national savings to GDP ratio and Y is the natural logarithm of per capita income.

Data spanning the period 1965-1987 were utilized. Gross national savings were obtained by subtracting total consumption

from national disposable income and adding gross capital consumption. The expected rate of inflation π was derived from an 'adaptive expectations' model that proxied the actual rate of inflation by the Retail Price Index.

Watson and Ramlogan estimated a 'long-run' or cointegrated savings model and a corresponding 'short-run' error correction mechanism savings model based on the Granger Representation Theorem. The concept of Granger - Causality was employed to test whether interest rates 'cause' the savings variable in question. Direct Granger tests as opposed to more complicated procedures were employed.

The results of the Direct Granger tests were not convincing. Only in exceptional cases was statistical significance achieved even at the 10 percent level. Watson and Ramlogan inferred that due to small sample sizes the results were not extremely reliable. They concluded that there were some elements of interest rate savings causality justifying the inclusion of interest rates in the regression.

Watson and Ramlogan characterized the fits for the estimated long-run or cointegrated saving models to be quite good, judging from the coefficients of determination and the F-statistics. All the explanatory variables carried the expected signs and were significant at least at the 10 percent level and most at the 5 percent significance level. They noted that the interest rate variable was always significant at the 5 percent level and concluded that there existed more than a little support for the importance of interest rates in the determination of savings behaviour, at least in the long-run.

The estimated 'short-run' error correction mechanism saving models displayed considerable fluctuation in the proportion of variation in savings explained, from as low as 25 percent to a high of 87 percent, and a marked difference in performance when the foreign savings variable was included. The interest rate vari-

ables did not perform well in most cases, being statistically insignificant and possessing the wrong signs. Similar patterns were displayed by the income variable. The foreign savings variable was the best performing variable.

The findings of Watson and Ramlogan (1991) provide added evidence on the impact of foreign savings on domestic savings. But, whereas the findings of Ramsaran, Bourne, and Craigwell and Rock heightened uncertainty about the interest rate impact on savings, the results of Watson and Ramlogan denied short-run effects, pointing instead to a long-run effect of interest rates on domestic savings behaviour.

Ekanayake (1991; a, b) tested the impact of interest rate, foreign savings, exports and dependency on savings. The life cycle model was used to examine dependency effects. The following two equations were estimated:

$$\text{Ln } (S/Y) = f \{ \text{Ln } (Y/\text{pop}), \text{Ln } g, \text{Ln } \text{Dep.1}, \text{Ln } \text{Dep.2} \} \quad (11)$$

$$\text{Ln } (S/y) = f \{ \text{Ln } (Y/\text{pop}), \text{Ln } g, \text{Ln } \text{Dep.} \} \quad (12)$$

Where Ln is logarithm, Y/pop is per capita income, g is the rate of per capita income growth, Dep.1 is the percentage of the population aged 14 or less, Dep.2 is the percentage of the population aged 65 or older and Dep is the sum of Dep.1 and Dep.2.

The models were fitted by OLS to data for the period 1964-1982. The years after 1982 were omitted on account of income growth being negative. Estimates were obtained for the periods 1964-82, 1964-73 and 1974-82.

The estimated coefficients of the dependency ratios in model (11) were positive, whereas *a priori* they were supposed to be negative. The coefficient of Dep.2 was statistically insignificant in all cases. The Durbin Watson Statistic indicated an absence of serial correlation and together with the F-ratio and the

coefficient of determination, suggested that the model fitted reasonably well. The magnitude of the coefficient on Dep.1 exceeded that of Dep.2 for the periods 1964-82 and 1964-73 reflecting the fact that the proportion of the population less than 14 years of age is substantially higher than the proportion of that above 65 years of age. Ekanayake concluded that there is little indication of a significant adverse effect of dependency on savings.

The effect of foreign savings was examined by estimating the following two models:

$$\frac{S}{Y} = f(F/Y) \quad (13)$$

$$S = f(Y, F) \quad (14)$$

where S is domestic savings, Y is gross national product and F is foreign capital inflows. Both equations (13) and (14) were fitted to data for the 1955-87, 1955-73, 1974-82 and 1983-87 periods.

Better estimates were obtained for model (14) than for model (13). The coefficient on foreign capital inflows was negative in both models for all periods. However, the coefficients are statistically significant only for the periods 1955-87 and 1974-82. Ekanayake concluded that "there is evidence to expect that foreign capital inflows reduce domestic savings".

The effect of exports on savings were tested by estimating two sets of equations. In the first instance the following equation was estimated:

$$S = f(Y, \frac{Y}{X}) \quad (15)$$

where S is gross domestic savings, Y is gross national product and X is exports. Data for the corresponding four periods as in the foreign savings examination were utilized.

The estimates produced reasonably good fits, the coefficients of determination were over 65 percent in three out of the four estimated equations. The coefficient on the export ratio was significant only for the period 1983-87. The export ratio had a positive impact on savings for all the periods.

Maizels' hypothesis (Maizels, 1968) was also tested by estimating the following two equations:

$$S = f(y) \quad (16)$$

$$S = f\{(Y-X), X\} \quad (17)$$

where Y , X and S are as defined previously.

Maizels expected equation (17) to produce a higher coefficient of determination than equation (16). Further he expected the coefficient on X to be statistically significant as well as larger than the coefficient on $(Y-X)$, non-export GDP.

The estimated results produced a higher coefficient of determination for equation (17) compared to equation (16). The export variable was significantly positive for all the periods considered. The non-export GDP coefficient was also significant in all the periods. The export coefficient was much larger than that of the non-export GDP coefficient. These results appeared to support Maizels' hypothesis. Nevertheless, Ekanayake argued that the results preclude any precise statement on the export and savings relationship, though exports appeared to be positively related to savings.

The interest rate effect on savings was examined by Ekanayake using Granger Causality testing and the McKinnon-Shaw model. The Granger Direct Test, using lags of dependent variables as explanatory variables, was used to test the direction of causality between savings and the interest rate. Computed F-Statistics supplemented by the Wald likelihood Ratio and Lagrange Multiplier statistics were used to test the joint significance of par-

ticular lags with the independent variables in estimated regression equations.

The data used were real gross national savings, real personal disposable income and real interest rate, with the GDP deflator, base year 1985, serving as the price deflator. Real interest rate was obtained by subtracting the rate of inflation (percentage change in the CPI) from the nominal rate of interest.

The results suggest that the direction of causality between savings and interest rate is mainly from interest rate to savings. The values of the Wald likelihood Ratio and Lagrange statistics indicated that at certain lag lengths there is evidence of feedback between savings and the interest rate.

Given evidence of unidirectional causality, running from the rate of interest to savings, the McKinnon-Shaw proposition of positive interest responsiveness of savings was tested using the Fry (1978) model which follows:

$$\frac{S_d}{Y} = f \left\{ g, y, r, \frac{S_f}{Y}, \left(\frac{S_d}{Y} \right)_{-1} \right\} \quad (18)$$

where $\frac{S_d}{Y}$ is domestic savings, g is the real rate of income growth, Y is real per capita income, r is the real interest rate, $\frac{S_f}{Y}$ is the foreign savings ratio and $\left(\frac{S_d}{Y} \right)_{-1}$ is the lagged savings ratio.

Estimates were obtained by the method of two-stage least squares. The real rate of interest was measured by subtracting the observed rate of inflation from the 12-month time deposit rate of interest. The data used spanned the period 1966-87.

The estimated results indicated that the model failed to fit the Trinidad data. The estimated real interest rate coefficient was

statistically significant, but exerted a negative influence on savings whereas *a priori* a positive influence was expected. The signs of all the other coefficients agreed with *a priori* expectations. The negative sign on the foreign savings variable suggested that it constituted a substitute for domestic savings. Essentially, the results suggested that the real rate of interest does not have a positive effect on domestic savings as suggested by the McKinnon-Shaw model.

Watson (1992) estimated a simultaneous equation savings model to correct for simultaneous equation bias and also sought to test the McKinnon-Shaw hypothesis. Watson estimated the following savings function to correct for simultaneous equation bias arising from failure to incorporate the economy's features of openness:

$$S = f(d - \Pi, Y, S_f) \quad (19)$$

Where S is savings, d is the deposit rate of interest, Π is expected inflation, Y is national income and S_f is the level of foreign savings.

Defining foreign savings as imports minus exports ($S_f = \text{Imp} - X$) and noting that exports can be treated as exogenous, Watson specified the following import function: $\text{Imp} = f(Y, P^d)$ where Y is income and P^d is the domestic price level. The model functions as follows. An increase in income increases imports, leading to increased foreign savings and increased economic growth due to the impact of foreign savings on domestic savings. Since, by definition, income equals consumption plus savings ($Y = C + S$), the equilibrium condition where investment equals foreign savings plus domestic savings ($I = S + S_f$) closed the model.

McKinnon's complementarity hypothesis was tested by specifying the following money demand function:

$$M = f(I, d - \Pi, Y, M_{-1}) \quad (20)$$

where M is broad money demand, M_{-1} is lagged money demand, I is investments, Y is income, d is the deposit rate of interest and Π is expected inflation.

The following money demand function was also specified to test Shaw's debt intermediation hypothesis:

$$M = f(b - \Pi, d - \Pi, Y, M_{-1}) \quad (21)$$

where b is the treasury bill rate and all the other variables are as described above.

A positive and statistically significant investment coefficient was expected to verify the "complementarity hypothesis" while a negative and statistically significant coefficient on the real treasury bill rate was expected to verify the debt intermediation hypothesis.

Data for the period 1966-87 were used together with two measures of savings, gross domestic and gross national savings. gross domestic savings was defined as the difference between GDP and total consumption and differed from national savings by the amount of net factor income from abroad plus net unrequited transfer from abroad. The expected inflation rate was obtained from an "adaptive expectation" model which proxied the actual rate of inflation by the retail price index. A dummy variable captured the oil boom years 1974-81. The method of two-stage least squares was used to fit the equations.

Watson characterized the estimated results as quite good from the standpoint of the standard criteria. All signs were correct and most coefficients proved significant, at least at the 10 percent level. The time paths of the actual and simulated values of the endogenous variables in the system displayed a close fit of the models upon visual inspection. Watson concluded that the models offered a satisfactory explanation of the savings process in Trinidad.

The McKinnon-Shaw “financial liberalization” hypothesis appeared to be verified in all cases, since the real deposit rate coefficient was always positive and significant. However, neither the “complementarity” nor “debt intermediation” hypothesis seemed to be fully substantiated. The coefficients carried the correct signs but were quite insignificant. Watson, therefore, argued that multicollinearity may be a problem due to high correlation between interest rates, GDP and lagged money demand on the one hand and on the other, high correlation between the real deposit and treasury bill rate. Savings were also indicated to be dependent on levels of national income and foreign savings. The foreign savings variable had a strong negative relationship. This, Watson suggested, confirmed the hypothesis that foreign savings militated strongly against indigenous savings.

Watson also attempted to estimate the cost of financial repression by the method of model simulation. The results indicated that failure to apply a 10 per cent nominal deposit rate increase resulted in lost economic growth, as much as 1.2 per cent in the year of the first oil shock, 1973. For the years after 1973 lost economic growth averaged 0.5 per cent and higher. These results suggest that economic growth would have been higher if the nominal rate of interest was higher than the actual rate which prevailed during the sample period.

On the basis of these results, Watson suggested an economic policy thrust that encourages the ‘freeing-up’ of the financial system to allow for increases in the real deposit rate of interest which would at least keep it at positive levels. This need not involve abnormally high nominal rates, Watson advised, but can involve policies aimed at controlling inflation.

The issue of simultaneous equation bias was also addressed by Ekanayake (1991; a, b). To avoid simultaneous equation bias, due to the simultaneous determination of savings and investments, the following simultaneous equation savings model was estimated:

$$SAV_t = (1-k) SAV_{t-1} + Ka \Delta GNP_t + bIR_t \quad (22)$$

$$INV_t = b_0 + b_1 \Delta GNP_{t-1} + b_2 FCI_t + b_3 IR_t \quad (23)$$

where SAV_t is gross domestic savings, SAV_{t-1} is lagged savings, ΔGNP_t is change in gross national product and IR_t is the interest rate variable. The parameter k measures the adjustment of actual to desired savings and the parameter a the desired asset-income ratio. INV_t is gross domestic investments, ΔGNP_{t-1} is lagged changes in GNP and FCI_t is foreign capital inflows.

The method of estimation was two-stage least squares. Data utilized were annual observations for the period 1955-87. Constant price observations for the 1963-87 period were also used. Model estimation was undertaken for the pre-boom, the boom and post-boom periods.

The estimated nominal data results proved superior to those of the real data. The interest rate coefficient was statistically insignificant and possessed the wrong sign. Ekanayake, therefore, omitted the interest rate variable and focused on nominal savings estimates. The estimates yield a statistically significant lagged savings parameter for the periods 1955-87, 1955-73 and 1983-87, but it was statistically insignificant for the 1974-82 period. The boom period 1974-82 showed the highest adjustment of actual to desired savings. The ΔGNP term was significant for all periods, suggesting an income-elastic response of savings of a relatively large magnitude. A relatively high desired asset-income ratio was obtained for all periods except 1974-82. This, Ekanayake concluded, indicated a desire to hold a relatively large proportion of income in financial assets.

Government savings were investigated by Ramsaran (1988; a) and Ekanayake (1991; a, b). Ramsaran regressed government savings on aggregate GNP, per capita GNP and current revenue. The estimates revealed positively signed but statistically insignificant coefficients for the 1952-62 and 1952-72 periods. Associ-

ated coefficients of determination were quite low, under 30 percent and zero. For the longer periods 1963-79 and 1952-79 the coefficients were statistically significant and the coefficients of determination 89 percent and higher. The use of per capita current revenue estimates explained none of the variations in government savings for the 1952-72 period. Over the longer periods 1963-79 and 1952-79, the estimated coefficient was positive and significant. The associated coefficient of determination exceeded 90 percent. When the savings to GNP ratio was regressed on the tax to GNP ratio, for the 1952-73 period, the estimated coefficient was positive and statistically insignificant, while the coefficient of determination was zero. Inclusion of per capita GNP simply increased the coefficient of determination to 5 percent. The extended data series, 1952-79, resulted in tax ratio coefficients that were positive and statistically significant and high coefficients of determination. These results captured the impact of post-1973 developments viz. the oil boom, that exerted a determinate influence on series covering the longer time span, and which, until 1973, might have been pointing in a different direction, Ramsaran concluded.

Ekanayake (1991; a, b) using the following Keynesian absolute income model examined government and private savings behaviour:

$$S = f(Y) \quad (24)$$

where S is savings and Y is income.

The concept of private savings included both personal and corporate savings. Private income defined as national income less government income from property and entrepreneurship was regressed on private savings. The estimated income parameter was highly statistically significant for most of the periods. The estimated MPS declined over the periods. Regressing government savings on current government revenue, GNP and government revenue from taxation, the current government revenue vari-

able provided the best results. Estimates of per capita government savings regressed on per capita government revenue produced statistically significant coefficients for all periods. However, the coefficient of determination was low, under 40 percent for most periods. A negative value of the intercept for the period 1955-87 and a positive value for the period 1974-82 suggest a tendency for the government to save relatively more when government revenue is high. The results also revealed an increasing MPS over time for the government sector. The MPS of the government sector appeared relatively higher than that of the private sector.

Summary of Findings

A substantial body of empirical research exploring the savings process in Trinidad exists. The results of the empirical research point to income as a key determinant of aggregate domestic savings. A positive income effect on savings was obtained by all researchers. Ekanayake described an income-elastic response of savings of a relatively large magnitude. Specific examination of households' savings, by Ramsaran and Ekanayake, uncovered households' income as explaining a substantial proportion of households' savings. Ekanayake further revealed that lower income groups possessed a lower marginal propensity to save than higher income groups, suggesting that savings mobilization policy must discriminate between low and high income groups. Examining the propensity to save out of labour and non-wage income, Ramsaran found support lacking for the view that a distribution of income in favour of the non-wage sector is a necessary prerequisite for increasing savings. Martin found a positive long-run workers' income effect on savings and a positive short-run capitalist income effect. The propensity to save out of workers' income also exceeded that of capitalist income.

The foreign savings variable, where it did not have a strong negative impact on domestic savings, pointed to a negative

impact. For the export variable Ramsaran failed to draw any firm inference. While a positive relationship appeared possible, Ekanayake could not offer any precise conclusions. However, Craigwell and Rock noted that increased export-orientation induces a rise in domestic savings. These researchers' findings left open the possibility of positive export effects on savings.

Three researchers examined the effects of population dependency rates on savings. Craigwell and Rock's long-run regression indicated that the lower the dependency rate the higher the savings growth. Ramsaran noted that the proportion of population 14 years and under appeared to reduce savings, whereas the proportion 65 years and over had no definite impact. Ekanayake found little evidence of a significant adverse effect of dependency rates on savings. In sum, there is evidence of adverse dependency rates impact on domestic savings. Ramsaran and Bourne investigated the effects of prices on savings. Ramsaran could advance no conclusion on price effects, while Bourne found inflationary expectations induced higher rates of domestic savings.

The interest rate impact was examined by all researchers. Bourne and Ramsaran's findings were uncertain about the interest rate effect on savings. Craigwell and Rock found a negative interest rate effect which contradicts an expected positive effect. Granger's Causality testing of the interest rate and savings relationships was undertaken by Ekanayake and Watson and Ramlogan. Ekanayake found evidence of uni-directional causality from interest rate to savings. Some elements of interest rate to savings causality were found by Watson and Ramlogan. These researchers then tested the McKinnon-Shaw hypothesis of a positive interest responsiveness of savings. Ekanayake obtained a negative interest rate effect, a virtual rejection of the hypothesis. A long-run positive interest responsiveness of savings effect was detected by Watson and Ramlogan. Additional positive interest rate effects, obtained by Watson, were considered as verification of the McKinnon-Shaw hypothesis on the basis of which he advo-

cated financial reform to allow for increased real deposit rates. Out of six research findings only two findings, those of Watson, and Watson and Ramlogan, found positive interest rate effects on savings. In one case the effects were long-run effects. Two sets of causality testing provided evidence of interest rate to savings causality. Evidently, the bulk of the empirical evidence suggests uncertainty about the interest rate effect on savings.

Ramsaran and Ekanayake investigated government savings. Ramsaran found that the oil boom exerted a determinate influence on such variables as current revenue and the tax to GNP ratio that impacted on government savings. Ekanayake identified the current government revenue variable as the key determinant of government savings. Also, the MPS of the government sector appeared relatively higher than that of the private sector.

JAMAICA

Bourne (1986) investigated the propensities to save business and personal incomes in Jamaica. The following two behavioural equations were specified:

$$\text{BUSAV} = S (\text{Profits}) \quad (25)$$

$$\text{Con} = C (\text{ALY, PY}) \quad (26)$$

where BUSAV is retained profits, ALY is real adjusted per capita disposable labour incomes and PY is real per capita disposable property income. Profits were treated as after-tax gross profits. Adjusted labour income was defined as wages and salaries plus transfers minus social security contributions by employers. Property income was the sum of income of unincorporated enterprises, dividends, rents and interests. Disposable income was obtained using the average effective tax rate on total personal incomes in the absence of information on property taxes. The price deflator used was the index of retail prices.

The equations were estimated in linear and double-log linear form, using annual data for the 1953-73 period. Equation (26) was utilized to conduct a weak test of the differences in personal propensities to consume different kinds of personal incomes.

Bourne found that not less than 90 percent of Jamaican incremental profits is retained as corporate savings and that the personal sector's marginal propensity to save (MPS) is small, absolutely and in relation to the corporate sector's marginal savings propensity, the maximum MPS labour income being 0.11 and the maximum MPS property income being 0.74. The absolute magnitudes of the marginal propensity to consume labour and property income differ widely (1.00 vs 0.54). Bourne's attempt to test the statistical significance of the absolute difference in the marginal propensities to consume labour and property income proved inconclusive. The double-log functional form yielded statistically significant differences, while the linear forms did not yield statistically significant differences. This, Bourne argued, precluded any categorical statements about the scope of influencing the national savings rate by altering the composition of personal incomes despite the basis for such thinking implied by the actual magnitudes of the differences.

Bourne (1985) estimated the following savings function for Jamaica:

$$\frac{DS}{Y} = f(\dot{Y}, i_D, \dot{P}^e, FS/y) \quad (27)$$

where $\frac{DS}{Y}$ is the savings to GDP ratio, \dot{Y} is income growth rate, i_D is the bank deposit rate of interest, \dot{P}^e is expected inflation and FS/y is the foreign savings to GNP ratio.

Domestic savings were estimated as gross capital formation minus foreign savings. Foreign savings were defined as the current account balance in the standard two-gap model. The ex-

pected inflation rate was derived from a first order auto-regressive process. Data covering the period 1955-82 were used.

The estimated results yielded an interest rate variable that impacted negatively on savings and was statistically significant at the 10 percent level. The income growth variable and the expected inflation variable had positive effects on savings. The foreign savings variable affected domestic savings negatively. All three variables were statistically significant at the 1 percent level.

Ramsaran (1988; b) examined the determinants of domestic savings in Jamaica by estimating the following savings function:

$$GDS = f(DI, PI, OR) \quad (28)$$

where GDS is gross domestic savings, DI is net direct investments flows, PI is net other private investment flows and OR is net official receipts. All variables were expressed as a percentage of GDP. Data covering the period 1970-86 were used.

The estimated results explained 60 percent of the variation in domestic savings. The official inflow variable, however, had a negative effect on the domestic savings ratio. Inclusion of the rate of income growth as an explanatory variable did not improve the proportion of savings variation explained by the model. The income growth variable had a positive impact on savings.

To gauge the current income effect on savings Ramsaran regressed domestic savings on GDP at current prices. The estimated current income coefficient had a negative impact on savings.

Ramsaran proceeded to examine the determinants of government savings through the following government savings function:

$$CAS = f(X, TR) \quad (29)$$

where CAS is government current account savings (deficit) expressed in current values, X is exports of goods and services expressed in current values and TR is tax revenue expressed as a proportion of GDP.

The estimated results yielded statistically insignificant coefficients and did not explain more than 20 percent of the variation in government savings.

The following deposit savings function was also examined:

$$\text{TBD} = f(\text{INT}, \text{IF}, \text{PCI}) \quad (30)$$

where TBD is total bank deposits, INT is average nominal interest rate on 3-months fixed deposits, IF is the expected rate of inflation and PCI is per capita GDP in current prices.

The estimated results explained 55 percent of the variation in total bank deposits. The interest rate variable had a positive effect on total bank deposits and was statistically significant. The inflation rate coefficient had a positive impact but was statistically insignificant. The per capita income variable had a positive effect on total bank deposits but was statistically insignificant.

Summary of Findings

The surveyed empirical research provides some insights into the Jamaican domestic savings process. Income and income growth were found by Bourne to have positive impacts on domestic savings, with the former being a major determinant of savings. Ramsaran also isolated income growth as having a positive impact on savings. However, his current income estimate had a negative impact. These findings suggest that income, more so income growth, is a key determinant of Jamaican savings.

Bourne found the interest rate variable to have a negative effect on domestic savings. Ramsaran discovered a positive in-

terest rate effect on financial savings. Evidently, the interest rate effect on savings can only be characterized as uncertain. Where Bourne obtained a positive inflation effect on domestic savings, Ramsaran discovered an uncertain inflation rate effect on financial savings. These findings preclude any, even tentative, suggestions on the possible inflation rate savings effect.

The propensities to save business and personal incomes were examined by Bourne, who found the personal sector's marginal propensity to save small, absolutely and in relation to the corporate sector's marginal propensity to save. However, Bourne's attempt to test the statistical significance of the absolute difference in marginal propensities to consume labour and property incomes proved inconclusive. Examination of government savings, by Ramsaran, found exports and the tax revenue variables to be poor explanatory variables. Ramsaran also examined the influence of direct investment, other private investments and official flows on savings. The official flows variable had a negative impact on domestic savings.

GUYANA

Williams (1985) investigated savings behaviour in Guyana by estimating the following savings function:

$$\text{Ln}(s_p) = f(\text{Ln } r_t, p_t, \text{Ln } \frac{Y}{P}) \quad (31)$$

where $\text{Ln}(s_p)$ is the logarithm of real national savings, $\text{Ln } r_t$ is the logarithm of real interest rate on time deposits, p_t is the rate of inflation and $\text{Ln } \frac{Y}{P}$ is the logarithm of real income.

Estimates were obtained by the method of two stage least squares with monetary base, government expenditure and population included as instrumental variables. The interest rate and income variable had positive effects on savings. The inflation

variable had a negative impact on savings. However, the interest rate and inflation variables were statistically insignificant.

A model of the financial sector was also estimated by Williams using three stage least squares (with serial correlation correction). Williams advanced a portfolio balance model with asset demand equations covering the money, time and savings deposits, new building society assets, treasury bills and real assets market. On the basis of Walrus' law the demand function for real assets was dropped. The specified equations included as explanatory variables the rates of interests on treasury bills, time and savings deposits, new building society deposits, expected price changes and expected real income as a proxy for wealth. Quarterly data spanning the period 1966-82 were utilized.

The estimated time deposit equation yielded a positive own rate of return coefficient. However, it was statistically insignificant. Williams argued that the time deposit equation was the most important equation in the model. Because it was assumed that a rise in the level of these assets is the most efficient way in which larger levels of capital can be ultimately obtained, the estimated wealth coefficient was positive and statistically significant. On the basis of these results Williams concluded "it may be possible therefore, to mobilize savings via a high interest rate policy, but such a policy could only be successful if applied in conjunction with other policies geared towards removing some of the constraints in the economy".

Bourne (1986) estimated equations (25) and (26) above to examine the propensities to save business and personal incomes in Guyana. The estimated results suggested that not less than 70 percent of Guyanese incremental profits is retained as corporate savings; that the personal sector's marginal propensity to save (MPS) is small, absolutely and in relation to the corporate sector's MPS, the maximum MPS labour income being 0.20 and the maximum MPS property incomes being 0.41. The absolute magnitudes of the marginal propensity to consume labour and property

incomes were not much different (0.99 vs 0.83). However, Bourne's attempt to test the statistical significance of the difference proved inconclusive.

Ramsaran (1988; b) examined domestic savings in Guyana by estimating equation (28) using data for the period 1970-85. The estimated results indicated that direct investments, other private investments and official receipts had positive impacts on domestic savings. However, they explained only 19 percent of the variation in domestic savings. When the income growth rate was added as an explanatory variable it turned out to be a major factor affecting savings. To gauge the impact of current income on savings Ramsaran regressed domestic savings on current price GDP. The estimated coefficient had a negative impact and the proportion of savings variation explained was extremely low.

Government savings was investigated and the results revealed that exports and the tax revenue to GDP ratio failed to explain government savings. The coefficients were statistically insignificant and less than 20 percent of savings variance was explained by the variables. Ramsaran also examined financial savings using equation (30). The interest rate and inflation rate variables had positive impacts on financial savings. However, the inflation variable was statistically insignificant. The per capita income variable positively affected financial savings but was statistically insignificant.

Summary of Findings

The available empirical research provides some understanding of savings dynamics in Guyana. The income variable was found by Williams to positively and significantly affect savings. Income growth, but not current income, was noted by Ramsaran as a major factor determining savings. These findings point to income as an important determinant of savings.

Williams' findings on interest rate indicated positive and statistically insignificant impacts on domestic and financial sav-

ings. A positive and statistically significant wealth (real expected income) effect obtained on financial savings. Williams therefore suggests that high interest rate policy, in conjunction with other policies and removing some of the constraints in the economy, may facilitate savings mobilization. Ramsaran found a positive and statistically significant interest rate effect on financial savings. It is impossible to arrive at a conclusion on the interest rate effect on the basis of these findings.

The inflation rate variable affected savings negatively and was statistically insignificant in Williams' findings. Ramsaran uncovered a positive and statistically insignificant inflation rate effect on financial savings. Evidently, the inflation rate effect is uncertain. Moreover, government savings, as Ramsaran's findings demonstrated, could not be explained by the tax revenue ratio and exports.

BARBADOS

Boamah and Holder (1991) investigating the external debt build-up of Barbados estimated the following savings function:

$$SP = f(YD, \Delta GDP, RDR, INF, Dep, RFS, TT, XGR, D) \quad (32)$$

where SP is real private savings, ΔGDP is the change in gross domestic product, YD is disposable income, RDR is real deposit rate, INF is the rate of inflation, Dep is the dependence ratio, RFS is real foreign savings, TT is the terms of trade, XGR is export growth rate and D is the stock of real external debt.

The estimation methodology relied on cointegration theory. This required invoking The Granger Representation Theorem and relying on the Dickey Fuller tests for unit roots. Data for the period 1965-89 were employed. The foreign savings variable was defined as the net capital inflows on the current account of the balance of payments. Gross national savings were derived as the difference between gross capital formation and foreign savings. The dependency ratio recorded the proportion of the population

65 years and older and the proportion under 15 years. The real deposit rate was defined following Greene and Villanueva (1991).

The estimated savings function was subjected to three diagnostic tests. The Lagrange Multiplier test for autocorrelation was not significant, the Jorge Bera test suggested that the residuals were normal and the Ramsey Reset test did not indicate any problem with the functional form. Boamah and Holder, therefore, concluded that the estimated equation was well specified statistically.

Real private savings appeared to be largely determined by real output, the stock of real external debt outstanding, real foreign savings, the terms of trade and the demographic dependency ratio noted by Boamah and Holder. The real interest rate, the rate of inflation and the export growth rate were all of the right signs but were statistically insignificant. Boamah and Holder interpret the signs on the real foreign savings and real debt variables as corroborating the general view in the literature that foreign savings in developing countries are substitutes for domestic savings.

Ramsaran (1988, b) estimated equation (28) for Barbados. The estimates revealed private and official inflows having a negative impact on the domestic savings effort. Inclusion of GDP growth as an explanatory variable did not significantly improve the results. However, the regressing of savings on current GDP yielded poor results. The current income effect was negative and the proportion of savings variation explained was quite low.

Ramsaran proceeded to examine government savings and financial savings. The findings revealed that tax revenue to GDP and exports failed to explain government savings and that the interest rate and inflation rate variables had negative impacts on financial savings in addition to being statistically insignificant. Per capita income had a positive impact but was statistically insignificant.

Wood (1994) estimated the following savings function for Barbados:

$$PS = f(Y, GS, FS, UR, IR, DR) \quad (33)$$

where PS is private savings, Y is income, GS is government savings, FS is foreign savings, UR is the unemployment rate, IR is interest rate and DR is age-dependency rates.

Gross national private savings deflated by the CPI, with base year 1974, was used as the private savings variable. It was estimated as the difference between gross capital formation and foreign savings (net movement on the capital account of the balance of payments) and government savings (current government budget surplus). The income variable is gross national product (at factor cost) based on constant 1974 prices. The real interest rate variable is the nominal weighted average rate on commercial banks' time and savings deposits corrected for inflation. Three measures of inflation were considered, but the current period value of the percentage change in the CPI provided the best results and was utilized. The dependency rate was defined as the proportion of persons below 15 years and over 65 years in the mid-year population. The government savings variable was included to test Ricardian Equivalence, which suggests that variations in government savings are neutralized by opposite movements in private savings. Data covering the period 1965-89 were employed.

The estimation methodology employed the cointegration approach. This involved the estimation of a 'long-run' or cointegrated savings model, followed by the estimation of a corresponding 'short-run' error correction mechanism savings model based on The Granger Representation Theorem.

Wood subjected the estimated 'long-run' savings equation to the Dickey-Fuller, Augmented Dickey-Fuller and Cointegration Regression Durbin-Watson tests which all indicated stationarity. The error-correction or dynamic 'short-run' savings equation was derived and the Lagrange Multiplier Test for serial

correlation, Ramsey Specification Error Test, Bera-Jarque Normality Test, the Chow Test for structural change, Predictive Accuracy Test and Hausman Test for exogeneity all confirmed its adequacy.

The estimates revealed a positive income effect on savings with an income savings elasticity of 0.39 in the short-run and 0.32 in the long-run. The government savings variable indicated that short-run and long-run variation in government savings is not completely neutralized by opposite movements in private savings, denying a strong assumption of Ricardian Equivalence for Barbados.

The foreign savings variable impact on domestic private savings was negative in the short-run and long-run. Wood argued that weak support was provided for the notion that foreign and national savings are substitutable resources as indicated by estimated short-run and long coefficients of -0.13 and -0.09. The interest rate variable had a negative effect on savings in the short and long-run, with the short-run coefficient being statistically insignificant. A negative savings impact was also derived from the unemployment variable in the short-run and long-run. The short-run unemployment savings elasticity was -0.31 with -0.52 for the long-run.

Summary of Findings

Interesting insights emerge from the empirical findings on Barbadian savings behaviour. The findings of Boamah and Holder and Wood, with respect to Barbados, point to foreign debt and foreign savings having a negative impact on domestic savings. Ramsaran's finding of a negative private and official inflows effect provides support. The dependency rate was found to reduce domestic savings by Boamah and Holder. However, Wood obtained a statistically insignificant dependency rate coefficient in the long-run savings function. The evidence of dependency rates' impact on domestic savings can only be described as inconclusive.

Boamah and Holder found positive and statistically insignificant interest rate effects on savings. Ramsaran found a negative and statistically insignificant interest rate effect on financial savings. Wood also obtained a negative effect on savings in the short-run and the long-run, with the short-run effect being statistically insignificant. These findings point to a negative though mostly uncertain interest rate effect on savings.

The income variable impacted positively on private savings despite a negative current income effect obtained by Ramsaran. Movements in government savings appeared not to be completely neutralized by opposite movements in private savings. However, the export and inflation rate effect remains an open question. An interesting finding was that the unemployment rate had a significant negative effect on private savings, with the long-run unemployment savings elasticity being -0.52.

The OECS

Bain and Liburd (1989) estimated the following savings function for the OECS.

$$S^d/Y = f(g, r, S^d/Y, S^d/Y_{-1}) \quad (34)$$

where S^d/Y is domestic savings to GDP ratio, S^d/Y_{-1} is the lagged domestic savings to GDP ratio, r is real interest rate and g is the rate of growth in GDP.

The real interest rate was measured by subtracting the rate of inflation from the average rate of interest on twelve-month deposits. The estimated growth rate was the natural logarithm of real GDP. The savings function was estimated by OLS using time series and cross sectional data for the period 1980-86.

The estimated equation produced a negative and statistically insignificant real interest rate coefficient. The foreign savings ratio was negative and statistically significant. When the growth rate in real GDP was regressed on the real interest rate,

the estimated real interest rate coefficient was positive and statistically insignificant. However, the proportion of variation in savings explained by the estimated equation was 12 percent. Based on these findings Bain and Liburd concluded that “savings in the OECS, particularly since 1983, cannot be said to be influenced by the real interest rate” and that foreign savings tend to replace domestic savings.

Watson (1993) estimated the following two savings functions for the OECS.

$$S = f(Y, S_f, i_r) \quad (35)$$

$$S = f(Y, S_f, i_r) \quad (36)$$

where in equation (35) S is domestic savings, Y is the level of GDP, S_f is the level of foreign savings and i_r is a measure of the real rate of interest. In equation (36) S and S_f are the ratio of domestic and foreign savings to GDP and Y is the natural logarithm of per capita GDP.

Data covering the period 1980-90 were used with the exception of Antigua and Barbuda for which data covered the period 1980-87. The econometric methodology employed Hendry's General-to-Specific Modelling approach. This led to four different model estimates based on equations (35) and (36). The first was the LSDV model which assumes that the slope coefficients for each country are identical, but the intercepts differ and the “individual” effects as measured by the different intercepts are fixed. The estimation procedure is OLS applied to the pooled data. The second was the OLS model in which ordinary least squares were applied to the data for each country. Thirdly, if the individual variation is random then the so-called Random Effect model with generalized least squares was the estimation procedure. Finally, there was the pooled (OLS) model which assumes that the intercepts and the slopes are equal for each country.

Watson applied a battery of diagnostic tests (Hausman, Breusch and Pagan and traditional statistics) to these models to determine whether or not the data should be pooled and which pooling procedure should be used in the event of a decision to pool, and also to judge the quality of the results. The results led to a rejection of the LSDV, Random Effect and the Pooled (OLS) models in favour of the OLS model. Simulation of the models and visual inspection of the plots of actual and predicted values provided further evidence of the OLS model's superiority, particularly as a forecasting tool.

The results, Watson noted, have serious consequences for economic policy as indicated by the findings for equation (35). Firstly, estimated coefficients for individual countries were markedly different from each other and from those obtained by the panel data methods. Secondly, the interest rate coefficient was positive and statistically significant in the three panel data estimates: a non-rejection of the McKinnon-Shaw hypothesis. The interest rate coefficient was significant only in the case of one country where it was also negative. For three other countries it was negative and insignificant. Thirdly, the panel data methods suggest roughly a 20 percent marginal propensity to save (MPS) out of income for each country, whereas the OLS estimates yield wide variations in the MPS. Finally, the foreign savings coefficient was negative for the panel data methods, but significant only in two cases. For the OLS model the results were mixed with the foreign savings coefficient positive and insignificant in two cases, negative and insignificant in one and negative and significant in two cases. The findings resulting from application of equation (36) were similar.

Watson, on the basis of these results, concluded that the domestic savings effort of the individual OECS economies, under current circumstances, would not benefit from an active interest rate policy. However, the uncritical acceptance of panel data methods led to the opposite conclusion.

Summary of Findings

Some insights into savings behaviour in the OECS can be gleaned from these findings. The interest rate variable appears to have a negative impact on savings. The foreign savings variable negatively affects domestic savings in Bain and Liburd's findings. Watson's OLS results provide mixed results on the foreign savings variable impact. What is obvious, though, is that there is some evidence of a negative foreign savings impact on domestic savings.

THE EMPIRICAL FINDINGS AND SAVINGS POLICY

The empirical savings findings clarified the impact of variables on aggregate domestic savings and, assuming that the variables are policy responsive, simultaneously outlined a role for policy. The findings broadly suggest that aggregate income, and to a lesser extent income growth, provoke increases in domestic savings. This calls for economic policies that expand national income and are growth inducing. Fiscal policies that contain fiscal deficits and reduce deficit financing contribute to low inflation rates. Foreign trade policies that reduce the distortion of incentives between tradeable and non-tradeable sectors and discrimination against export activities enhance economic growth. Appropriate exchange rates and exchange rate stability that maintain balance between domestic cost of production and world prices facilitate tradeables expansion. These policies make for a stable macro-economic environment, low inflation rates and realistic exchange rates, all factors that induce economic growth.

Specific examination of the individual components of savings, i.e. households, businesses and government, received scant attention from the empirical researchers, due to limited disaggregated savings data. Nevertheless, Ekanayake and Ramsaran examined household savings in Trinidad. Households' income was found to explain a substantial portion of household savings. The interesting results, from a policy perspective, came from

Ekanayake's examination of household budget survey data. The findings suggest that the marginal propensity to save of higher income groups exceeded that of lower income groups. The budget data also revealed lower income groups generally having negative savings and a gradual decrease in dissavings as income increases, with the higher income groups always achieving positive savings. The extent to which this pattern is replicated in other Caribbean countries awaits empirical verification. A related finding, by Ekanayake, is high desired asset-income ratios indicating a desire to hold a relatively large proportion of income in financial assets. Policy should offer incentives aimed at exploiting the greater savings potential of higher income groups. The system of tax incentives should be geared to this purpose.

Apparent desire to hold income in financial assets provides opportunities to broaden tax incentives for financial assets holding. This could include the granting of tax credits for the purchase of shares on the stock exchange and in venture capital companies, thereby giving a fillip to capital market development. The experience with 'credit unions' and 'unit-trust' tax credits is quite instructive here, especially when existing dividend income and capital gain allowances appear to have had minimal impact in stimulating widespread share ownership. So long as increased equity capital flows expand productive investments leading to income expansion, the resulting tax revenue gains may offset initial tax revenue losses. Prior concern, therefore, cannot be with initial tax revenue losses from granting tax credits.

The view that the distribution of income in favour of the non-wage sector is a necessary prerequisite for increased savings lacked empirical support. Ramsaran and Martin found support lacking in the Trinidadian data. Statistical tests of the significance of the absolute difference in marginal propensities to consume labour and property incomes in Guyana and Jamaica by Bourne proved inconclusive. Despite the limited country coverage, these results suggest that if existing policies deliberately favour the non-wage sector on the grounds of a larger savings propensity, they may be badly flawed. The extent to which policy, through the

system of tax incentives, favours non-labour income over labour-income needs to be examined. Such examinations must seek to carefully determine, where possible, the probable savings gain from policies that discriminate against labour-incomes in favour of non-labour incomes.

An overwhelmingly negative foreign savings effect on domestic savings appears to operate in Caribbean economies. The need to stimulate domestic savings appears to be in conflict with existing dependence on and demand for foreign savings inflows. In short, there is a trade-off between domestic savings mobilization policies and foreign savings mobilization policies, including foreign borrowing and foreign investment policies. A number of possible channels through which foreign savings affect domestic savings have been identified. These include reduced tax collecting efforts and changed expenditure composition in favour of public consumption, disincentive effects on private savings due to changes in credit condition, stimulation of importables and exportables consumption and inappropriate exchange rate consequent on increased availability of foreign exchange.

The possible channels of influence indicate areas for policy intervention to minimize apparent domestic and foreign savings trade-offs. Policy must attempt to ensure that official borrowing and official inflows are directed to productive activities or activities that are complementary to private productive investments. This should allow for future income growth and savings out of future income, while minimizing public consumption expansion. Attempts must be made to bias incentives for foreign direct investments towards activities that impact on export growth rather than import growth.

The notion of a positive link between interest rates and savings was not supported by the empirical evidence. Out of a total of thirteen empirical studies only two, Watson, and Watson and Ramlogan, found positive and statistically significant interest rate effects on savings. In fact, the Watson and Ramlogan study found a long-run effect on savings. Three of the remaining em-

irical studies, Ramsaran, Williams, and Boamah and Holder, found positive and statistically insignificant interest rate effects on savings. All other empirical studies found negative interest rate effects. Evidently, Caribbean empirical findings point to a mostly negative and uncertain interest rate effect on savings. A failure to support the McKinnon-Shaw hypothesis with its policy recommendation of financial liberalization centred around positive real deposit rates of interest.

The lack of a positive relationship between interest rates and savings suggests that positive real deposit rates of interest cannot be the pivot of financial liberalization in the Caribbean. High real deposit rates will have, at most, negligible impact on savings given empirically adduced negative interest responsiveness. If real positive deposit rates are attained by upward nominal deposit rate movements, corporate savings in the form of retained earnings may fall. Deposit rate increases can reduce corporate borrowings for working capital by provoking lending rate increases to maintain interest spread. High firm dependence on working capital releases resources and expands retained earnings or firm savings. Does widespread dependence on working capital, by Caribbean firms, not call for low inflation rates rather than high nominal deposit rates? An aversion of deficit financing and maintenance of exchange rate stability, leading to low inflation rates, should be a preferred policy. To the extent that unanticipated inflation and volatility of inflation rates increase financial assets risk and reduce financial savings added benefits will accrue.

Financial savings mobilization policy must move beyond the preoccupation with interest rates. The focus must be on enhancing efficiency in the financial sector. A first requirement is an improved regulatory framework, spanning Banks and non-Bank financial intermediaries, that ensures adequate prudential standards and concedes regulators the power to enforce regulations. Savings gains may accrue due to bolstered confidence of surplus units in financial intermediaries. Increased operating efficiency through improved management and information systems must be actively encouraged. Intense competition between intermediaries stimu-

lates efficient financial intermediation and adoption of modern technology generating efficiency gains in the process. The oligopolistic structure of Caribbean financial systems implies that attention must be focused on measures to enhance competition, since oligopolistic behaviour tends to assume the form of tacit collusion. A modern and effective regulatory framework, financial intermediaries operating efficient management systems, utilizing advanced information technology systems, and active competition among intermediaries, in a low inflationary and stable exchange rate environment, may be more essential to stimulating savings rather than high nominal interest rates *per se*.

Empirical findings on dependency rates savings impact were confined to Barbados and Trinidad. The Trinidad findings suggest negative savings effects. Findings by Boamah and Holder, for Barbados, indicate a negative effect, whereas Wood found a statistically insignificant effect. These limited findings together with Wood's findings of a negative long-run unemployment effect on savings for Barbados, in the context of high unemployment Caribbean-wide, suggest the need for employment-and growth-generating policies.

Findings for the export growth savings effect were confined to Trinidad and Barbados. The Trinidad findings suggest a positive effect while findings for Barbados were more uncertain. To the extent that export growth is the decisive influence on income growth and income has a major positive effect on savings, export growth is crucial for savings growth. Economic policy must expand the export growth thrust. This requires tilting incentives in favour of tradeables as against non-tradeables through monetary, financial, exchange rate and productivity policies.

The inflation rate effect appeared mixed and uncertain, given findings for Barbados, Trinidad, Guyana and Jamaica. At the theoretical level the inflation rate effect can be positive or negative. The key concern for policy, though, must be the effect on real interest rates. Failure to contain inflation rates means real deposit rates will be effected through nominal rate increases. By

affecting the cost of working capital it may impair corporate savings.

Government savings have the potential to enormously affect total savings. The empirical findings point to weak tax revenue variables effect on savings in Jamaica and Guyana. For Trinidad, tax and current government revenue have positive effects on government savings. The government's marginal propensity to save, Ekanayake found, exceeded the private sector's marginal propensity to save. Wood's results for Barbados indicated a failure of private savings to fully neutralize government savings, by opposite movements, which suggests that total savings would expand with growth in government savings. Should government savings be expanded through increased taxes or reduced expenditures? This is the central consideration from a policy perspective. The approach though will have to operate on both variables. The structure of expenditure will have to be examined and concern should be with the impact of expenditure items on productive private investments and human capital formation in its broadest sense. Priority concerns for tax changes should be the need to bias incentives in favour of the tradeable sector and against the non-tradeable sector.

THE SAVINGS AND INVESTMENT NEXUS

Financial Intermediation

The mobilization of domestic savings was premised on the need to rapidly increase domestic financing of investments. Accelerated domestic financing is necessary to cushion expected reduced foreign financing and to boost the level of domestic investments. Rising investments induce higher levels of economic growth thereby raising living standards and reducing unemployment. In Caribbean economies it is not simply increased investments, but increased investments in the tradeable sector, that guarantee economic growth. The binding foreign exchange constraint is what dictates this pattern of investments. An important ques-

tion immediately arises. How are savings transformed into investments? Any useful answer will be centred around the process of financial intermediation.

Theoretically, two influential sets of views on the link between financial accumulation and the savings-investment process exist. McKinnon (1973, 1974) advanced the "complementarity hypothesis" in which he maintains a positive relationship between the accumulation of real money balances and real investment under regimes of self-financed investment. Savings take the form of financial asset accumulation prior to the act of investment. Monetary assets are thus the "conduit" for investment. Bourne (1988) argued that self-financed investment linked to monetary accumulation is atypical of Caribbean economies because the household sector and the corporate sector are the main holders of monetary assets, the former being surplus units, for whom deposits constitute savings at the micro level, and the latter mainly deficit units whose deposits are more in the nature of working capital than investment funds. Shaw's (1973) debt-intermediation approach, Bourne contended, provides a potentially more illuminating framework for analyzing the financial asset accumulation and savings-investment link. The approach juxtapositioned financial intermediaries between micro-savers and investors with an economic sequence from surplus units (micro-savers) to financial intermediaries (monetary assets) to investments (aggregate savings in the national income accounting sense).

Financial intermediation, therefore, constitutes the crucial link between financial asset accumulation and investments. The rate at which financial intermediaries transform their liabilities into credit, for physical capital accumulation, exercises overwhelming influence on investment growth. Bourne (1986, 1988) identified two financial series as affecting the magnitude of the transformation coefficient, the first being the ratio of narrow money balances to the broad money stock, which is a measure of liquidity. The higher this ratio, the smaller the scope for term transformation by financial intermediaries and the smaller the scope for their financ-

ing of investments. The second was the share of real credit allocated to government consumption and personal consumption.

Liquidity preference ratios fluctuated mildly around average values and were generally stable, for most countries, over the period 1982-92 (see Tables 4 and 5). Nevertheless, the ratio for Grenada declined from 0.40 to 0.27 whilst that for Trinidad declined from 0.33 to 0.18, then increased to 0.20 by 1992. Sharp increases above period averages occurred for Guyana over 1988-89 and Jamaica over 1991-1992.

The larger share of monetary sector credit accrued to the private sector for all countries, excluding the OECS, by 1992 (see Tables 6, 7 and 8). A sharp reversal occurred in Jamaica and Guyana, where the government sector received the larger share of monetary sector credit in the early 80's. By the early 90's the private sector was receiving the larger share. Trinidad revealed a relative increase in the government sector's share, whereas Belize displayed a sharp decline in monetary sector credit to the government sector. In the case of the OECS the larger share of commercial bank credit accrued to private individuals as against business firms. The share to the government sector tended to be quite low with the exception of St. Kitts, where the government sector initially received the larger share. The dominant share of private individual credit in OECS total bank credit suggests limited transformation effects. The private sector received the bulk of credit in other Caribbean economies; whether that credit constituted investment in tradeables or non-tradeables assumes importance.

Scarcity of Finance or Investment

The bulk of investments in Caribbean economies has been concentrated in the non-tradeable sector. Worrell (1990) cites the heavy concentration of investments in the non-tradeable sector, and particularly in building construction. Poor economic performance, Worrell argued, was due to the insufficiency of the proportion of investment that financed additional capacity for

TABLE 4. LIQUIDITY PREFERENCE RATIOS¹

Country	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Barbados	27.4	29.6	26.7	28.6	31.0	32.3	33.9	29.7	31.1	28.6	29.2
The Bahamas	24.9	23.7	26.6	24.5	24.7	21.9	22.0	21.8	22.4	22.8	22.7
Belize	30.9	27.6	31.6	29.1	28.6	28.6	28.9	30.5	28.6	28.6	30.6
Guyana	34.6	33.1	34.1	34.1	33.8	33.4	40.0	38.5	36.4	36.9	29.6
Jamaica	30.9	29.6	29.3	28.1	30.3	30.2	32.7	28.9	31.1	39.3	37.0
Trinidad & Tobago	33.4	28.6	25.0	25.1	23.0	22.0	18.3	19.5	21.3	26.3	26.8
Antigua & Barbuda	21.8	21.6	23.8	23.5	26.0	24.6	26.2	26.2	25.5	23.8	24.4
Dominica	26.4	24.0	26.5	24.0	25.8	30.7	31.6	27.4	27.5	23.8	25.5
Grenada	40.6	39.5	33.8	30.8	30.8	29.3	28.7	28.6	25.7	23.8	27.3
Montserrat	-	-	33.7	33.2	35.0	-	-	-	28.0	25.4	23.3
St. Kitts & Nevis	19.5	18.3	18.7	15.0	21.5	26.0	22.5	23.3	30.3	16.3	14.7
St. Lucia	26.8	23.7	23.3	22.0	24.1	25.6	28.2	27.4	22.2	21.1	25.6
St. Vincent and the Grenadines	25.8	26.7	27.7	26.7	29.6	21.8	25.8	25.3	18.9	15.6	21.9

Source: Quarterly Statistical Digest, Central Bank of Trinidad and Tobago.
 Bank of Guyana Annual Report.
 Quarterly Review, Central Bank of Belize.
 Quarterly review, Central Bank of The Bahamas.
 Economic and Financial Statistics, Central Bank of Barbados.
 Statistical Digest, Bank of Jamaica.
 Eastern Caribbean Central Bank, Report and Statement of Accounts.

TABLE 5.
PERIOD-AVERAGE LIQUIDITY PREFERENCE RATIOS, 1982-1992

Country	Percent
Barbados	29.8
The Bahamas	23.4
Belize	29.4
Guyana	35.0
Jamaica	31.6
Trinidad and Tobago	24.5
Antigua & Barbuda	24.3
Dominica	26.6
Grenada	28.0
Montserrat	25.5 ¹
St. Kitts & Nevis	20.5
St. Lucia	24.5
St. Vincent & the Grenadines	24.2

¹Covers the period 1990-1992.

Source: Calculated from Table 4.

**TABLE 6. GOVERNMENT, PRIVATE AND PERSONAL SECTOR CREDIT AS A PERCENT OF
TOTAL MONETARY SECTOR CREDIT, 1982-1992**

Country	Sector	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Barbados	Government	26.3	23.3	23.8	20.1	20.0	21.6	20.5	17.0	27.4	28.2	29.2
	Private Sector	73.7	76.7	76.2	79.9	80.0	78.4	79.5	83.0	72.6	71.8	67.0
	Personal	13.2	14.3	14.0	15.2	16.8	17.7	19.9	19.3	15.6	15.0	13.5
The Bahamas	Government	25.1	26.3	26.4	20.5	16.2	17.5	21.7	25.4	25.1	26.5	26.8
	Private Sector	74.9	73.7	73.6	79.5	83.8	82.5	78.3	74.6	74.9	73.5	73.2
	Personal	32.7	32.9	36.0	40.4	43.4	44.7	40.0	35.1	39.8	39.2	39.6
Belize	Government	32.7	37.6	38.8	43.6	44.2	37.1	13.7	3.9	-4.0	8.7	10.8
	Private Sector	67.3	62.4	61.2	56.4	55.8	62.9	86.3	96.1	104.0	91.3	89.2
	Personal	6.6	7.8	7.5	5.0	5.7	6.5	10.6	12.6	16.5	61.1	13.6
Guyana	Government	87.4	91.3	92.1	92.1	90.7	90.9	89.3	85.1	76.8	59.6	42.9
	Private Sector	12.6	8.7	7.9	7.9	9.3	9.1	10.7	14.9	23.2	40.4	57.1
	Personal	3.9	3.8	2.9	3.8	2.7	3.6	2.9	3.1	6.3	10.1	14.7
Jamaica	Government	64.7	66.5	64.3	62.9	64.6	55.6	38.4	27.2	16.8	-4.3	-5.7
	Private Sector	35.3	33.5	35.7	37.1	35.4	44.4	61.6	72.8	83.2	104.3	105.7
	Personal	4.0	3.1	2.4	2.2	2.5	3.0	3.6	4.8	6.5	13.9	24.3
Trinidad and Tobago	Government	-89.5	-9.6	11.6	18.1	31.2	37.7	41.6	42.0	40.5	35.7	36.7
	Private Sector	189.5	109.6	88.4	81.9	68.8	62.3	58.4	58.0	59.5	64.3	63.3
	Personal	71.0	36.4	35.8	33.0	23.1	20.3	20.7	24.0	26.2	26.6	25.1

Source: Same as Table 4.

TABLE 7. PERCENTAGE SHARES OF TOTAL COMMERCIAL BANK LOANS, 1983-1992

Country	Sector	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Antigua & Barbuda	Government	13.4	13.5	12.7	14.3	15.3	14.9	13.7	11.2	10.0	10.6
	Business Firms	34.7	29.1	30.1	36.8	37.7	35.3	39.2	42.8	43.9	41.4
	Private Individuals	49.9	56.1	55.9	46.9	45.9	48.0	43.7	44.4	42.0	46.6
Dominica	Government	14.5	18.6	17.9	22.1	6.4	7.5	6.3	14.0	17.0	14.8
	Business Firms	45.8	31.5	33.3	36.5	37.9	39.3	34.4	30.9	30.1	32.1
	Private Individuals	32.6	42.8	41.7	37.6	47.4	50.4	55.8	53.3	50.4	51.1
Grenada	Government	19.7	15.9	14.4	11.3	11.4	11.2	9.1	9.0	9.0	6.6
	Business Firms	43.5	46.9	45.0	47.6	56.3	44.6	47.9	47.9	48.2	58.4
	Private Individuals	34.3	33.5	38.4	38.9	51.0	41.5	40.2	39.5	39.7	32.1
St. Kitts & Nevis	Government	40.2	39.7	46.3	46.8	22.0	23.7	23.0	27.3	27.4	21.4
	Business Firms	25.9	25.2	17.1	20.2	32.0	33.3	34.1	32.0	32.5	39.2
	Private Individuals	31.5	32.6	34.5	31.4	44.2	41.8	41.7	39.2	38.7	37.8
St. Lucia	Government	8.5	8.7	11.2	12.4	11.6	7.8	7.2	6.6	6.0	7.9
	Business Firms	37.0	35.8	32.2	28.8	30.4	37.2	39.7	40.7	44.6	41.3
	Private Individuals	52.9	53.7	54.8	57.0	56.4	53.0	51.7	49.2	46.5	47.1
St. Vincent & the Grenadines	Government	29.5	30.8	29.9	28.6	25.2	22.2	19.2	17.1	14.9	15.8
	Business Firms	38.8	35.4	32.7	32.7	38.4	35.2	35.7	34.6	37.4	38.4
	Private Individuals	30.2	31.4	33.8	32.6	32.5	39.2	41.7	40.7	41.8	41.0
Montserrat	Government	10.6	8.9	11.7	7.6	6.5	3.0	0.9	0.3	0.1	0.1
	Business Firms	35.9	39.6	36.2	26.2	26.5	24.1	26.5	31.3	33.1	36.0
	Private Individuals	43.3	40.2	39.8	52.5	56.8	59.8	54.2	61.3	60.4	57.1

Source: Same as Table 4.

TABLE 8.
PERIOD-AVERAGE GOVERNMENT, PRIVATE AND
PERSONAL SECTOR SHARES AND PERCENTAGES OF
TOTAL COMMERCIAL BANK AND MONETARY SECTOR CREDIT

Country	Government	Private Sector ¹	Personal Sector
Barbados	23.4	76.2	15.9
The Bahamas	23.4	76.6	38.5
Belize	24.3	75.7	9.9
Guyana	81.6	18.3	5.2
Jamaica	41.0	59.0	6.4
Trinidad and Tobago	17.8	82.2	31.1
Antigua and Barbuda	13.0	37.1	47.9
Dominica	13.9	35.2	46.3
Grenada	11.8	48.6	38.9
Montserrat	5.0	31.5	52.5
St. Kitts/Nevis	31.8	29.1	37.3
St. Lucia	8.8	36.8	52.2
St. Vincent & the Grenadines	23.3	35.9	36.5

¹For the OECS countries the figures under this category represent credit to business firms.

Source: Calculated from Tables 6 and 7.

earning foreign exchange, rather than the amount of investment *per se*. The following questions follow inevitably. Why have investments in the tradeable sector been limited? Is it because of a lack of viable projects? Some have argued that a shortage of viable projects is the problem. So it is a problem less of finance than of entrepreneurship. Worrell (1990, 1991) eloquently advances the argument:

We have now reached the stage of financial development where if a firm cannot secure adequate finance with a little effort its projects are probably not viable. We have a long chronicle of projects which were turned down by private financial institutions as unviable but which government funded because they were "developmental". They have all collapsed after extinguishing sizable amounts of official finance. In truth, the financial system does a pretty decent job of funding viable projects; the problem is a scarcity of viable projects, particularly in exports of goods and services. Micro-economic policies to remedy that deficiency are the solution. As these projects emerge, they will be financed.

Worrell in his earlier work (1990), in examining investment and finance in Barbados, concedes the existence of anecdotal evidence from individual companies that had difficulty in obtaining adequate finance on terms that offered sensible margins for contingencies, but suggests it would be wrong to infer that credit was being rationed globally. However, official efforts to provide financing for new ventures strengthen the availability of finance argument. These included special discounts, preferential interest rate margins and concession on reserves requirements by Central Banks to encourage lending by commercial banks. The creation of specialized institutions for long-term financing, the establishment of stock exchanges and the provision of export credit and guarantees also featured.

However, at the root of poor tradeable sector investments are two issues: firstly, new-export projects viability and secondly, export project search and evaluation capabilities. A new-export project may aim to develop and sell a new product (good or ser-

vice) or take an existing product to foreign markets. The prospects of the product capturing a share of the foreign market determine the expected rate of return and, therefore, the viability of the project. The deciding influences are product and factor market conditions.

The product market (international market) is competitive by definition and imposes requirements on factor markets. A need for information arises and the enterprise may need to upgrade existing technologies or deploy new technologies. This requires investments in new skills and technical and organizational information or the development of new technological capabilities. Such gaining of technical competence is not instantaneous, costless or automatic, even if technology is widely diffused. It has to be learnt and involves a learning process specific to the firm. Functioning skills markets are supposed to supply the range of special and particular skills required. Information markets are expected to facilitate information search, providing information on competitors, product types, marketing strategies, technological capabilities and market entry requirements such as health and environmental standards. The technology market is supposed to provide the science and technology infrastructure including support institutes providing engineering, research back-up and extension services. If such markets are missing or market failures are widespread, firms will be denied the optimal supply of special skills, information and technological inputs required for gaining foreign market shares and keeping abreast of competition.

The sources of market failures are many and varied. An important source of skill creation takes place after employment and involves firm-financed training. Managers may not be aware of the skill needs of the technology they are using leading to a failure to develop the skills of employees. They may be unsure of recouping the full benefits of investments because trained employees may switch to competing firms. Access to in-house training may be non-existent and overseas training may be out of the question. Moreover, advanced technical training and a diverse and wider range of skills presuppose training beyond primary and

secondary schooling. Market failures can arise here because of lumpiness of facilities, absence of assurance of relevance and quality, and risk aversion.

Technological market failures can be consequent on inability of firms to perceive the need for deliberate technological effort to achieve efficient operations. Firms may be too small to finance and bear the risk of investing in R&D. The returns on investments in technology may be reduced by the danger of losing the knowledge to other firms thus limiting technological activity by firms. The supporting facilities from a science and technology infrastructure may not exist. To the extent that some technological functions have "public goods" features, whose rewards are difficult to appropriate by private firms, market failure will occur. Information gathering and analysis require the presence of specialized personnel in the foreign markets. This is costly and the small size of individual firms may prohibit financing. The telecommunications infrastructure to support data-base networking and information analysis, storage and retrieval systems may be non-existent.

Caribbean factor markets experience serious market failures, especially the skills, information and technology markets. Some interventions seeking to correct some of these market failures have been made. Export development agencies have been created to help correct for failures in information markets. They provide information on foreign markets and have achieved significant levels of development. But many have been funded by bilateral grants, operate with small budgets that provide little for marketing and promotion activities, limited manpower and have never received formal budgetary allocations. Moreover, the technology infrastructure is weak and mostly non-existent, research capabilities are limited and development capabilities rare. There is no systematic up-grading, widening and deepening of skills. Where skill up-grading occurs, it tends to be haphazard.

Export projects relative to domestic projects will be treated as more risky. Because financial institutions are less informed

about external markets than about internal markets and consequently assign greater risk to export-oriented projects, widespread market failures in the decisive factor input markets for new-export projects dramatically increase their risk and reduce their viability. Larger size firms can arguably internalize some of these market failures and so enhance export project viability. Most large and established concerns in the Caribbean have not developed and, in some cases, are only now attempting to develop technological infrastructure, build information systems, initiate R&D and upgrade skills. These conditions can hardly yield viable export projects, and reduce the viability of export projects in general. Export projects that emerge will, almost automatically, be low viable projects that can hardly command finance. The problem, on all counts, cannot be a lack of viable new-export projects but the automatic low viability of new-export projects. Selective interventions in skills, information and technology markets, to correct market failures, are urgently required in Caribbean economies. This is a virtual pre-condition for the emergence of any significant amount of viable new-export projects.

Inherent low viability of new-export projects, engendered by factor market failures, requires export project evaluation capabilities. Major differences exist between export projects and domestic projects. Capturing a share of the foreign market is the crucial factor in an export project. This hinges on developing export marketing research capabilities, promotional capabilities, the building of distribution systems and channels in distant and unknown markets, and achieving "best practice" technological capabilities to match competition. It takes time to develop such capabilities and involves the element of trial and error. The absence of efficient skills, information and technology markets to satisfy the demand for information, expertise and technological inputs slows the development of the required capabilities. The evaluation of an export-project, therefore, involves the capacity to assess export market research findings, evaluate distribution channels, practices and location, and assess packaging and product quality standards, marketing strategies and technological capabilities. Such capabilities have to be built up and require

financial intermediaries to develop the necessary expertise. Caribbean financial intermediaries generally lack the required expertise despite recent efforts at building expertise in some areas. The end result may have been poor project assessment and failure to actively seek out new export projects.

EMPIRICAL FINDINGS ON THE DETERMINANTS OF DOMESTIC INVESTMENT

A small body of empirical studies has attempted to identify the variables influencing domestic investment in Caribbean economies. The theoretical and general empirical literature has posited a number of variables as determining domestic investments. These include government investment, bank credit, the rate of interest, imports of raw material, intermediate and capital goods, foreign capital inflows, retained earnings, and money and foreign exchange earnings instability. The Caribbean empirical studies have sought to examine the effect of these and other variables on domestic investment. We proceed below to extract the findings of the empirical studies by detailing country findings. These country findings are compared with select empirical investment findings for a representative high growth economy. Implications for designing investment policies are then derived.

TRINIDAD AND TOBAGO

Ramlogan and St. Cyr (1991) estimated the following investment function for Trinidad together with other similar investment functions:

$$I_p = f(\text{GDP}, I_g, \text{WLR/PLR}, C_p, S_f) \quad (37)$$

where I_p is private investments, I_g is government investment, GDP is gross domestic product, WLR^g is the weighted loan rate, PLR is the prime loan rate, C_p is credit to the private sector and S_f is foreign savings.

The method of estimation was OLS. The government investment variable was defined as capital expenditure. Private investment was treated as total investment less domestic savings. Five models were estimated using data for the period 1967 to 1987 and a single model estimated for the period 1960 to 1987.

The estimates for the period 1967 to 1987 revealed good fits in terms of the standard criteria. The GDP variable was statistically significant and positive in all models. The estimated coefficients suggest that a dollar increase in GDP results in an increase in private investments within the range of \$0.25 and \$0.45. The government investment variable had a negative and statistically significant effect on private investments in four out of the five estimated models. The coefficients implied that each dollar of government investments crowds out approximately \$0.50 of private investments. The private sector credit variable had a negative and statistically significant effect on private investments. This, Ramlogan and St. Cyr concluded, reflected that much of private borrowing was for consumption rather than for investments. The foreign savings variable had a positive and statistically significant effect on private investments.

The single model estimate for the longer period indicated that the crowding out effect of government investment was not as severe as in the shorter period. The estimated coefficient was (-0.09).

Bourne (1988, b) estimated the following investment function for Trinidad:

$$I/Y = f(\dot{Y}, r_D, P^e, SF/Y, CR/Y) \quad (38)$$

where I/Y is investment to GDP ratio, \dot{Y} is income growth, r_D is real rate of interest, SF/Y is the foreign savings to GDP ratio, P^e is expected inflation and CR/Y is real private sector credit to GDP ratio.

The investment variable was treated as real gross capital formation. Data covering the period 1953 to 1981 were utilized. The estimation method was OLS.

The estimated results satisfied the standard criteria. A positive and statistically significant credit ratio coefficient was obtained. The computed credit ratio elasticity at the point of mean was 0.54. All other variables were statistically insignificant.

JAMAICA

Equation (37) was estimated by Ramlogan and St. Cyr (1991) for Jamaica. Models were estimated for the period 1967 to 1987 and 1977 to 1982.

Based on the standard criteria the models performed well for the period 1967 to 1987. Gross domestic product had a positive and statistically significant impact on private investments. The effect of government investment was negative and statistically significant at the one percent level. The estimated coefficients varied between 0.82 and 1.07, suggesting almost total crowding out of private investment. The private sector credit variable had a small positive and statistically insignificant effect on investments. The foreign savings variable appeared to be the most important determinant of private investments. It was statistically significant at the one percent level. The estimated coefficients suggested that half of all foreign savings is channelled into private investments.

The estimates for the period 1977 to 1987 performed better using the standard criteria. The estimate that included the prime loan rate (PLR) had a better fit than the estimate which included the weighted loan rate (WLR). The GDP variable had a positive and statistically significant impact on investments. The government investment coefficient was negative, significant and greater than one, indicating that the extent of government's crowding out of private investments led to a fall in total investment.

The interest rate variable (PLR) had a negative impact on investment and was significant at the 10 percent level only. Replacement of PLR by the weighted loan rate yielded a negative but statistically insignificant coefficient. Credit to the private sector had a negative impact and statistically insignificant effect. The foreign savings variable effect was positive and statistically significant.

Bourne (1985) estimated equation (38) for Jamaica using annual data for the period 1955 to 1982.

The estimated results indicated income growth, expected inflation and the foreign savings ratio having a positive and statistically significant effect on investments. The interest rate variable had a negative and statistically significant effect on investments. The credit variable was statistically insignificant.

BARBADOS

Ramlogan and St. Cyr (1991) estimated equation (37) for Barbados using data for the period 1974 to 1987. The foreign savings variable was proxied by the sum of net capital inflows and financing made available through the International Monetary Fund.

The estimates did not perform as well as the Jamaican and Trinidadian estimates using the standard criteria. The GDP variable had a positive and statistically insignificant effect on private investments. However, the coefficient tended to be quite small. Government investments were positively related to private investments and were statistically significant in two out of three model estimates. The estimated coefficients ranged between 0.74 and 1.33 suggesting that every dollar increase in government investment led private investment to increase on the average by one dollar.

The interest rate (PLR) variable in two of the three models was positive and statistically significant at the ten percent level.

This, Ramlogan and St. Cyr contended, could be interpreted as supporting the McKinnon-Shaw hypothesis or indicating that investments would be undertaken if the internal rate of return exceeds the interests cost. Credit to the private sector was inversely related to investments and statistically insignificant. The foreign inflow variable was positively related to investments but statistically insignificant. Ramlogan and St. Cyr viewed this result as surprising because of the openness of the Barbadian economy. They concluded that the failure to use foreign savings which would have captured the real significance of a foreign inflow variable might be the problem.

Boamah and Holder (1991) estimated the following investment function for Barbados:

$$I_p = f(GDP_{-1}, \Delta CRP, IG, PFI, UCC, IP_{-1}, D) \quad (39)$$

where I_p is real private investment, GDP_{-1} is real gross domestic product, CRP is real credit to the private sector, IG is real public investments, PFI is long-term foreign capital inflows, UCC is the user cost of capital, D is the stock of external debt outstanding and IP_{-1} is investments lagged one year.

The investment variable was defined as real gross capital formation. Foreign savings was defined as the net capital inflows on the capital account of the balance of payments. The user cost of capital included elements of price, capital gain and depreciation. The definition of Greene and Villanueva (1991) was utilized. Data covering the period 1965 to 1989 were employed.

The estimation methodology employed cointegration theory and relied on The Granger Representation Theorem. A long-run and short-run error correction investment function was estimated. The Ramsey Reset, Jarque Bera and Lagrange Multiplier Tests were employed to assess the estimates. These tests indicated that the estimates were well specified statistically.

Boamah and Holder found that real public investments, one period lagged real gross domestic product and the level of real investments in the previous period, had a positive and statistically significant effect on private investments and that the lagged private investment variable suggests investors generally achieved 65% of desired investment levels in a given period. The real credit to the private sector, change in real output, user cost of capital and the stock of external debt had the expected impact but were all statistically insignificant. Boamah and Holder interpreted these results as corroborating other studies which suggest that neither lack of financing nor the cost of funds has been a constraint on investment in Barbados.

Summary of Findings

The empirical investment findings have identified some of the influences on private investments in the Caribbean. All studies, with the exception of Bourne's Trinidad study, found the income variable exerted a positive and statistically significant effect on investments. Bourne found a negative and statistically insignificant income growth coefficient. Government investment had a negative impact on private investments in Trinidad and Jamaica. This suggests a crowding out of private investment by government investment, with the Jamaican coefficients indicating a near total crowding out. The Barbados findings suggest an absence of crowding out. Findings by both Ramlogan and St. Cyr, and Boamah and Holder indicated positive and statistically significant government investment coefficients.

The impact of credit to the private sector on investments appeared uncertain. Ramlogan and St. Cyr obtained a negative and statistically significant effect for Trinidad whereas Bourne discovered a positive and statistically significant credit ratio effect. The credit ratio for Jamaica, Bourne found, was negative and statistically insignificant. Ramlogan and St. Cyr obtained for Jamaica a positive effect over the 1967 to 1987 period and a negative effect over the 1977 to 1987 period. Both effects were statistically insignificant. Boamah and Holder found a positive and

statistically insignificant effect for Barbados as against a negative and statistically insignificant effect obtained by Ramlogan and St. Cyr. Evidently, the impact of the credit to the private sector variable on private investment is uncertain.

The interest rate effect was found to be negative and statistically insignificant for Trinidad by Bourne, and Ramlogan and St. Cyr. A negative and statistically significant interest rate effect on investments was found for Jamaica by Bourne. Ramlogan and St. Cyr derived a negative and statistically significant prime loan rate effect, in one out of two model estimates, for the period 1967 to 1987. A similar effect was found in two model estimates for the period 1977 to 1987. Estimates using the weighted loan rate were negative and statistically insignificant over the period 1977 to 1987. The Barbados findings, by Ramlogan and St. Cyr, revealed the prime loan rate having a positive and statistically significant impact on private investments. The interest rate effect appeared negative and insignificant for Trinidad, ambiguous for Jamaica and positive and significant for Barbados.

The empirical findings revealed an overwhelmingly positive and statistically significant foreign savings impact on private investment. The sole estimate using the foreign debt variable, by Boamah and Holder, yielded a positive and insignificant effect on private investments for Barbados. The expected inflation variable displayed a negative and insignificant effect for Trinidad but a positive and significant effect for Jamaica.

A High Growth Economy

The representative high growth economy is the Chilean economy. The Chilean economy, after initiating radical policies of economic liberalization and export orientation that began in the 1970s, registered good economic performances. Since 1985 the real growth rate has been more than 5 percent annually and export earnings rose from US\$5b to approximately US\$9b in 1991. Copper which constituted 70 percent of total exports in 1970

accounted for approximately 40 percent in 1991. The dynamic export sectors have been agro-business, fishing and forestry products that now jointly account for around US\$3.5b annually in export sales. Chilean economic performances over the course of liberalization were not without difficulties. During the period 1982-83 a severe recession and financial crisis gripped Chile. Growth registered -14.1 and -0.7 percent in 1982 and 1983 respectively before improving to 6.3 percent in 1984. Major financial institutions reported non-performing loan portfolios. The government intervened, acquiring important banks and financial institutions that were restructured and subsequently privatized.

The liberalization programme was wide ranging and sought to rapidly integrate Chile into the global economy. The military regime, after the 1973 military coup, pursued a policy of de-bureaucratization, deregulation (removal of price controls and administrative regulations) and wide-ranging privatization. Trade liberalization followed with customs duties cut from an average of 94 percent in 1973 to a uniform rate of 10 percent in 1979. Financial markets were also liberalized allowing free interest rates, the removal of capital controls and state regulation of the financial sector. The exchange rate was devalued in 1979 and the rate fixed; subsequently the rate was devalued in 1982 and a crawling-peg regime followed after. Fiscal reform was initiated to balance the government budget. These policy changes meant the destruction of the previously dominant development model of import-substituting industrialization.

Chile's high growth and dynamic export performance³ consequent on wide ranging economic liberalization and external orientation provide the rationale for examining its investment function. Currently, Caribbean countries are vigorously pursuing policies of economic liberalization and export orientation, with the objective of accelerating economic growth, export sales and employment levels. Comparative examination of Chilean investment determinants may be useful from the policy standpoint because of the similarity of policies on the one hand, and Caribbean eco-

conomic objectives and Chilean economic outcomes on the other. On this basis we proceed below to examine the findings of a select empirical study of Chilean private investment determinants.

Salimano (1989) estimated the following three equation models to examine private investment behaviour in Chile:

$$I_t = I(Q_t, Y_t, \sigma_{Q_t}, \sigma_{Y_t}, C_t/P_t, I_{t-1}) \quad (40)$$

$$Q_t = Q(e_t, Y_t, \gamma_2, g_{Et}, Q_{t-1}) \quad (41)$$

$$Y_t = Y(e_t, e_{t-1}, \gamma_t, \gamma_{t-1}, \gamma_{t-2}, Y_{t-1}, t) \quad (42)$$

where I_t is private investments, I_{t-1} is lagged investments, Q_t is the ratio of the stock market price index to the wholesale price index (profitability indicator), Y_t is the deviation of output from its trend (a variable for capacity utilization) and y_{t-1} its lagged value. σ_{Y_t} is the variance of output (demand), σ_{Q_t} is the variance of the profitability index, C_t/P_t is the stock of real credit, γ_t is the real interest rate (and γ_{t-1} and γ_{t-2} are its lagged values), e_t is the real exchange rate and e_{t-1} is its lagged value, g_{Et} is the return on holding foreign currency (ratio of the average paralleled market exchange rate to the official exchange rate) and t is a time trend.

The model was estimated in logarithmic form by the method of three stage least squares. To capture the 1981-83 recession and seasonal factors, dummy variables were included in the estimation. Quarterly data running from 1977 (I) to 1987 (IV) were utilized.

The estimated results provide interesting insights into investment behaviour in Chile. The profitability variable had a positive and statistically significant impact on investments, but the elasticity was rather low with a value of 0.22 in the short-run and 0.32 in the long-run. Salimano, therefore, inferred that profitability was important but its quantitative importance was not large.

The output variable was statistically significant with a short-run output-elasticity of 1.77 and a long-run elasticity of 2.60. This result shows a high response of investment to changes in cyclical conditions or economic fluctuations.

In the case of the risks and uncertainty variables the variance in output was statistically significant, whereas the profitability variance was non-significant. This, Salimano concluded, implies that much of the variance in asset prices may not correspond to changes in fundamentals and hence it should not be expected to be correlated with investments.

The stock of credit variable was statistically significant and positively related to private investments; however, the quantitative magnitude was small as indicated by both a long-run and short-run elasticity of less than 0.5. Significant lags in the adjustment of actual investments to desired investment were confirmed by the statistical significance of the lagged investment variable.

The real exchange rate displayed a negative and statistically significant effect on aggregate profitability of private investments. The coefficient of the real interest rate and the return on holding foreign currency both had a negative and statistically significant effect. Therefore, a rise in the black market premium for foreign exchange and in the real interest rate appears to depress private investments.

Some Comparisons

The variables common to both the Chilean and Caribbean empirical studies had substantial divergent investment impacts in the two cases. An output or income, a credit and interest rate variable were used in the Chilean and Caribbean empirical studies. The income variable exerted a positive and significant investment effect in the Chilean and Caribbean economies. Findings for the credit variable indicate that increased credit expands Chilean private investments, whereas the impact of credit on investments

appears uncertain in Caribbean economies. The interest rate variable has a negative effect on investments in the Chilean economy. For Caribbean economies no definite relationship was uncovered between investments and interest rates. The select empirical investment findings for the Chilean economy, a representative high growth economy, indicate that the credit and interest rate variables have definite effects on investments, in contrast to the uncertain investment effects in the Caribbean findings.

The investment impact of other variables in the Chilean findings is not without significance. The transformation period in Chile was erratic and marked by crisis, culminating in the severe 1982-83 recession. Caribbean economies are currently being transformed by major policy changes, including privatization of state enterprises and tariff reductions. The potential for major crises exists. In this context, the Chilean findings also suggest that exchange rate stability, macro-economic stability and low real interest rates are necessary conditions for high levels of investments.

Salimano also performed policy simulation with the estimated model to gauge the impact of different policies and/or exogenous shocks on private investment in Chile. A stable path for the real exchange rate, a reduction in exogenous fluctuations in output and a reduction in real interest rates were simulated.

One of the important results from the simulations is that if exchange rate policy had been supportive of greater real exchange rate stability during the sample period, the level of investment would have been higher. Over-valuation of the exchange rate that developed stimulated investments and undervaluation tended to depress investments. However, these results, when qualified, do not mean that overvaluation is a good device to promote investments and that export promotion through high real exchange rates leads to a crowding out of private investments. Greater macro-economic stability is associated with a higher level of private investment, and higher real interest rates were an important depressing factor on private investments in Chile between 1978-80 and to a lesser extent in 1982-84.

The Empirical Findings and Investment Policy

The empirical findings clarified the impact of certain macro-economic variables on investment behaviour in the three Caribbean economies of Trinidad, Barbados and Jamaica. Important implications emerge for investment policies within Caribbean economies in general. The empirical evidence indicates that income exerts a positive effect on investments, so that expanded income consequent on policies aimed at rapid and accelerated economic growth expands investments. The channel of influence may be through increased income growth to increased savings and ultimately to increased investments; a strong positive income effect on savings obtained in the empirical savings findings. Policies geared at increasing investments are therefore dependent on policies to stimulate growth.

The evidence indicates that government investment may crowd out private investment but may also be complementary to private investment in Caribbean economies. Crowding out occurred in Jamaica and Trinidad in contrast to Barbados where government investment was complementary to private investments. The implementation of public sector investment programmes (PSIP) in Caribbean economies must be examined and so structured as to prevent the displacement of private investments. Government projects, ideally, should target areas that raise the expected rate of return on private investments. Generalized factor market failures and size constraints in Caribbean economies suggest that non-traditional projects in skills formation and technological infrastructure development should also be targeted. The approach of Caribbean economies that achieved complementary relationships between government and private investments should be examined and appropriate lessons learnt.

The impact of credit to the private sector on private sector investments in Caribbean economies appeared unclear, as indicated by the empirical evidence. At issue here is the transformation of financial intermediaries credit into investment activities

rather than consumption activities. Commercial banks remain the dominant financial intermediaries and the pivot of Caribbean financial systems (Haynes and Craigwell, 1991; Crichton and DeSilva, 1989; Liburd and Bain, 1989). The bulk of credit in the OECS, it was previously noted, accrued to private individuals (consumer loans) rather than to business firms. Bennett (1994) reports that the major share of bank loans comprised personal loans in Trinidad and Barbados over the 80's and that a greater share of bank loans supported what might be deemed directly productive activities in Jamaica. However, the pattern of lending remained static and agricultural sector loans declined after 1985. There is evidence that credit, in Caribbean economies, remains decidedly biased against productive and tradeable sector investments.

The argument has been posited that a shortage of viable new-export projects is the problem (Worrell; 1989, 1991). Recently, Bennett (1994) suggested that "it is necessary to face up to the fact that there might be as much a shortage of investment ideas as finance". The proposed solutions include enhancement of the capabilities of financial institutions in risk assessment outside of areas of traditional focus and new institutions and institutional arrangements to provide capital, support micro-enterprises and foster a spirit of enterprise. However, the real issue may well be the automatic low viability of new-export projects due to market failures in the key skills, information and technology market. The viability of export projects depends on conquering the foreign market. Inputs of new skills, market information and technologies are required since without these export projects are doomed. Low viable projects will not receive financing.

Historical experience points to banks during the early stages of industrialization providing entrepreneurial talents and guidance. Instead of restricting themselves to a purely intermediation function, banks actively sought out and exploited profitable undertakings in manufacturing and other productive activities. Banks participated actively in shaping the major and even

not so major decisions of individual enterprises. It was the banks which often mapped out a firm's path of growth, conceived far-sighted plans and decided on major technological and locational innovation (see Cameron, 1972, Cameron *et al*, 1967 and Gerschenkron, 1962). The singular failure of financial intermediaries to provide entrepreneurial talent and guidance distinguishes the Caribbean experience from the historical experience. Small size, it is argued, militates against close firm-bank relationships due to potential adverse impact on the financial system of firm failure. The inevitability of firm failures means that the real issue can only be the number of vigorous and progressive firms that emerge from close firm-bank relationships.

The push for new institutional arrangements, including venture capital companies, is unlikely to field a surfeit of tradeable sector investments. Development banks, development finance companies and other specialized institutions were conceived to provide medium and long-term financing to productive and tradeable sector investments. Most developed large non-performing loan portfolios and experienced erosion of their capital base, in some cases complete erosion. Lack of operational guidelines and insufficient administrative independence have been blamed. However, the more important factors appeared to be inability to provide managerial assistance to new and often inexperienced entrepreneurs and the need to offer technical information and to improve the weak marketing assumptions in projects based on insufficient data (Pemberton, 1989). Thus the availability of finance for more risky longer-term investments deepened rather than lessened the need for provision of entrepreneurial talents and guidance. The simple enhancement of risk assessment capabilities and expansion of institutions, supposedly to absorb greater risk, miss this point. Expanded tradeable sector investments require financial institutions to develop export project search and evaluation capabilities that cover the capacity to manage export projects, evaluate market research findings, assess marketing strategies, product packaging, quality standards and technological capabilities. Only such a capability will facilitate the provision of managerial assistance and the nurturing of entrepreneurial talent.

The empirical evidence failed to offer a definite investment interest rate relationship. Interest rates appear to have both an ambiguous effect and a positive effect on investments in Caribbean economies. On the one hand an increase in interest rates may increase investments. Theoretically, this can happen through increased savings or by the weeding out of low yielding investments. On the other hand increases in interest rates may reduce investments through increase in cost. As a consequence, the interest rate cannot be viewed as a major tool of investment policy in the Caribbean.

Foreign savings have a positive and significant effect on investments in the Caribbean. Investment policy should seek to encourage foreign savings. If foreign savings lead to future interest payments to foreign countries, then the investment activities that receive foreign savings must generate future foreign exchange earnings to cover the future interest payments. Foreign savings that fund consumption, under these conditions, will impact adversely on future development. Attracting foreign savings is no simple matter, and as such, we proceed in the next section to examine some of the issues involved.

ISSUES RELATING TO FOREIGN DIRECT INVESTMENT

Foreign Direct Investment Flows

A clear Caribbean-wide dependence on foreign inflows was previously established. Foreign inflows consist of portfolio investments, grants and direct investments. Developments in international financial markets and the slowing down of overseas development assistance have reduced the prospects for inflows of portfolio investments and grants (Bourne; 1988, a). Foreign direct investments offer an alternative source of foreign inflows for Caribbean economies. Accelerated rates of investments are required to increase economic growth which creates conditions for facilitating the reduction of high levels of Caribbean unemployment. An increased inflow of foreign direct investments (FDI)

therefore, becomes an important Caribbean economic policy issue.

Foreign direct investments have been classified by types thereby facilitating the isolation of factors influencing FDI flows. Four types of FDI have been identified (Dunning, 1994): firstly, natural resource-seeking covering both human and physical resources; secondly, market-seeking aimed at accessing domestic and adjacent markets such as regional markets; thirdly, efficiency-seeking that aims at rationalizing production to exploit economies of specialization and scope across value chains (product specialization) and along value chain (process specialization); and finally, strategic (created) asset-seeking to acquire resources and capabilities that will advance a firm's core competence in regional or global markets. Assets range from innovatory and organizational capabilities to accessing distribution channels and the needs of customers in unfamiliar markets.

Caribbean economies, in the past, have received inflows of natural resource-seeking and market-seeking FDI; the former targeted bauxite, petroleum and tourism (beaches and ecology), the latter targeted manufacturing for the regional and adjacent US market. Efficiency-seeking FDI have featured in recent times, targeting for example, steel manufacturing. The presence of natural resources has therefore been a major factor attracting FDI inflows into the Caribbean, seeking resource rents. Manufacturing activities dominated by the enclave type firm indicate that a mixture of factors attracted FDI flows into manufacturing. The possible factors include the system of incentives that offered tax holidays and reduced tax rates after the holiday ends, quality of the work force, proximity to the large US market and good infrastructure in some cases. Codrington (1987), in the case of Barbados, observed that many enclave enterprises were attracted because of the literate work force, proximity to the US and good infrastructure. Further benefits, he noted, were obtained from a ten-year tax holiday.

There is debate, as Codrington noted, about the influence of industrial incentives on foreign investors' decisions. Some have suggested that while incentives alone may not attract investors, they may reinforce other factors which are favourable to investments (Codrington *et al*, 1985). The efficiency of incentive programmes (tax holidays, tax credits) in generating new investments is difficult to assess because we do not know the rate of redundancy (Usher, 1977). The rate of redundancy is the difference between the dollar value of the subsidized investments and the net increase in total investments attributable to the incentive programme, all expressed as a proportion of the dollar value of the subsidized investments. Incentives can be redundant because subsidies may be granted to a firm that did not require subsidies. The amount of the subsidies could have exceeded what was required to attract the investments. The investments of other potentially new firms may be displaced by the subsidies or because subsidized firms drive other firms out of business. However, the important point is that, throughout the Caribbean, the area of manufacturing activity which attracted the bulk of foreign capital was activities-dominated by enclave-type firms in areas such as textiles and electronic components. These were areas receiving deliberate government encouragement, even at the level of political directorates, and substantial numbers of incentives. It is difficult to conclude that governmental encouragement and incentives had no impact on FDI inflows.

Globalization and FDI

Developments in the international economic system have brought new changes that impact on the ability of developing countries to attract FDI inflows. At the centre of developments is the shift to global organization by firms. This process began with the internationalization of firms' markets when marginal domestic output was sold as exports to foreign markets. Rapid expansion of foreign trade during the 60's led firms to seek foreign markets as major sources of growth. Increased importance of foreign markets pushed firms to set up production facilities in many coun-

tries, producing outputs for sale in the associated markets. The next step was for firms to become “transnational” corporations by decentralizing the production process, with different national facilities operating at different stages of the production process to produce a final product. The final product was assembled and sold in specific targeted national markets. Today firms consider specific national markets as part of a single undifferentiated world or global market in which a single product line may be sold.

The global firm of today draws on raw materials and semi-finished goods from producers in a range of countries. The final assembly process is decentralized across a number of regional centres producing a unified product. The final product is then distributed to final markets through an integrated global distribution system with an integrated sales organization and advertising campaign. The distinctive feature of the global firm is that primary and semi-manufactured inputs as well as production and assembly plants move across national borders as easily as final products.

The globalization of production has been closely inter-related to the globalization of financial institutions and the revolution in micro-electronics, information and communication technologies. International expansion of firms and the shift from export of goods to the export of production were accompanied by the expansion of banks’ operations in all major international financial markets. The international location of financial institutions can be explained by the need to make foreign payments. Flexible exchange rates and the need to hedge exchange risks forced banks to operate in different financial markets thereby creating international capital markets. The silicon chip and optic fibers have revolutionalized data storage, processing and transmission, thus facilitating the integration of automated production systems and decision-making in multinational and multiproduct enterprises. Computer aided designs and manufacturing reduce design time and expand dramatically the automation of additional manufacturing stages. These and other technological develop-

ments are making the size and location of productive facilities less important. Assembly plants can be assembled in a short time with high technology input flown in and accessed via satellite networks. The advent of global banking, the internationalization of capital markets, advances in information and telecommunication technologies all facilitate the global firm.

The globalization of production and finance has some rather simple implications for small developing economies. Since productive capacity can be moved quite easily across borders and be constructed rapidly, the relative cost of particular stages of the productive process influences FDI decisions, so that each part of the productive process goes to countries most competitive for the particular inputs. This implies that cheap labour and raw materials will be important factors but also that created assets (technology, intellectual capital, learning experience and organizational competence) supportive of international production and marketing strategies have now assumed importance. Countries cannot, except at their own peril, ignore the strategies of competing countries, such as their upgrading of created assets.

The increased importance of transaction costs in economic activities means that country specific constraints, such as red tape and complex regulation, are no longer acceptable to firms. These constraints increase transaction costs and impair the international competitiveness of global firms.

Countries, especially small ones, are no longer in a position to screen and control potential investors as in previous decades. Quite the opposite now prevails. Countries are selected on the basis of their specific comparative advantage that can enhance a firm's global competitiveness. However, comparative advantage is no longer substantially based on factor endowments but is increasingly built up. It is also secured by governmental measures aimed at improving a country's investment climate.

FDI Incentives

Over the last three decades Caribbean countries have developed incentive regimes to attract FDI flows. These regimes had their origins under the Lewis Model and the import substituting industrialization strategy, in a world of multinational and transnational corporations. Under conditions of globalized production and footloose FDI flows it is doubtful whether these incentive regimes are appropriate. We proceed below to summarize the key features of the incentive regimes of three Caribbean countries using available data. The similarities, differences and key features are noted as a basis for assessing the ability of Caribbean investment incentive regimes to meet the requirements of globalized production, the crucial assumption being that the regimes examined are representative of Caribbean investment incentive regimes.

TRINIDAD AND TOBAGO

The investment incentive regime is embodied in several different pieces of legislation. These include the Fiscal Incentive Act, Finance Act, Hotel Development Act, Income Tax Act, Free Zone Act, Corporation Tax Act, Income Tax (in Aid of Industry) Act and Foreign Investment Act. The major incentives are provided by the Fiscal Incentive Act, the Corporation Tax Act and the Free Zone Act. The major incentives are listed below.

A. Fiscal Incentive Act

1. Ten-year tax holiday for approved enterprises providing approved products. Excluded items range from aerated water to umbrellas and window frames. The length of the tax holiday can be adjusted based on the following criteria:
 - (i) Percentage of local value added

- (ii) Enclave industries exporting out of Caricom
 - (iii) Capital-intensive industries.
- 2. Exemptions from custom duties during the tax holiday period.
- 3. The Industrial Development Corporation (IDC) was the executing agency.

B. Export Allowances under the Corporation Tax Act

- 1. Companies incorporated in Trinidad, wholly or partially dedicated to most exports outside of Caricom countries, are entitled to an export allowance which acts as a tax credit in relation to the amount of exports compared to the company's total production. A company that exports 100% of its production is entitled to an export allowance in the amount of 100% of that year's tax obligation.
 - (i) The Board of Inland Revenue provides the tax credit during the yearly tax audit.
- 2. Duty-free importation of raw materials, capital equipment and spare parts requires a minister's license under the Customs Act.

C. Free Zone Act

- 1. Tax-free status for companies enjoying free zone status.
- 2. Waiver of customs duties on raw materials, plant, spare parts and other inputs.

3. The Free Zone Company Ltd., through its Board of Directors, grants tax and other fiscal exemptions.

BARBADOS

The Barbadian incentive regime is located in a number of different pieces of legislation. These include the Fiscal Incentive Act, the Income Tax Act and Hotel Aids Act. Specific incentives for international and off-shore business are provided for in the Off-Shore Banking Act, Shipping Incentives Act and the Foreign Sales Act. The main elements of the incentive regime follow.

A. Fiscal Incentive Act

1. Tax holiday is provided to five types of enterprises based on local value added:

Enterprises	Value Added	Maximum Tax Holiday
I	50% or more	10 years
II	25% - 50%	8 years
III	10% - 25%	6 years
Enclave and highly capital intensive (not less than \$BD 50m)	-	10 years

- (i) Dividends paid to shareholders resident in Caricom exempted from income tax.
- (ii) Non-residents of Caricom are taxed on the excess of the shareholder's liability in his country of residence on dividend income earned in Barbados.
- (iii) Net losses encountered during the tax holiday may be set off against taxable profits

during the 7 years immediately following the expiration of the holiday period.

- (iv) In addition to normal depreciation allowance at the end of the holiday, firms may qualify for an allowance not exceeding 20% of capital expenditure incurred after the tax holiday period.
2. Industrial parks provide spaces at subsidized rents.
 3. Industrial Training Grants:
 - (i) The IDC reimburses employees an amount equal to 75% of the wages paid to employees during a specified training period. The maximum subsidy per employee should not exceed \$70 per week and the training period should not exceed 8 weeks.
 - (ii) For upgrading the status of an employee from unskilled to skilled technician or supervisor, the IDC reimburses the employer an amount equal to ½ of the wages paid to each employee during the period of an institutionalized training course, which must be certified and formalized. The subsidy should not exceed \$100 per week per employee, should not exceed three months, and the company must be in operation at least one year prior to the training course.
 4. Firms are eligible for export rebates under the income tax act on products from an industry or business other than sugar or traditionally export-oriented products.

B. Income Tax Act

1. Research and development allowance valued at 150% of the actual expenditure incurred for the purposes of promoting export sales or market research and development for exports outside of Caricom.
2. Export Allowance: A tax credit for non-Caricom exports at the following rates:

% of export profits to total profits	% tax rebate on export profits
up to 50%	25%
21% - 41%	35%
41% - 61%	45%
61% and over	80%

3. Market development allowance of 150% of actual expenditure incurred in connection with encouraging tourists to visit Barbados.
4. Tax credit in respect of foreign currency earnings equal to 50% of the net foreign currency earnings on the following:
 - (i) Undertaking of qualifying overseas construction projects.
 - (ii) Supply of qualifying professional services.

C. Hotel Aids Act

1. Persons operating hotels can set off against taxable income in the year incurred or over the suc-

ceeding nine years capital sums expended on buildings and certain amenities.

2. Duty free imports of certain items used in hotels.

ST. LUCIA

The central elements of the investment incentive regime are as follows:

A. Fiscal Incentive Act

1. Tax holiday is provided to five categories of enterprises based on value added.

Enterprises	Value Added Holiday	Maximum Tax
I	50% or more	15
II	25% - 49%	12
III	10% - 24%	10
Enclave	-	15
Capital Intensive	-	15

- (i) Net losses encountered during the tax holiday can be carried forward to offset future profits for a period not exceeding 5 years after the end of the tax holiday.
- (ii) Dividends paid from profits to a Caricom resident during the tax holiday are exempted from income tax.
- (iii) Dividends paid to non-residents of Caricom are exempted from income tax for any amount over and above what an individual pays in his country of residence.

B. Export Allowance

Companies exporting outside of the East Caribbean Common Market receive tax rebates depending on the percentage of profits attributable to exports.

Export profits as % to total profits	Rebate of Income Tax as % of tax on exports
10% - 20%	25%
21% - 40%	35%
41% - 60%	45%
more than 60%	50%

1. Businesses receiving tax holidays are eligible for export allowances after the expiration of the tax holiday.
2. Industrial parks provide space for rent at subsidized rates.
3. Three free trade zones are operated that provide duty free importation of raw materials, machinery, plant, equipment and spare parts for the duration of the tax holiday period.
4. Repatriation of all earnings as well as imported capital and the gains from the sale of plant and equipment or business liquidation are allowed for industries owned by non-residents and granted tax holiday.

C. Hotel Aids Ordinance

- (i) Provisional license can be granted to build a new hotel or renovate an old one.

- (ii) Imports of goods and equipment related to the construction and operation of the hotel are liable for duty free treatment.
- (iii) After the hotel is opened the investor is issued a 10-year license granting duty free privileges and exemptions from income taxes for the duration of the license.

These investment incentive regimes harbour a number of key features. The Caricom MDC's regimes are more developed than the Caricom LDC's regimes as indicated by St. Lucia's regime. The fiscal incentive acts, and the associated benefits, reflect the influence of the Industrial Incentives (Regional Harmonization) Act aimed at preventing regional competition in granting fiscal incentives. More specifically though, incentives are contained in diverse pieces of legislation. Eight different pieces of legislation are revealed for Trinidad while six different pieces, including international business legislation, appear to exist for Barbados.

The direct consequence is that a variety of government agencies, departments and ministries are responsible for approving incentives, so that IDC's and investment promotion agencies screen investing firms to determine if criteria are satisfied. Ministries of finance approve licenses for import duty concessions and ministries of national securities grant work permits. Customs departments provide duty free treatment draw-back payments. The approval process is, therefore, highly discretionary, implying elements of unpredictability.

Incentives are also granted automatically as in the case of export incentives provided as tax credits, under income tax acts, during annual tax audits. The entitlements are automatic, are supervised as part of the tax system, and do not require separate bureaucracy. It is performance based; if exports are generated then entitlements are granted, as against granting of incentives based on prior screening in the expectation of desired results.

These features suggest that Caribbean investment incentives regimes may be incompatible with the requirements of globalized production. The pursuit of liberalization policies on a world scale and the ensuing competition for FDI flows have generated a tendency for countries to reduce effective tax rate on business and eliminate all special incentives. Caribbean incentive policies thus face two options, to continue with high effective tax rates and special fiscal incentives or low effective tax rates and zero fiscal incentives. The latter policy implies automatic equal treatment for local and foreign investors. Hong Kong, over the years, pursued this latter strategy with maximum personal income tax rate of about 15%, corporation tax rate of 17.5% and no special incentives. Mauritius has lowered its tax rate to 10% for export business and abandoned all special incentives, while Indonesia eliminated tax holidays and offered lower corporate tax of 20%. Caribbean economic policy may pursue this as a long term objective since indicators are pointing in that direction. Jamaica has reduced corporation taxes from 45% to 33%, Barbados from 45% to 35% and Trinidad recently reduced the rate from 45% to 38%.

The impact of transactions costs on international competitiveness means that discretionary-based incentives, involving a plethora of government ministries and departments granting approvals, can only be a disincentive to investors, because of the elements of unpredictability, waiting time for approval and the absence of discretionary approval in competing locations. One-stop shops have been established in IDC's and investment promotion agencies to reduce approval time and so minimize transactions costs. Indeed, costs have come down but the thrust must be to provide incentives that are self-executing, automatic and performance-based. Good examples are export tax credits incorporated in income tax acts. The requirements for alien land holding, work permits, building standards of physical plants, urban planning and environmental requirements must be made simple, transparent and consistent where possible. Institutional restructuring and re-alignment may be an associated requirement.

Because countries are selected on the basis of their specific comparative advantage that enhances global competition, the option to screen and control potential investors no longer exists. Existing IDC's and investment agencies will have to be re-oriented towards a pro-active promotional rather than a regulatory and screening role. This may require institutional realignment, re-organization and rationalization. Consideration should be given to pulling together incentives offered by diverse legislative acts in Caribbean countries into single foreign investment acts that spell out investment procedures and institutions, thereby creating a single document in law that answers all concerns of an investor. Such an act should cover investment guarantees, dispute settlement and other relevant areas. A policy thrust in this direction simultaneously offers the opportunity to establish simple rules and eliminate overlap in the activities of institutions and government departments that impact on foreign investments.

A critical role is now played by created assets (technology, intellectual capital, learning experience and organizational competence) in a country's foreign investment incentive regime. Technological advances in production place a premium on high quality created assets. Incentives embodied in some of the investment regimes providing training and research and development grants must be extended and integrated into comprehensive skills development strategies. Policies geared at developing the scientific and technological capabilities of the workforce must be seen as part of the investment incentive regime. Talk about a literate workforce must be replaced by talk about a skilled, technical and scientific workforce.

THE MAIN POLICY CONCLUSIONS

This study yields a number of crucial policy conclusions for savings and investment mobilization policies in the Commonwealth Caribbean. Empirical evidence on savings and investment determinants and the globalization of production are the factors shaping the policy conclusions. The main policy conclusions follow.

- Economic policies adhering to macro economic fundamentals (i.e. low inflation, exchange rate stability) that stimulate growth, expand exports and put the unemployed to work stimulate higher levels of domestic savings and investments.
- Incentives should be offered to exploit the greater savings potential of higher income groups and apparent desire to hold financial assets. Tax credits for the purchase of shares on the stock exchange and in venture capital companies should be addressed.
- The extent of bias in the system of tax incentives in favour of non-labour income and against labour-income should be re-examined if the assumption is that of a higher marginal savings propensity.
- Policy must seek to minimize domestic and foreign savings trade-offs by ensuring that official borrowings and inflows are directed to productive activities or activities complementary to private productive investments.
- Financial savings mobilization policy must move beyond the preoccupation with interest rates since a low inflationary and stable exchange rate environment may be more essential to stimulating savings rather than high nominal interest rates. The focus must be on enhancing efficiency in the financial sector by improving the regulatory framework, insisting on improved management and information systems and pursuing measures to enhance competition given oligopolistic behaviour.
- Factor market failures in the key skills, information and technologies market require urgent selective intervention to correct for market fail-

ures and to guarantee the viability of new-export projects.

- Commercial banks must be pushed to develop export project search and evaluation capabilities to facilitate the provision of managerial assistance and the nurturing of entrepreneurial talent in export activities.
- Efforts must be made to ensure that government investments increase the expected rate of return on private investments. The implementation of public sector investment programmes must be examined and so structured as to prevent the displacement of private investments.
- The interest rate cannot be viewed as a major tool of investment policy.
- The reduction of business taxes to low levels and the elimination of special incentives should be made a long-term objective by building on the trend of reducing corporation taxes.
- FDI incentives should be made less discretionary, more automatic, performance-based and promotionally pro-active. The consolidation of the legislative base and re-aligning of the institutional framework are necessary to complement these changes.
- Incentives for training and research and development should be extended and urgent measures taken to begin building a skilled, technical and scientific workforce.

End Notes

¹It would have been more appropriate to look at the net-investment ratio but limited data on capital consumption restricted the focus to gross investments.

²Krueger (1992) provides data, Table 1.4, on developing countries that experienced strong economic performances over 1980-88. These countries had average gross domestic savings ratios of 23% and average real GDP growth of 6.3%.

³The dynamic pillars of export growth, it should be noted, have been in resource-related sectors (fruit, vegetables, fisheries, food processing and the timber industry) in which little industrial processing has taken place to date. (See Messner).

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Estimation of Savings Functions for the Organisation of Eastern Caribbean States (And the Dangers of the Inappropriate Use of Panel Data Methods)

Patrick K. Watson

Summary

The Principal concern of this paper is the econometric estimation of savings functions for the Organisation of Eastern Caribbean States (O.E.C.S.). A major concern is the examination of the validity of the McKinnon-Shaw hypothesis which predicts that savings responds positively to increased interest rates.

The econometric methods used are also of fundamental importance to this paper. Whereas it is tempting to use panel data methods as is so often done in similar studies, it is found that these methods are largely inappropriate in the current context and that straightforward estimation by Ordinary Least Squares gives much better and more reliable results despite the short series used. This should serve as a warning to those who fashion economic policy in the O.E.C.S. and other countries to be very wary of uncritically formulating policies based on econometric models using panel data unless the necessary pretesting is done to confirm the validity of these methods.

Introduction

It has become very fashionable in the literature to use panel data (or the pooling of Cross Section and Time Series Data, or just pooled data) covering, in many cases, a wide cross section of countries whose principal (if not only) common feature is that they share some loosely defined characteristic such as being “developing” or “Asian”. Furthermore, it is not unusual for these studies to be conducted in the absence of any rigorous testing procedures to establish whether or not assumptions underlying the application of the econometric methods associated with such data have been validated. Notwithstanding this, such studies are used to derive weighty policy prescriptions involving key variables like interest rates. Finally, it is quite disturbing that many such studies appear to be undertaken by technocrats and researchers employed by multilateral organisations like the International Monetary Fund and, indeed, some of these studies are reported in quasi official documents of these organisations such as the *Staff Papers*, for instance Rossi [19], Blejer and Khan [2] and Greene and Villanueva [12]. There is good reason therefore to expect that such policies - based on econometric analysis which might be faulty - will be implemented.

When it was first decided to undertake this study of savings functions in the Organisation of Eastern Caribbean States (O.E.C.S.), it appeared quite natural to consider the application of panel data econometric methods. On the surface, this grouping appears to be a natural setting for the application of such methods: it consists of seven (7) English speaking micro states of the Commonwealth Caribbean¹ - Antigua & Barbuda, Dominica, Grenada, Montserrat, St. Kitts & Nevis, St. Lucia and St. Vincent & the Grenadines. All countries use the same currency - the Eastern Caribbean (EC) dollar - and are all served by the same Monetary Authority - the Eastern Caribbean Central Bank (ECCB). Despite this, as will be illustrated in the body of this article, panel data methods for the estimation of savings functions proved to be very inadequate and indeed, if the results obtained are accepted

without proper analysis and testing, would lead to completely erroneous policy prescriptions for the individual countries.

Whatever the limitations, it is certainly not without interest to study the nature of savings functions in the O.E.C.S. There are some small-to-medium cities in larger metropolitan countries which are larger than all these countries put together, and it is therefore not difficult to appreciate that the resource base of all these countries is extremely narrow. Apart from the tourism sector, this consists largely of agricultural products like spices, sugarcane and bananas. Table 1 gives a brief profile of the individual countries making up the grouping:

TABLE 1. PROFILE OF O.E.C.S. COUNTRIES 1991*

Country	Area (Km ²)	Population	GDP (EC\$ Million) (1984 Prices)	Population Density	Per Capita GDP
Antigua & Barbuda	440	82900	595.03	188.4	7177.7
Dominica	750	71199	273.20	94.9	3837.1
Grenada	340	90700	315.70	266.8	3480.7
Montserrat	100	10999	103.01	110.0	9364.4
St. Kitts & Nevis	270	43000	247.27	159.3	5750.4
St. Lucia	620	136000	748.02	219.4	5500.0
St. Vincent & the Grenadines	340	107600	361.26	316.5	3357.5
TOTAL	2860	542400			

Source: Caribbean Development Bank (Social and Economic Indicators 1991).

*1989 for Antigua and Barbuda.

In 1991, the total population of all seven countries just exceeded half a million. The smallest - Montserrat - had a population of 11 000 living on a land area of 100 km² while the population of St. Lucia did not exceed 140 000 for a land area of 620 km².

Traditionally, domestic savings in these countries have not been a major preoccupation of policy makers and have tended to display a considerable amount of fluctuations, sometimes even becoming negative. Table 2 attests:

TABLE 2
DOMESTIC SAVINGS RATIOS* IN O.E.C.S. COUNTRIES 1980-1991 (%)

Year	Antigua and Barbuda	Dom- inica	Grenada	Mont- serrat	St. Kitts and Nevis	St. Lucia	St. Vincent & the Grenadines
1980	12.08	-19.70	-4.11	-27.15	7.87	16.48	-11.65
1981	16.49	-10.19	-2.95	-23.25	1.13	9.44	0.71
1982	26.71	2.57	-1.67	-21.56	3.27	6.59	-1.76
1983	25.54	8.67	4.27	-17.24	-7.33	16.03	0.47
1984	11.74	4.08	0.87	-10.50	-2.04	11.18	13.96
1985	10.28	5.07	0.96	-5.62	8.19	12.72	22.55
1986	11.39	17.05	2.31	-2.59	6.84	16.87	19.41
1987	12.92	13.76	8.32	5.83	12.34	12.27	14.80
1988	n.a.	15.06	10.23	13.54	20.41	20.11	23.21
1989	n.a.	8.00	12.90	7.52	26.92	13.47	5.97
1990	n.a.	15.57	14.53	18.62	16.82	16.21	5.94
1991	n.a.	8.63	11.95	5.44	n.a.	12.87	n.a.

Source: Caribbean Development Bank (Social and Economic Indicators 1991).

*Ratio of Domestic Savings to Gross Domestic Product (Market Prices).

n.a. = Not Available.

Over the years, economic growth and development have been largely dependent on a steady inflow of foreign savings as well as foreign aid. Unfortunately, for a host of reasons, such flows are unlikely to continue in the future - see Aghevli *et al.* [1] and Bourne [3]. Like many other countries of the so-called Third World, the O.E.C.S. countries will have to begin to make serious efforts to shore up the domestic savings effort.

It is principally for this reason that this study was undertaken. Some relatively straightforward functions are considered which, among other things, will be used to test the well known McKinnon-Shaw hypothesis on the responsiveness of savings to the (real) rate of interest. As will be seen, the indiscriminate use of panel data methods may lead to completely erroneous conclusions about this hypothesis for the individual countries and may even put in doubt the validity of the conclusions drawn in similar studies by Fry [7], [8] and Giovannini [11] and others where panel data were used.

In the following section (Section 2), there is a brief discussion about interest rates in the O.E.C.S.. This is included largely because of the focus in this paper on the impact of interest rates on savings behaviour. The model(s), the data and the econometric methodology are discussed in Section 3 while in Section 4, the results obtained are analysed in some detail. In Section 5 the paper is concluded.

Interest Rates in the O.E.C.S.

The potential of an active interest rate policy for the mobilisation of domestic savings is of central importance to the current study. However, the causal link between the two variables is not without controversy, especially in the context of so-called developing economies like those comprising the O.E.C.S. Classical economists like Wicksell [23] firmly believed that the interest rate was *the* most important determinant of savings but Keynesian theory (Keynes [15]) which quickly established itself

as the new orthodoxy, greatly de-emphasised its importance. For economies like those of the O.E.C.S., the Keynesian viewpoint is even more acceptable on a *priori* grounds because of the marked absence of organised financial markets which militate strongly against any possible potential of an active interest rate policy aimed at the mobilisation of savings.

Feldstein [6] was among the first to challenge the empirical validity of the econometric results tending to confirm the Keynesian hypothesis for both developed and developing economies. It was his contention that the use of nominal as opposed to real interest rates in these studies was tantamount to model misspecification and tended to bias results in favour of the Keynesian viewpoint. It was however the seminal works of McKinnon [17] and Shaw [20] which generated a flurry of theoretical and empirical studies with special emphasis on developing countries. One of the most important claims of these authors is that artificially low real interest rates discourage both saving *and* investment and even result in inefficient use of investible funds. The financial system should therefore be "liberalised" to allow for higher nominal and positive real rates of interest.

In Table 3, data on inflation rates (based on the Consumer Price Index) and a representative interest rate - the 12 month deposit rate of interest - are given for all O.E.C.S. countries. High inflation rates and relatively low to moderate nominal interest rates of the 70s (and corresponding negative real interest rates) carried over into the early years of the 80s. Due largely to slowdown in economic activity, inflation rates gradually subsided and, although there was virtually no movement in nominal interest rates (reflecting little if any active interest rate policy) real interest rates were more frequently positive in the later years of the 80s and the 90s (though this appears to be more by accident than design).

TABLE 3
INFLATION AND 12 MONTH DEPOSIT INTEREST RATES IN
O.E.C.S. COUNTRIES 1980-1991 (%)

ANTIGUA & BARBUDA			
Year	Inflation Rate	Interest Rate (Lower Bound)	Interest Rate (Upper Bound)
1980	19.16	4.5	7.50
1981	11.46	7.00	8.50
1982	4.17	6.00	8.50
1983	2.35	7.50	13.00
1984	3.80	7.00	13.00
1985	-2.00	4.75	8.50
1985	0.50	4.00	8.25
1987	3.60	4.00	7.50
1988	6.80	4.00	7.50
1989	3.70	4.00	10.00
1990	7.00	4.00	10.00
1991	n.a.	n.a.	n.a.

TABLE 3 - Continued

DOMINICA			
Year	Inflation Rate	Interest Rate (Lower Bound)	Interest Rate (Upper Bound)
1980	32.70	4.00	5.00
1981	13.30	4.00	6.00
1982	4.40	6.00	6.00
1983	4.10	5.50	6.00
1984	2.20	5.50	6.00
1985	2.10	5.50	6.00
1986	3.04	4.00	6.00
1987	4.80	3.50	6.00
1988	2.20	3.50	6.00
1989	6.30	3.50	6.00
1990	2.50	3.50	7.00
1991	5.90	3.50	7.00

TABLE 3 - Continued

GRENADA			
Year	Inflation Rate	Interest Rate (Lower Bound)	Interest Rate (Upper Bound)
1980	21.10	3.00	5.50
1981	18.82	3.50	5.50
1982	6.60	3.00	5.00
1983	6.14	4.00	7.00
1984	5.60	4.00	8.00
1985	2.50	4.00	8.00
1986	0.60	4.00	7.50
1987	-0.90	4.00	6.50
1988	6.50	4.00	6.00
1989	5.60	4.00	7.00
1990	2.60	4.00	8.00
1991	2.60	4.00	7.00

TABLE 3 - Continued

MONTSERRAT			
Year	Inflation Rate	Interest Rate (Lower Bound)	Interest Rate (Upper Bound)
1980	2.98	3.50	3.50
1981	7.10	3.50	5.50
1982	9.80	3.50	5.50
1983	4.66	3.50	5.50
1984	5.50	3.50	5.50
1985	2.70	4.00	5.50
1986	3.10	4.00	5.50
1987	3.70	4.00	6.00
1988	4.10	4.00	6.00
1989	1.80	4.00	7.50
1990	6.80	4.00	7.00
1991	n.a.	n.a.	n.p.

Estimation of Savings Functions / 191

TABLE 3 - Continued

ST. KITTS & NEVIS			
Year	Inflation Rate	Interest Rate (Lower Bound)	Interest Rate (Upper Bound)
1980	17.83	4.50	7.00
1981	10.37	5.50	7.00
1982	5.94	5.50	7.00
1983	2.28	5.50	7.00
1984	2.70	5.50	7.00
1985	2.24	5.00	8.00
1986	0.40	4.00	7.00
1987	0.92	4.00	6.50
1988	0.23	4.00	8.00
1989	5.40	4.50	9.00
1990	4.20	4.50	9.00
1991	n.a.	n.a.	n.a.

TABLE 3 - Continued

ST. LUCIA			
Year	Inflation Rate	Interest Rate (Lower Bound)	Interest Rate (Upper Bound)
1980	21.18	6.00	7.50
1981	9.40	8.00	9.00
1982	0.61	8.00	9.00
1983	1.31	7.50	10.00
1984	1.19	7.50	10.00
1985	0.00	3.30	10.00
1986	2.16	2.75	10.00
1987	7.01	4.00	6.00
	0.81	4.00	6.50
	4.36	4.00	6.50
	4.30	4.00	7.00
	6.00	4.00	7.00

TABLE 3 - Concluded

ST. VINCENT			
Year	Inflation Rate	Interest Rate (Lower Bound)	Interest Rate (Upper Bound)
1980	17.22	3.50	5.50
1981	12.69	3.50	6.00
1982	7.32	4.00	8.00
1983	5.42	4.50	7.50
1984	2.74	4.50	7.50
1985	1.30	4.00	6.50
1986	1.60	4.00	6.50
1987	3.40	4.00	5.50
1988	2.10	3.50	5.50
1989	3.50	3.50	5.50
1990	9.20	3.50	4.75
1991	2.30	3.50	5.50

Source: Caribbean Development Bank (*Social and Economic Indicators 1991*) and Eastern Caribbean Central Bank (*Quarterly Commercial Banking Statistics*).

n.a. = Not Available.

The above data tend to indicate the presence of “financial repression” (in the McKinnon-Shaw terminology) which is typical of other Caribbean countries over the same period. One such case is that of Trinidad & Tobago where Watson [22] confirms the financial liberalisation hypothesis and also shows that artificially low rates may even result in lower rates of economic growth. Fry [7], [8] and [9] has also published a series of papers which tend to confirm this hypothesis for other countries. There is, however, no unanimity on the matter: Giovannini [11], for instance, is very critical of Fry’s work and uses the same data to reach an opposite conclusion. It is interesting to note that both Fry and Giovannini use panel data and that the methodology of estimation and the use of such data.

The Models, Data and Econometric Methodology

The Models

Two (2) distinct models of the savings function will be presented here. The first, which will be referred to as **Model 1** is

$$S_d = \alpha_0 + \alpha_1 Y + \alpha_2 S_f + \alpha_3 i_r \quad (1)$$

In this model, S_d is the level of domestic savings, Y is the level Gross Domestic Product (GDP), S_f the level of foreign savings and i_r a measure of the real rate of interest which, in this paper is calculated as

$$i_r = \frac{(1 + i_n)}{(1 + \pi)} - 1$$

where i_n is the nominal deposit rate of interest and π the rate of inflation. S_d , Y and S_f are all measured in constant prices.

The second model will be referred to as **Model 2** is

$$\beta_1 y + \beta_2 s_f + \beta_3 i_r \quad (2)$$

where s_f are, respectively, the ratio of domestic savings to GDP, and y is the natural logarithm of constant prices).

It is abundantly clear from the outset that these models are nested (to use the Hendry type terminology "General to Specific" modelling) and are not in fact specific instances of some more general

savings function (whether or not such a general function exists). Despite their obvious resemblances, Model 1 can be regarded as an attempt to explain the level of savings while Model 2 looks more specifically at the Average Propensity to Save.

The inclusion on the right hand side of each model of the interest rate variable has already been justified in the previous section. The McKinnon-Shaw hypothesis will be verified if α_3 (in Model 1) and β_3 (in Model 2) are positive *and* significant.

The inclusion of income type variables hardly needs justification and, at least since the publication of Keynes' *General Theory* is generally taken in one form or another to be a major determinant of savings. In Model 1, α_1 can be interpreted as the marginal propensity to save and should be a positive fraction. In

Model 2, $\frac{\beta_1}{100}$ measures the response of the Average Propensity to Save to a 1% change in per capita income. β_1 should be positive since theory predicts that the Average Propensity to Consume declines when income rises.

The inclusion of the foreign savings variable is not unusual in the literature relating to developing economies and it is argued in Grinols and Bhagwati [13], for instance, that such foreign inflows tend to discourage the domestic savings effort, especially (as is very likely to be the case for the economies under consideration here) if they have a direct impact on the government budget surplus/deficit. In Model 1, α_2 , which measures the responsiveness of domestic savings to a unit change in foreign inflows is therefore expected to be negative and likewise for β_2 in Model 2, where $\frac{\beta_2}{100}$ measures the response of the Average Propensity to Save to a 1% change in the foreign saving

Data

Data on the 12 month deposit rate of interest were obtained from various publications of the *Quarterly Commercial Banking Statistics* published by the Eastern Caribbean Central Bank. The other data were obtained directly or derived from the Caribbean Development Bank's *Social and Economic Indicators 1991*. In the absence of appropriate deflators, all data were deflated by the Consumer Price Index (rebased, where necessary, to 1984). The most coherent set of data was available for the period 1980 - 1990 for all countries except Antigua & Barbuda which only had data covering the period 1980 - 1987. It unfortunately turned out that, in addition to being the shortest series, the data from Antigua & Barbuda were quite unreliable. In the econometric analysis in the following section, this country was therefore excluded.

Econometric Methodology

To a large extent, the methodology employed in this section is an application of Hendry's General-to-Specific Modelling approach to (separately) models 1 and 2 (refer to Gilbert [10] or Charemza and Deadman [5], chs. 3-4, for a discussion of this methodology). What may appear as different estimation methods applied to the same model are nothing more than special estimation methods applied to specific cases of a more general model. These specific cases imply very definite restrictions on the general model and, in the interest of intellectual rigour, these restrictions must be properly tested.

The most general form of the model (either 1 or 2) is each of equations 1 or 2 taken separately for each country (there is no pooling of the data at all). The appropriate estimation method is then Ordinary Least Squares (OLS) applied to the data of each country. We shall refer to this approach as the OLS version of the model.

At a less general level, if we impose the restriction that the slope coefficients are identical for all countries but that the intercepts differ, we obtain the so-called “Within” or “LSDV” version of the model if we also assume that the “individual” effects as measured by the different intercepts are fixed (hence the term “Fixed Effects” model which appears frequently in the literature). Once again, the appropriate estimation procedure is OLS, applied this time to the pooled data with due cognisance taken of the different intercepts. This is by far the most popular panel data model appearing in the literature and a particular concern of this paper will be the comparison of results obtained from it with the OLS version.

If the individual variation is random, then we obtain the so called Random Effects version of the model and the appropriate estimation procedure is a Generalised Least Squares (GLS) approach applied to the pooled data. It can be shown that, for very long time series or for very large individual variations, the random effects version approximates the fixed effects version of the model.

The most restricted form of the model is obtained if we assume that there is no individual (or temporal) effect whatsoever and that equations 1 or 2 are immediately applicable to each individual country with intercepts and slopes equal. OLS may be applied here too and, for want of a more appropriate term, we will refer to this version as the Pooled (OLS) version of the model. That this is a special case of the LSDV version is quite obvious and it can also be shown (it is also intuitively obvious) that it is the limiting case of the random effects version when the individual variation tends to zero.

If a particular set of restrictions is true, then there is potentially a great deal to be gained in terms of efficiency² by application of the Panel Data methods rather than the individual OLS exercises applied to each individual country. In the particular case under consideration, where there are only 11 data points

for each country, there will be a marked improvement in the efficiency of the estimation procedure resulting from the “any justification for pooling will be most welcome”, but such justification must be rigorously obtained.

A battery of tests will be applied to establish

1. whether or not the data should be pooled;
2. in the event that a decision is made to pool the data, which particular pooling procedure should be employed.

A standard F statistics (identical to those used for testing linear restrictions in the General Linear Regression Model - see Kmenta [16], ch. 10) may be used to test the LSDV version against the OLS version (in what follows, we will refer to this statistic as F_A) Another (F_B) may be used to test the Pooled (OLS) against the OLS version and, yet another (F_C) may be used to test for the equality of the intercepts and to determine whether the LSDV model is (or is not) more appropriate than the Pooled (OLS) version. A Hausman [14] statistic can be used to discriminate between the Random Effects and the LSDV versions while a statistic devised by Breusch and Pagan [4] may be used to test the random effects against the Pooled (OLS) version. Both the Hausman and Breusch-Pagan statistics are χ^2 and their use in panel data models is discussed in Kmenta [16], ch.12.

It may be argued that the length of the time series for each individual country being used in this study may be too short to allow for uncritical application of the above tests, and there is merit in this argument. It is for this reason that, in addition, the more traditional tests statistics (R^2 , F, t and Durbin-Watson statistics) will also be used to judge the quality of the results. For easy comparison with the OLS version of the model, these statistics will be simulated for the individual countries using the results obtained from the panel data methods. Furthermore, the follow-

ing more “descriptive” statistics will be used to compare “predicted” values of Domestic Savings (obtained from solving the various versions of the model) with the actual values:

- CC = Correlation Coefficient between Actual Values and Predicted
- RC = Regression Coefficient of Actual Values on Predicted
- U = Theil’s Inequality Coefficient
- U₁ = Fraction of Error due to Bias
- U₂ = Fraction of Error due to difference of Regression Coefficient from unity
- U₃ = Fraction of Error due to Residual Variance

Ideal values are $CC = 1$, $RC = 1$ and $U = 0$. The statistics, U_1 , U_2 and U_3 represent the decomposition of the Mean Square Error and are due to Theil [21]. For a “perfect” fit, $U_1 = 0$, $U_2 = 0$ and $U_3 = 1$. This part of the analysis will be supported by graphs of the actual and predicted data.

Results

Model 1

The results based on the estimation and solution of the various versions of Model 1 are presented in summary form in, respectively, Tables 4 and 5.

The F_A and F_B statistics convincingly reject the restrictions implied by the LSDV and Pooled (OLS) versions of the model in favour of the unrestricted OLS version. Since the Breusch-Pagan statistic is indicating no significant difference between the random effects and the Pooled (OLS) model, this too is rejected in favour of the OLS version. The overwhelming superiority of the OLS version is further emphasised, firstly, by comparison of the standard statistics (R^2 , F, T and Durbin-Watson statistics) gen-

TABLE 4
MODEL 1. SUMMARY RESULTS OF ESTIMATION EXERTISE

$$S_d = \alpha_0 + \alpha_1 Y + \alpha_2 S_t + \alpha_3 I_t$$

	α_1	α_2	α_3	\bar{R}_2	D.W.	F
Pooled (OLS)	0.203 (14.4)	-0.208 (2.86)	119.4 (2.58)	0.801		88.5
LSDV	0.231 (10.4)	-0.127 (1.61)	106.9 (2.32)	0.814		36.5
Random Effects	0.207 (13.3)	-0.184 (2.56)	114.1 (2.52)	0.749		73.2
Dominica	0.349	-0.338	63.58			
(a)	(9.42)	(4.32)	(1.44)	0.956	2.23	73.3
(b)	(2.79)	(1.33)	(1.33)	0.831	1.07	17.4
(c)	(3.13)	(0.813)	(1.22)	0.823	1.37	16.8
Grenada	0.329	0.009	24.99			
(a)	(5.70)	(0.041)	(0.420)	0.858	1.17	21.2
(b)	(1.76)	(0.469)	(1.00)	0.434	0.362	3.55
(c)	(2.90)	(0.422)	(1.30)	0.736	0.687	10.3
Montserrat	0.929	-0.415	-5.07			
(a)	(18.3)	(5.93)	(0.129)	0.977	1.53	144.9
(b)	(0.638)	(0.466)	(0.485)	0.117	0.461	1.44
(c)	(0.800)	(0.318)	(0.478)	0.270	0.486	2.23
St. Kitts & Nevis	0.363	0.206	-156.5			
(a)	(4.03)	(0.787)	(1.79)	0.869	2.38	23.2
(b)	(0.890)	(0.308)	(0.528)	0.165	0.655	1.66
(c)	(1.26)	(0.237)	(0.585)	0.455	0.925	3.78
St. Lucia	0.166	-0.252	-123.0			
(a)	(5.26)	(1.61)	(1.07)	0.827	2.95	16.9
(b)	(4.60)	(0.937)	(0.748)	0.665	1.47	7.63
(c)	(5.01)	(0.556)	(0.640)	0.633	1.56	6.75
St. Vincent	0.408	-1.16	-303.0			
(a)	(10.2)	(9.42)	(3.28)	0.967	2.09	99.9
(b)	(1.41)	0.459	(0.359)	0.578	1.44	5.67
(c)	(1.46)	(0.261)	(0.294)	0.495	1.43	4.27

Notes: $F_A(15, 42) = 7.63$ (a) = Statistics Associated with OLS
 $F_B(20, 42) = 6.97$ (b) = Simulated Statistics based on
 $F_C(5, 57) = 1.82$ Pooled (OLS)
 Breusch-Pagan Statistics = 0.017 (c) = Simulated Statistics based on LSDV
 Hausman Statistic = 5.72 T Statistics are in Parentheses

TABLE 5
MODEL 1: SUMMARY RESULTS OF MODEL SOLUTION

	CC	RC	U	U ₁	U ₂	U ₃
Dominica						
Pooled (OLS)	0.972	1.33	0.270	0.012	0.505	0.483
LSDV	0.973	1.35	0.273	0.006	0.543	0.451
Random Effects	0.974	1.36	0.271	0.002	0.566	0.431
OLS	0.983	1.01	0.145	0.000	0.003	0.997
Grenada						
Pooled (OLS)	0.896	1.23	0.457	0.288	0.091	0.622
LSDV	0.925	1.23	0.339	0.002	0.170	0.828
Random Effects	0.905	1.25	0.424	0.219	0.117	0.664
OLS	0.962	1.02	0.222	0.001	0.005	0.994
Montserrat						
Pooled (OLS)	0.667	2.41	0.882	0.096	0.194	0.710
LSDV	0.865	2.87	0.756	0.013	0.551	0.435
Random Effects	0.716	2.68	0.878	0.113	0.259	0.628
OLS	0.992	1.01	0.125	0.000	0.003	0.998
St. Kitts & Nevis						
Pooled (OLS)	0.807	1.80	0.578	0.137	0.233	0.631
LSDV	0.860	1.53	0.459	0.000	0.252	0.748
Random Effects	0.824	1.76	0.548	0.100	0.254	0.646
OLS	0.954	0.986	0.232	0.000	0.002	0.998
St. Lucia						
Pooled (OLS)	0.933	0.862	0.196	0.002	0.146	0.852
LSDV	0.936	0.807	0.209	0.003	0.288	0.709
Random Effects	0.934	0.856	0.196	0.011	0.161	0.828
OLS	0.950	1.01	0.156	0.000	0.001	0.999
St. Vincent						
Pooled (OLS)	0.882	1.46	0.398	0.000	0.261	0.739
LSDV	0.820	1.32	0.440	0.000	0.107	0.893
Random Effects	0.869	1.45	0.409	0.000	0.230	0.770
OLS	0.988	1.00	0.110	0.000	0.107	0.893

erated by this version with those simulated from the versions based on panel data methods and, secondly, by the results presented in Table 5. Graphs of the actual and predicted values based on the solution of the various versions of model 1 are presented in Appendix A for each country as Figures A1 to A6. Visual inspection of these graphs tend only to reconfirm the fundamental result that the OLS version systematically outpoints all the others.

What are the consequences for economic policy in the individual countries of ignoring this conclusion? Even a cursory glance at the results in Table 4 is enough to indicate that these consequences might be quite serious. Firstly, the estimated coefficients for the individual countries are markedly different from each other and from those obtained from the panel data methods. Secondly, and perhaps most significantly, the panel data methods would lead to non-rejection of the McKinnon-Shaw hypothesis: α_3 is positive and significant in all 3 cases considered. But based on the OLS result, this hypothesis is rejected in all cases: α_3 is significant only in the case of St. Vincent & the Grenadines where it is also negative and, in three other cases (Montserrat, St. Kitts & Nevis and St. Lucia), it is negative in addition to being insignificant. Thirdly, the marginal propensity to save out of income would be roughly 20% in each country if the panel data results are uncritically accepted while, based on OLS estimation of individual country cases, this coefficient varies dramatically from one case to the next. Finally, the influence of foreign savings clearly differs depending on the case in question: whereas it carries the predicted negative sign for the panel data methods and is significant in two of the three cases considered, when the OLS results for the individual cases are considered, it is positive and insignificant in two cases (Grenada and St. Kitts & Nevis) and is not significant in the case of St. Lucia. For Montserrat and St. Vincent & the Grenadines, however, they are very significant and, in the latter case, domestic savings decrease by \$1.16 for every \$1.00 of foreign inflows.

Apart from being preferred to the panel data methods in the current exercise, the OLS results are quite good in their own right: the D.W. statistic indicates the absence of serial correlation while the \bar{R}^2 and F statistics indicate reasonably high quality goodness of fit. The values of the marginal propensity to save, though, may cause us some misgivings, especially in the case of Montserrat where it climbs to as high as 93%. It must be remembered, however, that over the period of the study (and before that), a vast amount of the spending power of these countries flowed in from outside in the form of gifts, aid and other “unrequited” transfers which do not enter into the measure of Gross Domestic Product used here. Indeed, accompanying these high coefficients are the correspondingly high *negative* values for the coefficient of foreign inflows.

The most important policy lesson is that the domestic savings effort of the individual countries comprising the O.E.C.S. would not, in the current circumstances, benefit from an active interest rate policy (the opposite conclusion would follow if the panel data methods were uncritically accepted). In the case of St. Vincent & the Grenadines, it would actually result in a weakening of this effort since the (negative) income effect of an interest rate change seems to be stronger than the (positive) substitution effect.

Model 2

The results based on the estimation and solution of the various versions of Model 2 are presented in summary form in, respectively, Tables 6 and 7. Graphs depicting the evolution of domestic savings for the different countries based on the solution of the various versions of the model are displayed in Appendix B as Figures B1 to B6.

TABLE 6
MODEL 1. SUMMARY RESULTS OF ESTIMATION EXERCISE

$$S_d = \beta_0 + \beta_1 y + \beta_2 s_r + \beta_3 i_r$$

	β_1	β_2	β_3	\bar{R}_2	D.W.	F
Pooled (OLS)	0.041 (1.75)	-0.581 (7.81)	0.055 (0.257)	0.576		30.5
LSDV	0.173 (4.22)	-0.330 (3.57)	0.146 (0.732)	0.653		16.3
Random Effects	0.078 (2.73)	-0.504 (6.63)	0.067 (0.339)	0.485		25.1
Dominica	0.168 (4.91)	-0.367 (4.63)	0.283 (1.52)	0.961	2.30	83.3
(a)				0.859	0.919	21.4
(b)	(0.632)	(3.85)	(0.157)	0.936	1.64	48.5
(c)	(3.89)	(3.20)	(0.604)			
Grenada	0.249 (2.95)	-0.081 (0.390)	0.214 (0.990)	0.673	1.20	7.86
(a)				0.267	0.859	2.21
(b)	(0.326)	(1.87)	(0.171)	0.600	1.03	6.00
(c)	(1.85)	(1.44)	(0.610)			
Montserrat	0.733 (13.3)	-0.471 (6.08)	0.218 (0.500)	0.968	1.39	102.4
(a)				0.134	0.230	1.51
(b)	(0.138)	(1.44)	(0.024)	0.378	0.208	3.02
(c)	(0.686)	(0.962)	(0.076)			
St. Kitts & Nevis	0.294 (5.91)	-0.062 (0.276)	-0.680 (1.95)	0.784	2.31	13.1
(a)				-0.107	0.718	0.679
(b)	(0.366)	(1.14)	(0.070)	5.271	1.40	4.72
(c)	(2.35)	(0.987)	(0.283)			
St. Lucia	-0.043 (0.731)	-0.267 (1.98)	-0.407 (1.94)	0.348	3.01	2.78
(a)				-7.10	0.284	-1.92
(b)	(0.201)	(1.22)	(0.075)	-7.35	0.314	-1.93
(c)	(0.831)	(0.682)	(0.194)			
St. Vincent	0.071 (1.40)	-1.15 (6.64)	-1.16 (2.52)	0.948	1.71	61.6
(a)				0.830	1.15	17.1
(b)	(0.447)	(1.85)	(0.066)	0.695	1.31	8.59
(c)	(1.41)	(0.785)	(0.131)			

Notes: $F_A(15, 42) = 14.0$ (a) = Statistics Associated with OLS
 $F_B(20, 42) = 14.7$ (b) = Simulated Statistics based on
 $F_C(5, 57) = 3.74$ Pooled (OLS)
 Breusch-Pagan Statistics = 0.062 (c) = Simulated Statistics based on LSDV
 Hausman Statistic = 11.7 T Statistics are in Parentheses

TABLE 7
MODEL 1: SUMMARY RESULTS OF MODEL SOLUTION

	CC	RC	U	U ₁	U ₂	U ₃
Dominica						
Pooled (OLS)	0.928	0.997	0.296	0.003	0.000	0.997
LSDV	0.984	1.10	0.157	0.014	0.191	0.795
Random Effects	0.953	1.08	0.250	0.029	0.054	0.918
OLS	0.986	1.02	0.131	0.000	0.008	0.991
Grenada						
Pooled (OLS)	0.869	1.38	0.467	0.087	0.175	0.738
LSDV	0.935	1.17	0.310	0.013	0.130	0.857
Random Effects	0.898	1.38	0.430	0.095	0.217	0.688
OLS	0.942	1.11	0.285	0.008	0.076	0.916
Montserrat						
Pooled (OLS)	0.431	1.01	0.901	0.003	0.000	0.997
LSDV	0.794	3.03	0.829	0.057	0.408	0.535
Random Effects	0.568	1.50	0.845	0.007	0.050	0.943
OLS	0.990	0.994	0.143	0.000	0.002	0.998
St. Kitts & Nevis						
Pooled (OLS)	0.688	1.71	0.651	0.133	0.116	0.751
LSDV	0.898	1.19	0.362	0.011	0.097	0.892
Random Effects	0.808	1.61	0.536	0.073	0.197	0.730
OLS	0.939	0.940	0.272	0.000	0.029	0.971
St. Lucia						
Pooled (OLS)	0.938	0.601	0.357	0.009	0.757	0.234
LSDV	0.952	0.521	0.501	0.143	0.764	0.093
Random Effects	0.945	0.588	0.376	0.035	0.777	0.188
OLS	0.933	1.03	0.180	0.000	0.005	0.994
St. Vincent						
Pooled (OLS)	0.967	1.31	0.252	0.026	0.431	0.543
LSDV	0.880	1.17	0.357	0.000	0.070	0.930
Random Effects	0.958	1.38	0.304	0.139	0.397	0.465
OLS	0.987	1.03	0.118	0.000	0.032	0.967

In comparing the various versions of this model, conclusions similar in spirit to those drawn in the case of model 1 about the superiority of the OLS version may also be drawn here. In particular, in the case of St. Lucia, the simulated R^2 statistics are negative and unusually large. Once again, too, the coefficient values obtained by applying OLS to the individual cases are sufficiently distinct from each other and from those obtained by the panel data methods as to make policy prescriptions based on one rather than the other a fairly risky affair. This time, however, there is greater unanimity in the rejection of the McKinnon-Shaw hypothesis: where the coefficient of the interest rate variable is significant at least at the 10% level (St. Kitts & Nevis, St. Lucia and St. Vincent & the Grenadines) it is also negative. In all other cases, it is not significant.

There is no evidence of serial correlation resulting from OLS estimation in any of the cases and, in most cases, goodness of fit as measured by \bar{R}^2 , the F statistics is reasonably good. Even when it is not, as in the case of St. Lucia (where the value of the F statistic is highly unsatisfactory), the statistics based on the solution of the model show that there is still some reasonable predictive power. For instance, Theil's U statistic shows an 18% error and the U_3 statistic is very close to unity (its ideal value). But the St. Lucian case clearly sticks out like a sore thumb for other reasons, in particular that the coefficient of the income variable is both negative and insignificant and great care should be taken in using this result.

Apart from the St. Lucia case, the average propensity to save responds, as predicted by theory, positively to changes in per capita income although it is not significant in the case of St. Vincent & the Grenadines. The most rapid rate of increase in this propensity is in the case of Montserrat where, for a 1% increase in real per capita income, it increases in value by 0.0073 (a relatively small response). A similar sensitivity was also reported in the case of Model 1). In other Caribbean countries, however, the response is more mod-

erate, ranging from 0.0017 for Grenada to 0.0029 for St. Kitts & Nevis.

The effect of foreign savings once again differs across the cases: although this time the corresponding coefficient always carries the correct sign, it is not significant in the case of Grenada and St. Kitts & Nevis. The response is greatest in the case of St. Vincent & the Grenadines where a 1% rise in foreign savings leads to an absolute fall in the value of the average propensity to save of 0.015.

Conclusion

There seems, first of all, to be no evidence for the McKinnon-Shaw hypothesis in any of the countries although the uncritical use of the panel data methods would have led to the opposite conclusion in the case of Model 1. Clearly, the policy makers of the O.E.C.S. have to find other policy instruments to assist in the mobilisation of domestic savings, and this may well include the introduction and/or amelioration of the existing financial institutions and instruments. This may well be a useful direction in future research.

There is also the very clear lesson, especially to those of the multilateral lending agencies whose role in policy making is increasing in the Caribbean region, that panel data methods improperly applied may lead to erroneous policy formulation. It is indeed very tempting to use such measures when time series data appear to be lacking (as in the case of the present study) on the very reasonable ground that savings in degrees of freedom will automatically lead to improved efficiency in estimation. Our study has shown that this is clearly not so and that it is dangerous to assume that the homogeneity necessary for the application of such methods can be justified on *a priori* grounds. If homogeneity is not verified by proper procedures for obtaining improved coefficient estimates, we are instead with completely misleading results with serious implications for policy formulation.

End Notes

¹All former British colonies with the exception of Montserrat which is still a British colony.

²Degrees of Freedom will be increased manifold.

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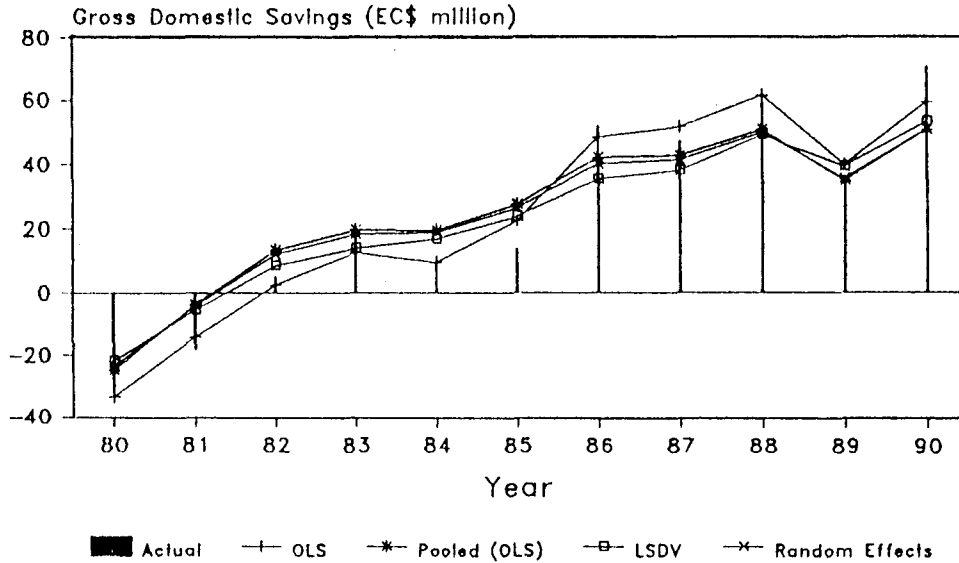
Appendix A

**GRAPHICAL PLOTS OF ACTUAL AND
PREDICTED VALUES BASED ON SOLUTION OF MODEL 1**

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FIGURE A1

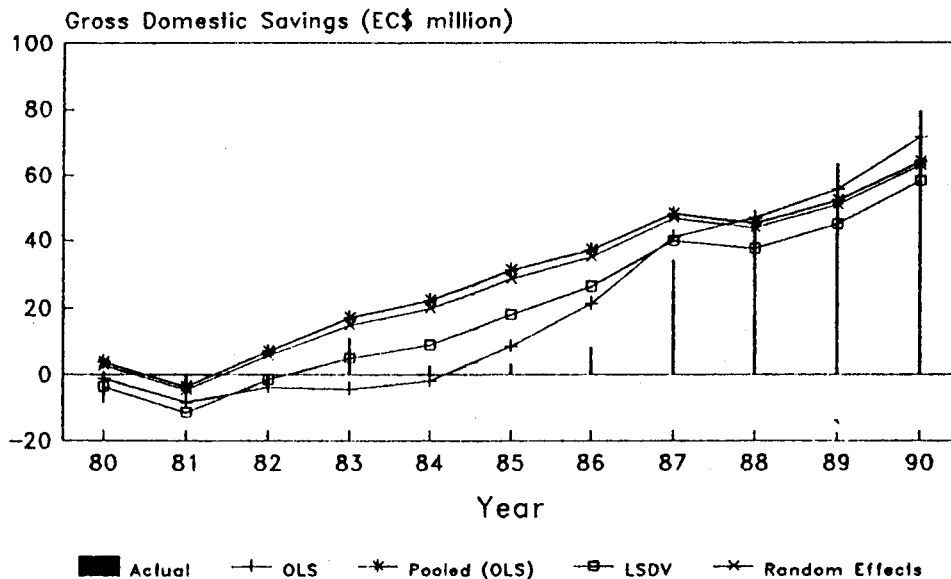
Model 1: Dominica



Comparison of Actual and Predicted

FIGURE A2

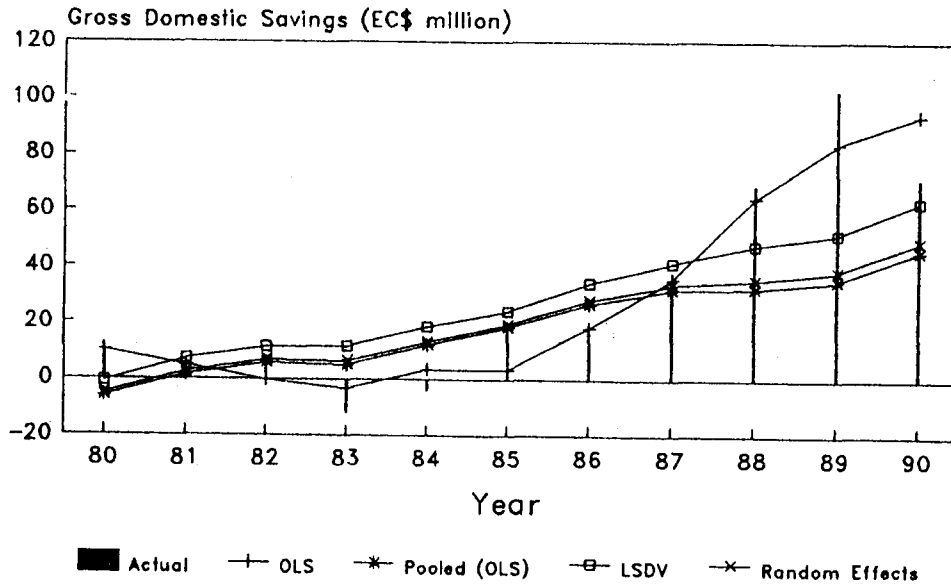
Model 1: Grenada



Comparison of Actual and Predicted

FIGURE A3

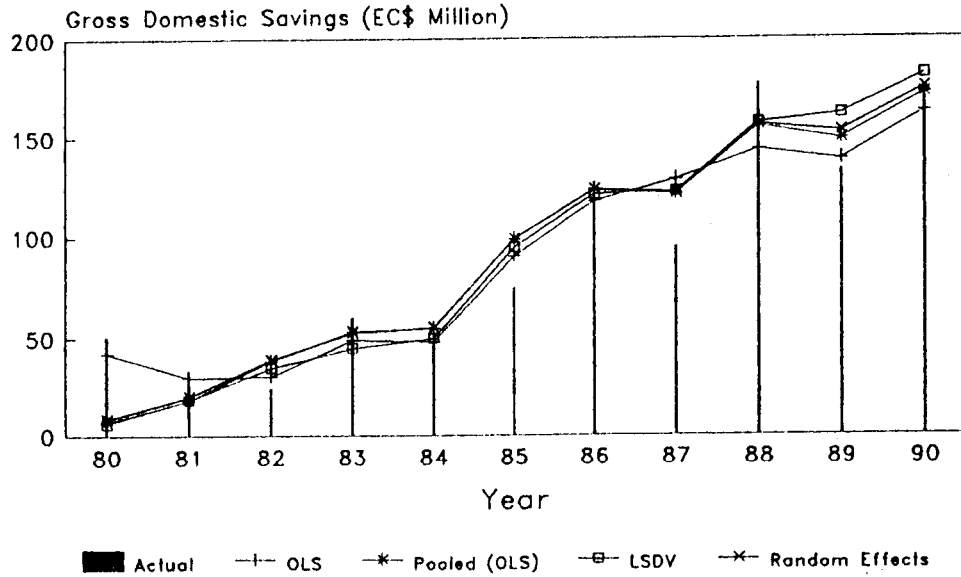
Model 1: St. Kitts & Nevis



Comparison of Actual and Predicted

FIGURE A4

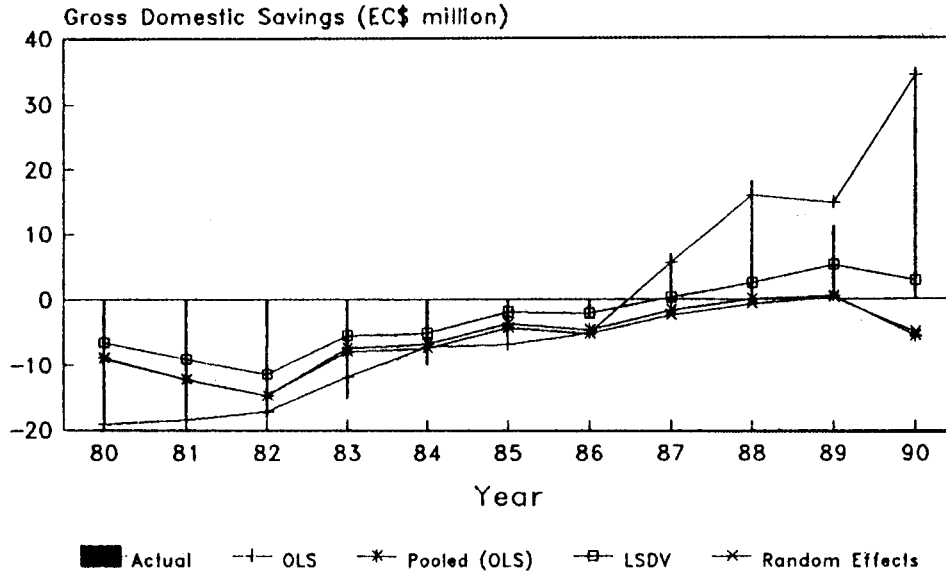
Model 1: St. Lucia



Comparison of Actual and Predicted

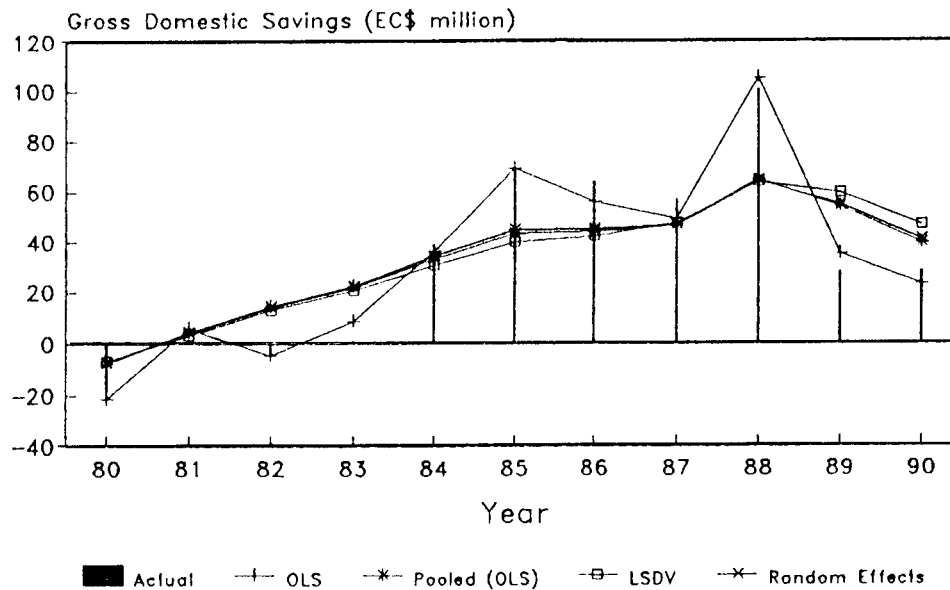
FIGURE A5

Model 1: Montserrat



Comparison of Actual and Predicted

FIGURE A6

Model 1: St. Vincent & the Grenadines

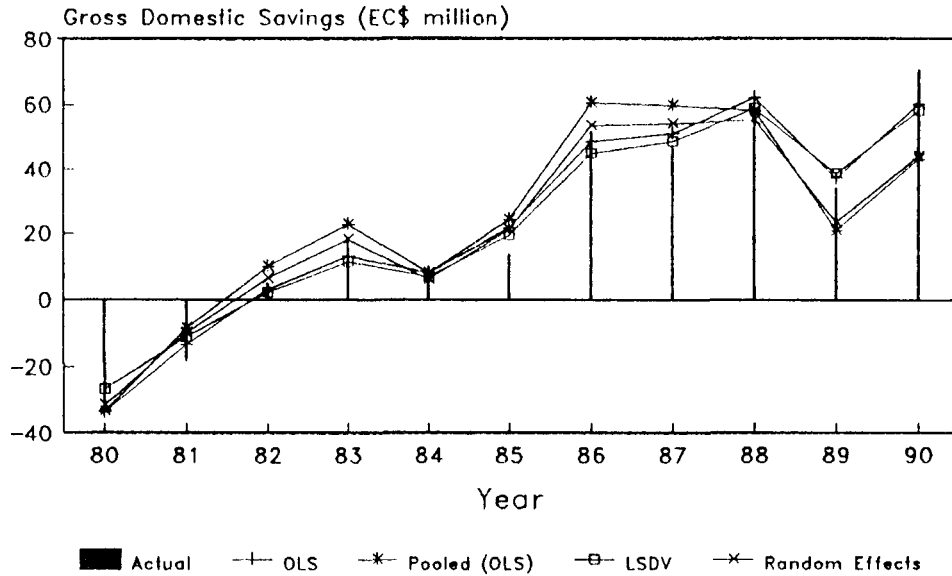
Comparison of Actual and Predicted

Appendix B

**GRAPHICAL PLOTS OF ACTUAL AND
PREDICTED VALUES BASED ON SOLUTION OF MODEL 2**

FIGURE B1

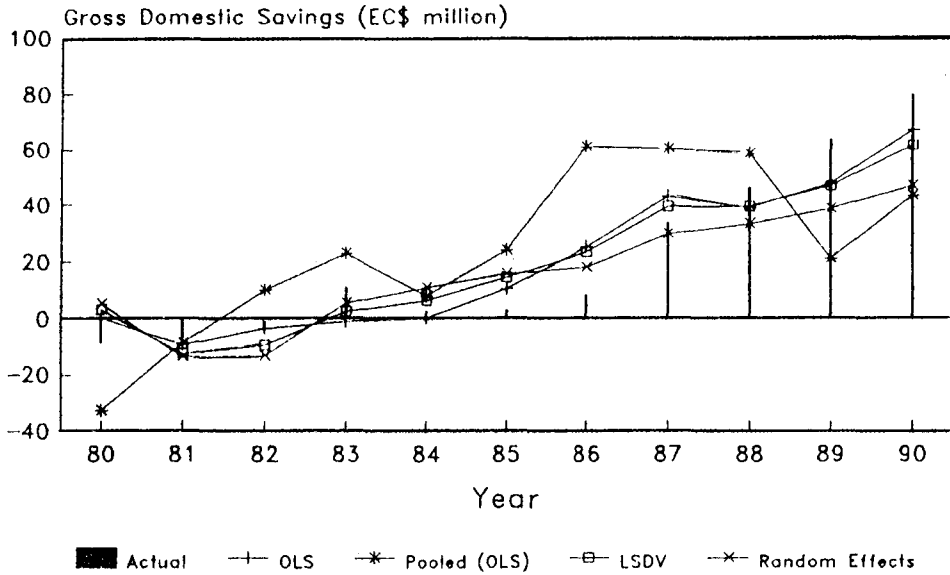
Model 2: Dominica



Comparison of Actual and Predicted

FIGURE B2

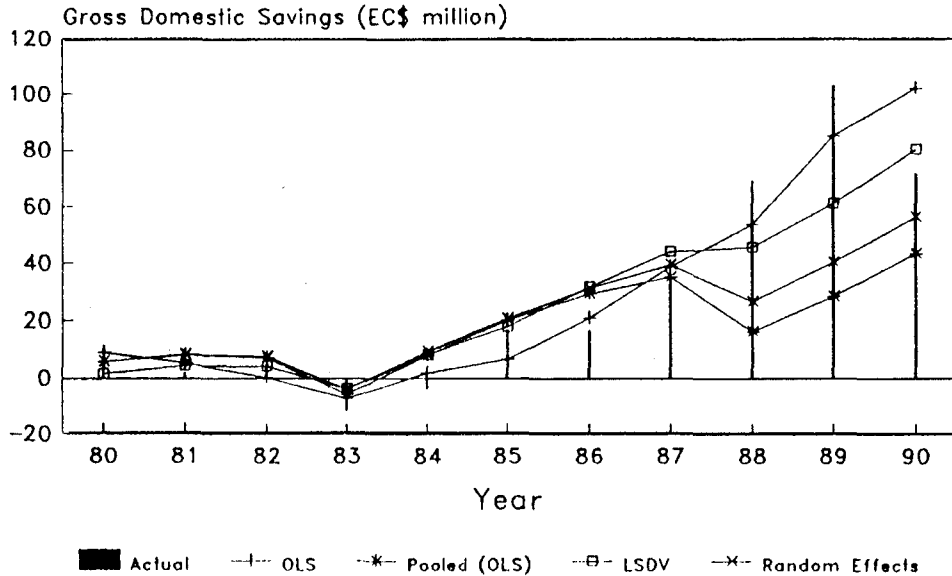
Model 2: Grenada



Comparison of Actual and Predicted

FIGURE B3

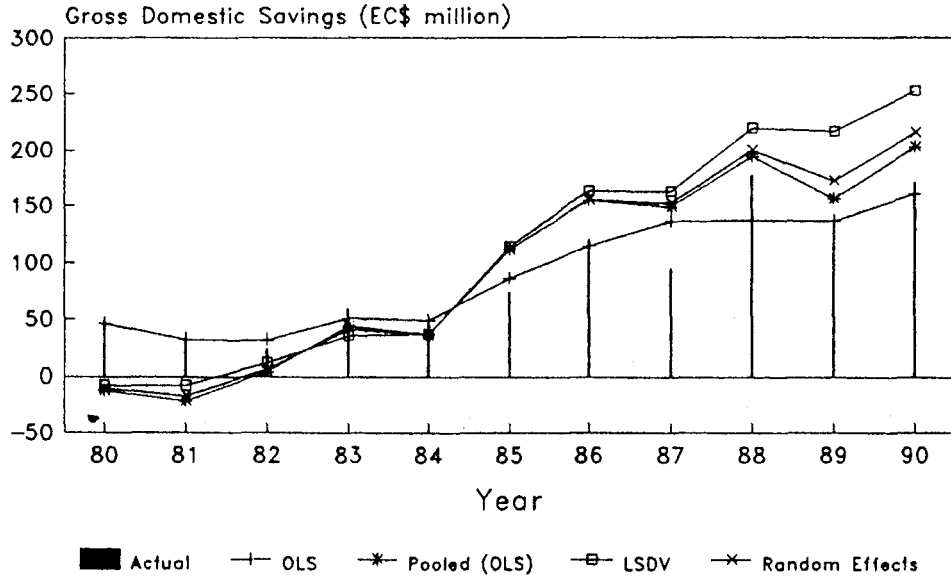
Model 2: St. Kitts & Nevis



Comparison of Actual and Predicted

FIGURE B4

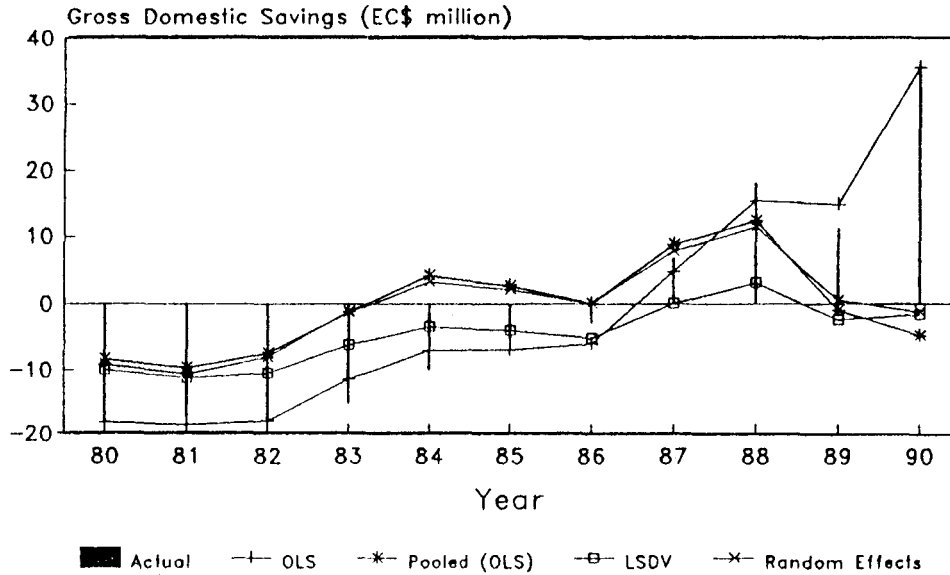
Model 2: St. Lucia



Comparison of Actual and Predicted

FIGURE B5

Model 2: Montserrat



Comparison of Actual and Predicted

Savings and the Distribution of Income Between Capitalists and Workers in Trinidad and Tobago: An Econometric Approach*

John Martin

Abstract

Some researchers contend that capitalists are the people in society who save and workers' savings are insignificant (e.g. Lewis, 1954). This may be the case for industrialized countries, but may not necessarily be so for less developed countries. The hypothesis based on the propensity of the two groups has not been the subject of a great deal of empirical testing. It is my purpose to test this hypothesis, using data from Trinidad and Tobago.

It is argued that the propensity to save out of workers' income is greater than that of capitalists in Trinidad and Tobago. In addition, it will also be shown that the volume of workers' savings is significant. Workers' income has been greater than capitalists' income; and a greater propensity to save out of the former results in a significant contribution to total savings. In this study, the Granger-Engel two step procedure will be used. The data used in this study cover the period 1955 to 1991.

*I am indebted to Dr. Ramesh Ramsaran for his comments on earlier drafts of this paper.

Introduction

Savings are a very important factor in economic development. A knowledge of the variables which influence savings helps in formulating social and economic policy. It is even more essential for many developing countries because of the dwindling inflows of foreign resources in recent years.

A number of studies have been done in the past with the aim of distinguishing the most important factors which influence savings in less developed countries including Trinidad and Tobago, (see Ramsaran, 1988). The investigative framework of most of these studies was confined to one or more of the following: the classical theory of savings, Keynes' theory of savings, the permanent income hypothesis, and the life cycle hypothesis. Even though these theories may help, to some extent, in explaining savings behaviour in Trinidad and Tobago and similar countries they do not cast a great deal of light on the savings performance of the various actors of the economy such as the capitalists and the workers. One of the theories which can be useful here is Lewis' theory of savings which recognizes the distinction between profits and wages and the implications for savings.

Capitalists may be the more significant savers in the industrialized economies but this may not be so for all countries. The idea should not be generalized. A hypothesis based on the respective propensity of the two groups has not been subject to a great deal of empirical testing. One reason for this may be the absence of savings data in a disaggregated form (Deaton, 1989). The use of disaggregated national income data, however, can enable us to draw some conclusions on savings propensities in particular situations.

Income in the national accounts, when disaggregated, is made up of operating surplus (which in this exercise is taken to be capitalists' income) plus compensation of employees (which is taken to be workers' income). The idea is that instead of using income as an aggregate in the specification, one can disaggregate

income in the equation as capitalists' income plus workers' income. Traditionally, studies on savings use income as an aggregate. However, in this work, income will be disaggregated into capitalists' income and workers' income. The intention of this study is to test workers' propensity to save in Trinidad and Tobago. The hypothesis is that workers save a relatively high proportion of their income and thus workers' savings are significant in the national savings process. Only two studies of savings done for the Caribbean using a disaggregated form of Lewis' theory are recorded to date; these are the study done by Bourne (1986) and Ramsaran (1988). In addition, only two other studies have been recorded to date for the less developed countries: Houthakker, (1965) and Williamson, (1968). With the exception of Ramsaran's (1988), the other three studies found the propensity to save out of workers' income to be lower than that of capitalists', and workers' savings insignificant in the national savings process.

The Models

In this study, the general theoretical framework used is adopted from Lewis' theory of savings and investment which can be compactly stated as:

$$RPS = f(RP, WWI)$$

where RPS is private sector savings, RP is capitalists' income, WWI is workers' income. The methodology used in the study is discussed in *Appendix I*. The results of the Engel and Granger two-step procedure are stated and analyzed in the following section.

Results of the Engel and Granger Two-Step Procedure and the Johansen Procedure

The results of the long run equations will be stated first, followed by the results of the short run equations. The results of the first specification are as follows:

$$\text{RPS} = 128.27 + 0.02 \text{ RP} + 0.12 \text{ WWI} + 1189.9 \text{ DUM}$$

$$(0.59) \quad (1.62) \quad (2.99) \quad (4.18)$$

$$R^2 = 0.67 \quad \text{D.W.} = 1.69 \quad \text{F - Stat.} = 22.0$$

$$\text{ADJ } R^2 = 0.64$$

where RPS is the level of real private sector savings, RP is income of the capitalists, WWI is income of the workers and DUM is the dummy variable which is included to take into account the effects of the oil boom.

The figures in parentheses are the absolute 't' statistics. Serial correlation does not appear to be a problem, judging from the value of the Durbin-Watson (D.W.) statistic. The equation does seem to have a reasonable fit as evidenced by the R^2 and the adjusted R^2 . Both of the variables carry the expected sign and one can see that the capitalists' income variable is not significant; but the workers' income variable is. The dummy variable is also significant meaning that the oil boom had a significant impact on the economy of Trinidad and Tobago. The propensity to save out of workers' income is larger than that of capitalists' income: for every \$1 million increase in capitalists' income, private sector savings increase by only \$20,000. On the other hand, on average, for every \$1 million increase in workers' income, private savings increase by \$120,000.

When this equation was tested for cointegration using the Engel and Granger test, the Dickey Fuller (DF) 't' statistic was -5.06 which is significant at the 5 percent level of significance: thus this equation can be tentatively accepted as cointegrated (see *Table 1*).

Table 1
Results of the Engel-Granger Cointegration Test

Long Run Equation	DF- Statistic	Critical Values 5% and 10%	
1	-5.06	-4.43	-4.06
1	-4.73	-4.00	-3.63

The corresponding error correction equation (ECM or short run equation) is as follows:

$$\Delta RPS = -231.8 + 0.038 RP - 0.12 \Delta WWI - 0.82 U_{-1} + 282.3 DUM$$

(1.61) (2.84) (0.65) (3.81) (0.83)

$$R^2 = 0.43 \quad D.W. = 1.90 \quad F - Stat = 5.39$$

$$ADJ R^2 = 0.35$$

where U_{-1} is the lagged residual from the cointegration equation.

Only the capitalists' income variable carries the expected sign. In addition, the absolute 't' statistic is significant only in the case of the capitalists' income variable. This could mean that in the short run, workers' savings do not impact significantly on private savings. The residual in this equation is significant and thus it is stationary; this means that this ECM equation corresponds to that of the cointegration equation.

In the second specification, the capitalists' income variable was left out and private savings was regressed only on workers' income. The results accord with what was expected. The estimated results of the second long run equation are as follows:

$$\text{RPS} = 207.8 + 0.130 \text{ WWI} + 1440.4 \text{ DUM}$$

$$(0.95) \quad (3.01) \quad (5.73)$$

$$R^2 = 0.64 \quad \text{D.W.} = 1.57 \quad \text{F Stat} = 30.25$$

$$\text{ADJ } R^2 = 0.62$$

This equation also seems to have a reasonable fit. The sign of the workers' income variable meets the *a priori* expectation. This equation also reveals that workers' income and savings do have a significant impact on the level of private savings in the long run. The coefficient of the workers' income variable, which is the propensity to save out of workers' income, is greater than the corresponding coefficient for the capitalists' income variable in the preceding equation. It can be seen that when workers' income increases by \$1 million, private savings increase by \$130,000. This is by far a larger influence on private savings than capitalists' income. Thus, the findings indicate that in Trinidad and Tobago, workers' propensity to save is greater than that associated with capitalists' income.

The Engel and Granger cointegration test reveals that this equation is cointegrated at the 5 percent level of significance. The DF statistic is -4.73 which is more significant than the McKinnon critical value of -4.00 at the 5 percent level of significance.

The results of the corresponding ECM equation are as follows:

$$\Delta \text{RPS} = -76.3 - 0.70 \Delta \text{WWI} - 1.06 \text{U2}_{-1} + 272.3 \text{DUM}$$

$$(0.52) \quad (0.16) \quad (3.29) \quad (0.89)$$

$$R^2 = .28 \quad \text{D.W.} = 1.70 \quad \text{F Stat.} = 3.80$$

$$\text{ADJ } R^2 = 0.20$$

The R^2 and the adjusted R^2 are somewhat small. Serial correlation does not seem to be a problem. The workers' income variable does not carry the expected sign. In addition, it indicates that this variable is insignificant. The level of workers' income and savings seems to have little impact on private savings in the short run.

In conclusion, based on the findings in this study, it can be said that workers' savings are not significant in the short run. However, workers' savings are significant in the long run. On the other hand, capitalists' savings appear to be significant in the short run but not in the long run. In addition, the propensity to save out of workers' income appears to be greater than that of capitalists' income.

Conclusions

Many researchers conclude that workers' savings are insignificant in the national savings process, but not many attempts have been made to test this hypothesis. One of the reasons for the absence of such exercises has been the lack of detailed savings data. The purpose of this exercise was to test this hypothesis. Savings data in a disaggregated form, providing corporate savings as distinct from workers' savings, have been unavailable. In the absence of disaggregated data in a more appropriate form, the hypothesis was tested by disaggregating national income into capitalists' income and workers' income. Private savings were then regressed on these respective incomes in order to discover whether or not workers' savings are significant in Trinidad and Tobago.

The findings obtained were interesting. It was found that workers' savings do in fact impact significantly on the level of total savings. This was found to be the case in the long run. In

addition, the coefficient associated with the workers' income variable was greater than that of the capitalists' income in all instances; thus there is reasonable evidence to conclude that the propensity to save out of workers' income is greater than that out of capitalists' income in Trinidad and Tobago. Overall, the results support my expectations. Thus, Lewis' theory does not appear to apply to Trinidad and Tobago - at least as far as the propensity to save by the major actors is concerned.

On the other hand, capitalists' savings appear to be insignificant in the long run, but significant in the short run.

The results that were obtained in this study are not surprising. I expected to find that the propensity to save out of workers' income greater than that of capitalists' income in Trinidad and Tobago, and that workers' savings are significant. The reasons for expecting the results that were obtained in this study will now be discussed.

When it is said that workers' savings are insignificant in the national savings process of a country, and that the propensity to save out of their income is smaller than that of the capitalists, this can easily be understood to be the case for advanced industrialized countries and some LDCs. However, this may not be the case for a country such as Trinidad and Tobago. In the advanced industrialized countries, it is a part of their custom or culture for a large proportion of their population to rent homes. Rent in these countries tends to be expensive and not much is left of the workers' income to save. This is evidenced from the fact that it is very common in these countries for workers to obtain a second or a part-time job. In contrast, in Trinidad and Tobago, most people do not have to spend a large proportion of their income on rent. A large proportion of the population own their own homes. So people in this country have a greater portion of their income from which to save. It is not a part of the culture for people to rent homes in this country.

Closely associated with the above-mentioned observation is the fact that Trinidad and Tobago has a custom of savings. It is habitual for workers to save a portion of their income for future purposes such as education of their children, contingencies and for retirement purposes.

With respect to the LDCs, it is generally assumed that workers' savings are insignificant and that the propensity to save out of their incomes is small. One explanation usually given for this is that the agricultural sector in these countries is large and average income in this sector tends to be low. In contrast, Trinidad and Tobago does not have a large agricultural sector as part of its working sector, and the average income of the working sector is relatively high. This is in part because Trinidad and Tobago possesses petroleum. The relatively higher income in this country compared to a large number of other developing countries gives the working sector a higher savings potential.

Another important indicator which may contribute to significant workers' savings in Trinidad and Tobago is the presence of a large number of financial institutions. These include commercial banks with a network of branches, credit unions, insurance companies (a large proportion of the population of Trinidad and Tobago has some form of savings via life insurance), the Unit Trust Corporation, the National Insurance Board (most persons of the relatively large working sector contribute a portion of their income to national insurance for pension purposes), finance houses etc. It is widely accepted that financial intermediation increases domestic savings. This is so particularly with respect to workers' savings. The existence of well-regulated financial institutions in a country helps to encourage savings, especially in rural areas. A history of a relatively low inflation rate may also be a contributory factor.

Appendix 1

METHODOLOGY

The methodology adopted in this study is that of regression analysis - the cointegration approach. This requires the testing for unit roots.

In testing for unit roots, the plots of the series were viewed¹ and the Augmented Dickey Fuller (ADF)² was performed.

Data and Some Explanations

The sources of the data in this study are as follows: Central Bank Handbook of Key Economic Statistics, Central Bank (1989); and Central Statistical Office (C.S.O.), National Income of Trinidad and Tobago, 1966-1985 (1987).

In the course of compiling the data, a few problems were encountered. The first of these problems was the unavailability of information on the Gross Domestic Product (GDP) deflator for the earlier part of the study; i.e. 1955 to 1968. In order to overcome this problem, the GDP deflator was regressed on time and then forecasting was done (backcasting) in order to get the missing values.

For the purpose of this study, income was divided into capitalists' income and workers' income.³ Operating surplus⁴ is being used to represent capitalists' income and compensation of employees to represent workers' income.

Both the data and the approach used in this study have been influenced by the unavailability of data on savings disaggre-

gated into corporate and household savings. Such disaggregated data that are available for savings in Trinidad and Tobago are for national savings and personal savings.

All the series used were in current prices and they were converted into real terms by dividing by the GDP deflator (1987=100). The workers' income variable was converted into real terms by dividing by the consumer price index (CPI 1987=100).

Results - Unit Root Procedures

A test for unit root was performed. A unit root is a root that lies on the unit circle thereby making the series non-stationary.

Private Sector Savings (RPS)

When the plots of this series are viewed, one can see that the series is not stationary. The Augmented Dickey Fuller test also confirms this (see Table 2). Thus some degree of differencing is required.

Table 2
Augmented Dickey Fuller Test

Variable	Lags	ADF Statistic	Critical Values	
			5%	10%
RPS	0	- 2.45	-2.94	-2.62
RP	0	- 4.78	-2.94	-2.62
WWI	0	- 1.31	-2.92	-2.61

Table 3
Augmented Dickey Fuller Test

Variable	Lags	ADF Statistic	Critical Values 5% and 10%	
RPS1	0	- 7.38	-2.94	-2.61
WWI1	0	- 3.33	-2.95	-2.61

When the private sector savings variable is differenced to the order of one, the plot of the series begins to fluctuate around a constant mean and thus this series now looks stationary. The ADF test also testifies to this (see Table 3). Thus it is integrated of order one, $I[1]$.

Capitalists Income (RP)

The plot of this series gives the notion that this variable is not stationary. However, the ADF test shows the DF statistic to be more significant than the critical values. Thus it may be concluded that this variable is stationary.

Workers Income (WWI)

When the plot of this series is viewed, it can be concluded that this series is not stationary. Thus, some sort of differencing is required (see Table 2).

Upon first differencing, the series begins to establish a fluctuating trend around a constant mean, but it still shows a deviating pattern. The ADF test shows that the DF statistic for 0 lags is -3.33 which says that this variable is stationary at the 5 percent and 10 percent levels (see Table 3).

End Notes

¹In viewing the plots of the series, if the series displays a pattern which does not fluctuate around a constant mean, this series is not stationary. The series will then need some sort of differencing in order to convert it to a stationary one. If at the end of first differencing, the series begins to fluctuate around a constant mean, the series is now stationary. Thus it is integrated of the order one, I[1] (Dickey, 1986).

²In the case of the ADF test, the null hypothesis of non-stationarity will be tested against the alternative hypothesis of stationarity. For example, if we wish to test whether the series Y is stationary or not, and to what order it is integrated, we can begin by performing the ADF regression, and testing the null hypothesis against the alternative hypothesis. If the DF t- statistic is negative and significantly different from zero, then the series is stationary. The critical values used are the McKinnon critical values (McKinnon, 1991).

³This is similar to that used by Kaldor and Pasinetti (Bourne, 1986; Jones, 1975).

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Investment Behaviour in Jamaica

Wayne Robinson

Introduction

The quest for development embodies the need for rapid accumulation of capital. The typical growth theory is underpinned by the role of changes in capital. Capital is the “wealth used to create more wealth”.¹ This employment of capital we generally refer to as investment.

The paper attempts to analyze the behaviour of this volatile but fundamental variable in the Jamaican economy, focusing on the post 1979 period. The background to this is that in spite of appreciably high levels of investment in the 1960's (particularly in the mining sector) and the application of structural adjustment policies during the 1980's and 1990's, the economy has not experienced a sustainable level of growth over the past thirty-two years.

Furthermore, the emergence of trading blocs (NAFTA, EEC etc.) and lower international trade barriers proceeding from the recently concluded GATT negotiations signal new challenges for the Jamaican economy, not only in terms of trade but in attracting capital flows. As Lee kuan Yew noted, “The real competition in the future will be to get investments”. The challenge posed to policy makers entails the need to restructure the economy so as to: (i) attract capital inflows, (ii) encourage domestic savings and

(iii) expand and effectively utilize domestic productive capacity. To achieve this a clear understanding of investment behaviour, particularly since the 1980's, is necessary. It must be noted, however, that the paucity of statistical data prevents a rigorous analysis of some of the underlying issues concerning investment in Jamaica.

Definition

Investment can be defined as any increase in the capital stock of an economy. It is necessary to distinguish between fixed capital investment and inventory investment.² The former is a flow variable which corresponds to an increase in productive capacity over time. The latter constitutes changes in the stock of raw materials, goods in the process of production and goods held in anticipation of sales.

We can also make a distinction between foreign investment and domestic investment. This distinction is of significance in the Jamaican context (and for developing countries in general) because of the dominant role foreign direct investment played in the earlier years and its impact in the latter years, particularly on the balance of payments.

A further dichotomy can be made of domestic investment into private and public investment. This is essential, as the nature of the relation between the two determines the overall level and impact of investment. As we will discover later, this distinction acquires more importance given the fact that over the past ten to fifteen years, increasingly less emphasis has been placed on public sector investment.

This decline in emphasis is due, firstly, to budgetary constraints; secondly, the re-definition of 'government' has reduced the level of public sector direct investment. It should be pointed out that this re-definition has allowed for a broader form of private sector involvement through the government's divestment programme.

The critical variable is, therefore, private investment behaviour and its determinants. Private investment tends to be endogenous, whilst public sector investment, being a policy variable, is more or less exogenous.

The major theoretical approach to investment is the neo-classical flexible accelerator model (Jorgenson 1971). Its reliance, however, on assumptions such as the existence of perfect capital markets makes it unsuitable for developing countries such as Jamaica. Empirical studies on real investment demand in developing countries³ have identified the real user cost of capital, real credit availability, real output, public sector investment, foreign capital inflows and changes in the stock of external debt as some of the main determinants of private investment in developing countries.

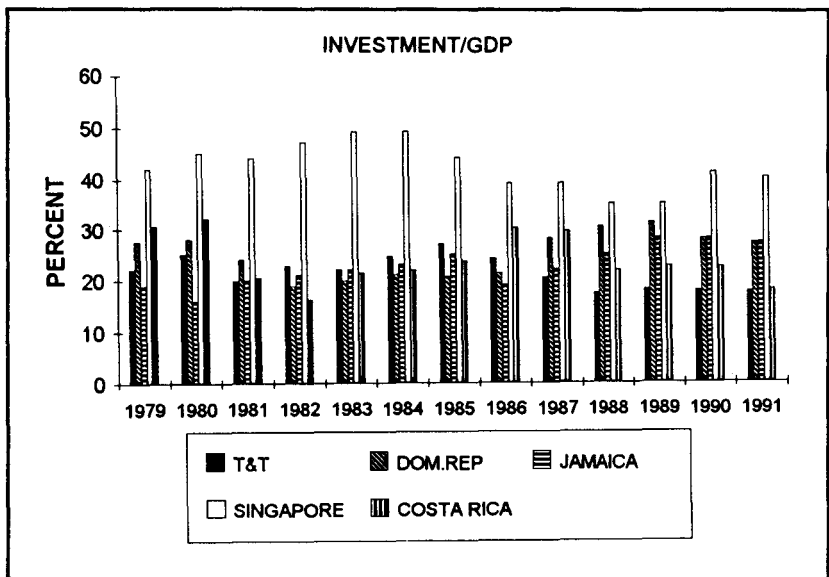
In the neoclassical framework investment is expected to vary inversely with the real user cost of capital. Also, the stock of external debt is expected to impact negatively on investment to the extent that a higher proportion of national income has to be devoted to debt servicing, thereby reducing the resources available for investment. Investment is expected to vary directly with changes in real output (an indicator of aggregate demand), credit availability and long term capital inflows. Public sector investment, provided that its financing does not 'crowd out' credit to the private sector, will have a positive impact (crowd in) on investment.

Recent Trends in Investment

Investment performance amongst developing countries has been deficient since the 1970s. In fact, investment on average declined progressively from 26.5 percent of GDP in 1980 to 22.9 percent in 1989. (IMF, World Economic Outlook 1989). Despite signs of revitalization between 1987 and 1989, gross domestic investment in Latin America and the Caribbean declined from 24 percent of GDP in 1980 to 19 percent in 1991. (World Tables 1993).

Looking at selected countries within the Latin American and Caribbean region, investment performance was strongest in the 1979-81 and 1987 - 91 periods, with Costa Rica and the Dominican Republic heading the list (see Appendix I and fig. I). Between 1979 and 1991, investment/GDP ratios in East Asian countries such as Singapore were larger than those of the region. Singapore in particular, under the "Governed Market" model, had an average investment ratio of over 40% between 1979 and 1991.

FIGURE 1

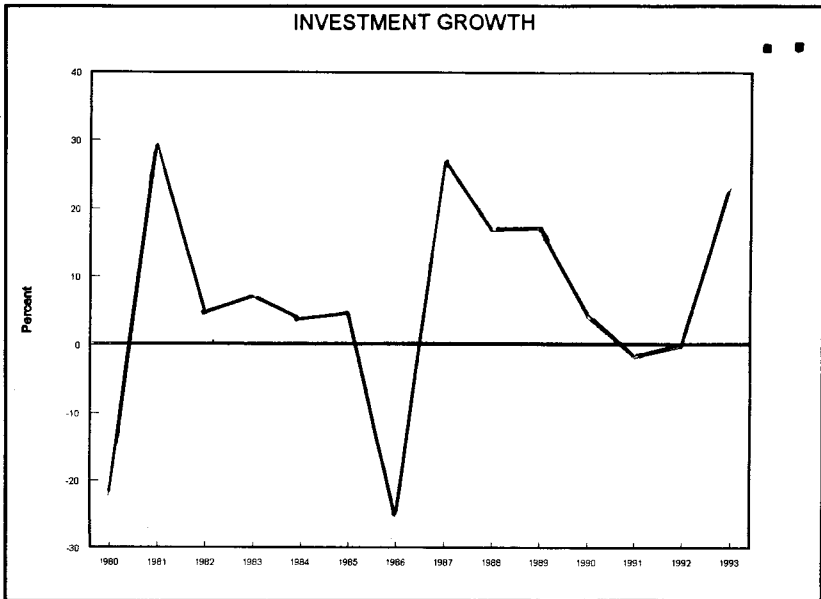


Source: World Bank World Tables 1993.

Within the region, investment ratios in Jamaica fell largely in the median range (see Appendix I). Nevertheless, the flows of investment remain inadequate. Furthermore, these flows have been variable over the period with periods of strong growth juxtaposed with periods of low growth (see Appendix II). The trend resembles the business cycle (see fig. 2). Following a steep de-

cline of approximately 23 percent in 1980, gross investment grew by some 29 percent in 1981. Thereafter, capital flows grew marginally over the next five years, at a rate ranging from 3 to 6 percent per year.

FIGURE 2



Source: STATIN.

1986 saw another steep decline of some 25 percent over 1985. Investment levels recovered appreciably between 1987 and 1990. Over the four year period, 1987 to 1990, real investments grew at an average rate of 9.2 percent, moving from J\$3632.16 million in 1987 to J\$5160 million in 1990 (see Appendix II). However, this trend was reversed over the following two years, with capital flows declining by approximately 2 percent and 0.3 percent in 1991 and 1992 respectively. Investment flows recovered in 1993, increasing by 23 percent over the previous year.

Since the 1980s the ratio of investment to GDP has been above average for most developing countries.⁴ The ratio for Jamaica has been fairly consistent over the period, the average being 24.0 percent with some 5 percent variability (see Appendix II). One will note, however, that prior to 1988 the ratio was mostly in the low twenties. Nonetheless, except for 1993, the ratio of investment to GDP for Jamaica was well below that of Singapore. 1993 was an exceptional year in which a ratio of 35 percent was well above the projected 30.7 percent and thus above the rate deemed necessary for the projected 3 to 4 percent economic growth rate for the following three years. The question is whether the projected growth is realizable at this level.

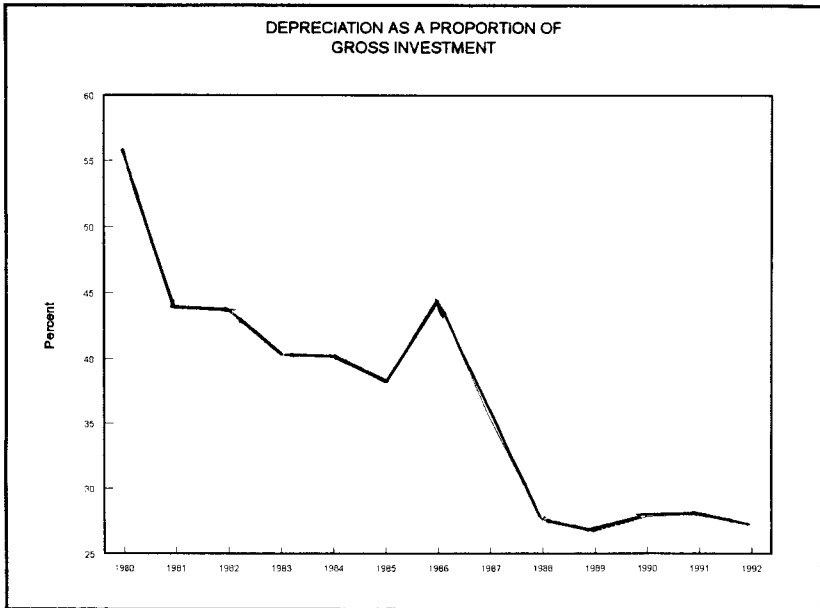
Looking at the incremental capital output ratio (ICOR)⁵ we find an absence of any unique trend (see Appendix II). Generally, a declining trend is favourable as it indicates greater efficiency in the use of capital. The ICOR is not a perfect measure. However, it does give a fairly accurate indication of the marginal productivity of investment.

The data on the ICOR raise some pertinent questions about the performance of investment. In certain years, whilst investment declined, output increased (though marginally). At other times the reverse occurred. The trend is indicative of a combination of two scenarios: inefficiency in the use of capital and underutilization of capacity. The PSOJ's survey of 257 firms in 1993 notes that only 24.1 percent of firms have full capacity utilization. More than fifty percent of the firms have a capacity utilization ranging between sixty and ninety percent. The survey noted, however that in the manufacturing, agriculture and mining sectors, a significant number of firms operated at less than fifty percent capacity.

If we consider depreciation the data on gross investment prior to 1988 do not say much about changes in the productive capacity of the economy. This is against the background that in 1980, depreciation accounted for as much as 55.54 percent of capital expenditure in the economy. Up to 1987, the percentage

of gross capital expenditure accounted for by depreciation remained in the high thirties to low forties. What is positive, however, particularly after 1987, is that the proportion declined (see fig. 3). Nevertheless, the data do suggest that a sizeable portion of resources has been spent on maintaining existing capacity in comparison to that spent on expanding productive capacity.

FIGURE 3



Source: STATIN.

We must note, however, that since 1990 there has been a notable increase in gross fixed capital formation relative to capital consumption allowances. The impact of this, as we have noted earlier, will be reflected in the ICOR. In the first half of the 1980's foreign capital constituted a significant portion of investment. During this period, except for 1980 and 1983, foreign flows accounted for more than fifty percent of gross investment (see

Appendix IV). Indications from JAMPRO are that the main recipient areas were textiles followed by tourism and information processing (see Appendix VII). The trend was reversed after 1986 when domestic investment started playing a more important role. In fact, the domestic portion ranges from 62 percent in 1990 to as much as 90 percent in 1988 and 1992 (see Appendix IV).

Inflows of foreign capital between 1985 and 1989 displayed a significant level of variability. Foreign flows gained some buoyancy in the immediate post Gilbert reconstruction era. The sharpest downturn in the use of foreign capital occurred between 1990 and 1992. Simultaneously, domestic investment grew by 10.6 percent in 1991 and 29 percent in 1992. We saw in the previous section, however, that overall gross investment declined over the period.

More significant is the fact that prior to 1986 and in 1991 and 1992, net foreign borrowing constituted the largest portion of foreign capital flows (see Appendix V and fig. 4). Of total foreign capital flows between 1980 and 1985, net foreign borrowing accounted for 97.3 percent (and 51.67 percent of total gross investment over the said period). Net direct capital flows, however, increased after 1985 and became the more significant factor in 1986, 1988, 1989 and 1992.

The data contained in Appendix V indicate that the contribution of domestic savings⁶ to gross investment prior to 1986 was almost negligible. In fact, dissaving occurred in the years 1981, 1982 and 1985. The level of domestic savings improved, however, after 1986. Between 1986 and 1992 the average growth in domestic savings was approximately 17 percent.

Data from JAMPRO⁷ for the period 1981 to 1994 indicate that the main sectors, in terms of the distribution of total gross investment, were manufacturing, agriculture, tourism and the garment manufacturing sub-sector (see Appendix VI). However, the flow of investment in each sector varied somewhat over the period (see fig. 5).

FIGURE 4

COMPOSITION OF FOREIGN CAPITAL INFLOWS

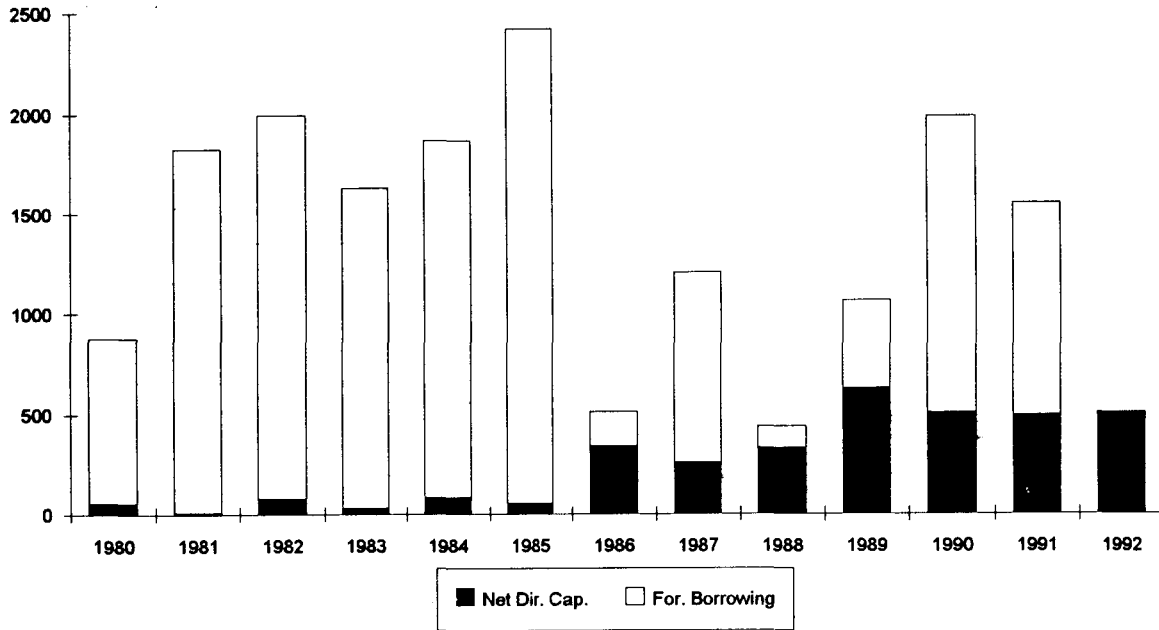
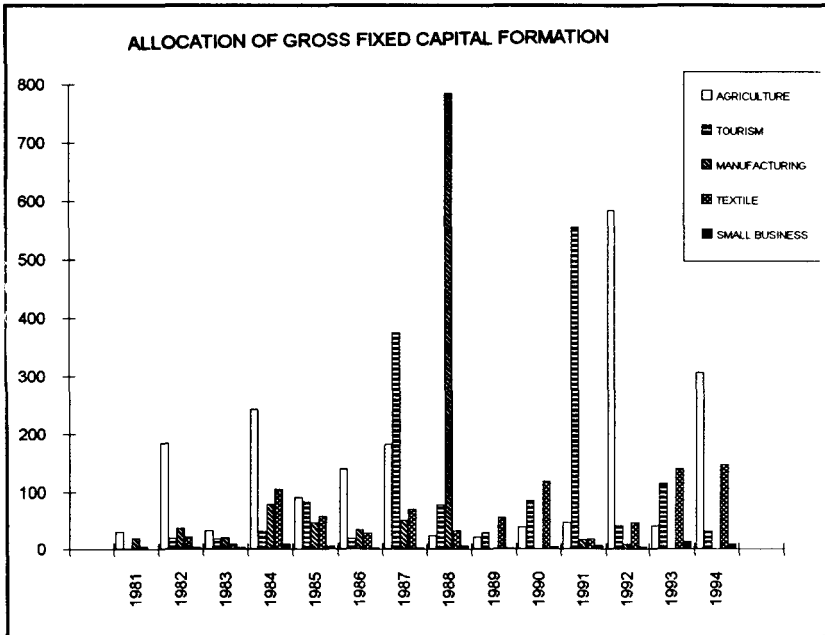


FIGURE 5



Source: JAMPRO.

The agricultural sector had relatively higher investment flows up until 1987. This can be attributed to activities under the AGRO 21 programme and policies designed to encourage investment in non-traditional exports. Approximately 56,000 new jobs were created over the 1979-87 period. Subsequently, investment within the sector slowed and it was not until the 1991-93 period that there was any recognizable resurgence of investment activity in this sector. This can be attributed to the increased competitiveness of agricultural produce following the exchange rate depreciations over the period.

Investment in the manufacturing sector was encouraging in 1988. Apart from 1988, however, investment flows to this sector were lower when compared to the other major sectors. The

flow of investments into the garment sub-sector was less varied, with stronger growth occurring over the last two years.

Information from JAMPRO indicates that investments in 1994 were primarily concentrated in agriculture, tourism, textiles and to a lesser extent the film industry. The data suggest that as of August 1994, investment in tourism was largely foreign, totalling some J\$32.2 million, whilst investment in agriculture totalled some J\$306.07 million, 97 percent of which was domestic (see Appendices VI & VII).

Textiles received approximately J\$147.39 million in investment, with 52 percent originating from foreign sources. Employment in this sector is estimated at 38,000 jobs. Indications from JAMPRO are that an additional \$117.1 million will be invested in this sector by March 1995. However, recent developments in Mexico, particularly the devaluation of the peso, are likely to impact negatively on this forecast.

Factors Affecting Investment Behaviour

Jamaica, like most developing countries, has sought to promote investments through a number of incentive schemes. These incentives were generally sector-specific in orientation. The schemes constituted both legislative acts and programmes, the main ones being the Export Industry Encouragement Act, Industrial Incentives (Factory Construction) Act, Hotel Incentives Act, Jamaica Export Free Zones Act and the Industry Modernization Programme.

Since the mid 1980's, a number of reforms have been introduced since it was felt that the protection offered to the various industries encouraged inefficiencies and therefore hindered the ability of firms to compete internationally. These reforms include the reduction of import licensing and price controls, the gradual elimination of the JCTC import monopoly and the reform of the tax and tariff systems.

An attempt has also been made to consolidate the various incentive schemes into a single regime. This would come under the Omnibus Incentive Code (Act). The incentives in this Act include up to 100 percent tax relief on investment activities, special capital investment allowance and exemption from GCT among others.

In addition, several measures were recently announced by the government to address the supply side of the economy. The measures are: (i) accelerated depreciation of machinery over two years to assist in retooling and the adoption of new and improved technology in the manufacturing sector; (ii) tax credit of 25% on the nominal value of bonus shares issued; (iii) introduction of differential interest rates for the productive sector and small farmers; (iv) a US\$25 million Government of Jamaica bond issue to finance export-based activity; (v) a reduction in the interest rates charged by the development banks and differential interest rates for small farmers and businesses.

In spite of these initiatives, however, the preceding discussion suggested that over the review period there has been an absence of a sustained flow of capital into the Jamaican economy. The level of capital flow stands in contrast with other rapidly developing countries that have succeeded in generating capital flows three times the levels obtained in Jamaica. In addition, the East Asian economies along with Latin American economies such as Chile, have displayed high levels of efficiency in the mobilization, allocation and utilization of capital.

A closer analysis of the data will show that investment trends in Jamaica are largely the response to the process of structural change and international factors. With this in mind we can subdivide the period of study into two epochs.

The period 1980-86 represented a deflationary phase, as the economy underwent steep adjustments. Real GDP declined at an average rate of 0.05 percent. The fiscal compression of this

period reduced the ability of the government to deliver the quality and level of infrastructure required to resuscitate private activity. Coupled with this was a decline in the bauxite/alumina sector, partly as a result of depressed conditions in the international market for aluminum.

The impact of structural factors on the ability of the economy to generate investment during this period becomes clearer when we look at the structure of production. The major contributors to GDP (apart from the distributive sector) were the traditional sectors - agriculture, tourism and mining, and to a lesser extent, manufacture. As was noted in the previous section these sectors received the larger portion of investments. Consequently, fluctuating aggregate demand in these sectors will impact negatively on overall gross investment in the economy.

Whereas efforts at structural adjustment have had some positive impact, the resurgence of economic activity between 1987 and 1990 was largely influenced by benevolent international conditions and the post Gilbert reconstruction activities. The growth over this period was commensurate with an increase in investments (particularly in non-traditional exports, textiles and manufacturing). GDP grew by 12.6 percent over the three years, with approximately 36,100 jobs created.⁸

The second epoch of the late eighties to early nineties was characterized by acute macro-economic instability, as the recent trend was sharply reversed after 1990, with negative growth occurring in 1991 and 1992. Real GDP declined some four percent in 1992, whilst the unemployment rate increased marginally to 15.9 percent.

The early years of the 1990s were characterized by economic instability largely in the external sector. The behaviour of investment during this time (as with other economic variables) has to be viewed against the background of the intensification of the government's liberalization programme. The anticipated

growth in investment did not materialize in the first three years. A contributing factor was the current instability which prevailed. This period demonstrated the need to find a balance between short-term and medium-term objectives. The short-term efforts to stabilize the economy in the wake of inflationary pressures resulted in low levels of real output. Thus, to the investor, planned additional capital was not justified by the anticipated aggregate demand. Such a balance, one will appreciate, will hinge on an appropriate balance in the use of monetary and fiscal policies. The situation over the two sub-periods is reinforced by the quality of investments as reflected in the ICOR. As previously noted, the trends in the ICOR suggest high levels of inefficiency in the use of capital and under-utilization of capacity.

It is difficult to ascertain which of the two is more influential. This will have to be explored on a sectorial basis, focusing on the ICOR of labour intensive *vis-à-vis* capital intensive industries. One explanation could be that growth, during the years when capital investment declined, came from the labour intensive sectors. Also, there could have been an underlying shift in resources in response to changes in the marginal productivity of capital as against labour. Another important factor could be that a significant portion of gross investment is concentrated in residential investment, which in itself does not contribute to production.

In addition to the general macroeconomic adjustment, public sector and financial reforms have been identified as measures which contribute to a lowering of the ICOR (i.e increase in the efficiency of capital). Public sector reform entails a reform of public enterprises, tax systems, improvements in public sector investment programmes, in which the focus of government expenditure would be on improvements in health, education, transport, power and communication and physical infrastructure. With respect to financial reform, we consider the role of financial intermediation, interest rates and foreign capital.

Following from this are three areas of fundamental importance to which we now turn. These include (i) Investment financing; (ii) Government activity and following from this (iii) Non-Price factors.

Investment Financing

The analysis of the preceding section suggests a continued dependence of the economy on foreign sources of investment financing. Given the inadequacy of domestic savings, investment in the earlier years was financed primarily by foreign inflows.

More critical is the fact that in the pre-1986 and 1990-1991 period foreign borrowing constituted the largest portion of foreign capital (see Appendix V). Dependent on how it is utilized, this form of foreign capital can be a restraint on future development, given the consequent debt service obligations. Empirical studies on investment in developing countries show that high debt service payments in relation to changes in output not only reduce the funds available for investment but act as a disincentive, as it implies a higher level of taxes on returns to meet these payments.⁹ Also, difficulties in meeting debt service obligations can have serious consequences for private financing as the country's credit-worthiness deteriorates.

An external debt of some US\$3647.2 million has seen some thirty-five to fifty percent of government's budget being allocated to debt servicing over the past five years. The debt-servicing problem has been exacerbated by exchange rate devaluations, which have increased the cost (in terms of Jamaican dollars) of debt servicing.

In this setting, alternative forms of foreign capital, such as direct capital investment, are desirable. Direct foreign investment provides a conduit for the infusion of technology and expertise. In addition, there are certain infrastructure spinoffs which could accrue (e.g. roads, utility, housing developments etc). This has been the case in the bauxite industry.

More critical to long term development is the mobilization and allocation of domestic surpluses. More and more, small economies like Jamaica will have to rely on domestic capital, as international capital flows (which are largely private) are now being consumed by the huge deficits in the industrial countries and by the emerging capital markets in other developing countries. Given the low levels of savings identified earlier, the economy faces a two-fold problem in raising aggregate saving and then being able to allocate it to productive activities.

Financial intermediaries, it has been observed, raise the return to savers and lower the cost to investors by their ability to accommodate liquidity preferences, achieve economies of scale in lending, and reduce the information cost to savers and investors. A number of domestic sources of finance have emerged, following the rapid evolution of the financial sector over the years. The operational structure and forms of deposits of these institutions often dictate the level and types of investment finance.

Traditional sources (e.g. commercial banks) tend to have shorter horizons. Within the Jamaican context they have developed into oligopolies focusing on the shorter end of the market. Clearly, the asset portfolio depends on the potential returns of the various projects. Consequently, a significant portion of assets is in low risk paper or biased to short-term projects. This behaviour relates directly to the economic environment which creates a bias for projects which provide quick returns. Over the years the traditional deposit-taking institutions have been the main source of domestic financial lending. Businesses in general rely on the commercial banks primarily for working capital.

A significant development, however, has been the growth in near bank intermediaries alongside the traditional commercial banks. The merchant banks in particular have grown by an approximate average of fifty percent since 1985. These institutions engage primarily in medium and long-term financing activities including floating and underwriting stocks, consultancy and investment services and lease and inventory financing, *inter alia*.

The growth in these near bank institutions along with the emergence of venture capital funds, pension funds and the commercial paper market, indicates a growing availability of resources for medium to long-term investments. Additionally, recognition must be given to institutions such as the development banks, Micro Investment Development Agency (MIDA) and the EXIM Bank, which have sought to expand their role in providing short, medium and long-term financing.

Fundamental to the intermediation process is the interest rate. Since the turn of the decade, the economy has experienced relatively high nominal interest rates in response to the government's demand management policies. An examination of the data in Appendix IX supports the hypothesis that there is a direct relation between the real interest rate and the demand for loans. One will notice that the volume of loans declined whenever there were negative real interest rates. Other factors, of course, such as credit restrictions and the loan source may also have affected loan demand.

In a liberalized financial system this points to the need to keep the inflation rate low in relation to the nominal interest rate. The rationale for this lies in the fact that the supply of capital depends largely on the real return; thus "the real rate of interest as the return to savers is the key to a higher level of investment".¹⁰ Not only does low inflation aid real rates but it reduces the riskiness of investment projects (particularly long term ventures).

The impact of changes in real interest rates is, however, varied. This is exhibited by the varying degrees of real interest elasticity. Demand was inelastic in certain years whilst in others it was elastic. In fact, the response of demand is seen to be inelastic whenever the real rate is declining, but elastic when rising. This implies that the business sector is more sensitive to rising real rates than to falling rates. To go further, it indicates that there are factors which prevent investors from taking greater advantage of a fall in real rates. Such factors could be expectations and

non-price factors.¹¹ In the 1986-87 recovery period, for example, the interest-rate effect was small. In this case rising output and renewed confidence were more critical.

Sectorial Allocation of Investment Finance

The construction sector accounts for the largest portion of loans (apart from the personal category) emanating from deposit taking intermediaries. Distribution followed by manufacturing, transport and storage and tourism are the other key areas (see Appendix VIII).

As pointed out before, the allocation of loans reflects institutional orientation. In addition, loan conditionalities can themselves create a sector bias. These conditionalities are influenced by the risk associated with a project. The risk component is very much associated with, or is determined by, the economic conditions of the particular sector. Conversely, not only do the institutional factors affect loan allocation, but the actual allocation to a sector depends on the demand for loans from that sector. This demand reflects the willingness of entrepreneurs to invest in that sector. The expected return within the particular sector is therefore critical.

The foregoing points to the need for an analysis of the factors affecting the returns within each sector. It also becomes necessary to determine to what extent fiscal incentives, which have been the traditional tools, are effective in influencing the rates of returns across sectors. This is important given the distribution of loans across sectors. There is an obvious need to alter the distribution of financial savings in favour of more productive activities, particularly export activities.

Alternate Sources of Investment Financing

Alternative sources of financing investments are the stock exchange and internal finance. The stock market provides savers

with an alternate instrument for savings. In terms of investments, the importance of the stock exchange is based upon the fact that by providing equity finance, it does not restrict prospective investors. Prospective investors are not restricted to low risk projects with short repayment periods. Also, risks vary across stocks, and given the range of choices in stocks, investors can diversify their risks.

Since 1985 some twenty-six companies have utilized the Jamaica Stock Exchange as a means of finance. Of these, four have had share offers on more than one occasion. The share issue totalled some 21,093,991 valued at some J\$5,133,933.8 million. Traditionally, the larger companies made use of the stock market. Recently, however, a number of smaller entities such as Radio Jamaica, DB&G, and Pulse Investments have had share offers on the market.

The number of listed entities since the inception of the Exchange, however, has been small in proportion to the size of the business community. (Bear in mind also that some entities were listed as a result of government's divestment programme). This phenomenon has a direct relation to the general financial orientation of businesses in Jamaica. It has been recognized that there is a reluctance among businesses to accept equity finance. The probable reasons include a resistance to shared ownership, the transaction costs and the possibility of double taxation. Consequently, business operations tend to have a high debt/equity ratio.

The ability of a firm to successfully make a share placement depends on its past performance, future prospects and the buoyancy of the market which in certain respects reflects the state of the economy.

Internal finance is generated from the firm's operating surpluses. Although operating surpluses as a proportion of domestic factor income were marginally less than wages, between

1980 and 1981 they grew at an average rate of approximately 117 percent.

If we use the operating surplus as an indicator of returns, then in Jamaica (apart from the financial sector), the highest returns generally accrue in the distributive sector, followed by construction and mining, then transportation and communication (see fig. 7). It was previously noted that the distributive and the construction sectors command the largest portion of banking finance, thus supporting the view that funds will flow where demand is greatest, such demand being primarily influenced by the returns. Where the distributive sector is concerned, finance from the banking sector is largely for cash flow purposes.

Internally-generated surpluses represent a potentially significant source of investment finance. In the mining sector, for example, a significant portion of capital expansion is internally financed (albeit a larger portion would emanate from the head offices of the MNCs).

Government recently took a decision to provide income tax relief to companies which issued bonus shares instead of dividends. However, more direct measures are needed to encourage the re-investment of surpluses (e.g. UDC).

Additionally, central government needs to reduce its reliance on the surplus of some public sector entities. The appropriation of these surpluses by the government reduces the resources available for re-investment by these entities.

Government's Activity

Government's activity impacts on investment in terms of its contribution to gross investment and more importantly through its effects on private investment. In market-oriented economies the latter impact is of greater significance as the private sector is identified as the main engine of growth. For a small open economy with a relatively small financial market, the amount of resources

consumed by the government is a key determinant in the level of private investment attainable. This is the typical crowding out effect. The argument is that by resorting to the financial sector to finance its fiscal needs, the government reduces the amount of resources available for private capital accumulation.

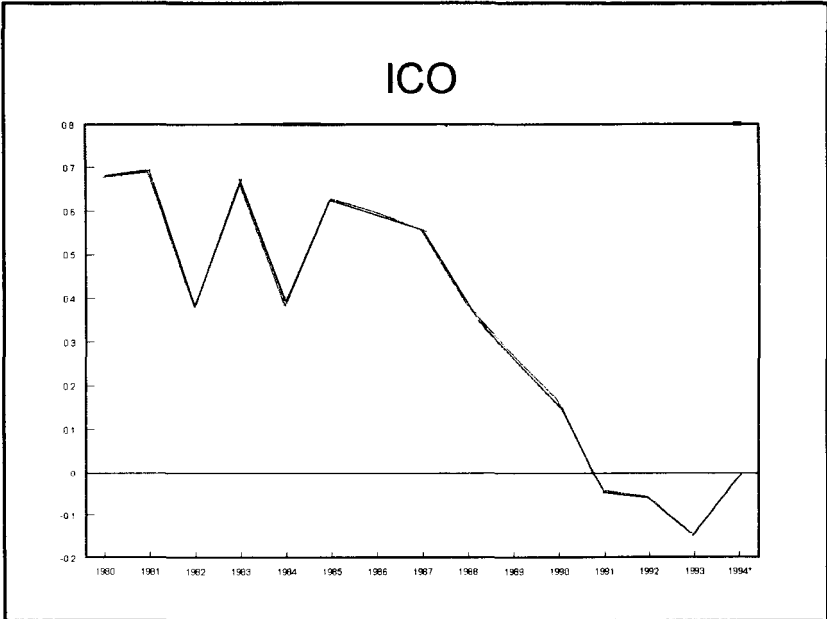
In an attempt to ascertain the extent of this phenomenon a simple index of crowding out (ICO) was constructed. This was done by taking the ratio of net public sector credit from the banking system to total domestic credit (see Appendix X).

The results reveal that up to 1987 the government in most instances consumed in excess of fifty percent of available finance. There was a significant decline in the index after 1988. In fact the trend in the index was most favourable between 1991 and 1994 (see fig 6). Crowding out defined this way, however, is very narrow as it does not take into account holdings of government bonds by households and non-financial entities. Government activities should not be considered as being entirely in competition with the private sector. In fact, as noted earlier, there is a complementarity between public and private sector investment. This stems from the fact that government's investment in physical and social infrastructure not only encourages private investment but also enhances productivity. Thus, the size and type of government's investment are key determinants of the behaviour of private investment.

Over the years there has been a decline in the level of government capital expenditure. The resulting poor social and physical infrastructure has impacted negatively on the overall rate of investment and on the cost of production.

Poor social infrastructure affects investment through the labour component. Given the volatile and mobile nature of capital, the ability of society to generate and attract sustained levels of investment depends, *inter alia*, on the quality of the labour force. Capital will move to areas where, *ceteris paribus*, *the productivity of labour for a given wage rate is competitive*. The inadequate

FIGURE 6



health and educational systems have adversely affected labour productivity over the years.

Given the budgetary constraints, an alternative is for private financing and management of certain types of infrastructure. Jamaica has sought to encourage private involvement in areas such as communications and electricity generation. The process, however, needs to be enhanced, particularly in the area of water and sewage services.

Non-Price Factors

The foregoing discussion points to the need to achieve and maintain macro-economic stability. Very often, however, the

focus is concentrated on the macro-economic elements at the expense of critical non-price factors. In some instances the failure of investment policies and incentive schemes can be attributed to a disregard of micro-economic ramifications. Undoubtedly these micro-factors are, to a large extent, the products of the macro environment.

At the micro level, one is primarily concerned with the rate of return. It is expected that, *ceteris paribus*, a higher rate of return (and hence a lower opportunity cost), will induce higher levels of investment. Critical to any investment strategy, therefore, is an analysis of factors affecting the rate of return. These factors are both price and non-price factors which affect, either directly or indirectly, operating costs. Within the Jamaican context, the major factors at the micro level which affect businesses can be divided into three broad categories — legal, technological and socio-economic .

The legal category refers to the constraints that arise from the legal arrangements and regulations governing business activity. These regulations and administrative requirements result in excessive bureaucracies, which restrain productive activity. The procedures for establishing business, customs procedures and tax regulations are often cited as disincentives to investment. They increase the 'time and transaction costs' involved in business activity. Although these costs may be implicit, they contribute significantly to production costs.

It must be noted that in the context of the new liberalized system, the government has attempted to alleviate some of the bureaucratic impediments e.g. establishment of a one-stop documentation centre and the Export Facilitation Board. Nevertheless, the business response indicates that more needs to be done in this area.

An important issue is the land titling and distribution process, the pace of which has impacted negatively on agriculture, particularly the small farmers. The lack of titles has denied farm-

ers access to loans because of the lack of adequate security and has also discouraged long term planning because of the uncertainty surrounding land tenure.

Under 'technological', we note issues that relate to managerial practices, the state of technology and plant size, utilities and information constraints.

Understandably, the lack of quality local entrepreneurship hinders private sector development. Moreover, failure of management to adopt scientific and current management techniques restricts the ability of firms to take advantage of the changes in the global economy and even various local incentives. In fact, a government study¹² has identified simple things such as poor record keeping as one of the major constraints affecting small businesses.

Investment, especially in the manufacturing sector, is inhibited by the availability of suitable factory space, access to raw materials, the state of technology, the unreliability of utility supplies (light and water) and the state of physical infrastructure. The comparative advantage of other developing countries (within and without the region) in these areas; has been the reason for a number of relocations over the period.

On the socio-economic side, can be included the labour force, transportation system, social and political stability. We have dealt with the main aspects of the labour force and the transportation system (as it relates to the infrastructure). We must add, however, that stability within the labour force is critical in inducing investment. Frequent labour unrest acts as a disincentive to investment, particularly foreign investment. In addition, there is a current shortage of skilled manpower in various sectors.

Social and political stability, especially for Latin American and Caribbean countries, are critical pre-conditions for the generation of investments. Generally, Jamaica has maintained a relatively stable political environment but the recent upsurge in

crime has served to undermine social stability. This not only discourages investment activities but adds to the costs of production. In fact, businesses are now reporting that a growing portion of their operating costs comes from the security bill.

Summary and Recommendations

The solution to unemployment, growth and development hinges on our ability to attract and expand investment activities. The increased international competition for capital emerging from the new global economic order poses an additional challenge in this regard. There are, however, certain salient features of the Jamaican economy which give us an advantage, if prudently exploited. These include our proximity to the world's largest market and our established ties with North America and Europe. In addition, our endowment of natural and human resources provide viable opportunities in areas such as textiles, agriculture (non-traditional crops and agro-processing), mining (limestone, Bauxite-Alumina, gypsum, etc.), services (information processing, finance, tourism) to name a few.

Despite numerous incentives, investment flows have been less than sufficient for sustainable growth and development. The economy over the years has been beset by inefficiencies in the allocation of resources and in the use of capital.

The trend over the years suggests some correlation between macroeconomic stability and the rate of investment. The economic climate which has developed over the years is biased towards short term activities, most of which are speculative in nature. The over-reliance on monetary policies has been cited as a contributing factor. In addition, fiscal policies have not been particularly encouraging, given the crowding out effect and inadequate investments in infrastructure. There are also non-price factors which discourage investments. These are associated with the poor social infrastructure and government bureaucracy.

If investment is to be encouraged in Jamaica there is need for a coherent set of policies which would in the short to medium-term address the following:

- (i) Stability in variables such as the exchange rate and inflation must be maintained since these affect the viability of investments. A stable environment is the only basis on which long term planning can be fostered. Furthermore, a stable macro-economic climate is a primary incentive for foreign capital.

Careful attention has to be given to the relation between interest rates and inflation. The current behaviour of these variables and the attending business climate indicate a need to shift the emphasis to fiscal polices, leaving monetary policy solely for liquidity management. This clearly calls for a leaner government, which in turn would reduce the burden of recurrent expenditure. Consequently, issues relating to efficiency within the public sector will have to be addressed.

- (ii) Following on the first is the need to formulate and implement an **“INFRASTRUCTURE DEVELOPMENT PROGRAMME”**. Such a programme would have as its objective the development of physical infrastructure, education, the health system and the assimilation of new technologies over the short and long term. In the short to medium term, educational issues relate to the level and type of skills training currently required. What is needed is a national skills survey. This will serve to guide the development of skills-training programmes through the various vocational institutions.

In terms of physical infrastructure, road improvements should be targeted primarily in the agricultural and main indus-

trial areas along with other areas in which there is the potential for industrial development (e.g. the southern coast which favours Eco-tourism).

Funding from international development agencies, along with local sources, should be directed specifically to this programme. In addition, private sector participation should be considered in the provision of certain types of infrastructure such as health and education.

- (iii) A reassessment of current incentive schemes (particularly the Omnibus Incentive Act), within the framework of an industrial policy, is also necessary. This has to be done against the background of their attractiveness and hence competitiveness with respect to other developing countries. Incentives must have among their objectives the promotion of research and development, and training. The associated criteria for incentives must be performance-based. Such criteria should include feasible production and export targets, and given levels of technical change. Each target should be set in consultation with the various private sector associations. Such targets can be either on a quarterly or bi-annual basis. This calls for a closer and more integrated relation between the government and the private sector. Regular working sessions must be established between both agents, at which targets can be decided and problems dealt with.
- (iv) In terms of finance, policies should be geared at achieving targeted levels of annual or quarterly national savings. This level must relate to the prevailing resource gap of the economy. In terms of allocation to productive uses, encouragement must be given to institutions which provide medium to long-term financing. These include merchant banks, venture capital funds, insurance companies (pen-

sion funds), development banks, MIDA, and the EXIM Bank.

The use of alternate sources such as operating surpluses should be further encouraged. With respect to the stock market, incentives must be provided to firms placing new issues. Incentives could include tax credit or exemption on transactions involving the new issue and on future profits/dividends for a specified time period.

Direct measures are needed for the encouragement of foreign direct capital. Very important among these is the promotion of joint ventures. Joint ventures provide a more direct means for the infusion and assimilation of technology and expertise. Additionally, the use of bilateral investment agreements should be enhanced. Currently, Jamaica has agreements with the UK (1987), Switzerland (1990), and the Netherlands, Germany and France (1991). These agreements cover, *inter alia*, the encouragement of investments, stimulation of business activities, economic cooperation and profit repatriation.

Along with direct foreign borrowing, greater emphasis should be placed on the use of both local and foreign financial markets. The appeal to the market mechanism will ensure allocations to the most efficient projects and will also encourage the development of the domestic financial market. Already there have been recent moves by National Commercial Bank, Eagle Commercial Bank and the Government in this direction.

- (v) The incremental capital output ratio points to a need to examine, firstly, the process of structural adjustment to assess the extent to which it has led to greater productivity, and secondly, to devise policies which encourage the infusion of technology and modern business practices. With respect to the latter, the government's Industry modernization programme will have to be expanded across

all sectors and should be the centre-piece of economic policy.

- (vi) It must be understood that investment flows are not altogether automatic. As such, the government must identify strategic industries for which special assistance and attention must be given. Such industries would include both export and import-substituting industries for which we have a clear competitive advantage.

The industries which obviously qualify are agriculture/agro-processing, information processing, entertainment and hospitality. Assistance where necessary must include subsidies, non-tariff protection and fiscal incentives.

- (vii) Simpler procedures regarding the registration and regulation of business activities are required. An important area in this regard is the lands titling process. An immediate technological upgrading of facilities at the respective government departments is therefore necessary.

Where crime is concerned one would expect that as more job opportunities are created and as the social infrastructure develops there will be a reduction in crime rates. What is necessary at this juncture, however, is the implementation of the recommendations of various reports on crime, especially the Wolfe Report.

Investment policies and incentives must be consistent and clearly articulated. Consequently, a consensus must be established between the government, private sector, labour and the general society; a social contract must be forged. The approach envisaged is one of co-operation (e.g. The Mexican 'PACTO').

What is called for is a proactive government with policies fervent in the objective of promoting investment. In order to

End Notes

¹M.Hirsh, "Capital Wars" in Business Week, October 13, 1994.

²A third category, residential investment, is identified in the literature. For our purpose we will focus on the above two.

³See Blejer and Khan (1984) and Greene and Villanueva (1991).

⁴See N. Panton *Non-Price Constraints to Investment*. BOJ (1992).

⁵A crude measure of this index was calculated using the ratio of the changes in investment to the changes in GDP. One must note, however, the lead and lag effects in this analysis, as the impact of investment in one time period will be distributed over other periods.

⁶Savings is defined in a National Income Accounting sense.

⁷In the absence of data on sectoral flows, figures from JAMPRO were used as an indication of sectoral distribution. These figures relate to JAMPRO-administered projects and consequently do not capture the entire flow of investment in the economy.

⁸STATIN, *Labour Force Statistics*.

⁹See J. Greene and D. Villanueva (1991), and L. Serven and A. Solimano (1992).

¹⁰M. Fry (1988). See also Mckinnon's complementarity hypothesis.

¹¹This analysis may not only be confined to a situation where there are negative real rates.

¹²See Ministry Paper No. 40, *Small Business Development Program*.

¹³D. Morrison, *Economic Imperatives II : An Effective Investment and Manpower Strategy 1993/94 and Beyond*. p.7.

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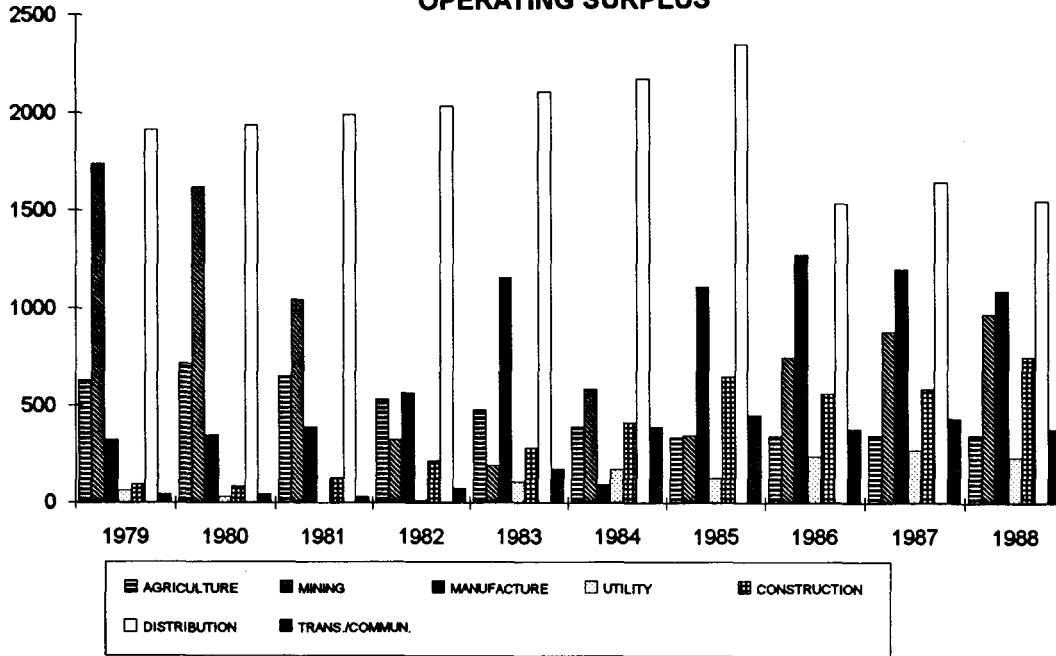
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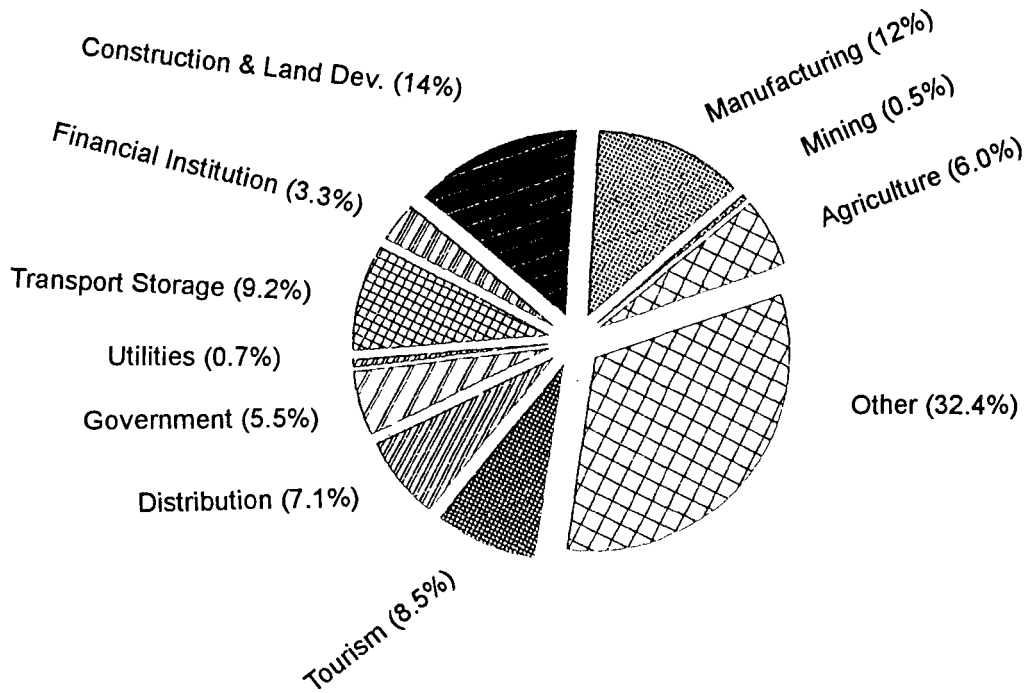
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25. IMF, *World Economic Outlook 1988, 1989*.

FIGURE 7

OPERATING SURPLUS



**FIGURE 8. COMMERCIAL BANKS
LOAN ALLOCATION (1987-1993)**



**FIGURE 9. MERCHANT BANKS
LOAN ALLOCATION 1989-1993**

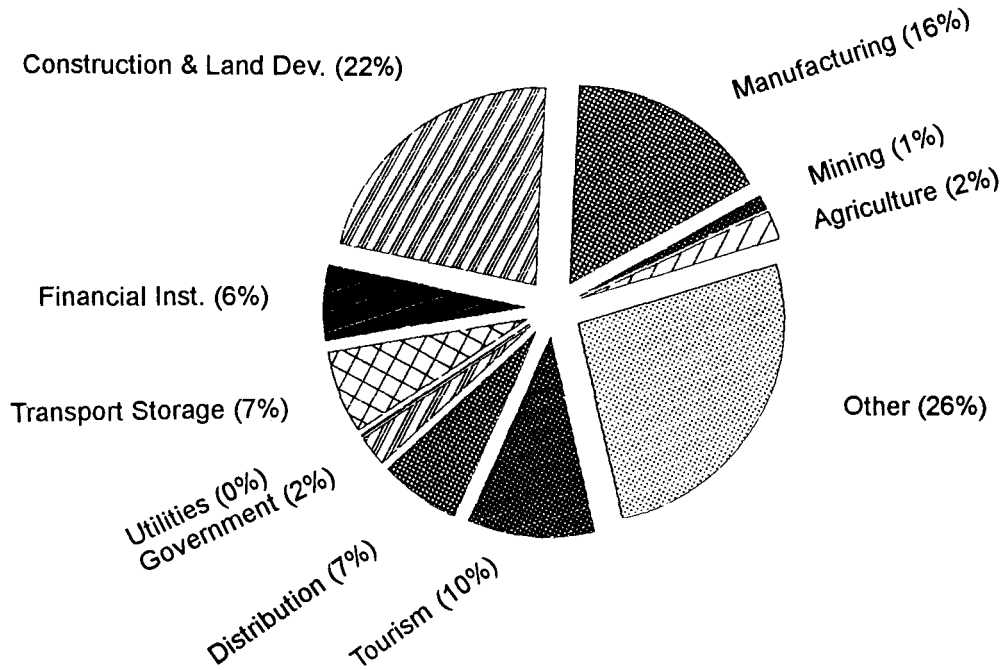
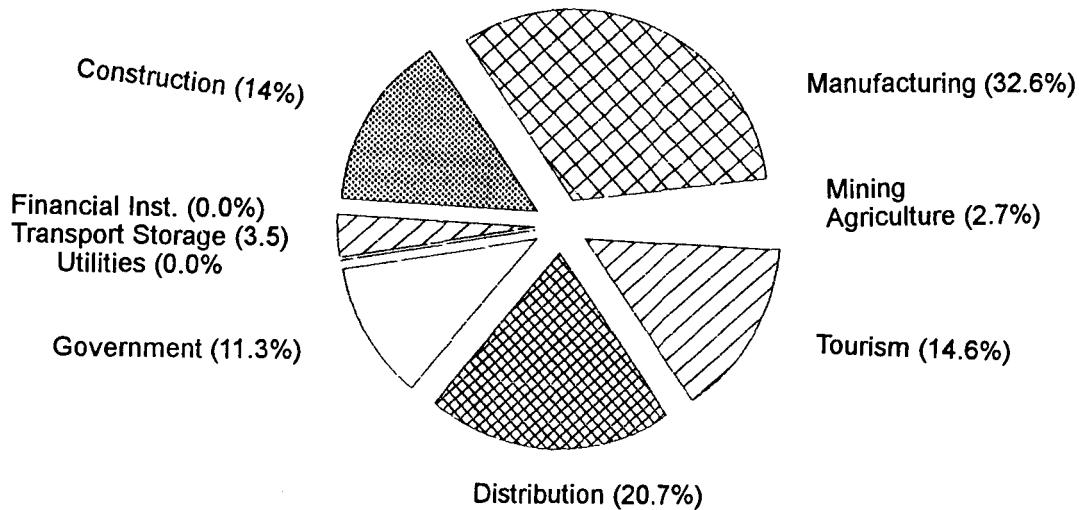


FIGURE 10. FINANCIAL HOUSE/TRUST CO.

LOAN ALLOCATION (1989-1993)



NON-COMMERCIAL LOAN CATEGORY EXCLUDED

APPENDIX TABLES

APPENDIX I
Gross Investment/GDP Ratio in Selected Countries 1879-91
(%)

Year	Barbados	Trinidad and Tobago	Dominica	Guyana	Dominican Republic	Jamaica	Costa Rica	Singapore
1979	0.27	22.09		30.94	27.47	19.00	30.50	42.00
1980	0.29	25.01		30.11	27.97	16.00	32.21	45.00
1981	0.31	19.94		26.86	23.93	20.00	20.43	44.00
1982	0.25	22.70		20.38	18.97	21.00	16.20	47.00
1983	0.22	22.01		17.63	19.88	22.00	21.43	49.00
1984	0.18	24.62	0.429	22.46	20.97	23.00	21.88	49.00
1985	0.17	26.88	0.369	27.70	20.68	25.00	23.59	44.00
1986	0.18	24.10	0.256	29.03	21.23	19.00	29.93	39.00
1987	0.19	20.38	0.265	30.52	28.03	22.00	29.33	39.00
1988	0.20	17.37	0.302	15.81	30.20	25.00	21.71	35.00
1989	0.22	18.12	0.391	26.22	31.03	28.00	22.50	35.00
1990	0.21	17.77	0.324	31.96	27.89	28.00	22.39	41.00
1991	0.22	17.52		24.16	26.93	27.00	18.01	40.00

Source: World Bank, *World Tables 1993* & Author's Calculation.

APPENDIX II (a)**Gross Investment
(1987 Prices)**

Year	JAMAICA			
	Investment	Growth Rate %	Inv/GDP Ratio	ICOR
1979	3151.92		0.19	
1980	2449.03	-22.300	0.16	3.62
1981	3168.24	29.367	0.20	12.44
1982	3309.19	4.449	0.21	5.20
1983	3537.73	6.906	0.22	2.90
1984	3667.63	3.672	0.23	2.60 (-)
1985	3834.19	4.541	0.25	0.95 (-)
1986	2860.00	-25.408	0.19	12.58 (-)
1987	3632.16	26.999	0.22	4.20
1988	4242.65	16.808	0.25	9.05
1989	4962.27	16.962	0.28	2.74
1990	5160.00	3.985	0.28	0.97
1991	5061.30	-1.913	0.27	2.67 (-)
1992	5047.44	-0.274	0.29	0.06
1993	6218.17	23.195	0.35	19.38

APPENDIX II (b)

**Gross Investment
(1987 Prices)**

SINGAPORE

Year	Investment	Growth Rate %	Inv/GDP Ratio	ICOR
1979	10940.00		0.42	
1980	12743.00	16.481	0.45	1.65
1981	13648.00	7.102	0.44	0.70
1982	15673.00	14.837	0.47	1.41
1983	17447.00	11.319	0.49	1.19
1984	19101.00	9.480	0.49	6.32
1985	16682.00	-12.664	0.44	4.15
1986	15298.00	-8.296	0.39	0.97
1987	16637.00	8.753	0.39	0.10
1988	16811.00	1.046	0.35	0.92
1989	18206.00	8.298	0.35	3.16
1990	22820.00	25.343	0.41	0.72
1991	23976.00	5.066	0.40	

Source: World Trades Tables; STATIN, *National Income and Product* & Author's Calculations

APPENDIX III

Gross Investment
(J\$ Million)

Year	Gross Cap. Formation	Increase In Stocks	Gross Accum.	Real Investment (1987)
1979	748.20	71.30	819.50	3151.92
1980	690.10	69.10	759.20	2449.03
1981	953.80	123.40	1077.20	3168.24
1982	1167.80	56.60	1224.40	3309.19
1983	1436.40	120.20	1556.60	3537.73
1984	1980.70	183.20	2163.90	3667.63
1985	2581.20	256.10	2837.30	3834.19
1986	2431.80	142.20	2574.00	2860.00
1987	3544.70	160.10	3704.80	3632.16
1988	4865.30	98.60	4963.90	4242.65
1989	6503.00	47.20	6550.20	4962.27
1990	8361.90	152.10	8514.00	5160.00
1991	11824.50	221.40	12045.90	5061.30
1992	20494.20	200.30	20694.50	5047.44
1993	32812.80	454.40	33267.20	6218.17

Source: STATIN, *National Income and Product*, Various Issues;
& Author's Calculations.

APPENDIX IV

**Composition of Investment
(1987 Prices)**

Year	Domestic	%	Foreign	%
1980	1572.90	0.64	875.81	0.36
1981	1343.82	0.42	1824.41	0.58
1982	1312.16	0.40	1997.03	0.60
1983	1908.41	0.54	1629.32	0.46
1984	1802.03	0.49	1865.42	0.51
1985	1417.16	0.37	2417.03	0.63
1986	2346.78	0.82	513.33	0.18
1987	2431.86	0.67	1200.29	0.33
1988	3802.31	0.90	440.34	0.10
1989	3901.52	0.79	1060.76	0.21
1990	3181.27	0.62	1978.73	0.38
1991	3519.62	0.70	1541.72	0.30
1992	4540.51	0.90	506.93	0.10

Source: STATIN, *National Income and Product*, Various Issues.

APPENDIX V
Investment Components
(1987 Prices)
(J\$ Million)

DOMESTIC			
Year	Domestic Saving	Capital Consumption	Total
1980	212.90	1360.00	1572.90
1981	-44.12	1387.94	1343.82
1982	-132.43	1444.59	1312.16
1983	483.18	1425.23	1908.41
1984	331.02	147.02	1802.03
1985	-45.41	1462.57	1417.16
1985	1070.78	1276.00	2346.78
1987	1145.00	1286.86	2431.86
1988	2630.34	1171.97	3802.31
1989	2576.97	1324.55	3901.52
1990	1745.15	1436.12	3181.27
1991	2101.64	1417.98	3519.62
1992	3169.12	1371.39	4540.51

FOREIGN			
Year	Net Direct Capital	Net Foreign Borrowing	Total
1980	51.61	824.19	875.81
1981	5.29	1819.12	1824.41
1982	76.49	1920.54	1997.03
1983	27.50	1601.82	1629.32
1984	81.19	1784.24	1865.42
1985	49.73	2367.30	2417.03
1986	339.22	174.11	513.33
1987	251.27	949.02	1200.29
1988	327.69	112.65	440.34
1989	625.76	435.00	1060.76
1990	504.48	1474.24	1978.73
1991	489.66	1052.06	1541.72
1992	506.93	0.00041	506.93

Source: STATIN, *National Income and Product*, Various Issues.

APPENDIX VI
Sectoral Allocation of Investment (August 1981-1994)
(J\$M)

Year	Agri- culture	Tourism	Info. Process- ing	Manu- facturing	Min. & Che.	Textile	Gen. Services	Film	Small Business
1981	31.3	0.6	0	19.568	1.25	4.85	0	0	0
1982	185.34	19.622	2.892	36.572	2.025	22.617	8.53	2	4.049
1983	33.307	18.883	0	21.749	0.611	8.794	2	0.45	3.411
1984	243.471	31.812	3.15	80.529	49.76	106.325	48	6.339	10.434
1985	92.505	85.5	3.623	47.066	2.26	59.813	0	33.694	5.501
1986	139.51	19.535	15.025	34.235	49	28.482	0	2.205	2.655
1987	182.338	374.173	12.681	50.925	2.83	71.643	0	6.49	2.736
1988	24.504	79.89	0.11	784.885	2.015	33.54	70.405	28.706	6.351
1989	22.32	30.385	2.767	0.403	0	56.808	8.31	26.302	2.627
1990	38.696	86.928	4.735	0.967	0	118.611	0.525	10.713	4.211
1991	46.41	554.445	6.368	18.286	35.89	18.574	0	27.241	6.241
1992	583.813	41.325	16.183	9.403	95.78	46.61	3.997	248.345	4.383
1993	40.619	114.196	111.714	0	63.12	139.93	14	194.347	13.331
1994	306.071	32.2	1.4	0	0	147.39	0	54.702	8.5

Source: JAMPRO (Figures relate to JAMPRO administered projects).

APPENDIX VII
Sectoral Composition of Investment (August 1981-1994)
(J\$M)

292 / Wayne Robinson

Year	Agriculture		Tourism		Info. Processing		Manufacturing		Textile	
	Dom.	For.	Dom.	For.	Dom.	For.	Dom.	For.	Dom.	For.
1981	30.2	1.1	-	0.6	-	-	19.2	0.368	4.8	0.5
1982	164.37	20.97	14.36	5.262	0.101	2.791	35.455	1.117	14.187	8.43
1983	29.695	3.612	7.467	11.416	-	-	20.733	1.016	8.794	-
1984	229.539	13.932	16.1	15.712	2.2	0.95	72.979	7.55	11.575	94.75
1985	91.205	1.3	33.2	52.3	1.623	2	30.656	16.41	7.778	52.035
1986	109.46	30.05	15.555	3.98	13.224	1.801	23.235	11	13.115	15.367
1987	175.471	6.867	285.023	89.15	12.681	-	42.375	8.55	20.055	51.588
1988	18.534	5.97	16.525	63.365	-	0.11	762.61	22.275	2.24	31.3
1989	12.255	10.065	26.985	3.4	2.767	-	0.303	0.1	53.558	3.25
1990	32.132	6.564	86.67	0.258	0.79	3.945	0.907	0.06	13.49	105.121
1991	17.97	28.44	545.85	8.595	4.8	1.568	-	18.286	0.73	17.844
1992	556.92	26.893	6.6	34.725	-	16.183	-	9.403	7.38	39.23
1993	40.619	-	108	6.196	2.886	108.828				

Dom. - Domestic

For. - Foreign

Source: JAMPRO (Figures relate to JAMPRO administered projects).

APPENDIX VIII
Financial Sector Loans and Advances
(J\$'000)

Year	Commercial Bank			Finance House/Trust		
	Private Sector	Public Sector	TOTAL	Private Sector	Public Sector	TOTAL
1979						78856
1980	869903	220442	1090345			85663
1981	1200291	294787	1495078			103528
1982	1615231	347827	1963058			172760
1983	2065424	382023	2447447			256295
1984	2348954	396853	2745807			366991
1985	2473727	572604	3046331			409384
1986	2982327	839538	3821865			436926
1987	3938410	957442	4895852			402876
1988	5325717	440267	5765984			608557
1989*	6868723	577723	7446446	128553	498	129051
1990	8219106	778100	8997206	134135	0	134135
1991	11246765	633313	11880078	215900	4732	220632
1992	13281839	813222	14095061	172289	569	172858
1993	22258514	1299414	23557928	235223	5941	241164
1994	24376952	1796978		318365	0	318365

Source: BOJ, *Statistical Digest*; STATIN, *Social and Economic Survey*; Superintendent of Insurance *Annual Reports*.

APPENDIX VIII - Concluded
Financial Sector Loans and Advances
(J\$'000)

294 / Wayne Robinson

Year	Merchant Bank		Building TOTAL	Insurance Societies	Companies	ACB
	Private Sector	Public Sector				
1979				15442	26389.262	
1980				17573	17971.271	
1981			38074	21188	22991.593	
1982			65601	34111	27745.484	986
1983			57967	30280	98036.715	43184.4
1984			51461	31445	192641.498	53420.6
1985			106252	18292	262748.973	146.192
1986			275568	27458	239719.931	187.943
1987			674796	58088	214705.537	285.062
1988			1139145	51543	376223.988	346.561
1989*	1709196	58070	1767266	104635	484863.424	478.594
1990	2575679	110436	2686115	180549	521787.84	540.958
1991	2917911	171305	3089216	181030		642.069
1992	3943821	74186	4018007	168056		655.709
1993	4255339	0	4255339	331230		655.687
1994	4780521	0	4780521			

Source: BOJ, *Statistical Digest*; STATIN, *Social and Economic Survey*; Superintendent of Insurance *Annual Reports*.

APPENDIX IX
Weighted Loan Rates and Financial Sector Loans

Year	Real Rate	Loans (JS'000)	Growth Rate in Loans
1981	4.2	4813765	
1982	9.93	5949781	0.24
1983	5.72	6276611	0.05
1984	-9.09	5363151	-0.15
1985	-0.24	4813469	-0.10
1986	11.8	5038177	0.05
1987	18.45	5973524	0.19
1988	16.93	6421954	0.08
1989	11.17	7077851	0.10
1990	8.75	7162095	0.01
1991	16.41	6382322	-0.11
1992	-32.49	4459982	-0.30
1993	21.61	5243819	0.18

Source: BOJ, *Statistical Digest*, Various Issues and Author's Calculation.

saving has not improved commensurately. The paper examines recent developments in the financial system, the policies that spawned growth in the financial sector, and their impact on financial savings mobilization.

The link between private domestic savings and more specifically financial savings mobilization and economic growth has been discussed extensively in several studies. For example in his study *The Mobilization of Savings in Small States: The Commonwealth Caribbean (1991)*, C. Y. Thomas did an analysis of the determinants of savings in Barbados, Guyana, Trinidad and Tobago and Jamaica. He concluded that financial repression and rapid inflation led to capital flight and diminished saving in most countries. In another work, *Savings, Investment and Housing in Singapore's Growth 1965-90*, Roger J Sandilands (1992) summarizes the main features of Singapore's exceptionally rapid growth since 1965, and examines why its savings rate has increased to one of the highest in the world. In fact, growth rates in many Asian countries such as Singapore and South Korea have consistently exceeded those of other developed and developing countries. Studies have shown that, on average, the shares of investment and savings are higher in the former countries. The reasons for the relatively high level of savings in the Asian countries are not very clear. While cultural peculiarities, such as emphasis being placed on thriftiness, may be important, a common feature of these countries is that they all maintain stable macroeconomic policies which did not encourage large fiscal deficits.

The ability of Jamaica's financial institutions to attract savings, and issues relating to how these savings are used to promote productive investment, will be discussed below. Section 1 of the paper provides a brief theoretical overview of financial sector developments and financial savings. Section 2 is an overview of financial reform and financial savings in Jamaica. Section 3 examines the factors affecting financial savings mobilization. Finally, the conclusion will examine the implications for the rate of growth in financial savings as a result of macroeconomic policies and briefly

comment on the policies needed to promote and sustain a relatively high level of financial savings.

SECTION 1

THEORETICAL OVERVIEW OF FINANCIAL SECTOR DEVELOPMENT AND FINANCIAL SAVINGS

Financial development refers to the evolution of financial instruments (claims) and markets, as well as financial institutions. Financial instruments may be direct or indirect. Direct instruments comprise claims such as mortgages and treasury bills and are usually issued by non-bank entities and governments. Financial institutions create indirect claims such as deposits. The indirect nature of these instruments come about because the depositor or lender supplies funds that are channelled to ultimate borrowers through an intermediary institution. Thus financial intermediaries act as “middlemen” between lenders and borrowers, or between savers and investors.

Financial instruments play a critical role in economic development. These instruments facilitate saving and investment by providing the means through which claims can be transferred from lenders (surplus savers) to borrowers (deficit spenders). Financial intermediaries can therefore raise the level of investment in an economy, thereby influencing the process of economic growth and development.

Two contra-hypotheses on financial sector development were postulated by Hugh T. Patrick (1966). These are referred to as the “demand-following” and “supply-leading” phenomena. The “demand-following” perspective argues that “the creation of modern financial institutions, their financial assets and liabilities

and related financial services is in response to the demand for these services in the real economy".² This approach implies that finance is essentially passive and permissive in the growth process. The second approach, the "supply-leading" phenomenon, emphasizes that the creation of financial institutions and the supply of financial assets, liabilities, and related financial services are in advance of the demand for them.

The literature identifies price stability, fiscal discipline and policy credibility as critical factors necessary for the successful implementation of financial policies. A policy which engenders low inflation is needed to stimulate financial sector development and enhance savings mobilization. There are indications that inflationary conditions, which are a manifestation of macroeconomic imbalances, have been the principal factors which mitigated against the pace of growth in real financial savings in Jamaica.

Experience has shown that uncertainty about future inflation rates leads to a concentration of financial transactions in instruments with short- rather than long-term maturities. This reduces the availability of funds for long-term investment. Nevertheless, there are arguments which point to some ambiguity between a reduced rate of inflation and saving.³ The implication is that, given a nominal interest rate, lower inflation would have a favourable impact on saving if it discouraged the advance purchase of consumer goods. On the other hand, an unfavourable effect would be obtained if a lower rate of inflation reduced uncertainty about future income and decreased the precautionary motive for saving.

There are many channels through which inflation influences saving behaviour, the measurement of savings and the value of financial assets. The *a priori* assumption is that there should be a statistically significant negative relationship between the rate of inflation and real financial savings. In Jamaica, over the years, financial saving has grown nominally following the pattern of

growth in inflation. In some years, however, there has been a decline in real saving. (Table 9).

There is also the impact of the level of interest rate on financial savings. Theoretically, the effect of an increase in the real interest rate on private sector saving behaviour is ambiguous. A change in interest rates can have two different effects: firstly, a substitution effect, that is, individuals may react to an increase in the real interest rate by postponing consumption and increasing saving, in order to augment future consumption. The second effect, the income effect of an increase in real interest rates, induces individuals to reduce their savings for a greater accumulation of assets in the present. The net effect on saving depends on which effect is greater.

Other factors such as the perceived soundness of the bank, tradition, security, and precautionary motives also have a profound impact on saving decisions. The impact of the rate of interest on saving decisions is not definitive in developing countries. There is, however, evidence to suggest that interest rate does have an important influence on the forms in which wealth is held. This is especially so in the case of institutional investors, such as unit trusts and pension funds investors. These savers/investors are guided by the higher returns on their investment, inclusive of capital gains from property appreciation and capital and income gains from equities.

Finally, the level of savings and in particular national income saving (the portion of current income not consumed) is a function of income and growth. The Keynesian approach sees the absolute level of current income as being the principal determining factor in the saving decision. The theory postulates that an increase in current income leads to an increase, albeit a smaller one, in consumption. There is some statistical support for Canes' theory of a positive relationship between the level of income and saving. The implication is that an increase in income will result in an increase in national income savings.

Financial saving is not the same as national income saving. Financial saving is monetary while national income saving is residual non-consumption out of current production and may be in money or in kind. Financial saving is more likely to be related to the monetary component of national disposable income which is enhanced by net financial transfers from the rest of the world. In the absence of a precise measurement of this monetary component, however, and especially in a highly monetized economy, total national disposable income may be used as a proxy.

SECTION 2

FINANCIAL REFORM AND FINANCIAL SAVINGS IN JAMAICA

Financial Reform

The degree of saving mobilisation in any country is partially a function of the level of income. The sustainability of economic growth depends on the correct macroeconomic fundamentals including a positive real rate of return on financial assets and investments, and generally sound macroeconomic policies such as low inflation and a stable exchange rate. During the review period (1983-1993), the thrust of macroeconomic policies was primarily in the area of structural reforms, that is, financial, fiscal and foreign exchange market reforms. These were complemented by short-term stabilization policies that formed part of the Extended Fund Facility (1981-1984) which was an important component of a broad-based structural adjustment programme.

Jamaica's financial market prior to 1985 was characterized by a high level of government regulation. In addition there were bureaucratic controls on market entry. This, coupled with the dominance of commercial banks within the financial sector, created an uncompetitive market environment.

Additionally, the financial sector during the 1980's to early 1990s was characterized by financial repression, whereby real interest rates were low and sometimes negative. In 1992, for example, the end-of-period nominal yield on Treasury bills was 34.36 percent, while the average annual inflation rate was 77.3 percent. This resulted in negative real return on these instruments. Additionally, domestic financing of the public sector contributed to relatively high lending rates and the crowding out of the private sector. Financial distortions were reflected in an over-reliance on non-market instruments (credit ceilings and statutory reserve ratio manipulation) to effect monetary policy, the existence of a floor on the saving deposit rate (20.0 percent at the end of 1985), and subsidized credit. The objectives of the financial sector reform programme were therefore aimed at:

1. the separation of monetary and fiscal policies;
2. the elimination of distortions in the financial market, thus allowing for the free interplay of market forces in determining interest rates and allocating financial resources; and
3. the creation of an institutional environment which would strengthen the capital markets.

The Trade and Financial Sector Reform Programme (TFSRP), which incorporated elements of financial reforms, was implemented with the specific objective of removing factors which impeded the efficient performance of the financial market. It was envisioned that improved financial intermediation would accelerate the process of economic growth. This approach to financial market development was essentially an outgrowth of neoclassical theory.

The thrust of financial policy in Jamaica since the mid-1980s was directed at the growth and development of financial markets and financial intermediaries. The objective of financial sector policy was to allow greater facility of market forces in the

pricing and allocation of financial resources. The policies pursued up to March 1988 included the phased elimination of “captive financing” of the public sector as embodied in the reduction of the non-cash liquid assets ratio, the introduction in 1986 of Bank of Jamaica Certificates of Deposit (a market-oriented instrument) for the conduct of open market operations and the deregulation of money market interest rates.

Reforms were concentrated in four areas: interest rate structure, the conduct of monetary policy, housing, and money and capital markets. It was anticipated that liberalizing the interest rate structure on saving deposits would induce increases in domestic financial savings with an accompanying increase in investment activity.

The implementation of the financial sector reform programme coincided with improvements in the domestic economy arising to some extent from changes in the international economic environment. There was the windfall effect of a fall in oil prices, lower international interest rates, as well as a recovery in the international bauxite/alumina market. These positive developments ensured a stable exchange rate, dampened inflation and facilitated a downward movement in interest rates.

The pace of financial intermediation grew over the period 1986 - 1988. Total assets of the financial sector (defined to include the commercial banks, merchant banks, development banks, trust companies, finance houses, building societies, credit unions and insurance companies) rose from \$7.2 billion at the end of 1983 to \$100.7 billion in 1993.

TABLE 1
JAMAICA: ASSETS OF SELECTED FINANCIAL
ENTITIES 1983 & 1993
(J\$MN.)

Institutions	1983	% of Total	1993	% of Total	% Change 1993/83
Comm. Banks	4319.7	59.4	62291.8	61.8	1342.0
Mer. Banks	125.2	1.7	10926.6	10.8	8627.3
Dev. Banks	191.3	2.6	4023.9	4.0	2003.5
Trust Comps.	373.6	5.1	-	-	-
Fin. Houses	-	-	492.6	0.5	-
Build. Socs.	580.1	8.0	11964.0	11.9	1962.4
Credit Unions	331.1	4.6	1838.5	1.8	454.6
Ins. Companies	1354.9	18.6	9251.4	9.2	582.8
TOTAL	7276.3	100.0	100788.8	100.0	-

Source: BOJ, *Statistical Digest*, Various Issues

The sector's contribution to Gross Domestic Product (GDP) at constant 1986 prices increased from 6.8 percent in 1987 to 11.4 percent in 1993. This represented the third highest contribution to GDP for the various sectors.

The Financial Sector Reform Programme contributed to the emergence of a competitive financial environment. This served to further enhance the financial intermediation process and contributed to the establishment of a more sophisticated financial system. This was reflected in:

- (i) the growth in the number and types of financial institutions;

- (ii) an expansion in the range of products offered to consumers such as credit cards, automatic teller machines and investment-linked insurance facilities;
- (iii) new and improved types of credit and investment-linked insurance facilities such as private development bank financing; and
- (iv) the growth in “financial supermarkets” consisting of commercial banks, near-banks, building societies and insurance companies.

Nature of the Financial System

Relative to other developing countries, Jamaica’s financial infrastructure is well developed. The country is served by a wide variety of financial institutions providing varying financial services. At the end of 1993, the financial sector consisted of the Central Bank, eleven commercial banks, twenty-five merchant banks, four merchant/trust companies), one trust company, five finance houses, three development banks, ten life and seventeen general insurance companies, one hundred and fifteen people’s co-operative banks, six building societies (reporting to the Building Societies Association of Jamaica) and eighty-six credit unions. The growth in assets of selected financial institutions over the period 1983-93 is shown in Table 1. (There might be some limitations in the data coverage as a result of inter-institutional transactions. The data therefore represents crude unconsolidated total).

The data clearly shows that the financial system is dominated by the commercial banks. At the end of 1993, total assets of the commercial banks stood at J\$62,291.8 million. This represented approximately 61.8 percent of the total assets of the selected financial system (excluding the Bank of Jamaica). There was a significant increase in the assets of commercial banks during the period 1983 - 1993. Assets of commercial banks increased substantially by over 1,000 percent, moving from \$4,319.7 million in 1983 to \$62,291.8 million in 1993 (See Table 1).

The dominance of commercial banks in the financial sector is even more entrenched due in part to their close affiliation with other financial institutions and their ownership of non-financial entities. Over the last ten years commercial banks have moved away from their traditional role of deposit mobilization and on-lending of funds. They now hold substantial equity and participate in the operation of non-bank financial intermediaries such as merchant banks, trust companies, building societies and insurance companies. Jamaica is served by a range of non-bank deposit-taking financial intermediaries - merchant banks, trust companies and finance houses, building societies and credit unions. These accounted for approximately 25.0 percent of total assets in 1993. There was rapid growth in the assets and liabilities of these institutions throughout the 1980's and into the 1990's.

Most merchant banks, trust companies and finance houses originally developed as subsidiaries of commercial banks in the early 1960's, complementing the banks' short-term lending activities by engaging in medium- and long-term financing activity. During the 1980's, however, new non-bank entrants were mainly independent entities with no identifiable links with commercial banks. The mobilization of savings accelerated through growth in the amount and type of business conducted by these intermediaries. The groups' (excluding building societies) share of total assets increased from 11.3 percent in 1983 to 13.1 percent in 1993. Growth in the amount and type of business conducted by deposit-taking non-bank financial intermediaries had a positive impact on saving mobilization and asset accumulation within the financial system and was directly responsible for the increase in the groups' total assets.

The expansion in the assets of near-banks, in particular merchant banks, from 1.7 percent of total assets in 1983 to 10.8 percent in 1993 was partially as a result of the economic policy measures implemented during the mid- to late-1980's. The monetary authority's use of monetary policy instruments, specifically credit ceilings and high statutory reserve requirements to contain credit growth within commercial banks, facilitated a rapid expan-

sion in the activities of merchant banks. Additionally, a combination of lower reserve requirements and operating overhead costs enjoyed by near-banks, as well as less stringent Central Bank control, enabled these institutions to respond to the changing economic circumstances, offering relatively new types of credit facilities such as leasing, inventory and insurance financing. In several instances, where non-banks were subsidiaries of commercial banks, business was diverted to the non-banks in an effort to circumvent Central Bank control.

The six (reporting) building societies in operation at the end of December 1993 had total assets amounting to J\$13,806.6 million compared to total assets of J\$580.1 million at the end of 1983. Nevertheless, while total assets increased by nearly 2000 percent between 1983 and 1993, the composition of assets reflected more significant growth in liquid funds rather than mortgage loans. Liquid funds consist primarily of cash in hand and at banks, government securities and other investments. This has been the fastest growing component of total assets. In 1983, liquid funds were \$120.3 million or 20.7 percent of total assets while loan balance outstanding was \$444.8 million or 76.6 percent of total assets. By 1993, however, liquid funds had increased to \$6422.1 million or 46.5 percent of total assets, while loan balance outstanding moved to \$3779.2 million or 27.4 percent of total assets.

In terms of total assets, the insurance industry (life and general) ranks third to the commercial banking system. Life insurance companies represent a major source of long-term financial savings within the non-bank sector. These institutions sell a variety of insurance contracts that incorporate elements of insurance and savings. The general insurance companies provide risk indemnity against losses arising from damage for which the insured may be held liable. During the period 1983 to 1993 the assets of the insurance companies rose by 582 percent, moving from a base of \$1354.9 million in 1983 to \$9251.4 million in 1993. The expansion in the insurance industry's asset base was related to developments in the economy. These included strong market

competition for financial savings, increased marketing aggressiveness in the context of the removal of tax credits previously enjoyed by the industry, and a resurgence in the local stock market which strengthened the performance of the companies' equity-linked policies.

Other financial entities which mobilise a significant proportion of financial saving include the co-operative credit unions. Total assets of these institutions moved from \$331.5 million in 1983 to \$1838.5 million in 1993.

Financial Savings

The mobilization of financial savings in Jamaica has been mainly through the range of financial institutions alluded to above. They offer a wide choice of financial instruments to savers. In recent times there has been rapid growth in the number and types of financial instruments. The financial instruments available fall in three categories: private sector money market instruments, capital market instruments and government instruments.

In Jamaica, as in most other Caribbean nations, the financial system is dominated by commercial banks. These institutions attract the bulk of the private sector's financial savings. The eleven commercial banks offer interest and non-interest bearing demand deposits (presently four commercial banks offer interest on demand deposits), savings and time deposits.

There has been significant growth in commercial bank deposits over the period 1983 - 1993. On an annual basis, growth in total deposits averaged over 30 percent. Growth in deposits peaked at 81.7 percent in 1992 over 1991. This was due primarily to an increase in capital inflows following the suspension of exchange control regulations in September 1991.

The annual rate of growth in the deposit liabilities of merchant banks during the period 1983-1993 was particularly significant. In 1986, for example, commercial bank deposits increased

TABLE 2
SAVINGS MOBILIZED BY SELECTED FINANCIAL INTERMEDIARIES 1983-1993
(J\$MN)

Year	Commercial Banks	Merchant Banks	Insurance Companies	Building Societies	Credit Unions	Total ¹
1983	3165.7	71.9	963.4	545.4	269.8	5016.2
1984	3888.5	129.1	1242.4	626.8	312.6	6199.4
1985	4755.5	233.0	1428.6	739.9	347.0	7504.0
1986	6051.0	483.9	1355.4	977.3	379.1	9246.7
1987	6919.7	934.4	1251.1	1258.6	432.2	10796.0
1988	9019.5	1539.3	1742.9	1737.8	499.9	14539.4
1989	9821.5	2544.8	1917.5	2097.4	582.1	16963.3
1990	11719.8	2842.6	2048.0	2669.2	694.1	19973.7
1991	17252.3	3151.2	3988.7	3731.8	810.7	28934.7
1992	31339.5	6379.7	5983.1	7530.3	1070.8	52303.4
1993	43372.5	7005.1	8974.6*	10202.5	1568.2	71122.9

*Estimates.

¹Crude total due to double counting as a result of inter-institutional deposits.

Source: Annual Credit Union League Statistics; (Savings = Shares (95%) and Deposits (5%).
 Building Societies of Jamaica Fact Book (Various Issues);
 BOJ, *Statistical Digest*, Various Issues;
 Superintendent of Insurance, *Annual Reports*.

TABLE 3
COMMERCIAL BANK DEPOSITS BY TYPE 1983-1993
(J\$MN)

Year	Demand	Savings	Time	Total
1983	585.2	1,202.9	1,378.5	3,165.7
1984	755.0	1,400.3	1,733.2	3,888.5
1985	839.2	2,162.2	1,754.1	4,755.5
1986	1,292.0	2,820.9	1,938.1	6,051.0
1987	1,367.2	3,603.4	1,949.1	6,919.7
1988	2,097.9	4,725.6	2,196.0	9,019.5
1989	1,898.3	5,313.3	2,610.0	9,821.5
1990	2,318.2	5,991.9	3,409.7	11,719.8
1991	4,764.3	8,822.4	3,665.7	17,252.4
1992	9,229.9	14,107.1	8,002.5	31,339.5
1993	11,907.2	19,719.6	11,745.6	43,372.4

Source: Bank of Jamaica, *Statistical Digest*, Various Issues.

by 27.2 percent, while the increase was 107.7 percent for merchant banks. Several factors accounted for the faster rate of growth in merchant bank deposits, especially in the mid-1980's. Firstly, there was the higher interest rate paid by merchant banks relative to commercial banks on deposits with the same maturity structure. (Table 4).

Secondly, during the eighties and particularly the period 1984 to 1988 the number of merchant banks increased significantly. There were eight merchant banks operating in 1986; by the end of 1989 this number had increased to seventeen and by the end of 1993 twenty-six merchant banks were in operation. The increase in the number of merchant banks was largely in response to

opportunities within the economy and a somewhat easier stance adopted by the government with respect to the granting of near-bank licences. Against the background of strong private sector credit demands, merchant banks aggressively competed for deposits at relatively high rates of interest.

TABLE 4
NOMINAL DEPOSIT RATES FOR
COMMERCIAL BANKS AND MERCHANT BANKS
(END OF PERIOD)

Maturity Structure	Commercial Banks	
	1983 %	1984 %
1 - 3 Months	4 - 16.5	8 - 21
3 - 6 "	9 - 16.5	9 - 23
6 - 12 "	7 - 16.0	7.5 - 21
12 - 14 "	4 - 16.5	5 - 24
Over 24 "	4.5 - 15.75	4.5 - 21
	Merchant Banks	
1 - 3 Months	9 - 15	13 - 21
3 - 6 "	9.5 - 15	11 - 22
6 - 12 "	10 - 15.5	7 - 24
12 - 14 "	10 - 15	13 - 24
Over 24 "	10 - 11.5	8 - 24

Source: BOJ, *Statistical Digest*, Various Issues.

Savings mobilized by the insurance companies also increased significantly in the second half of the eighties. Total savings of the industry increased from \$963.4 million in 1983 to

approximately \$8,974.6 million in 1993. The growth in insurance savings was influenced by several factors, notably:-

- (i) the design, promotion and market acceptance of innovative income earning insurance products,
- (ii) extensive media advertising and market promotion undertaken by the industry, and
- (iii) a generally buoyant and competitive economic environment which encouraged life insurance companies to actively mobilize funds to maintain market share and expand investment activities.

During the 1980s there was strong growth in investment-linked policies. These policies are linked to a fund with investments in selective equities, such as units in the Investment (Capital Growth) Fund, fixed income securities and real estate. The premiums paid are divided between the basic life insurance contract and the investment fund. The demonstrated preference by policyholders for investment-linked policies suggests a preference for realising immediate income rather than future insurance income. Over the period 1980-1988, the number of equity linked policies increased at an annual average rate of 103.7 percent, which was significantly above annual average rates of 51.7 percent and 26.3 percent for personal accident and ordinary life.

The growth in equity-linked policies came in the context of initiatives by life insurance companies to retain and expand market share through the promotion and marketing of financial instruments which provided rates of return similar to or higher than those offered by commercial banks and other non-bank intermediaries. The use of innovative income-earning instruments allowed for incremental growth in policy holders' savings, and an increase in the number and variety of savings instruments. In addition, these instruments facilitated the growth and development of the domestic capital market through stock market and unit trust investments.

The building societies and credit unions are the other non-bank financial institutions which have been successful in mobilizing a significant proportion of domestic financial savings. The saving facilities offered by building societies are Share Accounts and Deposit Accounts. Share account holders are members of the society. Membership ensures priority treatment in obtaining mortgage loans (in the case of the building society). In addition, members are entitled to participate in the dividends declared by the building society, where returns vary, based on the performance of the society. Deposit accounts are similar to commercial banks' deposits. There is a preference for share accounts within the building societies. This is because of the flexibility it offers in dealing with fluctuations in earnings performance. In periods during which the performance of building societies is below target levels, the dividends paid to shareholders will reflect this. Share accounts make up approximately 90 percent of total savings in building societies.

The six (reporting) building societies and eighty-six credit unions in operation at the end of 1993 recorded approximately \$12,610.4 million (approximately 19% of total financial savings of the selected institutions) in savings. These savings were mainly from the household sector, as well as some institutional savers.

Most building societies are affiliated to financial networks which include commercial banks. They are able to mobilize savings by offering customers package deals which include mortgage financing in a variety of schemes at relatively affordable rates. Some schemes include direct involvement in construction projects, co-financing of mortgages with the National Housing Trust and savings incentives involving guaranteed low mortgage rates; for example, the "5 percent mortgage revolution," (an agreed amount attracting an average interest rate of five percent is saved weekly/monthly for five to seven years, after which a mortgage with an interest rate of five percent can be obtained or an existing property can be refinanced at a rate of five percent). Savings in building societies are used to finance long-term mortgages, securities investment and commercial loans.

Savings in credit unions are sourced primarily from lower middle-income wage earners, many of whom save with these institutions to secure access to consumer type loans at relatively low interest rates. Credit unions may have been at a disadvantage in the mobilization of saving since their interest rates were traditionally fixed, while there was no ceiling on deposit rates at commercial banks (a statutory specified floor was eliminated in the financial sector reform programme). Any potential disadvantage was substantially offset by the co-operative nature of credit unions which allowed members credit of a multiple of their deposits. In an attempt to become more competitive the credit unions responded by amending the Co-operative Societies Act in 1991. This amendment gave individual credit unions the authority to set their own interest rates. In addition, in an effort to compete more effectively with other financial institutions, some credit unions have instituted other measures such as extending the range of services offered to include credit cards, chequing accounts and the broadening of their loan portfolio to include the provision of finance to microenterprises.

These institutional changes within the credit union movement have facilitated an increase in the level of financial savings mobilized. Nominal savings of these credit unions increased from \$269.8 million in 1983 to \$1568.2 million in 1993. Nevertheless, credit union savings as a percentage of total savings mobilized by selected financial institutions (commercial banks, merchant banks, insurance companies, building societies, credit unions) declined from 5.4 percent in 1983 to 2.2 percent in 1993. This would seem to indicate that although credit unions have taken on some bank-related activities they have not evolved to a level at which it is necessary to consider them as being serious competitors to the commercial banks or any of the other selected entities in the mobilization of financial savings.

During the last three years, developments in the money market have resulted in innovative ways of mobilizing financial savings. One such method is through the use of commercial paper. Commercial paper are unsecured promissory notes issued

by companies (blue chip) as a means of funding short-term working capital requirements and/or retiring expensive commercial bank debt. Sometimes this is done through an intermediary (usually a commercial bank, merchant bank or investment bank) which provides a guarantee. Most companies issuing commercial paper are public (listed) companies. There are, however, several private companies in the market.

The interest rate charged on commercial paper transactions is usually below the prevailing market loan rates mainly because no cash reserve is associated with this transaction. The investor/lender also benefits from higher gross return relative to commercial bank deposit. A commercial paper transaction is typically for ninety days. As a result of the relative "newness" of this instrument, it is difficult to ascertain the size of the market, due primarily to reluctance on the part of some companies to divulge this information. Secondly, transactions are mainly recorded as off-balance sheet items making it difficult to quantify the level of activity. Nevertheless, at the end of 1993 commercial paper outstanding was estimated at between \$3 - 4 billion with approximately 50% of this amount guaranteed by commercial and merchant banks.

Another less traditional means of mobilizing financial savings is through Unit Trusts. There were three Unit Trusts in operation at the end of 1993. A Unit Trust constitutes the pooling of investors' money to purchase a portfolio of assets. An initial investment of \$10,000 at an initial offer price (the price at which the investor buys units to enter the fund) of \$1.04 may increase to \$15,000 three years later, depending on market conditions. Due to the diversified nature of the investment funds, consisting mainly of fixed income securities, equities and real estate, relatively small savers are able to spread risk and at the same time obtain a relatively high return.

The Central Bank's increased use of open market operations through the sale/purchase of Certificates of Deposit on its own behalf and Treasury Bills on behalf of the Government, has

provided an important instrument of savings mobilization. In its effort to manage the banking system liquidity the Central Bank, since 1985, has issued CDS and Treasury Bills on behalf of the Government, which offer competitive interest/yields. The stock of public sector fixed income instruments outstanding has shown significant increases over recent years (Table 5). Over the period 1986 to 1993, the outstanding stock of public sector fixed income securities (CDS, T'Bills and LRS) increased from \$6949.4 million in 1986 to \$25681.0 million at the end of December 1993. This represented an increase of approximately 269.5 percent.

TABLE 5
OUTSTANDING STOCK OF
BOJ/GOVERNMENT INSTRUMENTS
(END OF PERIOD)
J\$M

Year	CDS	Treasury Bills	LRS	TOTAL
1986	1009.9	999.0	4940.5	6949.4
1987	1666.0	1500.0	6728.2	9894.2
1988	2299.6	2878.0	6691.6	11869.2
1989	2425.9	3319.0	6052.8	11797.7
1990	2986.0	3498.0	5829.1	12313.1
1991	3381.8	3616.2	6029.5	13027.5
1992	3491.7	6461.0	11962.9	21915.6
1993	3128.1	6645.0	15907.9	25681.0

Source: Bank of Jamaica, *Statistical Digest*, Various Issues.

An additional means of mobilizing savings is through compulsory savings, particularly government compulsory savings programmes. These are statutory arrangements in which a por-

tion of an employee's income is deducted at source. Examples of these are the National Insurance Scheme, Pension Funds and National Housing Trust Contributions.

TABLE 6
NATIONAL INSURANCE CONTRIBUTION
1ST APRIL, 1991 - 31ST MARCH, 1993

Month	Amount		% Change
	1991/92 \$	1992/93 \$	
April	13,433,123.00	17,978,059.00	33.8
May	16,074,550.00	14,753,304.00	-8.2
June	15,619,224.00	18,865,811.00	20.7
July	14,816,187.00	16,438,676.00	10.9
August	14,686,029.00	16,214,901.00	10.4
September	16,147,384.00	18,205,877.00	12.7
October	14,721,234.00	15,541,002.00	5.5
November	15,198,039.00	18,232,684.00	19.9
December	17,118,976.00	14,832,323.00	-13.3
January	20,431,000.00	17,082,095.00	-16.3
February	19,215,373.00	18,541,906.00	-3.5
March	20,355,967.00	19,528,253.00	-4.0
Total	197,806,899.00	206,214,898.00	4.2

Source: Ministry of Labour and Welfare Report April 1, 1992 - March, 1993.

The National Insurance Fund derives income primarily from two sources, namely contributions from employees and earnings on investment. Contribution income for fiscal year 1992/93

was approximately \$206.2 million compared with \$197.8 million for fiscal year 1991/92 (see Table 6). Added to this was investment income of \$340.0 million and \$509.0 million for fiscal years 1991/92 and 1992/93 respectively. This represented a growth of 49.7 percent. Included in this amount was \$377.6 million or 75 percent from investments in fixed income securities (LRS, CDS and Treasury Bills), \$64.0 million or 13 percent derived from the sale of shares on the stock market and \$3 million in rental income from properties. Benefits disbursed from the fund in 1992/93 were \$245.4 million compared to \$172.8 million in 1991/92, representing an increase of 42%.

TABLE 7
PENSION SCHEMES OPERATED BY
LIFE INSURANCE COMPANIES
(END OF YEAR) 1986 - 1993

Year	Number of Plans	Amount of Funds (\$'000)
1986	520	586,369
1987	517	769,672
1988	552	1,008,643
1989	607	1,276,791
1990	607	1,811,196
1991	634	3,292,242
1992	677	6,912,909
1993	783	8,178,680

⌘: Yearbook of Life Insurance Statistics 1993.

has been a significant increase in the savings of pen-
ing the period 1986 - 1993. The number of pension
om 520 in 1986 to 783 in 1993. Similarly, the

amount saved increased significantly from \$586.3 million to \$8178.6 million in 1986 and 1993 respectively (Table 7).

Under the National Housing Trust Act, an employee is entitled to housing benefits and cash grants. Resources mobilized by the National Housing Trust are used primarily to build low- and middle-income houses, finance mortgage loans and invest in fixed income securities. Each employee is obligated to pay 2 percent of gross wages to the Trust, while the employer pays 3 percent of total gross wages of all eligible employees. In 1992 employees contributed \$194.8 million and employers \$229.1 million to the Trust. By 1993 these contributions had increased to \$327.6 million and \$380.0 million respectively. This represented an increase of 68.1 percent from employees and 65.9 percent from employers. Unaudited data obtained to the end of December 1994 indicated increases in employees' contributions to \$512.8 million and employers' contribution to \$582.4 million.

SECTION 3

SOME DETERMINANTS OF FINANCIAL SAVINGS MOBILIZATION

The pattern of financial sector development in Jamaica prior to 1985 and particularly during the 1960's and 1970's, can be categorized as the "supply-leading" approach, reflecting at the same time the need to facilitate the transfer of resources from traditional (non-growth) sectors to modern sectors and to stimulate an entrepreneurial response in these sectors. This was consistent with the supply leading approach reflected in the introduction of the Government-owned bank and the stock exchange. In the post-1985 period, however, financial sector development appears to have been driven mainly by the demand for financial services corresponding to the demand following pattern.

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domestic financial savings has
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encourage local and foreign private sector savings and investments
act business in the currency of their choice. This was expected to
Key accounts locally and overseas, and like non-residents, trans-
denitization meant that residents were free to hold foreign cur-
the repeal of the Exchange Control Act was to engender confi-
dential savings mobilization. One of the objectives underlying
- liberalisation of the foreign exchange market includ-
- consumers, and
- rate

an attendant decline in their ability to ...
resulting in a decline in the purchasing power of ...
overall increase, therefore, in the aggregate effective tax ...
holding tax of 25.0 percent on interest. There may have been an

322 \ *Novelette Panton-Davis*

In addition there was the removal of capital controls primarily to eliminate disincentives to private capital flows. Since the removal of exchange control regulations in 1991, there has been a sustained increase in private capital flows. In 1991, private capital inflows totalled US\$183.3 million, thereafter increasing to US\$285.2 million and US\$306.4 million in 1992 and 1993 respectively. Preliminary data for 1994 indicate inflows of approximately US\$534.3 million.

uted to the pace of the increase in liquid funds. The “new” societies were the “proprietorship” type with strong links to other financial institutions, unlike the “mutual” type organizations, which were geared specifically to provide mortgages to shareholders. Their main objective appeared to have been the mobilization of relatively inexpensive savings for the “parent” institution. In these institutions mortgage financing became secondary. The emergence of proprietary-type building societies alluded to above raises several important issues. Firstly, it raises concern as to the effectiveness of building societies as a vehicle for providing resources for residential housing. Secondly, the complex nature of the intercompany network involving building societies and other financial institutions such as commercial banks, suggests the need for closer monitoring of these institutions to ensure that they are abiding by the guidelines under which they were incorporated.

The positive relationship between the level of income and savings alluded to in section 1 is shown to some extent in Table 8.

Nevertheless, deflating nominal financial saving by the consumer price index (January 1975 = 100) indicates a decline in real financial saving over the period 1989 to 1991. However, there was an increase in real financial saving from \$1202.7 million in 1991 to \$1624.3 million in 1993. The increase in real financial saving between 1991 and 1993 was not only consistent with the reduction in the average annual inflation rate from 51.1 percent in 1991 to 22.1 percent in 1993 (see Table 9), but also with the increase in foreign inflows during this period.

TABLE 8
FINANCIAL SAVINGS OF SELECTED ENTITIES AND
NATIONAL DISPOSABLE INCOME 1983 - 1993
(J\$MN)

Year	National Disposable Income (at current prices)	Nominal Financial Savings
1983	6492.9	5016.2
1984	8013.9	6199.4
1985	9479.6	7504.0
1986	11485.5	9246.7
1987	13404.9	10796.0
1988	17860.2	14539.4
1989	20018.6	16963.3
1990	26100.3	19973.7
1991	37457.5	28934.7
1992	65750.0	52303.4
1993	86790.0*	71122.9

* Estimated

Source: BOJ, *Statistical Digest*, Various Issues,
 STATIN, *National Income and Product*.

TABLE 9
NOMINAL AND REAL FINANCIAL SAVINGS 1983 - 1993

Year	Nom. Fin. Savings	Annual Percentage Change	Real Financial* Savings	Annual % Change Real Fin. Sav.
1983	5016.2	-	1207.8	-
1984	6199.4	23.6	1137.3	-5.8
1985	7504.0	21.0	1116.2	-1.9
1986	9246.7	23.2	1245.3	11.6
1987	10796.0	16.8	1341.8	7.7
1988	14539.4	34.7	1654.8	23.3
1989	16963.3	16.7	1647.4	-0.4
1990	19973.7	17.7	1494.4	-9.3
1991	28934.7	44.9	1202.7	-19.5
1992	52303.4	80.8	1552.8	29.1
1993	71122.9	36.0	1624.3	4.6

*Real Financial Savings = Nominal Savings/CPI x 100.

Source: BOJ, *Statistical Digest*, Various Issues;
Author's Calculations.

It is also important to note that the annual percentage change in real deposits in commercial banks exhibited significant declines for some years. In 1991, for example, annual percentage change in nominal deposits increased by 47.2 percent over 1990, while the annual percentage change in real deposits for the same period declined by 18.2 percent (see Table 10). This is an indication of the pervasiveness of inflation. The high annual average inflation rates in 1991 (51.1 percent) and 1992 (77.3 percent) reflected a trend which emerged during the post-liberalization period. Since the removal of exchange control regulations in 1991 there has been a sustained increase in private capital flows which has contributed to the relatively high inflation rates experienced over the period.

TABLE 10
COMMERCIAL BANKS NOMINAL AND REAL SAVINGS 1983 - 1993

Year	Nominal Deposits	Annual % Change in Tot. Dep.	Real Deposits	Annual % Change in Real Dep.
1983	3165.7	-	762.3	-
1984	3885.5	22.7	712.8	-6.5
1985	4755.5	22.4	707.3	-0.8
1986	6051.0	27.2	814.9	15.2
1987	6919.7	14.4	860.0	5.5
1988	9019.5	30.3	1026.6	19.4
1989	9821.5	8.9	953.8	-7.1
1990	11719.8	19.3	876.8	-8.1
1991	17252.3	47.2	717.1	-18.2
1992	31339.5	81.7	930.4	29.8
1993	43372.5	38.4	990.5	6.5

Source: BOJ, *Statistical Digest*, Various Issues.

“Saving deposits” was the largest contributor to the commercial banks’ deposit base for most years. As a share of total deposits, saving deposits were 51.1 percent and 45.5 percent in 1990 and 1993 respectively, while time deposits, as a share of total deposits were 29.1 percent and 27.1 percent for the same periods.

Although the holding of higher balances in savings deposits rather than in time deposits would appear to suggest that some savers are insensitive to changes in the real interest rates, this is not necessarily so. As is discussed below, there is evidence to suggest that as the rate of return on fixed income securities increased, individuals, in particular institutional savers/investors, switched from bank deposits and into treasury bills, certificates of deposit and local registered stocks. In addition, in the context of Jamaica’s economic situation with low income levels and low ex-

TABLE 11
SELECTED NOMINAL INTEREST RATES 1983-1993
(WEIGHTED AVERAGE)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Call	10.6	17.3	15.2	10.9	14.1	13.8	21.2	23.0	29.8	20.8	39.7
6 Months	12.3	16.2	19.7	15.2	15.5	13.8	18.5	23.6	23.0	28.3	36.2
1 Year	12.5	14.6	18.2	15.0	14.8	13.8	16.7	25.2	16.5	26.3	20.1
Savings	9.0	13.0	20.0	15.0	15.0	13.0	18.0	18.0	18.0	21.9	20.0
Lending	13.0	18.0	23.0	25.4	25.2	24.4	31.0	36.0	40.1	46.4	61.3
CDS (Last Auction)	-	-	-	18.0	20.0	17.4	25.1	30.7	46.9	25.5	48.4
T'Bills (Last Auction)	12.1	16.4	21.3	15.9	19.6	21.5	28.3	34.0	38.4	24.6	49.0

Source: BOJ, *Statistical Digest*, Various Issues.

pectations of higher income, it would appear that there is still a significant number of individuals who are saving mainly to meet daily transactions and contingencies. These individuals appear not to be preoccupied with the level of interest rates earned on savings accounts. In the rural farming community, for example, it is observed that most small farmers are more concerned with the security of their money. A regular savings account provides for this. Finally, over the last few years, an increasing number of employees have made arrangements for their salaries to be paid directly to their chequing accounts. This partially accounts for the growth in demand deposits (Table 3). It is therefore important to recognize that there is still a significant proportion of the population that is saving purely for transactionary and precautionary motives. Therefore interest earned is not the major criterion for saving by these savers.

Over the review period the real interest rate on savings deposit was negative for most years (see Table 12). In addition the Jamaican experience has shown that the interest rate on savings accounts has generally been below that on other financial instruments. In 1991, for example, deposits in savings accounts totalled J\$8.8 billion, earning an average nominal rate of 18.0 percent per annum, while returns of 46.9 percent and 38.4 percent were available on CDS and Treasury Bills respectively. The extent to which savers ignored the interest rate differential on competing instruments, and the effect of inflation on nominal savings, suggest that the interest rate may not be a major influence on the saving habits of saving deposits holders. However, the BOJ's use of monetary policy instruments, particularly variations in the statutory liquidity requirements, (50.0 percent for commercial banks and 17.0 percent for non-banks) induced deposit-taking non-bank financial intermediaries to develop a more competitive stance in mobilizing financial savings. It can be seen from Table 2 that although the non-bank institutions increased their share of total deposits, the commercial banks have maintained a dominant position. There has been a significant increase in deposit liabilities of the former institutions partly as a result of active interest

rate competition by non-affiliated near-banks, particularly Merchant Banks, since 1980. Secondly, the tendency for institutional depositors such as life and general insurance companies and building societies to transfer a part of their saving/insurance premium and pension fund contributions to term deposit accounts in merchant banks and finance houses also served to increase the level of deposits in these institutions.

TABLE 12
NOMINAL AND REAL SAVINGS DEPOSIT RATES 1983 - 1993
%

Year	Nominal Savings Deposit Rates	Real Savings ¹ Deposit Rate
1983	9.0	-0.2
1984	13.0	-0.5
1985	20.0	-0.2
1986	20.0	-
1987	15.0	1.1
1988	15.0	0.5
1989	13.0	0.2
1990	18.0	-0.2
1991	18.0	-0.6
1992	21.9	-0.7
1993	20.0	-0.1

¹Real interest on savings deposit is defined as:

$$ir = \{(1 + in)/(1 + P)\} - 1$$

where *ir* = real interest on savings deposit

in = nominal interest on savings deposit

P = average annual inflation rate 1983 - 1993

Source: BOJ, *Statistical Digest*, Various Issues;
 Author's Calculations.

With respect to financial savings in fixed income securities there has been a gradual shift from CDS to LRS, as the present International Monetary Fund agreement stipulates a reduction in the stock of CDS to zero by the end of March 1995 (the final stock of BOJ's CDS was retired on February 23, 1995). This is in keeping with the Central Bank's tight liquidity management policy, since the payment of interest on CDS and the subsequent payment of principal at maturity serves to increase the money supply, if there is no cash transfer from the Government to cover the Central Bank's losses. Additionally, the payment of interest poses a cost to the Bank of Jamaica, since it is a loss to the Central Bank. Although Local Registered Stocks have long-term maturity and are used mainly to finance development projects, recent LRS issues (similar to the CDS) have been used primarily for the purpose of liquidity management. Nevertheless, although the interest rate/yield on both instruments are not significantly different, the maturity profile differs, which therefore affects the effective yield on both instruments.

As instruments for the mobilization of financial savings, the relatively high interest rate/yield on fixed income securities served to attract savings. The growth in securities, in particular CDS in the eighties, could be partially explained by the fact that these securities provided an alternative instrument to savers. Secondly, the higher nominal rates obtained on these instruments might have encouraged a shift of deposits from commercial and merchant banks into these instruments. In the latter case, total available resources to the economy would not have increased. In addition, to the extent that savings mobilized through the use of CDS are effectively sterilized, the flow of resources for investment purposes might have been constrained.

The growth in the different types of financial instruments available within the economy has aided the process of savings mobilization. To date commercial bank saving deposits remain the most popular instruments used to mobilize financial savings; this may be due to the perceived low risk associated with these instruments. However, as the financial market develops, and

financial information is more widely dispersed, pertinent factors such as how the maturity profile of the contract affects real return on saving instruments, issues concerned with marketability and relative risk, as well as the level and type of yield of varying instruments, should induce savers to acquire a wider range of financial assets. In addition, although overall banking operations have been profitable for the operating institutions and there is evidence of extremely low rate of bank failures, there might be a case for the establishment of deposit insurance. This may serve to induce a higher level of financial savings.

CONCLUSION AND SUMMARY - POLICY IMPLICATIONS

There is evidence to suggest that there has been a decline in saving rates world-wide. This is more endemic in developing countries which have huge budget deficits. A significant proportion of the national saving of these countries has been transferred abroad to service the external debt. Policy makers are therefore faced with the challenge of finding innovative ways to increase national savings and, in particular, financial savings for investment.

In the main, macroeconomic policies implemented in Jamaica over the past ten years have sought to induce increases in the level of financial savings. In order to accelerate the private sector's saving rate, certain prerequisites are necessary. These should include financial deepening through financial sector reform, an increase in national disposable income, exchange rate stability, price stability, the absence of large government deficits and positive real rates of return on financial assets.

To the extent that there has been a significant increase in the nominal assets of the financial sector, growth in the number of financial entities and an increase in the contribution of the finan-

cial sector to GDP, it is correct to say that financial policies pursued during the late 1980s and early 1990s have had a positive impact on the level of financial savings mobilized during the period reviewed. The challenge to policy makers in the medium-term, therefore, is to accelerate the process of structural transformation of the economy while maintaining conditions conducive to increased financial savings.

The preceding discussion of domestic financial savings mobilization conveys implications for policy in Jamaica and other developing countries. The following must be considered:

- the pursuit of macro policies that reduce inflation, preserve real income and facilitate positive real interest rates;
- policy should seek to encourage households to postpone consumption in order to ensure that a higher level of financial savings is generated. In this respect, disincentives to save, for example withholding taxes on financial savings, should be eliminated, while inflation should be contained at relatively low levels;
- the beneficial effect on saving of interest rate policy and in particular positive real interest rates cannot be ignored. A positive real interest rate may induce the public to further increase its holdings of domestic financial assets, rather than foreign denominated instruments;
- continued financial sector reform including equalizing and reducing cash reserve ratios across financial institutions;
- preserve the liberalization of foreign exchange market to facilitate stable foreign inflows;

- incentives to make home ownership more affordable (e.g. 'occupational housing schemes' for teachers, nurses) thereby encouraging increased savings in building societies;
- incentives to make compulsory savings more attractive by providing "secure" benefits such as indexing retirement pension to the inflation rate or to at least eighty percent of last salary;
- the Government, while recognizing its role of facilitating the growth of financial savings, must also be cognisant of the need to increase public sector financial savings through the generation of surpluses;
- deposit insurance might be a necessary addition to enhance savings growth; however, it must be recognized that it is not a panacea, but must complement other measures such as improved financial sector legislation and improvement in depositors' awareness of the relative "soundness" of particular financial institutions.

End Notes

¹Selected Financial Institutions - Commercial Banks, Merchant Banks, Insurance Companies, Building Societies, Credit Unions.

²Meier, Gerald M. *Leading Issues in Economic Development*. (Third Edition), Oxford University Press, 1976, p. 296).

³A Lanyi, *An Analytical Framework for Medium-term Adjustment*, IMF Institute, 1989.

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An Economic Evaluation of Credit Unions in Trinidad and Tobago 1972-1989

Glenn A. Khan

Introduction

The Credit Union Movement has done exceptionally well since its introduction into Trinidad in the early 1940's. It has made, and continues to make, a very significant contribution both to its membership and to the wider society. It commands a fair share of the market for financial savings and for consumer lending and is firmly entrenched as an important area of the local financial sector. Indeed, for many people, it is the only financial institution with which they transact business.

A study by Khan (1992) focused on the savings mobilization activities of Credit Unions. This study found that Credit Unions' financial savings moved from TT\$32.1 million in 1973 to TT\$1013.5 million in 1987, a percentage increase of 3,057 percent or an absolute increase of TT\$981.4 million. The 1973 figure represented 2.3 percent of institutional financial savings; by 1987, however, the Credit Unions' share of financial savings had increased to 6.2 percent. It is interesting to note that during the same period, the share of commercial bank financial savings moved

from 55.4 percent to 46.9 percent of total financial savings (see Table A, Appendix 2).

The study also revealed that Credit Union savings as a percentage of Gross Domestic Savings (GDS) increased from a low of 2.1 percent of GDS in 1974 to 30.4 percent of GDS in 1987, while Credit Union savings as a percentage of total market savings, Gross Domestic Savings as used here, refer to the difference between Gross Domestic Product and total consumption. Total market savings referring to quasi money plus total financial Credit Union savings moved from 4.8 percent in 1974 to 13.6 percent in 1987 (see Tables A and C, Appendix 2). When the rate of increase in Credit Union savings was compared to the rate of increase in Gross Domestic Savings and total market savings, the Credit Unions' rate of increase was greater (see Table B, Appendix 2). Khan inferred that the Credit Unions' ability to mobilize savings was particularly good.

In 1946, the movement had a membership of 100 persons and a share capital of TT\$500.00. At the end of 1989, total shares had grown to TT\$1.2 billion and membership was in excess of 250,000 persons. The Cooperative Credit Union League estimated total shares of \$1,362,392,917 and total membership of 300,000 at the end of 1992. It is very clear, then, that Credit Unions have been very successful in mobilizing savings, hence our interest in studying them.

The success which Credit Unions (CUs) enjoy has placed them in a very enviable position, but it has also brought into focus the efficacy of services rendered by them. While the institutions themselves have grown in stature and had increased their membership to approximately 55 percent of the working population by 1989, questions still remain unanswered as to whether they can play a meaningful role in the economic development of Trinidad and Tobago.

We have used available data to examine the performance of Credit Unions over the period 1972 - 1989. Our analysis was

conducted with the aid of financial and other ratios developed by Marion (1987) and Cuevas (1988), both of whom have written extensively on Credit Unions in the industrialized countries and who have also been engaged, at one time or another, in a consultative capacity with Credit Unions in the developing world. In this study, we did not focus on qualitative factors such as the success of a Credit Union's programme of thrift education or of financial counselling. Instead, we have concentrated on the Credit Union's financial operations since this is what our data permit.¹

The paper is not exhaustive in its treatment of the movement. No single work can address all the relevant or important issues. Our analysis and suggestions are not intended to detract from the contribution the Credit Union movement has made to the development of Trinidad and Tobago since the early 1940's. The Paper confines itself to selected issues.

We started our analysis with the belief that the movement contains institutions which, though successful, are largely inefficient. The conclusion of our research has confirmed our *a priori* expectations. However, we would like to introduce a caveat about our findings. Our research employed the techniques of ratio analysis though in some studies the use of ratio analysis has often led to totally incorrect conclusions. In fact, Altman (1968) suggested that academicians seemed to be moving toward the elimination of ratio analysis as an analytical technique in assessing the performance of the business enterprise. Notwithstanding the deficiency of ratio analysts we believe that Credit Unions are specialized institutions and hence the ratios developed by Marion et al, however inadequate, can be useful in providing good insights about the efficiency of those institutions.

Efficiency

The principal function of financial intermediaries may be viewed as managing the financial assets of business concerns and individuals. They have an important influence on every business

entity or individual who saves or borrows money. Credit Unions play an important role in domestic savings mobilization by facilitating certain untapped categories of savings (small savers). Moreover, Credit Unions' philosophy² and motivation (not for profit, not for charity but for service) are different from other financial organizations; therefore their potential for mobilizing substantial savings which can be used in the country's development process dictates that their efficiency be an essential concern for public policy.

The quality of service provided by the financial system affects the performance of the entire economy. Credit Unions are important contributors to the financial intermediation process because they provide services to sectors of the population that otherwise would not enjoy access to those services. In addition, their importance is readily seen by comparing the number of Credit Unions with the number of bank branches. This by itself is not significant but the fact that there are more Credit Unions (182 active in 1980, 354 registered)³ than bank branches (approximately 115)⁴ indicates that Credit Unions serve a wider cross section of the community. It should be noted also that some Credit Unions have branches which are spread over a large area of the country. Given their position in the financial system, Credit Unions can make an important contribution to the savings/investment process. If they are to grow and inspire confidence, however, they cannot ignore the efficiency aspect of their operations.

Credit Unions incur costs in the production of their services. They utilize financial resources as direct inputs into their production process. The main inputs are financial capital (shares and deposits) and labour. In addition, they utilize physical capital in the form of buildings, machinery and equipment, and intermediate inputs such as stationery and services provided by the public utilities.

According to Herendeen (1987), an institution will combine its real capital with labour services, machinery and equipment and operating funds to produce its output. The Credit Union

may either own capital (retained earnings) which will furnish its services over the life of the asset, or it may rent the services of capital on a current basis (members shares). Its financial capital (the liability side of the balance sheet) represents the generalized purchasing power necessary to command real capital, labour services and operating funds. It tells how the assets controlled by the Credit Union are financed. The real capital assets of the Credit Union will include land, buildings, machinery and equipment. Operating funds will include cash, liquid assets and net accounts receivable.

It is clear that the shares of members which are used to finance loans to members are an input into the production of loans. However, there is some ambiguity with respect to members' deposits. If deposit liabilities are transformed into earning assets, then clearly deposits will have to be considered an input. If on the other hand a deposit account is viewed as a service provided to the members, in this case it will be considered an output.

The risk of capital loss which results from loan delinquency and asset value deterioration, for which some reserves are maintained as a provision against asset portfolio loss, may be considered as an element of their production costs, but this is seldom done. These costs are generally referred to as operating costs.

The cost of using one's own savings or that of others is the interest rate. If a Credit Union uses its own savings, the relevant cost is the opportunity cost of investing elsewhere. When it uses the savings of its members, the relevant cost is the cost of borrowing. These costs are referred to as the cost of capital. In making business decisions, firms normally compare the expected rate of return on their investment with the cost of capital; if the expected rate of return exceeds the cost of capital the investment is undertaken. Credit Unions sometimes benefit from cost-free capital, that is, in cases where members withdraw their shares before dividends are declared.

The performance of financial institutions is directly related to their efficiency. Bourne (1988) argues that the depiction of a financial institution as a production enterprise leads naturally to efficiency concepts, such as productive efficiency and allocative efficiency. He suggests that productive efficiency involves technical efficiency and price efficiency. Technical efficiency involves the minimization of the input-output ratio, and it is technology-dependent. Price efficiency means satisfying the neo-classical rule that the ratio of marginal products equals the ratio of input prices. Allocative efficiency is concerned with the allocation of financial resources in a manner that maximizes economic growth or economic development or some other social objective.

A concept of efficiency which is related to Bourne's description is Croteau's (Croteau, 1963). He felt that by bringing together the annual balance sheet and income-expenditure account, efficiency could be judged as an input-output problem (Bourne's productive efficiency) and as one of portfolio management. Croteau believes that efficiency is a relative concept and therefore, for him, there could be no such thing as absolute efficiency. A firm is "more efficient" or "less efficient" than another, or than it was, in a different time period. In a strictly economic sense, though, a firm is more efficient than another when it achieves a greater "output" from the application of the same or a smaller quantity of "input".

Most of the larger Credit Unions were able to improve their services to members by acquiring properties to house their operations (in most cases, out of equity holdings, therefore having no obligation to financiers) and by employing computers and other types of equipment that had the potential to reduce costs. Some were actively engaged in seeking out University graduates and other specialized staff in an effort to better manage their portfolio structures.

To determine the efficiency of Credit Unions, we compare the units of each group, one against the other, and then compare the groups together to identify the most efficient group. This is

done in two separate ways. First, we measure the efficiency of Credit Union intermediation by using the ratio of operating costs to total assets. Operating costs are represented by the difference between gross income and net income. An increasing ratio is an indication of poor performance. The converse is also true. Next, we compare the change in operating cost to the change in net income. If net income increases at a faster rate than operating costs then the Credit Union is improving in efficiency. If the operating costs increase faster than net income then the Credit Union is performing less efficiently.

The units of Group One represented the lowest level of technology in use throughout the sample. Its total staff, numbering seven persons, possessed academic attainment levels lower than Secondary School education except for one manager who was pursuing studies leading to a Certificate in Business Administration. The Institutions' additional source of income, apart from their loans' portfolio, was derived through investments, mainly in time deposits at Commercial Banks.

In circumstances like the above, one would not expect the operations of those units to be very efficient. In terms of their efficiency of intermediation, between the period 1972 to 1980 there were fluctuations - this is probably an indication of instability of performance. However, between 1981 and 1989 all units showed increasing ratios indicating decreasing efficiency in their intermediation of funds.

In comparing the changes in operating costs to net income, the trend was as follows: when operating costs fell net income increased and where it rose net income declined. There were a few instances when both operating costs and net income changed in the same direction. What is important to note, though, is that no unit had a constant trend of operating costs falling while net income was increasing. This would have been an indication of an improvement in efficiency. We have therefore concluded the efficiency of the units in Group One has not been improving.

The units of Group Two showed a significant improvement over the former group in terms of its staff and technology. Three of the units were run by trained accountants and all members of the staff (thirteen persons) were trained in Credit Union principles and practices. Most of them graduated from Secondary Schools and computers were used in two entities. What was interesting about this group was that it showed a greater diversification of income earning activities, with two units engaged in leasing property and running a small retail store. This indicated that the units with better qualified staff were more inclined to pursue secondary income earning activities. Three of these units had industrial bonds, the remaining two were based on community.

Our findings revealed that with the exception of one unit, whose ratio showed a tendency to decline, all other units in this group possessed higher ratios than the former group. This lone unit had no office and a volunteer manager. We concluded that the subsidy provided by volunteer workers, coupled with an absence of overhead cost for office space together with the strong bond which existed among the community, are among reasons why this unit proved to be the most efficient in this grouping.

When we compared the operating costs to net income ratios, the pattern was the same as in Group One. We thought that the better educated staff would have contributed to more efficient operations. Unfortunately, we were wrong. These Credit Unions, except one, were found to be less efficient than Group One units.

All five units in Group Three were based on industrial bonds and employed paid managers. Total staff of fifty seven (57) workers showed a wide range of skills and training, varying from typing to university education. Four of the units were housed on their own premises with one using rental accommodation, and computers were used by three entities, including two which had branch offices. Their investments showed a mixture of time deposits, stocks and bonds.

Here again the efficiency of intermediation was poor. In the financial services industry any institution which is inefficient will not be able to provide its shareholders with an acceptable return on investment. If its efficiency is not enhanced, consideration must be given to placing one's assets with alternative financial institutions. One of the units moved from a ratio of .9 percent in 1983 to 2.7 percent in 1989, another from a ratio of 4.1 percent in 1974 to 6.8 percent in 1989. This group performed worse than Groups One and Two. Using our second method of measurement, the trend was consistent with previous findings. None of the units showed a tendency for operating costs to decline in relation to net income.

In Group Four, we encountered the most sophisticated operations. Two of the units had a network of branches throughout the country, each with a General Manager who was responsible for operations and accountable to the Board of Directors. None of the managers was university trained, but they possessed a combination of training and experience (including overseas training at premier Credit Union organizations) unrivalled by the other groups. In fact, the five managers possessed as many as seventy (70) years joint experience in Credit Union practices and principles. These units employed a combination of professional and clerical staff, including fifteen (15) university graduates out of a total staff complement of 426 workers. Two of the units had minimum entry requirements, with one requiring only Advanced Level graduates, but all used computers. This group showed the largest diversification of activities, such as travel agency, hardware, drug-store, rental accommodation, nursery school, day-care centre, estate and fishing tackle.

The two largest units performed worst among the members of this group. These units had efficiency of intermediation ratios of 11.2 and 8.8 in 1975 compared to the other members of the set whose ratios were 3.0, 2.8 and 2.1. After a period of fluctuation between 1972 and 1984, all units showed an increasing trend. The average ratios of this group were comparatively higher

than any other group, indicating that the efficiency of this group was lower than that of the other groups.

Our analysis clearly revealed that the performance of all the Credit Unions, in terms of the efficiency with which they produced their services and managed their portfolios, was poor. Further, it showed that the larger the unit the worse it performed. We expected the units with paid managers and better qualified staff and facilities to perform more efficiently but this was not to be.

Credit Unions need to carefully examine the structure of their costs with a view to providing services at a lower unit cost than they are at present capable of offering. It seems that Credit Unions are rather more concerned about realizing a surplus from operations than about assessing the changes in operating costs and the impact of these changes on their surplus. Ensuring a surplus is important, but even more important should be the provision of services at the least possible cost to members.

We would like to introduce a caution in accepting some of the above results. We were constrained by the data to measure operating costs as the difference between gross and net income. This, of course, is a very crude measure since it does not give the actual costs of operations but includes many items that may not traditionally be considered as operating costs, such as donations to charitable organizations and refreshments for meetings. Ideally, in arriving at operating costs, we should have separated the interest on borrowed money and other non-operating expenses. However, Credit Unions' accounting statements are not standardized, making it difficult, if not impossible, to focus on operating costs in the desired fashion. We believe, however, that the exclusion of the items mentioned would not have significantly altered the results obtained.

Capital Adequacy

We shall now evaluate the performance of Credit Unions by using the financial ratios developed by Marion (1986). In

determining the capital adequacy of the Credit Unions we used two ratios, the capital ratio and the reserves to loans ratio. Capital adequacy measures the extent to which equity is sufficient to protect members' and creditors' claims on the Credit Union's assets in the event of unforeseen losses or financial difficulty.

The traditional role of capital is to protect depositors/shareholders against losses, but its role is broader than that. Among other things it provides the working capital that is needed to undertake new investments, it absorbs temporary losses for bad loans and allows the institution to continue to operate and improve earnings, and is a source of funds necessary for growth. It is also necessary to maintain confidence in financial institutions. Its real significance, however, concerns what is commonly referred to as 'capital adequacy' (Gup 1984). Bourne⁵ defines capital adequacy in relation to capital risk. He asserts that capital risk is the probability that operating losses will be sufficiently large and protracted to fully absorb the enterprise's capital and result in insolvency. Maisel⁶ has stated that capital is adequate when portfolio risks are controlled and sufficient capital is maintained to reduce possible losses and insolvency to an acceptable minimum.

Credit Union capital consists of two basic elements, members' invested share capital and institutional equity capital (reserves and undivided earnings). Share capital acts like a non-par value deposit base, forcing members to participate in Credit Union losses, if any, but also protecting it from complete insolvency.

The need for capital depends on the quality of assets and the likelihood of losses. These, according to Harriss (1965), depend on the calibre of management, general business conditions, and legal requirements, all of which vary from time to time, and from place to place. Capital should therefore be related to total liabilities. The majority of Credit Unions' liabilities are members' shares; however, a small percentage (10-15 percent) is made up of members' deposit savings. One tends to agree with Harriss, rather than with Marion who suggested a capital ratio of at least 5 percent. Since our Credit Union movement comprises societies

of varying asset sizes, the appropriate measure should reflect the differences in societies.

It should be noted that the concept of capital adequacy is generally left undefined, making it impossible to specify an explicit criterion by which one can judge whether capital is adequate or not. Suffice it to say that when one speaks of capital being "adequate", one is normally referring to a situation where deposits will be "safe enough" (Sharpe 1978). In terms of the statutory regulations for non-bank financial institutions, the minimum capital requirement is that paid-up capital and reserve funds be not less than five percent of total deposit liabilities (see The Cooperative Societies Act, No. 22 of 1971).

Capital Ratio

The capital ratio represents the true equity position of the Credit Union because members have no individual claims on these accounts. This ratio is found by dividing the summation of statutory reserves, other reserves, loan loss allowance and undivided earnings by total assets. It shows whether the Credit Union has enough "financial cushion" to cover unexpected losses, to provide new services or to finance fixed assets. Marion believes that Credit Unions' should have a capital ratio of at least 5 percent. Smaller asset size Credit Unions are required to have higher ratios. Locally, provision for bad loans is considered as part of Credit Unions "Other Reserves". Some Credit Union rules provide for bad debts to be written off against their reserve funds.

All the units of Group One maintained adequate capital ratios throughout the sample period. Only one Tobago unit had a ratio of 5.0 percent in 1989, all others had ratios exceeding 9.0 percent. Marion has suggested that the smaller units require higher ratios, perhaps because smaller units tend to use less sophisticated techniques and employ less capable management and hence are susceptible to less rigid financial discipline which can ultimately lead to failure. Since the unit with the 5.0 percent ratio

was the smallest sampled, its management ought to make a concerted effort to increase its equity position.

In Group Two, four of the units were adequately protected. Their average ratios over the sample period all exceeded 7.0 percent. Only one unit with an average ratio of 5.5 percent had a ratio lower than the legal limit in 1989. While this was unacceptable and needed urgent remedial action, the fact that this Credit Union was able to improve its ratio from 2.6 percent in 1988 to 4.3 percent in 1989 was cause for optimism.

The units of Group Three all recorded ratios of over 5.0 percent in the latter years of the study. One especially has had high ratios throughout the sample period, its lowest ratio being 7.7 percent in 1978 and its highest being 22.4 percent in 1982. All others, except one, exceeded the minimum over the period 1972 - 1989. This unit was unable to attain the 5.0 percent minimum in the 1970's but it rebounded in the 1980's, starting from a low of 3.0 percent in 1983 and ending 1989 at 9.3 percent.

In Group Four, we found the very disturbing statistic that the two largest units in our sample did not have adequate capital protection in relation to their liabilities. Except for two periods in the case of one unit, and one in the other, these two units failed to attain the 5.0 percent minimum over the eighteen-year period. Their position probably resulted from their acquisitions of substantial fixed assets which had the effect of reducing their allocations to reserves or undivided earnings, but certainly it was as a result of their inability to understand the consequences of maintaining, for such long periods, inadequate capital reserves. Sometimes fortune does favour the foolish! The two units recorded 1989 ratios of 2.8 percent and 3.9 percent. All others in the group maintained ratios above 5.0 percent in the last two years of reporting.

Unions, though it is far from reaching crisis proportions. The consensus among Credit Unions was that the delinquency rate was generally low, about 5.0 percent and this compared favourably with the 10 - 15 percent which Marion suggested was normal for developing countries.

Earnings

Credit Unions are generally profitable financial intermediaries. Their operating costs are considerably reduced because of unpaid voluntary leadership and sometimes even voluntary management. Marion estimates that about 40 to 60 percent of a Credit Union's income is consumed by its operations. Most of a Credit Union's income (over 90 percent) is produced from its loan portfolio; the remaining portion comes from investments and service charges. The portion of income not consumed by operations is available for reserves, dividends on share savings, and additions to retained earnings.

Spread analysis is the fundamental technique for analyzing the earnings of a Credit Union. Two ratios were used to perform this analysis. One is the Net Spread Ratio, found by dividing the net surplus or addition to undivided earnings by the average total assets, which is the average of the previous year's total assets and current year's total assets. The other is the Operating Cost Ratio, found by dividing operating cost by gross income. If the net spread ratio is increasing, the Credit Union's earning potential is being enhanced. If the operating cost ratio is decreasing, this indicates that the Credit Union has a larger portion of income available to improve its reserves and undivided earnings.

In Group One, the net spread ratio of all units declined in the last year of reporting. With the exception of one unit all others experienced negative ratios in some years, but the pattern over the entire period has been one of fluctuation. This finding was not surprising since it was consistent with the negative changes recorded in loans outstanding. Turning to the operating cost ratio, we found that the ratios of all units increased towards the end of

the sample period. One unit moved from a ratio of 9.9 percent in 1988 to 45.7 percent in 1989, another from 9.0 percent in 1983 to 73.1 percent in 1989. It should be noted, however, that the averages over the entire period were between 40-60 percent, an amount which Marion claims is normally consumed by operations.

One is led to believe that this group of Credit Unions would be most affected by the austerity measures of the government. One holds this view given their small membership and the fact that they had a combined small staff. Yet their operating costs were very high. Too much of their income was being consumed by operating expenses. Their net income from operations, per \$1,000 of assets, is \$40.27, the lowest of all the groups (see Table 1.2). Our view is that austerity measures may cause their income to fall even further thereby lowering or possibly wiping out dividends and undivided earnings, signs of a Credit Union performing badly.

In Group Two, the net spread ratio of four units declined in 1989. Over the entire period there were fluctuations indicating that none of the units was improving its earning potential and sustaining it. This was strange, given that for most of the period the change in loans outstanding for these units was positive. Three of the units in the group had increasing operating cost ratios from 1987 to 1989. Interestingly the average ratios of four of the units were very low. This indicated that a large portion of income was not being consumed by operations, and this is confirmed by Table 1.2 which shows that this group realized the highest net income from operations per \$1,000 of assets. The fact that undivided earnings did not increase at a faster rate is perhaps explained by these Credit Unions paying out large dividends. However, the data did not allow us to confirm this.

In Group Three, the net spread ratio of four units saw many negative changes. This suggested that there was no surplus to transfer to undivided earnings and perhaps already accumulated undivided earnings were run down. One unit maintained

**TABLE 1.2. NET INCOME FROM OPERATIONS PER \$1,000
ASSETS AND PERCENTAGE ANALYSIS OF ASSETS, OF
CREDIT UNION BY SIZE, 1987**

	SIZE				
	Group I \$0 - 1.5 Million	Group II \$1.6-10.5 Million	Group III \$10.6-40.0 Million	Group IV Over \$40.0 Million	20 Cu's Average
Total Income	113,266	2,281,362	10,783,312	39,344,328	13,130,567
Total Operating Expenses	30,047	813,839	4,051,823	19,155,174	6,002,720.7
Net Income from Operations per \$1,000 Assets	40.27	64.02	61.11	43.24	52.16
Net Income from Operations	83,219	1,467,523	6,731,489	20,229,154	7,127,846.2
	PERCENTAGES				
ASSETS					
Loans	73.1	83.2	86.0	74.6	79.2
Fixed Deposits	11.1	11.3	4.0	8.5	8.7
Other Investments	1.9	1.6	.5	2.3	1.6
Cash and Fixed Assets	13.9	3.9	9.5	14.5	10.5
TOTAL ASSETS	100.0	100.0	100.0	100.0	100.0

Source: Computed from Sample Group Statistics.

positive changes throughout, showing that it was in a very healthy position. Turning to the operating cost ratio, all units saw their ratios increase over the 1988 figure. However, the changes were not significant. In fact, the average ratios of three units declined significantly during the period 1981 to 1989 when compared to the period 1972 to 1980. Of the remaining two units, one was fairly constant while the other saw a 15.0 percent increase in its average. All of them, however, operated within the acceptable limits suggested by Marion in terms of their averages over the period 1981 to 1989.

In the largest category, Group Four, the net spread ratio of all five units declined from 1988 to 1989. This group of Credit Unions experienced fluctuations throughout, with each unit having at least one year of negative increase. This clearly indicated that none of the units was able to sustain an increased surplus even though its income from all sources was increasing. When we examined the operating cost ratios, we found that the two largest units in our sample recorded period averages of 69.4 percent and 70.3 percent. These compared unfavourably with the other members of the group which had period averages of 31.9 percent, 36.5 percent and 29.8 percent. Four of the units recorded increasing ratios over the 1987 to 1989 period while the fifth unit saw its ratio decline.

Here again we found that the two largest units in our sample have been performing worse than all others. They have consistently exceeded the 60 percent maximum of income which Marion suggested may be consumed by operations. This is a very clear indication that these units were not very efficient in the production of their services. One expected that the operating costs of the larger units would comprise a smaller proportion of income given that increases in size would allow greater opportunities for hiring trained personnel and for specialization of functions and departmentalization, as well as economies from the wider use of mechanization. This has not been so. In fact, the two largest units are the only ones in our sample which experienced a deficit in operations.

Liquidity

Liquidity refers to the ease and speed with which savings in non-monetary forms can be turned into cash, and reflects both the maturity of financial instruments and their marketability. Maturity refers to the time which elapses before a deposit or loan is due to be repaid. Liquidity with Credit Unions is an individual matter because Credit Unions have no access to a Central Bank, nor do they have share account insurance. Either they must keep sufficient cash or other liquid assets on hand, or they must individually seek out sources of credit. The problem of liquidity, with Credit Unions is much more difficult than that of banks and other financial intermediaries which have deposit insurance. Banks and other financial institutions have access to the inter bank market and ultimately to the Central Bank. In addition, they fall under the umbrella of the Deposit Insurance Corporation which can provide assistance at closure. However, the reality is that Credit Unions have no such support mechanism, at least in a functional sense. The Credit Union Bank has been a dismal failure.

TABLE 1.3
PERCENTAGE ANALYSIS OF LIABILITIES OF TWENTY
CREDIT UNIONS BY SIZE, 1987 PERCENTAGE

Liabilities	Group I	Group II	Group III	Group IV	Aug.
Shares	88.6	89.1	85.5	84.5	86.9
Deposits	3.2	1.12	0.3	5.0	2.4
Reserves	3.1	3.6	3.6	3.8	3.5
Retained					
Earnings	5.1	6.2	4.9	3.0	4.8
Other Current					
Liabilities	0	0	5.7	3.7	2.4
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Computed from Sample Statistics.

Due to the nature of their asset and capital accounts, Credit Unions are inherently liquid institutions. Their assets are primarily invested in short-term loans to members (see Table 1.2 for a percentage analysis of assets) whereas their capital comprises very long-term share savings (see Table 1.3 for a percentage analysis of liabilities). A traditional measure of liquidity in the movement is a declining ratio of loans to savings. Marion believes that this reflects, in part, the implementation of more disciplined liquidity management practices.

In our analysis, savings represent the sum of shares and deposits. However, a few of the institutions do not carry deposit savings and in those cases, savings refer to shares only. In any event, total shares of the sample group account for 95.5% of savings, as opposed to deposits which account for only 4.5%. Table 1.3 shows that on average shares comprise 86.9% of liabilities while deposits average only 2.4%. Shares, therefore, are by far the more important component of savings.

We have used two measures of liquidity; one is the loans to savings ratio, the other is the debt to equity ratio. The loans to savings ratio measures the degree to which savings provided by members are used to fund loans to members. It is found by dividing total loans outstanding by total savings. A high ratio suggests possible liquidity problems and heavy savings withdrawal or high credit demand. A low ratio may indicate credit demand that is low, or restrictive lending policies. The debt to equity ratio measures the claims of members and creditors against the credit union in relation to its equity capital. It is found by dividing the sum of shares and deposits by the sum of statutory reserves, other reserves and undivided earnings. Marion believes that this ratio should not exceed 10:1, a ratio greater than this figure indicates that the Credit Union is over-indebted. It should be noted, however, that the loans to savings ratio is a very crude method of measuring liquidity. Shares tend to be "locked in" and hence liquidity will not be a problem once the institutions have healthy portfolios.

In Group One, two of the units were very liquid, both ending the period with savings to loans ratios of 40%. The remaining three units all had high ratios by comparison, one in particular recorded a ratio of greater than one (1) in 1980. Turning to the debt to equity ratios, four of the units maintained ratios of less than 10:1; the fifth unit was highly over-indebted. At the end of 1986, one Tobago unit had a debt to equity ratio of 12:1; by 1989 the ratio had climbed to 21:1. This is the same unit which recorded a loans to savings ratio of greater than one (1). It was very clear, then, that two units in the above-mentioned group were very liquid, two others less liquid, and one not liquid at all.

In Group Two, all the units had high loans to savings ratios. Four of the units experienced declining ratios over the period 1988 to 1989, while the other witnessed an increased ratio. Two of the units have not done particularly well when compared to the other units. These two units have consistently had ratios which have been greater than one (1) or very near to it. One of the two has been especially bad, with ratios for thirteen (13) out of eighteen (18) periods exceeding one (1). This is a clear case of bad management, one that can lead to possible insolvency. Two units have been found to be illiquid. When we examined the debt to equity ratios, we observed that only three units had ratios which were below the acceptable limit. One of the units had only recently reached this position, having exceeded the acceptable limit of 10:1 prior to 1988. The remaining units were heavily over-indebted. Only once during the period 1983 to 1986 have they had a ratio less than 10:1. Here again, we must conclude that bad portfolio management has led to the over-indebtedness of the Credit Unions. It should be noted that one of the over-indebted units was found to be illiquid.

In Group III, the ratio of loans to savings for all units has been very high. Two of the units had period averages of 1.1 and 1.2, while the others had averages of above 0.9. Only two units experienced declining ratios but even though declining, these ratios were as high as 1.0 and 0.99. It means therefore that this group of units is the least liquid of the three groups examined thus

far. One unit has been particularly bad, having fourteen (14) out of seventeen (17) ratios exceeding one (1). This means that the Credit Union has been continuously lending more than it has been saving, not a healthy position by any standard, and one that can lead to the eventual collapse of the Credit Union.

When we examined the debt to equity ratios of these units, we found that only one unit had never exceeded the limit of 10:1. Two of the remaining four saw their ratios decline from positions of over-indebtedness to acceptable positions below the 10:1 ratio. The others have exceeded the maximum limit in the last two periods. The unit which consistently had a loans to savings ratio greater than one (1) maintained a debt to equity ratio greater than 15:1 over the period 1984 to 1988. This unit was clearly experiencing problems and it was therefore not surprising that the Credit Union League seconded someone to manage the unit in the hope of changing its fortunes.

In Group IV, four of the units have seen their loans to savings ratios decline from an average of greater than one (1) in the 1970's to an average of .8 in the 1980's. It means that the liquidity position of these units has been improving. The remaining member of the group had a period average of 1.03 with ratios of less than one (1) in only two years. This unit has consistently loaned more than it has saved. One unit in this group has been found to be illiquid.

The debt to equity ratios of these units have been very high, only one unit had a ratio less than the critical maximum of 10:1. Its average over the entire period of 7.4:1, compares favourably with the averages of the other members, 10.5:1, 46.6:1, 11.1:1, and 28.3:1. Two of the units had acceptable ratios from 1972 to 1981 but after 1981 their ratios crossed the limit and this new position has been maintained. Once again, we find that the two largest units in our sample have not managed their portfolios well. Over the sample period neither of them had a ratio less than

the limit. In fact, their lowest ratio recorded was 15:1, and since then they have increased to 34:1 and 22:1 in 1989.

From our analysis we have determined that eight units have liquidity problems, four from Group III, two from Group II, and one each from Group I and IV. Nine of the units are highly over-indebted, four from Group IV, two each from Groups II and III and one from Group I. It is clear that the two largest groups of our sample performed badly in this area. One expected to find that the largest units would have been better managed, given that their staff is more highly trained than the other groups, and one thought that their portfolios would have reflected this. We were surprised to find that four of the five large units were over-indebted. We suspect that the reason for this is two-fold. One is that Credit Unions have persisted in paying out high dividends, leaving little net surplus to add to undivided earnings; and the second is that their net income is too small and too much income is consumed by operations, leaving little to transfer to reserves.

It seems to us that one way for these Credit Unions to improve their position is to increase their interest charges on loans to reflect a more realistic rate. This does not mean that they should charge the same rates as banks and other finance houses, but rather they should charge a rate of interest closer to the legal limit of 12% per annum. This will result in increased income, *ceteris paribus*, since more than 85% of their incomes are derived from interest on loans. A second suggestion would be to reduce or withhold, for a period of time, dividends paid, until the Credit Unions reach a more stable financial position. By reducing the dividend rate more income will be left over to transfer to undivided earnings.

Solvency

Solvency is an important consideration of all financial institutions. An institution is insolvent if it has insufficient liquid assets to redeem its deposits and other debt liabilities. Insolvency

impairs depositor confidence sufficiently to generate "deposit runs". Institutions which hold sufficient liquid assets or equally matched assets and liabilities are in a good position. The solvency ratio is found by dividing total assets plus loan loss allowance less delinquent loan factor less outstanding liabilities (except deposits), divided by total members' shares plus deposits. Our data do not provide information on loan loss or delinquent loan factor but we believe that the absence of these factors would not significantly change the ratio. The solvency ratio shows the estimated cash value of the Credit Union per monetary unit of deposits. A solvency ratio of less than 1.0 indicates a Credit Union having negative net worth, i.e. technical insolvency. It would have been more appropriate to examine the real solvency ratio; however, that would have required data on loan delinquency, loan loss and the level at earning assets in relation to funds bearing costs. These data were unavailable.

In Group I there were three units with ratios less than 1.0 for the years 1988 and 1989. Over all other periods, the units of Group I had acceptable ratios. The Units of Group II performed better; only one unit had a solvency ratio less than 1.0. This lone unit saw its ratio fall from 0.98 in 1984 to 0.94 in 1989. The units of Groups III and IV were found to be solvent; they even surpassed the critical minimum of 1.0 in some years.

Management

Management is a key factor in Credit Union viability and performance. Maintaining and improving the quality of management would help in the movement's development. One of the greatest difficulties encountered by Credit Unions is attracting, training and retaining qualified staff and leadership. In our sample, only four managers, two of whom were volunteers, had professional training. We observed that only those institutions which may be considered medium or large (Groups III and IV) had some reasonable, though by no means adequate, level of quality staff. The Credit Unions have begun to employ graduates of The Uni-

iversity of the West Indies but these persons are not performing at the managerial level, in the main, and therefore management decisions are being taken by persons with Credit Union experience and not management training. Of course, experience cannot be downplayed in importance but experience alone is not sufficient to successfully manage a business enterprise in these difficult times. The Credit Union League is attempting to come to terms with the inadequacies of management among its members by offering courses in financial management. This is a step in the right direction and one that should be continued and expanded.

Summary

It is clear from our analysis that the smallest units, those in Group I, were more efficient than the units of any other group. This is not to say that the Group I units were very efficient; in fact, their efficiency was low but when compared to the others they were the most efficient. The largest units in our sample were the least efficient. Only three units out of the twenty sampled have shown capital inadequacy, one in Group I and the largest units in Group IV. In terms of their ability to increase their earnings, the units of Group I and the two largest units in Group IV have not shown good potential here. The performance of the other units in the sample has been satisfactory. The earnings' potential of the industrial units has been better than the other units in the sample. Eight of the units are not liquid; Group IV has performed well here with only one illiquid unit. Four units in Group IV were found to be highly over-indebted, compared to one unit in Group I. Only four units were found to be insolvent, three in Group I and one from Group II.

Carlos Cuevas, (Cuevas, 1988) in examining the performance of developing countries' credit unions, considered three factors, namely membership, savings deposits and outstanding loan balance. If the growth in Credit Union membership is greater than that of the national population, Cuevas believes that progress is being made. Also important is the growth of savings' deposits

and of the outstanding loans balance. He claims that as Credit Unions become more developed the ratio of loans to deposits increases, perhaps due to better asset/liability management practices.

The data reveal that there was a general increase in membership. Between 1972 and 1989, membership of the sample group increased by 151,370 persons or a percentage increase of 1360 percent. Over the same period total population increased by 259,000 persons or by 26 percent. It is clear, then, that membership growth was more significant than population growth. The average increase in membership was 17.4 percent compared to the average increase in population, which was 1.4 percent. In respect of savings deposits these have increased by 63,995 percent between 1972 and 1989. Loans outstanding have been increasing continuously, moving from TT\$13.2 million in 1982 to TT\$453.4 million in 1989, a percentage increase of 3335 percent. The loans to deposits ratio fell from 1972 to 1976, increased from 1976 to 1980, fell again in 1981, increased in 1982, and continued to fall from 1984 right on to the end of the period (see Table 1.4).

By Cuevas' measurement we cannot say that the Credit Unions' performance has been particularly good, since they have performed satisfactorily only in respect of their deposit activities. Generally the Credit Unions did not perform well in terms of the loans/savings ratio but they may have been affected by the existing macro-economic conditions which caused a considerable slowdown in activity throughout most of the 1960's. It would be interesting to rate the performance of Credit Unions in the 1990's as the economy rebounds.

When one examines data on the Credit Union industry one can be easily impressed with the extraordinary progress made, in terms of the increases in all aggregates. However, the values seen have always been quoted as nominal values in current prices; no one has actually looked at the real changes. In Table 1.5, we

TABLE 1.4. ANALYSIS OF MEMBERSHIP AND POPULATION GROWTH, AND LOANS OUTSTANDING TO SAVINGS DEPOSIT RATIO (1972-1989)

Year	Sample Total (1) Members	% Δ of (1)	'000s Total Population (2)	% Δ of (2)	Savings Deposits ^o	Loans Outstanding ^x	Loans/ Deposits
1972	11,130	-	988.0	-	50,925	13,200,025	259.2
1973	13,676	22.9	1057.7	7.0	90,358	17,085,998	189.1
1974	14,711	7.6	1004.3	-5.0	147,856	20,060,826	135.6
1975	18,438	25.3	1011.9	0.8	774,434	23,835,684	30.6
1976	19,812	7.4	1022.9	1.1	1,853,125	31,908,382	17.2
1977	23,854	20.4	1035.2	1.2	2,355,841	40,991,974	17.4
1978	25,983	8.9	1048.6	1.3	2,311,684	49,092,550	21.2
1979	30,452	17.2	1063.5	1.4	2,054,244	66,719,702	32.5
1980	33,399	9.7	1081.7	1.7	2,126,506	84,600,578	39.8
1981	37,773	13.1	1093.9	1.1	2,993,296	102,770,642	34.3
1982	43,693	15.7	1115.7	2.0	2,231,490	132,645,193	59.4
1983	52,178	19.4	1138.5	2.0	6,911,388	173,590,978	25.1
1984	64,362	23.4	1169.6	2.7	8,806,296	235,469,499	26.7
1985	83,687	30.0	1181.2	1.0	12,181,591	310,563,070	25.5
1986	110,483	32.0	1199.2	1.5	16,852,908	393,041,540	23.3
1987	140,265	26.9	1218.4	1.6	23,948,340	464,385,919	19.4
1988	160,210	14.2	1235.4	1.6	31,193,604	532,113,226	17.0
1989	162,500	1.4	1247.0	0.9	32,640,570	453,456,371	13.9
Aug.	58,145	17.4	1106.3	1.4	8,306,914	174,746,231	54.8

Note that for some periods units in the sample CUs did not report on membership.

O = Some cuts do not carry savings deposits among their instruments.

X = Data for some periods are missing, hence the decrease in 1989

Source: Khan (1992).

TABLE 1.

DEPOSITS AND LOANS OUTSTANDING, CURRENT PRICE VALUES
COMPARED TO VALUE AT 1972 CONSTANT PRICES

Year	Saving Deposits TT\$	Deflated Value of Savings Deposits TT\$	Loans Outstanding TT\$	Deflated Value of Loans Outstanding TT\$	Deflator CPI TT\$
1972	50,925	29,781	13,200,025	7,719,313	171.0
1973	90,358	45,984	17,085,998	8,695,164	196.5
1974	147,856	61,709	20,060,826	8,372,632	239.6
1975	774,343	276,189	23,735,684	8,464,937	280.4
1976	1,853,125	598,941	31,908,382	190,312,987	309.4
1977	2,355,841	681,273	40,991,974	11,854,243	345.8
1978	2,311,684	606,582	49,092,550	12,881,803	381.1
1979	2,054,244	469,971	66,719,792	15,264,173	437.1
1980	2,126,506	413,959	24,600,578	16,464,868	513.7
1981	2,993,296	509,584	102,770,642	17,495,853	587.4
1982	2,231,490	340,893	132,645,193	20,263,549	654.6
1983	6,911,388	904,276	173,590,978	22,712,414	764.3
1984	8,806,296	1,017,128	235,469,499	27,196,754	865.8
1985	12,181,591	1,306,897	310,563,070	33,318,643	932.1
1986	16,852,908	1,678,911	393,041,540	39,155,364	1003.8
1987	23,948,340	2,153,821	464,385,919	41,765,079	1111.9
1988	31,193,604	2,639,053	532,113,226	45,018,039	1182
1989	32,640,570	2,545,178	453,456,371	34,094,464	1330

Source: Computed from Sample Group Statistics.

present the deflated values of savings deposits and loans outstanding for the period 1972 to 1989. These figures show that real deposits have increased by 8,140 percent and real loans outstanding by 342 percent. When looked at in this way the performance of Credit Unions does not appear as impressive as before.

Conclusion

The fact that many Credit Unions now offer savings deposit accounts, which are more liquid than shares, suggests that greater emphasis should be placed on capital to protect these deposits which are not covered by deposit insurance in the same way that deposits from other financial intermediaries are. This implies that capital ratios of Credit Unions will need to be increased to afford better protection for depositors.

In the case of reserves, these are required on both deposit and non-deposit liabilities. The proportion of reserves held by Credit Unions should be related to the size of the liabilities of societies rather than having one rate for all Credit Unions. Perhaps there can be a minimum and maximum requirement based on the size of Credit Unions' liabilities. The minimum requirement should be enforced by law, so that legal action could be taken against defaulters.

Our analysis has shown the group of small Credit Unions to be the most efficient among all groups studied. The fact that all units in our sample have almost the same level of margin suggests that the smaller units with less diversified portfolios can be more efficiently run, given the lack of management economies identified. In addition, the larger units have tended steadfastly to Credit Union principles. Some have been accused of operating like banks. The root of the problem to be that Credit Unions have deviated from their four principles by opening their bonds and by providing more sophisticated services without improving or upgrading their level of organization and management.

The Credit Union industry is highly skewed, with a few large units controlling the industry. We have seen that the five large units in our sample together account for 87 percent of the membership and 77 percent of the total assets of the sample. This is not a very good sign since our study has shown that the largest units have been the worst performers. Perhaps those Credit Unions which are planning to extend their bonds and become larger would be better advised to pay more attention to the management of their portfolios and to provide better service to their present membership. The small Credit Unions in the sample have performed better and perhaps their size is one factor responsible for this.

What we feel has been shown clearly is that Credit Unions have the potential to be very profitable institutions. Only two units have experienced deficits in the 18-year period. We believe that the fact that some units have not done as well as others in our sample is mainly as a result of bad management. The management of these institutions is the most critical factor in determining their success and viability. Some may claim that they have progressed this far with the present management but the environment is becoming increasingly challenging.

The government has allowed tax concessions to Credit Unions and it is appropriate and necessary for the Government to ensure that these organizations are properly managed and that shareholders' interests are protected.

The granting of tax concessions, however, does not seem necessary. Some observers may argue that the concessions may have contributed to significant savings mobilization. It is possible that without them the savings rate could have been lower, though this is doubtful. The greater attraction to Credit Union is that this Institution provides credit to a group of people who might not otherwise have had access to credit of any form. One can argue that since the majority of Credit Unions loans are used on consumer goods and for other non productive uses (see Khan, 1992) this encourages foreign exchange leakage. It can be argued, however, that commercial banks also do this kind of lending.

We believe that professional levels need to be established for management and staffing of Credit Unions. It is only through such initiatives that a cadre of competent leaders can be produced. In order to ensure that shareholders'/depositors' interests are protected, an agency functioning as a Deposit Insurance facility should be set up to cater to the specific needs of Credit Unions and to provide comfort to small investors. Perhaps legislation which makes it compulsory for Credit Unions to deposit a certain percentage of their deposits with the facility can be introduced to enable Credit Unions to meet their financial obligations during periods of illiquidity.

In our view the efficiency of the Supervisory agency which governs the Credit Union industry has been shown to be inadequate. Some Credit Unions have been given a "free hand", resulting in inappropriate control mechanisms regarding liquidity, insolvency and risk management. It is small wonder, then, that in 1993 the Government of Trinidad and Tobago saw it fit to appoint a committee to examine the operations of these institutions with a view to placing them under the direct control of the Finance Ministry.

Given the inadequacies found within the movement, urgent attention is required to ensure that the Cooperative Department is restructured and that its staff is properly trained to make the institution and its employees more effective and productive and to ensure compliance with the Cooperative Laws. We believe also that the Cooperative Act should be amended to empower the Commissioner to take action against offending Societies. This seems to us to be the most urgent task facing the movement. We believe also that there are far too many weak Credit Unions in the country and that a decision has to be taken either to close them down or to allow them to be taken over by stronger societies. In any event, the trend worldwide seems to be one of mergers and acquisitions and while this is unheard of in the local Credit Union sector, it may be what the sector needs.

There is no doubt that the Credit Union movement has a role to play in our economic development. Because of their image of "friend of the small man" the Credit Unions have an excellent opportunity to link small enterprise development to their financing. On the basis of their overwhelming savings mobilization capabilities, Credit Unions' lending can be an instrument which contributes towards employment creation and business development. Credit Unions and/or their members must become investors in the real or productive sector.

There has been only minimal investment by them in that sector. There is absolutely no reason why Credit Unions cannot become the new venture capitalists. In fact there are many businesses which have failed and others on the brink of failure, and perhaps Credit Unions should begin to examine the possibility of taking over some of these enterprises. The Credit Union is by far the most successful arm of the Co-operative Sector, and yet there is very little support coming from Credit Unions to these organizations. Can they not have a role in Agro-processing? They have to link up with the Agricultural Co-operatives and examine the possibilities. The sad truth is, however, that the spirit of cooperation is badly lacking among Co-operatives. It is perhaps this lack of togetherness which has been a key factor in the ineffectiveness of the Co-operative Credit Union Bank.

No one can deny that the Credit Union sector has made, and continues to make, an outstanding and significant contribution to the nation. It possesses the resources required to contribute to the national economic development effort. National policy, however, needs to encourage the philosophy of cooperation and the brotherhood of man, particularly among the youths.

End Notes

¹For a discussion on the methodology and an analysis of the sample, see Appendix 1.

²For a discussion on the philosophy of Credit Unions, see Khan 1992 (UWI).

³Information received from Co-operative Department.

⁴Computed from the Trinidad and Tobago Telephone Directory 1990.

⁵Compton Bourne, "Structure and Performance of Commercial Banking in Trinidad and Tobago 1965-1982", in *Money and Finance in Trinidad and Tobago*. Bourne and Ramsaran, I.S.E.R., 1988.

⁶*Ibid.*, p. 63.

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Appendix 1

Methodology

We decided to use a twenty (20) percent sample because we felt that this would give a good representation of the industry. Our sample was selected from a population of ninety-eight (98) Credit Unions which reported to the Cooperative Department of the Ministry of Industry, Enterprise and Tourism for the year ending December 1987. Our choice of 1987 was made based on the average number of societies reporting to the Cooperative Department over the period 1972-1988. The arithmetic mean was 108 units. We decided to select a year in which the number of societies reporting was close to the average. Three years were looked at, 1982 (106 units), 1985 (108 units), and 1987 (98 units). We chose 1987 because we believed that the choice of an earlier period would have resulted in considerable difficulties in locating what may be considered usable data.

Our sample selection was based on a stratified sampling process. The population was divided into four strata, based on total assets. They are as follows: Group I, Credit Unions with assets less than TT\$1 million; Group II, Credit Unions with assets less than TT\$15 million but greater than TT\$1 million; Group III, Credit Unions with assets greater than TT\$15 million but less than TT\$40 million, and Group IV, Credit Unions with assets in excess of TT\$40 million.

The stratification was based on total assets rather than size of membership because we found that membership selection could lead to certain problems. For instance, one Credit Union with a membership of 8,600 persons had assets in excess of \$100 million, while another with 69,000 members had assets in the same range. At the other end of the assets scale we find a unit with a

membership of 1,110 persons having assets of over TT\$18 million, while another with the same size membership held assets of less than one million dollars. Because of these inconsistencies we thought it best to stratify the sample according to asset size, since this would allow Credit Unions with the same size of assets to be judged together.

In terms of the actual sample itself, seven units were selected from each of three groups, together with all the units of the fourth group. This was done by assigning a number to the units of each group and by generating random numbers which resulted in the selection of the seven units. Group I consisted of 41 units, Group II, 29 units, Group III, 22 units and Group IV, 6 units. Seven units were selected to facilitate replacement in the event of any unit refusing to cooperate. In the case of Group IV it should be clear that there was no need to select the samples.

Our data set was derived largely from the annual reports of societies, which were submitted to the Cooperative Department. In many instances the data on individual Credit Unions were incomplete and as such the Credit Unions themselves were contacted for assistance. An interesting observation was made here. Annual reports which were not found at the Cooperative Department were found at the Credit Unions' offices. In addition, information lodged at the Tobago branch of the Cooperative Department was not available at the Head Office in Trinidad. This is very strange, given that all Credit Unions are required by law to report to the Cooperative Department annually.

Our Analysis employs simple techniques, one developed by Peter Marion, WOCCU financial systems specialist and another by Carlos Cuevas, used to assess the performances of Credit Unions in developing countries.

Marion has developed several ratios "key operating statistics" which focus on the balance sheets and income statements of Credit Unions. We, however, are unable to use all of his ratios

since the information submitted to the Cooperative Department does not include all the required data. The reader may therefore find that the analysis is not exhaustive but we hope that our presentation is sufficient to make generalizations about the industry.

A priori we believe that our study will show that Credit Unions which have remained true to the Credit Union principles and have not expanded into risk-taking ventures have performed better. Our hypotheses are that small Credit Unions are more efficient than larger ones, and that Credit Unions with industrial bonds perform better than those with other bonds. Our assumptions are that the smaller Credit Unions are less likely to have business ventures and that the bond between members is very strong. We assume also that industrial Credit Unions have a smaller risk of delinquency, given that Credit Union payments are made through salary deductions.

Analysis of Sample

Our sample encompasses societies in most areas of the country. One can find Credit Unions from as far as East as Coryal, as far South as Pt. Fortin, in Tobago, Chaguanas and Port of Spain. There are ten (10) societies with industrial bonds, five (5) with bonds based on community or association and five (5) based on residential bonds. The twenty units selected represent 20.4 percent of the societies reporting to the Cooperative Division in 1987. Their total membership in 1987 of 140,265 persons represents about 56 percent of membership of the entire industry. Their total assets of TT\$602.9 million represent 56.7 percent of the total assets of all societies reporting in 1987. Their total shares of TT\$464.4 million represent 52.3 percent and 50.3 percent of total shares and total loans outstanding respectively of all societies reporting in 1987.

When we take a closer look we find that the Credit Unions in Group I together have a membership of 1,315 persons or 0.9 percent of the membership of the sample group, total assets of

\$2.1 million or 0.3 percent of the assets, total shares of \$1.8 million or 0.4 percent of the shares, total loans outstanding of \$1.5 million or 0.3 percent of loans. The five units of Group II have a total membership of 4,629 persons or 3.3 percent of the sample group, total assets of \$22.9 million or 3.8 percent of the assets, total shares of \$20.5 million or 4.0 percent of the shares and total loans outstanding of \$19.1 million or 4.1 percent of the loans. The Credit Unions of Group III have a membership of 11,634 or 8.3 percent of the members, total assets of \$110.1 million or 18.3 percent of the assets, total shares of \$94.7 million or 20.4 percent of the loans. Group IV has a total membership of 122,687 persons or 87.5 percent of the members, total assets of \$467.8 million or 77.6 percent of the assets, total shares or \$395.3 million or 77.2 percent of the shares and total loans of \$349.1 million or 75.2 percent of the loans (see Table 5.1).

TABLE A. INSTITUTIONAL COMPOSITION OF FINANCIAL SAVINGS AT YEAR END 1973-1989 (TT\$ MILLION)

Type of Institutions	1973	1974	1975	1976	1977	1978	1979	1980
Central Bank	147.2 (10.7)	631.8 (29.1)	1,403.6 (41.2)	1,918.4 (42.2)	3,183.1 (48.4)	3,795.4 (47.1)	4,133.1 (43.9)	5,550.1 (46.0)
Commercial Banks	758.9 (55.4)	1,007.5 (46.4)	1,302.1 (38.3)	1,728.1 (38.0)	2,190.5 (33.3)	2,686.3 (33.4)	3,557.4 (37.8)	4,065.2 (33.7)
Finance Companies	13.3 (1.0)	21.1 (1.0)	53.6 (1.6)	83.2 (1.8)	118.3 (1.8)	191.5 (2.4)	226.2 (2.4)	319.8 (2.6)
Mortgage Finance and Trust Companies	50.5 (3.7)	74.5 (3.4)	113.9 (3.3)	148.1 (3.3)	186.7 (3.0)	315.6 (3.9)	363.3 (3.9)	537.5 (4.5)
Thrift Institutions	21.6 (1.6)	22.9 (1.1)	28.2 (0.8)	19.9 (0.4)	25.0 (0.4)	30.1 (0.4)	29.6 (0.3)	20.0 (0.2)
Development Banks	13.8 (1.0)	25.4 (1.2)	35.4 (1.0)	50.0 (1.1)	76.0 (1.2)	124.4 (1.5)	156.9 (1.7)	220.4 (1.8)
Credit Unions	32.1 (2.3)	40.9 (1.9)	56.3 (1.7)	73.4 (1.6)	98.4 (1.5)	128.8 (1.6)	131.9 (1.4)	192.1 (1.6)
Life and Non-Life Ins. Co.	231.0 (16.9)	238.0 (11.0)	263.0 (7.7)	303.2 (6.7)	409.5 (6.2)	454.9 (5.6)	545.8 (5.8)	632.8 (5.2)
Pension Funds	102.5 (7.5)	106.9 (4.9)	147.9 (4.3)	224.0 (4.9)	275.7 (4.2)	325.3 (4.0)	278.3 (3.0)	538.9 (4.5)
Unit Trust Corporation	-	-	-	-	-	-	-	-
Home Mortgage Bank	-	-	-	-	-	-	-	-
TOTAL	1,370.9 (100.0)	2,169.9 (100.0)	3,404.0 (100.0)	4,548.3 (100.0)	6,573.2 (100.0)	8,052.3 (100.0)	9,422.5 (100.0)	12,076.8 (100.0)

N.B.: Figures in brackets are percentages of totals.

TABLE A. INSTITUTIONAL COMPOSITION OF FINANCIAL SAVINGS AT YEAR END 1973-1989 (TT\$ MILLION) - Cont'd

Type of Institutions	1981	1982	1983	1984	1985	1986	1987	1988	1989
Central Bank	6,326.4 (44.3)	4,555.4 (30.1)	2,891.6 (18.7)	1,844.4 (12.3)	1,523.6 (9.8)	1,700.5 (10.5)	961.6 (5.9)	5,069.7 (24.1)	5,872.5 (34.5)
Commercial Banks	4,996.9 (35.0)	6,613.5 (43.6)	7,248.1 (46.9)	7,639.7 (50.9)	7,701.1 (49.6)	7,417.1 (45.8)	7,639.0 (46.9)	7,805.9 (37.2)	8,325.5 (48.9)
Finance Companies	511.0 (3.6)	801.3 (5.3)	959.9 ^P (6.2)	867.3 ^P (5.8)	794.3 ^P (5.1)	329.5 ^P (2.0)	418.0 (2.6)	477.0 (2.3)	597.5 (3.5)
Mortgage Finance and Trust Companies	689.8 (4.8)	881.3 (5.8)	1,155.1 (7.5)	1,338.6 (8.9)	1,584.0 (10.2)	1,610.2 (9.9)	1,631.3 (10.0)	1,690.8 (8.0)	1,477.6 (8.7)
Thrift Institutions	20.3 (0.1)	20.6 (0.1)	21.4 ^P (0.1)	21.5 (0.1)	21.8 ^P (0.1)	22.4 ^P (0.1)	21.9 ^P (0.1)	21.4 (0.1)	-
Development Banks	308.1 (2.2)	363.3 (2.4)	582.4 ^P (3.8)	604.3 ^P (4.0)	591.3 ^P (3.8)	626.3 ^P (3.9)	615.1 (3.8)	484.6 (2.3)	482.4 (2.8)
Credit Unions	255.5 (1.8)	361.1 (2.4)	477.3 (3.1)	501.9 (3.3)	724.2 (4.7)	967.6 (6.0)	1,013.5 (6.2)	827.4 (3.9)	-
Life and Non-Life Ins. Companies	657.7 (4.6)	813.6 (5.4)	1,152.4 (7.5)	1,318.4 (8.8)	1,686.8 (10.9)	1,958.9 (12.1)	2,100.0 ^E (12.9)	2,329.2 (11.1)	-
Pension Funds	517.7 (3.6)	706.7 (4.7)	935.0 (6.0)	836.9 (5.6)	863.3 (5.6)	1,509.2 (9.3)	1,700.0 ^E (10.4)	2,081.7 (9.9)	-
Unit Trust Corporation	-	41.0 (0.30)	30.3 (0.2)	28.4 (0.2)	30.8 (0.2)	41.9 (0.3)	61.5 (0.4)	68.4 (0.3)	82.5 (0.5)
Home Mortgage Bank	-	-	-	-	-	-	122.7 (8.0)	148.1 (0.7)	188.6 (1.1)
TOTAL	14,283.4 (100.0)	15,157.8 (100.0)	15,453.5 (100.0)	15,001.4 (100.0)	15,521.2 (100.0)	16,183.3 (100.0)	16,284.6 (100.0)	26,004.2 (100.0)	17,026.3 (100.0)

Source: Central Bank of Trinidad and Tobago.

N.B.: Figures in brackets are percentages of totals.

TABLE B. PERCENTAGE CHANGES IN CREDIT UNION SAVINGS AND ASSETS AND THEIR COMPARISON WITH MOVEMENTS IN GROSS DOMESTIC AND TOTAL FINANCIAL SAVINGS, (1972-1988)

Year	% Δ Credit Union Savings	% Δ Credit Union Assets	Savings to Assets Ratio %	Loans to Savings Ratio %	Rate of Δ Gross Domestic Savings %	Rate of Δ Total Financial Savings %
1972	-	-	86.6	87.0	-	-
1973	15.6	43.3	70.2	90.9	58.7	18.3
1974	27.5	0.9	88.7	90.0	138.7	32.4
1975	37.5	24.7	97.9	83.0	23.1	25.6
1976	30.4	42.8	89.4	63.0	2.5	28.8
1977	34.0	35.1	88.8	97.0	2.1	26.8
1978	31.0	26.3	91.9	87.0	-0.1	23.1
1979	2.3	3.9	90.7	89.0	30.0	41.2
1980	45.6	42.7	92.5	98.0	63.7	4.7
1981	33.0	27.8	96.3	79.0	-0.1	24.0
1982	41.3	48.2	91.2	72.0	-34.8	33.5
1983	32.2	46.1	83.0	99.0	-23.7	16.0
1983	5.1	6.9	93.8	93.0	24.4	9.7
1985	44.3	41.7	87.2	88.0	22.1	3.8
1986	33.6	40.2	91.0	93.0	-28.3	2.7
1987	4.7	3.9	95.3	91.0	0.4	4.2
1988	-18.4 ¹	14.0 ²	87.1	89.0	4.3	1.4
Average	24.9	26.3	89.5	87.0	17.7	18.5

Notes: ¹Only sixty-nine CUs reported in 1988, compared to 137 in 1986; therefore the negative increase is not truly reflective of CU total savings.

²See Note 1, the same is true with respect to assets.

Source: Khan (1992).

TABLE C. SAVINGS, GDP AND RATIOS, 1972-1989

Year	Gross Domestic Savings (GDS) TT\$mnn	Total Market Savings (TMS) TT\$mnn	National Savings (NS) TT\$mnn	Gross Domestic Product (GDP) TT\$mnn Current Market Prices	GDS/GDP (1) as a % of (4)	TMS/GDP (2) as a % of (4)	NS/GDP (3) as a % of (4)
	(1)	(2)	(3)	(4)			
1972	513	547.5	128.4	2,081.5	24.6	26.3	6.2
1973	814	647.9	397.2	2,564.2	31.7	25.3	15.5
1974	1,943	856.6	1,031.6	4,192.7	46.3	20.5	24.6
1975	2,392	1,077.3	840.8	5,300.1	45.1	20.3	34.7
1976	2,452	1,387.2	1,615.9	6,090.5	40.3	22.8	26.5
1977	2,961	1,758.9	1,767.7	7,532.8	39.3	23.3	23.5
1978	2,959	2,165.7	2,056.6	8,549.6	34.6	25.3	24.1
1979	3,847	3,057.2	2,428.3	11,045.8	34.8	27.7	22.0
1980	6,297	3,193.9	4,535.6	14,966.1	42.1	21.3	30.3
1981	6,131	3,960.9	4,501.7	16,438.0	37.3	24.1	27.4
1982	3,999	5,287.6	2,410.0	19,175.5	20.9	26.6	12.6
1983	3,051	6,131.5	1,146.4	18,719.4	16.3	32.8	6.1
1984	3,794	6,728.8	1,467.3	18,828.6	20.2	35.7	7.8
1985	4,631	6,986.5	1,130.1	17,813.3 ^r	26.0	39.2	6.3
1986	3,322	7,172.3	-73.3	17,371.9 ^r	19.1	41.3	-0.4
1987	3,335	7,475.4	277.5	17,375.7 ^r	19.2	43.0	1.6
1988	3,477	7,581.4	-	17,226.5 ^p	20.2	44.0	
1989	-	-	-	17,212.7 ^a			

r = Revised;

p = Provisional;

e = Estimated

Source: Khan (1992).

Gross Domestic Savings: Gross Domestic Product - Total Consumption Expenditure

Total Market Savings: Quasi Money and Total Financial CU Savings.

TABLE D. PERCENTAGE CHANGES IN SAVINGS, LOANS AND PER CAPITA GNP (1973-89)

Year	Commercial Banks % Δ in Financial Savings	Credit Unions Financial Savings % Δ	Total Financial Savings % Δ	Total Loans Outstanding of Credit Unions % Δ	Per Capita GNP US\$ (Current Prices)	% Δ Per Capita GNP
1972	-	-	-	-	980	-
1973	-	15.6	-	19.5	1,110	13.3
1974	32.8	37.5	56.9	27.6	1,280	15.3
1975	29.2	37.5	56.9	27.6	2,000	56.3
1976	32.7	30.4	33.6	-1.1	2,470	23.5
1977	26.8	34.0	44.5	105.9	2,760	11.7
1978	22.6	31.0	22.5	17.6	3,340	21.0
1979	32.4	2.3	17.0	4.2	3,680	10.2
1980	14.3	45.6	28.2	61.1	4,690	27.4
1981	22.9	33.0	18.3	7.1	5,990	27.7
1982	32.4	41.3	6.1	28.5	6,470	16.7
1983	9.6	32.2	2.0	81.7	6,070	-7.4
1984	5.4	5.1	-2.9	-1.3	6,080	-6.2
1985	0.8	44.3	3.5	36.1	5,020	0.2
1986	-3.7	33.6	4.3	41.8	3,970	-17.4
1987	3.0	4.7	0.6	2.2	3,350	-20.9
1988	2.2	-18.4	29.0	-19.8		-15.6
1989	6.7		-18.9	-		
Average	16.9	24.9	18.9	27.4		9.7

Source: Khan (1992).

TABLE E. ANALYSIS OF MEMBERSHIP, ASSETS, SHARES AND LOANS BY SIZE, 1987* (OF SAMPLE GROUP)

Group	Total Members	% of Sample	Total Assets	% of Sample	Total Shares	% of Sample	Total Loans	% of Sample
Group I	1,315	0.9	2,066,285	0.3	1,823,562	0.4	1,511,249	0.3
Group II	4,629	3.3	22,922,391	3.8	20,564,552	4.0	19,065,075	4.1
Group III	11,634	8.3	110,142,346	18.3	94,240,770	18.4	94,690,952	20.4
Group IV	122,687	87.5	467,809,146	77.6	395,373,391	77.2	349,118,643	75.2
% Total		100.0		100.0		100.0		100.0
TOTAL	140,265		602,940,168		521,011,236		464,385,919	

*All figures are actual totals.

Source: Computed from Statistics of Sample Group.

National Insurance: A Means of Savings Mobilization for Social and Economic Development in Trinidad and Tobago*

Sandra Beckles-Fontenelle

Introduction

In the Caribbean, as in other parts of the world, the search for a reliable form of social security has been a long and continuing one. Early recognition of the inadequacy of relief for the poor and an absence of philanthropy led to the reliance upon large scale cooperative efforts exemplified by the Friendly Society Movement (Odle 1972). The failure of this institution to measure up to its potential led to a search in other directions during the late 1940's and 1950's. As a result, the National Insurance Scheme was adopted by a large number of developing countries and it is now generally part of a wider package of social security programmes. This scheme not only serves a desirable social objective, but in many countries it also provides an important source of funds to finance economic development.

*I am greatly indebted to Dr. Ramesh Ramsaran for reading and commenting on earlier drafts of this paper.

A National Insurance Scheme is a compulsory insurance programme which is based on the modern principle of social security. It is designed to provide benefits in return for contributions. Its principal objective is to provide coverage for various contingencies,¹ inclusive of pension, to which workers are exposed. As such, the main aim is to give an umbrella of protection to the unprotected members of the employed section of the labour force. In addition, it may be used to supplement existing benefit rights under other means of protection. In Trinidad and Tobago, the National Insurance Board (NIB) is entrusted with the responsibility of administering this social security service to the nation.

The National Insurance Board (NIB) in Trinidad and Tobago began operations in 1972, but the history of social security goes back even further. Because of its method of funding, the NIB plays an important role in the mobilization of savings and acts as a provider of term capital. Its role as a vehicle of savings mobilization is even more important today in an environment of contracting domestic savings and scarce external financial resources. Thus, this institution has an obligation to ensure that these savings are prudently managed so as to achieve the most efficient allocation of scarce resources.

This paper has two major objectives. Firstly, it assesses the extent to which savings have been mobilized by the NIB in Trinidad and Tobago. Secondly, it surveys the investment policies of the NIB and evaluates the impact they have had on social and economic development. Although the National Insurance Scheme of Trinidad and Tobago is used as the main focus, the issues considered have wider implications.

Social Security: A Theoretical Discussion

As a forerunner to the discussion on the NIB and its role as a savings mobilizer, one has to place the National Insurance Scheme in perspective by looking at the wider concept of social security.

Social Security is defined as

... the protection which society provides for its members, through a series of public measures, against the economic and social distress that otherwise would be caused by the stoppage or substantial reduction of earnings resulting from sickness, maternity, employment, injury, unemployment, invalidity, old age and death. (ILO 1992).

Therefore, social security may embrace all programmes for long term risk of old age, death, invalidity or permanent disability, as well as short term risk of sickness, maternity, temporary disability and unemployment.

Social security is composed of different elements. Among them are social insurance and social assistance, and these are sometimes linked to additional provisions made by employers such as Workers' Compensation Schemes in respect of accidents or diseases of occupational origin, and other complementary programmes which have developed around social security.

Social insurance programmes provide for the collection of contributions and the payment of benefits under prescribed conditions, based on the pooling of risks and resources and the equalization of losses among all contributors. The strict insurance approach would require that every member contribute only for his own risk; for example, those with a higher incidence of illness would pay higher premiums. However, social insurance contributions are usually not varied with risk, so there is a redistribution of income from contributors with a low incidence of risk and those of a high income bracket to those with a high incidence of risk and from a low income bracket.

Benefits are financed by contributions and these are generally related to earnings, but there is no strict actuarial relationship between contributions and benefits. Social Insurance is generally used as a means of savings mobilization. These resources may then be used to promote economic and social development.

Social assistance relates to a scheme under which benefits are provided to individuals who have not made prior contributions, and who in terms of defined minimum standards are “in need” and lack private means. The benefits are ordinarily calculated to help individuals to maintain a minimum standard of living.

There are three possible approaches to financing social security (Odle 1969). These are:

- The Social Method. This involves the payment of pension or other type of benefits out of government revenue.
- The Provident Fund Method. This is a payroll tax on employers and employees and the paying of the various types of benefits out of an accumulated fund. Generally, contributors receive benefits at retirement, invalidity and death, consisting of the accumulated savings plus interest, payable in a lump sum.
- The Social Insurance Method. This involves the receipt of payroll contributions from employers and employees but may make benefit payments in a pay-as-you-go manner. Under this system, the benefits for each year are met out of current funds, except that provisions may be made for a contingency reserve.

Under social insurance, part or all of the revenues required for financing benefits are secured through contributions paid into an insurance fund by the persons protected and by their employers. This system avoids the repugnance associated with the means test usually necessary under a social assistance scheme. Contributors are entitled by law to stated benefits on the basis of their contributions. The scale and duration of benefits (like the contri-

butions) will reflect the wage level of the insured person and often the length of the period during which contributions have been made.

History of Social Security in Trinidad and Tobago and the Establishment of the NIB

The NIB started its operations in 1972. However, social support programmes in Trinidad and Tobago can be traced as far back as 1928 when the Workmen's Compensation Ordinance was introduced. Under the Workmen's Compensation Ordinance, Chapter 22 No. 4,

... compensation is paid by an employer to his worker in the event of injury arising out of and in the course of employment, which results in incapacity for three or more days or death.

In practice, however, many employers insure against this obligation with insurance companies.

The first state provision which offered a very limited measure of social security coverage for certain categories of citizens was introduced in 1931. Chapter 13, No. 1 of the statutes of Trinidad and Tobago gave effect to the introduction of a system of "Poor Relief" which provided relief for persons in need. Qualification for assistance under the Poor Relief Ordinance was calculated on the establishment of need, which was very vaguely defined, and medical certification attesting to the incapacity of the applicant to be financially self-sufficient. Assistance was available in cash and kind. Over the years, the stigma of Poor Relief was removed by redesignating the Ordinance "the Public Assistance Ordinance", but essentially the charity aspect of the system persisted.

In 1939, the government introduced the Old Age Pension Ordinance to provide for the payment of non-contributory pension to citizens of Trinidad and Tobago under certain specified

conditions. There have been several amendments to the Old Age Ordinance to date, which have had the effect of increasing the monthly pensions, increasing the means test and establishing a minimum monthly pension. This system of social security was supplemented by other private measures of social protection. Many well-established and large employers implemented schemes to provide cash assistance for their regular employees on retirement. These retirement schemes varied from non-contributory lump-sum gratuities to contributory provident funds, and contributory and non-contributory monthly pensions on retirement, or a combination of pensions and provident funds. In addition, Friendly Societies provided, by voluntary subscriptions, relief for, or maintenance of members and their families during sickness or other infirmity, widowhood and death, and for the maintenance of orphans. Basically the social security system which operated at the time was that of social assistance.

The effects of social change dictated the introduction of a modern social security system to satisfy contemporary demand. In 1971, the government of Trinidad and Tobago introduced the National Insurance Scheme. The decision to introduce this method of social security was not a hasty one. Rather, it was the outcome of a series of International Labour Organization investigations dating back to the 1950's.

Brocklehurst et al (1959) presented a report on the existing social security arrangement. The ILO consultants found gaps in the protection available to the people of Trinidad and Tobago in meeting the major contingencies of industrial injury, illness, old age, invalidity, maternity, unemployment and death, and pointed to the need to establish a systematic scheme of social security measures. The consultants proposed a scheme requiring compulsory social insurance. They indicated that if existing gaps in social security coverage were to be eliminated, the government must either expand greatly its existing non-contributory social security arrangement,² or adopt a social insurance approach which was the principal method used in most other countries. They recom-

mended the second alternative since it appeared to be a far more appropriate course with respect to most, if not all, of the contingencies against which protection was needed. They pointed out that a social assistance scheme financed entirely from public revenue and covering a wide range of persons may well impose heavy strain on government finances, and in times of fiscal stringency, payment rates might have to be reduced.

The contributory social insurance approach was, in contrast, less vulnerable to a reduction in benefits due to considerations associated with sudden increases in certain other government expenditures. All these investigations culminated in a White Paper³ on Social Security in Trinidad and Tobago and later in Act 35 of 1971, the National Insurance Act.

The ILO recommended a system of compulsory national insurance to ultimately provide benefits in respect of employment injury, sickness, maternity, old age, death, survivorship, invalidity and unemployment. An order of implementation was also suggested. The Report also suggested that benefits related to employment injury, sickness, death and maternity be implemented first. Once experience was gained, consideration should then be given to old age, survivors' and invalidity benefits. One noteworthy observation, however, was that the ILO advised against the introduction of unemployment benefits at the outset of the system of national insurance.

Legal Framework

The National Insurance Board is a statutory body incorporated under an Act of Parliament No.35 of 1971. The Act is now embodied in the laws of Trinidad and Tobago, chapter 32:1, Vol.7. The corporate mission of the National Insurance Board is to administer a Social Security service to the nation. The Board is to strive to improve its human and other resources to meet the following objectives:

- (1) To register the insurable population
- (2) To insure prompt payment of contributions and expeditious determination of claims.
- (3) To insure a reasonable return on its investment
- (4) To review and upgrade its services.

Under the Act, employed persons registered or eligible to be registered are to be insured against loss of earnings occasioned by several contingencies⁴ in relation to which benefits are provided.

Contributions made by all registered persons are based on the earnings of the employed persons. This is to say that:

... the contribution payable in respect of an employed person shall be based on the assumed average weekly earnings of the earnings class into which such person falls. (Section 41, Act no.35 of 1971).

Contributions to the NIS are compulsory and are based on contributions from both employers and employees. They are payable from age 15 to 60 (or to retirement, if retirement is deferred to age 65). At its inception, contributions were based on the eight earning classes as outlined in Table 1A. Since then, there has been one amendment to the contribution rates as outlined in Table 1B. Contributions are payable by both employer and employee in the ratio two-thirds by employer and one-third by employee. At the inception of the scheme the self-employed were not covered. The Act also makes provision for persons who were once insured, but are now unable to make contributions because of unemployment, to continue to voluntarily make contributions at a prescribed rate and time.

The NIS benefits payable to, or in respect of, persons insured are: sickness, maternity, invalidity, funeral grant, retirement

TABLE 1A. NIS: RATES OF CONTRIBUTION,* 1972

Earning Class	Earning range \$		Assumed Average Weekly Earnings of Class (\$)	Employees Weekly Contribution (\$)	Employers Weekly Contributions (\$)	Total Weekly Contributions (\$)
	Weekly	Monthly				
I	Under 16.00	Under 69.00	12.00	-	0.90	0.90
II	16.00 - 20.99	69.00 - 90.99	18.50	0.50	1.00	1.50
III	21.00 - 27.99	91.00 - 120.99	24.50	0.65	1.30	1.95
IV	28.00 - 36.99	121.00 - 159.99	32.50	0.85	1.70	2.55
V	37.00 - 47.99	160.00 - 207.99	42.50	1.15	2.30	3.45
VI	48.00 - 61.99	208.00 - 268.99	55.00	1.45	2.90	4.35
VII	62.00 - 79.99	269.00 - 346.99	71.00	1.85	3.70	5.55
VIII	80.00 and Over	347.00 and Over	90.00	2.45	4.90	7.35

*Contributions payable by an employer in respect of Employment injury coverage for an employed person, who has not yet attained the age of sixteen years or who has attained the age of sixty-five years, or for an unpaid apprentice shall be fifty cents per week.

Source: National Insurance Act, Chapter 32.01, p. 39.

TABLE 1B. NIS: RATES OF CONTRIBUTION,* 1981

Earning Class	Earning range \$		Assumed Average Weekly Earnings of Class (\$)	Employees Weekly Contribution (\$)	Employers Weekly Contributions (\$)	Total Weekly Contributions (\$)
	Weekly	Monthly				
I	Under 50.00	Under 220.00	40.00	1.10	2.20	3.30
II	50.00 - 64.99	220.00 - 279.99	57.00	1.60	3.20	4.80
III	65.00 - 84.99	280.00 - 369.99	75.00	2.10	4.20	6.30
IV	85.00 - 109.00	370.00 - 469.99	97.00	2.75	5.50	8.25
V	110.00 - 139.99	470.00 - 609.99	125.00	3.50	7.00	10.50
VI	140.00 - 179.99	610.00 - 779.99	160.00	4.50	9.00	13.50
VII	180.00 - 229.99	780.00 - 999.99	205.00	5.75	11.50	17.25
VIII	230.00 and Over	1000 and Over	230.00	6.45	12.90	19.35

*Contributions payable by an employer in respect of employment injury coverage for an employed person, who has not yet attained the age of sixteen years or who has attained the age of sixty-five years, or an unpaid apprentice shall be \$1.00 per week.

Source: National Insurance Act, Chapter 32.01, p. 39.

pension, retirement grant, survivors' benefit and employment injury. The benefits introduced at inception were the sickness, maternity, funeral and retirement grant. The invalidity and survivors' benefits were introduced in 1973, the retirement pension in 1975 and employment injury in 1976.

Concomitant with the benefits to be paid, Section 43 of the Act establishes three funds: the Employment Injury Benefit Fund, the Short Term Benefit Fund and the Long Term Benefit Fund. Income derived from contributions and investments is allocated to these three funds and they are managed for the purpose of providing resources required for the payment of benefits. Since contributions paid by employers, employed persons and the holders of certificates of voluntary insurance are credited to these funds, one can say that the NIB has adopted a "funded" approach.

The National Insurance Act has been amended on four separate occasions: Act 27 of 1974, Act 27 of 1977, Act 23 of 1980 and Act 13 of 1984. Act 27 of 1977 introduced three main provisions. The Act provided for an increase in the funeral grant from \$100 to \$300. It placed a liability on the employer to pay the entire contribution to the NIB and deduct from the employee's wage the contribution paid on his/her behalf. Thus the amendment also made the registration of domestic and casual workers voluntary rather than compulsory. Act 27 of 1977 brought employment injury benefit into effect and provided for the establishment of an appeal tribunal. The third revision of the National Insurance Act, Act 23 of 1980, introduced new rates of contributions and benefits. In addition, it provided for the reduction in the retirement age from 65 to 60 and an increase in the maximum period for which the sickness benefit is payable, from 26 to 52 weeks. Finally, Act 13 of 1984 empowered the Board to collect the newly introduced Health Surcharge on behalf of the Central government.

The NIB has a monopoly on social insurance in that it is compulsory for all employed⁵ persons or voluntary⁶ contributors. It is useful to note that the NIB is not governed by the Insurance

Act 1980 nor by the Supervisor of Insurance. It is unique in that it falls under the aegis of two Ministries - the Ministry of Social Development and the Ministry of Finance - as stated in section 23 of the Act. Section 70(1) of Act 35 of 1971 requires that an actuarial review of the system be undertaken at five-yearly or such shorter intervals as may be determined.

The NIB and Savings Mobilization

It has been well established that a high level of savings is essential for economic development. The higher a country's level of domestic savings, the less dependent it is likely to be on external sources of finance for economic development. The opening or widening of channels through which savings can flow (such as social security schemes) is one means by which governments in less developed countries can encourage savings for use in financing economic development.

Domestic savings in developing countries, whether it be generated by social security schemes or any other institution, have become even more critical in recent years for many countries now facing reduced flows from abroad. Without a strong savings effort the desired level of investment may not be achieved. Social security institutions represent a way to mobilise domestic savings. How effectively and efficiently they do so is another question. How well they use the resources at their disposal is also a critical issue.

The National Insurance Scheme is a means of compulsory savings and it offers the contributors a hedge against income loss in that it attempts to even out the stream of income and consumption during an individual's life time. The theory of national insurance savings raises a number of questions, and this is an appropriate point to address some of them.

1. How liquid are national insurance claims?

2. What determines the volume of national insurance savings?
3. What are the effects of national insurance savings on the overall savings rate in the economy?

In this section, an attempt will be made to answer the questions posed above. National Insurance claims are very illiquid in the sense that an employee cannot secure his share of the accumulated assets in the fund unless he qualifies for benefits under certain stated criteria. Savings in this scheme are therefore a form of contractual savings and the liabilities of such a scheme cannot be considered as money (final means of payment) (Odle 1972).

Whereas total savings can be said to be mainly determined by the level and distribution of national income, the same cannot be said for any particular type of savings. National insurance savings are more directly a function of employment than income (Odle 1972), although employee and employer contributions are usually not fixed but are related to income levels.

Savings via national insurance may be said to be automatic and passive rather than active, in the sense that national insurance does not compete directly with other financial intermediaries for deposits. In other words, what happens in other financial institutions will hardly alter the rate of savings via national insurance. However, the reverse does not hold. National insurance savings may affect the rate of other types of savings, so as to produce either a positive or negative effect on the overall level of savings (net savings) in the community.

There are several arguments about the effects an introduction of a national insurance scheme will have on the overall level of savings in a community. There are basically two reasons why domestic savings may be augmented.⁷ The first is that it is likely that poor employees would not have saved without the compulsory scheme. Secondly, it is possible that some workers who saved before will be inspired to increase their savings effort in

other financial media because of the relative illiquidity of national insurance savings. Therefore there is a need to save in other media irrespective of the size of national insurance savings.

On the other hand, total savings may not be enhanced when an insurance scheme is introduced because, for many poor workers, compulsory savings would necessitate a fall in the consumption of essential goods unless savings via other financial media were reduced. Also, business savings may be reduced (unless prices are increased) since employers' contributions could constitute an increase in labour cost.

Kopits (1980) points out that social security schemes may influence the household savings rate via three effects viz: the income effect, the wealth effect and the retirement effect. Changes in benefits and contributions can have an impact on the savings ratio through the income effect by altering the average level of disposable income. The overall impact is contingent on the extent to which, over the long run, benefits raise disposable income while contributions reduce it.

The wealth effect indicates the direct savings response of individuals to expected future benefits. It is negative if individuals feel that they need to accumulate less wealth for retirement and current contingencies and thus reduce their desired ratio of savings to income as a result of protection offered by social security. On the other hand, the effect is positive if the introduction of social security leads individuals to prepare for retirement and current risks by raising their desired savings ratio. The net wealth effect may be positive or negative depending on the relative strength of the individual's perception of the substitutability between social security benefits and savings.

An indirect repercussion of social security benefits on the savings ratio is through the retirement effect. The retirement effect can be positive because the prospects of receiving old age pension may encourage individuals to retire sooner and thus increase their savings to provide for a longer retirement.

A study done by Reviglio (1967) showed that the overall effect on savings (at least with respect to households) seems to be favourable, nevertheless. He noted that there was no evidence that this type of savings will cause households to reduce their savings in other forms and may even stimulate the motivation to save. Only for certain groups, especially those with high employee contribution rates, is there evidence of some substitution for savings in other forms, but this substitution tends to be offset by those whose reaction is to increase savings.

The Level of National Insurance Savings

The need for developing countries to maintain a sufficiently high level of savings to finance investment and accelerate economic growth has always been advocated by development economists.

In Trinidad and Tobago, given the general decline in domestic savings and in new foreign capital inflows in recent years, the need to raise the level of domestic savings to finance some targeted level of capital formation has become increasingly important. This section will attempt to explore the extent to which savings has been mobilized by the NIB of Trinidad and Tobago.

One measure of the degree of savings mobilization by the NIB or the importance of national insurance savings in the economy is the relationship between these savings and the gross domestic product (GDP) (Reviglio 1967).

In determining the gross savings of the NIB of Trinidad and Tobago, the three funds, the Employment Injury Benefit Fund, the Short Term Benefit Fund and the Long Term Benefit Fund are considered. These are accumulative and are calculated by adding the gross fund at the end of the previous financial year to the difference between receipts (contributions and net investment) and expenditure (benefits payments) of a particular year. Table 2 presents the gross savings of the NIB from 1972-1992. Over the

TABLE 2
NATIONAL INSURANCE BOARD: GROSS SAVINGS¹
(TT\$M)

Year	Long Term Benefit Fund	Short Term Benefit Fund	Employ- ment Injury Fund	Total Fund	% Growth
1972/73	31.1	9.1	10.9	51.1	n.a.
1973/74	60.4	14.8	21.6	96.8	89.4
1974/75	92.9	19.8	33.9	146.6	51.4
1975/76	134.7	26.9	49.4	211.0	43.9
1976/77	182.6	34.4	67.2	284.2	34.7
1977/78	235.1	41.2	86.1	362.4	27.5
1978/99	295.0	49.3	108.5	452.8	24.9
1979/80	n.a.	n.a.	n.a.	n.a.	n.a.
1980/81	n.a.	n.a.	n.a.	n.a.	n.a.
1981/82	n.a.	n.a.	n.a.	n.a.	n.a.
1982/83	n.a.	n.a.	n.a.	n.a.	n.a.
1983/84	1083.9	111.9	219.6	1415.4	n.a.
1984/85	1166.2	138.9	264.4	1569.5	10.9
1985/86	1266.2	171.7	318.2	1756.1	11.9
1986/87	1371.4	208.3	377.3	1957.0	11.4
1987/88	1444.7	245.0	433.8	2123.5	8.5
1988/89	1519.6	284.1	493.5	2297.2	8.2
1989/90	1579.0	324.1	555.2	2458.3	7.0
1990/91	1654.7	370.6	628.4	2653.7	7.9
1991/92	1688.6	408.5	689.6	2786.7	5.0

¹Gross savings take into consideration the three funds. It is accumulative and is calculated by adding the gross fund at the end of the previous year to the difference between receipts and expenditure.

n.a. - Not Available.

Source: National Insurance Board, *Annual Reports*.

period, the value of gross savings in nominal terms has grown each year although the rate of growth of the fund has declined each year with the exception of one year, 1985-86.

Table 3 shows the relationship between national insurance gross savings and GDP for the period 1972-1992. Generally the gross savings ratio has increased in every year with the exception of the last three years. There is no universal standard by which to compare these ratios. However, in a similar study done by Reviglio (1967) where the relationship between gross savings⁸ and the gross national product for several developing countries is considered, the result shows gross savings ratios ranging from -0.15 to 4.19 percent. While the results might not be directly comparable, the performance of the NIB appears to be superior to those of the countries represented in that study. The gross savings ratio for Trinidad and Tobago increased from almost 2% in 1972/73 to 8.69% in 1984/85. Since then it has averaged over 10%.

With respect to the question whether national insurance savings represent new savings, we need to address the related question of whether aggregate savings would be the same or less in the absence of the national insurance system. An empirical investigation of the behaviour of households is required to answer this question definitively and is beyond the scope of this paper.

The level of savings mobilized by the NIB is a function of receipts, benefits paid and the administrative expenses incurred. The level of receipts is in turn a function of the number of insured persons and the contribution rate. The larger the number of insured persons, the greater would be the value of contributions collected by the Board given that the contribution rates are constant. Table 4 presents the number of active insured persons over the years 1973-1992. When this is compared to the number of paid employees, it is apparent that a number of persons remain outside the national insurance network or employers are not paying contributions on their behalf.

TABLE 3
NATIONAL INSURANCE BOARD: GROSS SAVINGS RATIO
(GROSS SAVINGS AS A PERCENT OF GDP)

Year	Total Fund (\$M)	GDP at Current Market Prices (TT\$M)	Gross Savings Ratio (%)
1972/73	51.1	2564.2	1.99
1973/74	96.8	4192.7	2.31
1974/75	146.6	5300.1	2.77
1975/76	211.0	6090.5	3.46
1976/77	284.2	7532.8	3.77
1977/78	362.4	8549.6	4.24
1978/79	452.8	11045.8	4.10
1979/80	n.a.	14966.1	n.a.
1980/81	n.a.	16781.4	n.a.
1981/82	n.a.	19536.7	n.a.
1982/83	n.a.	18633.3	n.a.
1983/84	1415.5	18616.9	7.60
1984/85	1569.5	18071.2	8.69
1985/86	1756.1	17259.7	10.17
1986/87	1957.0	17271.9	11.33
1987/88	2123.5	17284.7	12.29
1988/89	2297.2	18372.9	12.50
1989/90	2458.3	21539.3	11.41
1990/91	2653.7	22448.0	11.82
1991/92	2786.7		

n.a. - Not Available

Source: National Insurance Board, *Annual Reports*;
 Central Statistical Office, *The National Income of Trinidad
 and Tobago*: 1966-1985, 1981-1991.

The value and type of benefits paid out by the NIB can also affect its ability to mobilize savings. Tables 5 and 6 summarize the value and terms of benefits paid between 1972/73 to 1991/92. The value of benefits paid out by the National Insurance Board over the period 1972-1992 has increased each year. Over the same period, short term benefits (sickness, maternity and funeral grant) have declined relative to long term benefits. At the end of 1986, long term benefits accounted for over 80% of the total benefits paid. This is a reflection of an increase in the number of pensioners as the fund matured, rather than an increase in the size of the benefits⁹ payable.

The level of savings is also a function of administrative expenses incurred. The cost of administration of the system was of concern to the legislators and Section 22(1) of the Act addressed this. Here it is stated that the administrative expenses of the Board should not exceed 9.5% of contribution revenue. Almost from inception, it was realized that this limit could be easily exceeded. This issue was addressed in the second actuarial review of 1979, in which the actuaries suggested that to allow the Board to administer the NIS effectively, the allocation for expenses should be changed to 6% of contribution and investment income. This was never adopted.

Table 7 provides details on allocated contribution income and administrative expenses. This ratio grew every year with the exception of 1980/81 and 1991/92. By the 1990's the administrative expenses ratio had more than trebled the legal limit set out in the Act. This may suggest one of two things: either the Board is not operating in an efficient manner or the 9.5% ratio stipulated in the legislation is unrealistically low.

Since 1975/76, administrative expenses as a proportion of allocated contribution income have been greater than the stipulated ratio (Table 7). With the system growing, this result is to be expected. However, the double digit inflation rates of the late seventies and relatively generous wage settlements also served to push up administrative expenses. Salaries and other related items

TABLE 4
A COMPARISON BETWEEN ACTIVE INSURED PERSONS AND
CSO'S REGISTERED PAID EMPLOYEES

Year	Active Insured Persons ¹	CSO's Registered Employees
1973	314,918	245,950
1974	344,360	248,950
1975	387,462	253,650
1976	416,761	n. a.
1977	451,130	293,400
1978	496,883	311,750
1979	556,938	319,850
1980	606,104	315,500
1981	664,343	313,500
1982	719,993	324,950
1983	798,957	315,300
1984	858,844	304,400
1985	450,000	290,000
1986	350,000	283,200
1987	364,886	273,700
1988	377,474	268,800
1989	310,815	275,700
1990	257,120	277,900
1991	266,950	304,400
1992	235,878	303,600

¹The figures for the years 1973 -1988 were not adjusted for deaths, retirement and duplicate registration.

Source: National Insurance Board, *Annual Reports*;
 Central Statistical Office, *Continuous Sample Survey of
 Population: Labour Force Statistics* (Various Issues).

**TABLE 5. NATIONAL INSURANCE BOARD: VALUE OF BENEFITS PAID BY TYPE
(TT\$000)**

Year	SHORT TERM			LONG TERM				Employ- ment Injury	Total
	Sickness	Maternity	Funeral	Retire- ment Grant	Retire- ment Pension	Invalidity	Survivors Benefit		
1972/73	149	157	68	264	0	0	0	0	638
1973/74	1528	855	86	1303	0	88	478	0	4338
1974/75	2438	1130	607	1973	33	392	1093	0	7666
1975/76	1886	1271	291	1158	715	699	1480	0	7500
1976/77	2406	1418	288	508	2091	899	1936	9	9555
1977/78	3122	1843	353	468	4885	1192	2670	1178	15711
1978/79	3038	1992	340	304	7133	1456	3089	1504	18856
1979/80	3327	2260	364	265	9734	1809	3492	2158	23409
1980/81	4444	3993	535	278	19672	3977	5856	3796	42551
1981/82	8016	5289	685	316	33323	4543	7227	6047	65446
1982/83	8094	7420	797	416	44057	5694	9214	6901	82593
1983/84	7250	8050	830	890	54600	6928	10350	7330	96228
1984/85	8296	7055	1087	4835	55265	9732	10467	7988	104716
1985/86	4711	9846	761	6943	65770	7973	15185	7907	119096
1986/87	5694	7669	978	9667	69190	10247	14326	7497	125268
1987/88	4904	6291	1036	9090	83426	10752	16183	7216	138898
1988/89	4630	5686	1019	10782	85064	11436	17324	7520	113461
1989/90	5064	5296	1100	13300	94534	12661	19037	7703	158695
1990/91	4728	5758	2057	11783	101738	13103	20685	7455	167307
1991/92	4818	7065	2399	14089	106941	14502	22266	8944	18102

Source: National Insurance Board, Annual Reports.

TABLE 6
NATIONAL INSURANCE BOARD:
PERCENTAGE DISTRIBUTION OF BENEFITS BY TYPE

Year	Short Term		Long Term		Employment Injury	
	Value '000	%	Value '000	%	Value '000	%
1972/73	374	58.6	264	41.4	0	0
1973/74	2469	59.9	1869	43.1	0	0
1974/75	4175	54.5	3491	45.5	0	0
1975/76	3448	46.0	4052	54.0	0	0
1976/77	4112	43.0	5434	56.9	9	0.1
1977/78	5318	33.8	9215	58.7	1178	7.5
1878/79	5370	28.5	11982	63.5	1504	8.0
1979/80	5951	25.4	15300	65.4	2158	9.2
1980/81	8972	21.1	29783	70.0	3796	8.9
1981/82	13990	21.4	45409	69.4	6047	9.2
1982/83	16311	19.7	59381	71.9	6901	8.4
1983/84	16130	16.8	72768	75.6	7330	7.6
1984/85	16438	15.7	80290	76.7	7988	7.6
1985/86	15318	12.9	95871	80.5	7907	6.6
1986/87	14341	11.4	103430	82.6	7497	6.0
1987/88	12231	8.8	119451	86.0	7216	5.2
1988/89	11335	7.9	124606	86.9	7520	5.2
1989/90	11460	7.2	139532	87.9	7703	4.9
1990/91	12543	7.4	147309	88.1	7455	4.5
1991/92	14282	7.9	157798	87.2	8944	4.9

Source: Calculated from Table 5.

TABLE 7
NATIONAL INSURANCE BOARD: ADMINISTRATIVE EXPENSES AND
ALLOCATED CONTRIBUTION INCOME
(TT\$ '000)

Year	Contribution Income	Contribution Income Allocated to Administrative Expenses Income	Adminis- trative Expenses ¹	Ratio of Administra- tive Ex- penses/Con- tribution
1971/72	7842	745	541	6.90
1972/73	47336	4497	2588	5.47
1973/74	49263	4680	3683	7.48
1974/75	53610	5093	4840	9.03
1975/76	65831	6254	6552	9.95
1976/77	73989	7029	7690	10.39
1977/78	79400	7543	10140	12.77
1978/79	87895	8550	12360	14.06
1979/80	88305	8389	15177	17.19
1980/81	191947	18235	30731	16.0
1981/82	n.a.	n.a.	34111	n.a.
1982/83	245884	23358	39760	16.2
1983/84	267040	25350	44590	16.7
1984/85	242195	22992	43103	17.80
1985/86	238455	22639	45164	18.94
1986/87	236048	22423	44704	18.94
1987/88	227142	21578	48530	21.37
1988/89	211477	20090	48759	23.06
1980/90	202313	19219	49735	24.58
1990/91	218080	20709	69036	31.66
1991/92	205217	19495	59293	28.89

¹Those expenses which arise from the collection of contributions and disbursement of benefits. It excludes expenses attributable to investment activities.

n.a. - Not Available.

Source: National Insurance Board, *Annual Reports*.

represent by far the most important expense of the NIB. Over the period 1972/92, it accounted for over 50% of total expenses (see Table 8). In their 1989 report, the actuaries predicted that the computerization of the NIB's operations and the implementation of the direct method of payment will enhance the operational efficiency of the NIB's operation and will lead to a relative decrease in administrative cost.

In view of the recent developments, it may be worthwhile for the authorities to take another look at the cost structure of the NIB with the view to increasing efficiency and making the necessary changes to the Act.

TABLE 8
SALARIES AND OTHER RELATED EXPENSES AS A
PERCENTAGE OF TOTAL ADMINISTRATIVE EXPENSES

Year	Salaries as Percent of Total Administrative Expenses
1972/73	59.6
1981/82	63.5
1985/86	66.8
1989/90	65.2
1990/91	48.6
1991/92	63.6

Source: National Insurance Board, *Annual Reports*.

Investment of National Insurance Funds

In a number of countries,¹⁰ national insurance has been successful in increasing savings. But the contribution of these sav-

ings to development depends largely on how they are used. The remainder of this paper discusses broad investment criteria and appraises the investment policies of the NIB since its inception.

Investment Criteria: A Theoretical Discussion

There are no strict investment criteria¹¹ which a national insurance scheme should follow. Broadly speaking, since it is a public institution, the reserves mobilized should be invested according to criteria “established for the optimum economic and social development of a country” (Reviglio 1969). Strictly speaking, the funds mobilized should be channelled into the pool available to the government and tapped for investment in different projects according to national priorities in such a way that they will expand production and taxable capacity.

Admittedly, broader development objectives may conflict at times with strict social security objectives. The parochialism of social security institutions with respect to investments may take either of two opposite forms - excessive emphasis on a high rate of return or preoccupation with high welfare returns to the exclusion of financial considerations. The social security institution should not be free to operate on a commercial basis, seeking the highest attainable monetary yield, or operating according to its own interpretation of welfare. Rather, the choice of investment projects should be made on the basis of their ability to enhance production while taking into consideration socio-economic benefits. Moreover, investment decisions should be made in the light not only of overall development policy but also of economic conditions.

There seems to be no reason why investment in the private sector should be avoided if such investment can make a contribution to socio-economic development. Limiting the use of social security funds to the public sector for financing of the capital or development budget may not necessarily achieve the best allocation of overall national savings. The capital budget may include

items that contribute little to productivity, for example, elaborate government buildings or investment in inefficient industries.

If the government uses the funds directly or indirectly, it should guarantee a reasonable rate of return. Reviglio (1967) notes that if there is a capital market, the interest rate on the government obligations should approximate that of other marketable obligations of similar terms in order to protect the beneficiaries. He further suggests that the government should assume risk of capital loss on any project it deems necessary for social and economic purposes, and for this it should issue bonds with its guarantee and not require the social security institution to invest directly in the project. Also, the use of social security surpluses for economic stabilization should not be ruled out if such use can have a favourable impact on future production and growth.

In the following section, we look at the investment policy of the NIB since its inception, with the aim of drawing conclusions about the efficiency with which the Board invests its funds.

Investment Policy of the NIB

The NIB is authorized under section 23 of Act 35 of 1971 to invest surplus funds in certain specified assets. The investment portfolio can consist of government bonds, equities, debentures and commercial loans, mortgages or cash on deposits. There is a legal limit on the holding of local equities, the upper limit being 25%.

Table 9 details the NIB's investment (at cost) of its surplus over the period 1972/73 - 1991/92. One can distinguish three phases in the investment policy of the Board over the 20-year period. During the first phase 1972/73 - 1976/77 two items dominated the investment portfolio, accounting for over 65% of the total portfolio; these were fixed deposits and government securities. In the first year these two items accounted for over 90% of the total portfolio. The large percentage of fixed deposits was

due partly to the limited range of investment opportunities (especially long-term investment instruments) and the need to allocate a substantial part of the Board's portfolio to short-term liquid assets for the purpose of meeting contingency expenditure. Bacon, Woodrow and De Souza (1979) in their actuarial review stated that the large percentage of these short-term liquid assets was not warranted. They were also concerned that there were too few investments in the portfolio whose real value could not be maintained during periods of inflation. During this first phase, especially in the earlier years, mortgages were relatively insignificant in the NIB's investment portfolio, accounting for less than 25% of total investment.

The period 1977/78 - 1985/86 marked a second phase in the investment policies of the Board. This period saw a declining importance of government securities and, to a lesser extent, fixed deposits. The share of mortgages increased significantly. The boom period led to an increased demand for housing and tremendous pressure was placed on the Board to satisfy this demand. As a result, mortgages in the investment portfolio rose from a low of 4.0% in 1972/73 to a peak of 63.5% in 1985/86. During the same period, there were small increases in equity and debentures due to the equity subscriptions made by the Board to its wholly — owned subsidiary — The National Insurance Property Development Company (Annual Report 78/79).

Equities accounted for 9.6% of the investment portfolio in 1980/81. The sharp decline in the share of equities after this period is, however, linked to the establishment of the Unit Trust Corporation and the policy decision of the government that the NIB would hold certain assets in trust for that institution. During the same period the amount of investment in government securities fell sharply from 13% in 1980/81 to 4% in 1984/85.

The third phase, the post 1985/86 period, was marked by a decline in economic activity and by structural adjustment. Concomitant with this was the collapse of the housing market and the large number of delinquent mortgage holders. Over this third phase,

TABLE 9. NATIONAL INSURANCE BOARD: PERCENTAGE DISTRIBUTION OF INVESTMENTS AT COST

Year	Government Securities	Equities	Mortgages	Debentures and Commercial Loans	Fixed Deposits and Savings	Real Estate	Subsidiary Company
1972/73	62.0	1.4	4.0	0.0	32.6	0.0	0.0
1973/74	44.4	2.9	10.5	9.5	32.7	0.0	0.0
1974/75	40.3	3.5	22.4	6.9	26.9	0.0	0.0
1975/76	38.9	2.6	24.4	5.4	28.7	0.0	0.0
1976/77	37.0	3.4	22.7	4.4	32.4	0.0	0.0
1977/78	21.9	4.6	22.7	5.0	45.7	0.0	0.0
1978/79	18.9	7.0	21.2	5.1	47.8	0.0	0.0
1979/80	16.7	9.1	22.9	7.9	43.5	0.0	0.0
1980/81	13.0	9.6	28.3	11.5	37.5	0.0	0.0
1981/82	9.9	9.0	36.7	13.1	31.3	0.0	0.0
1982/83	7.0	3.7	58.3	16.2	13.6	1.2	0.0
1983/84	4.5	3.8	61.6	11.7	7.8	1.2	9.4
1984/85	4.0	3.4	62.5	10.9	9.6	1.1	8.4
1985/86	5.2	3.0	63.5	13.0	5.9	0.9	8.3
1986/87	5.9	2.7	58.9	10.6	13.5	0.6	7.7
1987/88	7.1	2.0	55.2	9.3	18.2	0.5	7.6
1988/89	7.1	4.9	52.1	7.9	19.4	0.7	7.9
1989/90	9.0	5.0	50.0	8.0	21.0	0.7	6.0
1990/91	21.9	4.7	37.8	6.7	22.8	0.8	5.4
1991/92	26.7	4.4	35.5	5.7	21.8	0.8	5.2

Source: National Insurance Board, *Annual Reports*.

there was a significant decrease in the share of mortgages and an increase in the share of fixed deposits and government securities, especially in the later years of the period under review.

The Board's 1988/89 Annual Report outlines the ILO's general principles which govern the investment of social security funds. These principles are safety, liquidity, yield, and social and economic utility.

The report noted that while mortgages accounted for just over half the investment portfolio, given the prevailing economic conditions it appeared more appropriate to channel funds into bonds and fixed deposits to meet the ILO's guiding principles. This policy position is in sharp contrast to that suggested by Bacon, Woodrow and de Souza (1976). At that point, the actuaries expressed concern at the large proportion of investment placed in fixed deposits - short term liquid investments. The actuaries pointed out that the Board had few investments whose real values would be maintained during periods of inflation e.g equity and property.

In the 1986 actuarial review certain recommendations were made with the aim of improving the NIB's investment portfolio. They were as follows:

- That the investment in mortgages be limited in order to improve the safety of the portfolio and increase the overall rate of return of NIB's funds. It was further suggested that the interest rates be increased to move in line with market forces.
- Investment in short term deposits be limited to the amount of the contingency reserves needed for the short term and employment injury branch.
- Investment in government and other bonds be increased to reinforce safety.

- Investment in equities be gradually increased in order that a significant part of the portfolio could be invested in instruments which would give, in the long run, a hedge against inflation.
- To increase the projects of social and economic utility to be made in fixed income securities issued by the government agencies or guaranteed by the government to reduce the risk associated with these types of investments.

From Table 9, it can be seen that at no time over the entire period did the Board approach the legal limit on the holding of local equities. Also, the NIB has had a tendency to invest mainly in financial assets, which account for over 90% of its total portfolio. Little emphasis was placed on physical assets. Notably, over the period there was a relative absence of foreign instruments in the NIB's investment portfolio.

In December 1976 a decision was made to establish a National Insurance Development Company (NIPDEC), as a wholly owned subsidiary of the NIB. The main objective of this company was the construction of buildings to be leased to the government, statutory boards and non-government agencies, and the construction of flats and houses for middle income personnel. Investment in this subsidiary company has grown from \$128.8 million in 1983/84 to \$161.8 million in 1987/88 accounting for about 8% of the investment portfolio (Annual Report 87/88). In the period 1991/92, investment in this subsidiary company accounted for 5.2% of the investment portfolio (Table 9).

There is no doubt that the NIB's investment policy has assisted in the development of social investment in Trinidad and Tobago, if one is to judge from the share of mortgages in the Board's portfolio. However, mortgages represented a very costly investment for the NIB. One reason is the management fee paid to the agents - 10% of mortgage investment income. The second

reason is the high rate of delinquency on repayment. The 1987/88 report notes that 70% of the number of mortgages was more than 6 months in arrears. Against this experience, and from the point of view of safety and yield, one can question the decision to get so deeply involved in mortgage lending.

It is important, however, to separate the structure of investment from the return on the overall portfolio, and it is to that question we now turn. Table 10 provides some information on this question. It shows that the net rate of return on the funds has been significantly below increases in the retail price index since 1974. This suggests that the real value of the entire investment portfolio has not been preserved since that time.

There is a view that social security institutions should not put excessive emphasis on getting high rates of return. At the same time it is felt that there ought not to be an undue preoccupation with welfare considerations to the exclusion of financial criteria (Reviglio 1967). This approach to investment would ensure that the growth in the real value of investments would meet part of the cost of improving NIS benefits secured by past contributions. The reality of the 1980's, however, has been a collapse of the stock market and property values. In addition, inflation rates have been well above the NIB's rate of return on its investments. Therefore investment policies of the National Insurance Board need to be balanced by consideration of safety as well as maintenance of the real value of assets.

TABLE 10
GROSS YIELD ON NIB'S INVESTMENT COMPARED TO
THE INCREASE IN RETAIL PRICE INDEX

Year	Gross Yield on Investment	Increase in Retail Price Index
1972/73	n.a.	14.8
1973/74	n.a.	22.0
1974/75	8.0	17.0
1975/76	7.0	n.a.
1976/77	6.0	11.8
1977/78	8.0	10.2
1978/79	8.3	14.7
1979/80	7.8	17.2
1980/81	8.8	14.3
1981/82	8.2	11.4
1982/83	9.1	16.7
1983/84	8.1	13.3
1984/85	7.95	7.7
1985/86	9.42	7.7
1986/87	8.02	10.6
1987/88	7.5	7.8
1988/89	5.59	11.4
1989/90	6.4	11.1
1990/91	7.12	3.8
1991/92	7.66	n.a.
1992/93	8.1	n.a.

¹Based Years were as follows:

1972-'76, 1960 = 100

1977-'82, 1975 = 100

1983-'91, 1982 = 100

n.a. - Not Available.

Source: National Insurance Board, *Annual Reports*; Central Statistical Office, *Annual Statistical Digest*, Various Issues.

Summary and Conclusion

Resource mobilization is a fundamental aspect of the development process. For most social scientists it is of paramount importance in the development process, and institutions that promote savings need to be encouraged.

Social security schemes have evolved into a major institution in many developing countries. These schemes can undoubtedly contribute to economic growth and development, not only by investing surplus funds in productive activity but also by lifting the inhibitions arising from fear of the future. The behaviour of the worker is directly influenced by the existence of an effective social security scheme.

With respect to domestic savings, social security schemes can serve as instruments of resource mobilization if the authorities invest the surpluses directly or indirectly in projects that can contribute to national development, or if they make them available to investors.

Earlier in the paper it was concluded that the NIB does mobilize a considerable amount of savings. Within the scope of the paper it was not possible to conclude whether the surpluses of national insurance funds represent wholly a net addition to aggregate savings. But it seems reasonable to think that a significant part of the savings represented by such surpluses would not have been realized without such a programme.

It is difficult to evaluate precisely the impact of the investment activities of the NIB on the national economy. It is possible, however, to make a few statements against the background of theory and the investment decisions of the NIB. The data above

show that the greater part of the NIB's reserves has been channelled into mortgages. No doubt this has contributed to the social development of Trinidad and Tobago. Given the functions and objectives of national insurance schemes, the disposition of resources, however, has to be gauged against several different criteria. A balance has to be struck between social utility, safety, liquidity and yield. A large percentage of the Board's investment over the period 1972-1992 was in fixed deposits, savings and government securities. While yield is important, safety is also a consideration. The data suggest that for the greater part of its operations, the NIB has not been successful in preserving the real value of its investment portfolio. Since 1974, the net return on its investments has been below increases in the retail price index. In an inflationary or uncertain environment, it seems reasonable to invest in instruments which will preserve the real value of the investment portfolio. In this case, direct investment in enterprise is highly advisable since it can increase future production.

So far, the NIB has not invested in foreign instruments. In the context of trade and foreign exchange liberalization and the adjustments taking place in the exchange rate, it may make sense for the Board to consider investing in foreign instruments if such a policy can enhance earnings and preserve or even increase the real value of its portfolio.

End Notes

¹Contingencies such as sickness, maternity, employment injury, unemployment, invalidity, old age and death.

²The elements of which relate to old age pensions and public assistance, with provision for other classes of benefits or allowances on a means test basis financed out of its general revenues.

³Gott (1969).

⁴As mentioned previously.

⁵A person in receipt of earnings in respect of employment; includes self-employed.

⁶A provision which allows a person who was already insured and who has ceased to be in insurable employment, to continue to pay contributions on his/her behalf in order to maintain a record of contributions.

⁷For a useful discussion of the arguments for and against an increase in net savings see Reviglio (1967) pp. 341-344.

⁸Reviglio defined gross savings as the net increase in the consolidated social security sector. This net increase is measured by the difference between annual current receipts and the annual current expenditure. Surpluses and deficits are consolidated so that only the net increase in the reserves is shown.

⁹Rates of benefits payable were increased in 1980.

¹⁰Reviglio (1967) points out that in a developed country, social security gross savings appear to be more important than in developing countries. In 1960 the social security sector in developed countries mobilized resources ranging at or above the median for developing countries.

¹¹These criteria depend on the strategy that the developing country adopts to promote rapid economic development and are difficult to define.

¹²In 1986, the interest rate applicable to mortgages granted by the NIB was 9.5% for residential and 11% for commercial mortgage loans, which could be compared to the median rate for Trust and Mortgage Finance Co. standing at 12% for residential and 13.25% for commercial mortgage loans.

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Belize: Social Security Board Operations and the Impact on the Belizean Economy*

Sydney Campbell

Introduction

Social security is defined as the protection given by society to its members against economic and social distress caused by the loss or substantial reduction of earnings due to various reasons. In short, it is a social responsibility whereby the society looks after its own, through a mechanism of insured earnings, so that the person who loses earning power temporarily does not suffer unduly.

After several years of discussions in the latter part of the 1970's the Government of Belize decided to introduce Social Insurance in Belize. It was agreed that the scheme would be based on social insurance principles and would have risk sharing as its underlying approach. The Social Security Bill became law in 1980 by the signing of the Social Security Act, Chapter 34, of the Laws

*The views in this paper are not necessarily the views of the Central Bank of Belize.

of Belize 1980. It established a system of social security providing monetary payments for events such as retirement, maternity, sickness, death and for matters connected with the smooth running of the scheme. There are sixteen regulations dealing with the concepts and issues involved in the Social Security Act. These regulations cover matters ranging from registration of employees and employed persons to benefits amendments. On June 1, 1981, the Social Security Board was established.

It is important to note the background against which social security was introduced in Belize. In the early 1980's employment opportunities were limited in Belize. The major employer was the Government followed by the agricultural sectors and self-employed tradesmen and professionals. The conditions of employment were restricted basically to wages and vacation leave with some provision for sick leave with pay. The Government employment package was the most attractive during this period as it provided a pension benefit for permanent employees. The average wage for un-skilled labour was BZ\$1.25 per hour. The per capita income of the country was around BZ\$2,000.00. Although Belize's per capita income is still relatively high compared to other Central American countries, there was and there still is great disparity in the distribution of income.

Purpose and Obligations of Social Security Board

The principal mission of the organization is to operate a social security scheme aimed at providing some degree of protection against economic insecurity. The scheme entails:

- (1) registration of all employees and employers;
- (2) collection of all Social Security contributions due and payable;
- (3) payment of benefits according to the law within the shortest possible time.

The Social Security Scheme is administered by the Social Security Board which consists of a chairman, two persons representing employers, two representing insured persons and two representing Government. "The Board has responsibility to the Minister responsible for Social Security and for the administration of the Act and shall consider and provide advice on all matters which may from time to time be referred to it by the Minister".¹

In order to assist the Board in carrying out its functions there are specialized committees which provide professional advice to the Board, namely:

- (1) Medical Board/Referee
- (2) Appeals Tribunal
- (3) Investment Committee
- (4) External Auditor
- (5) Medical Consultant
- (6) Legal Consultant

These committees carry out specific functions:

- (1) The Medical Board determines the extent to which an injured person is disabled, thereby providing the Board with guidance for payment of benefits.
- (2) The Appeals tribunal, as the name implies, is a body to which insured persons can appeal if they are aggrieved by a decision made by the Board regarding benefits.
- (3) The Investment Committee advises the Board on matters pertaining to investment of the Board's surplus funds.
- (4) The External Auditor makes annual audit of the Board's accounts as required by the Social Security Act.

- (5) &
- (6) The Medical and Legal consultants give expert advice relating to these matters as may be requested by the Board.

The organizational structure of the Board consists of a manager, who is appointed by the Minister responsible for Social Security, and one assistant manager.

There are branch offices in each of the six district towns and sub-offices at Big Creek and San Pedro. The organization had a staff of 122 employees deployed throughout the country at the end of 1993. Initially, all operations of the organization were centralized in Belize City with branch offices and sub-offices being mainly concerned with collecting applications for registration and claims and submitting these to the head office for processing. Presently, the processing of short term benefits, claims and payments as well as the collection of contributions is done by the branch offices.

Collection of Contributions

Under the Social Security Act, all employers are required to register and pay social security contributions on behalf of their employees. Section 2 of the Social Security Act defines an employer as any person who employs or on whose behalf any other person employs any person and includes the following:²

- (a) any body of persons, whether such body be a legal person or not;
- (b) any Managing Agent of an employer;
- (c) the personal representative of a deceased employer.

Initially, the Board had two methods of collecting contributions. These were the stamp system and the direct payment of

all contributions. Since December 1991, the stamp system has been discontinued. Under the direct payment method, employers are required to submit Social Security contributions no later than 14 days after the end of each calendar month. At December 1981, the Social Security Board had 24,958 registered insured persons and 2,563 registered employers from whom they were collecting social security contributions. By the end of 1991, these figures had increased to 82,663 insured persons and 9,622 employers. This represents a near fourfold increase in both insured persons and employers. The Social Security Collection of Contributions Regulation, 1980, has a schedule which sets out the rates of contributions shown in Table 1. (Note: all figures used in this paper refer to Belizean dollars).

Table 1.
Weekly Contribution

Weekly Earnings	Weekly Insurable Earnings	Em- ployed Person	Em- ployer	Total
Under \$40.00	\$25.00	0.12	1.63	1.75
Between \$40.00-\$69.99	\$55.00	0.55	3.30	3.85
Between \$70.00-\$109.99	\$90.00	0.90	5.40	6.30
Over \$110.00	\$130.00	1.30	7.80	9.10

Source: Social Security Board, *Annual Report 1986*.

The collection of contributions is the most vital aspect of the Social Security Scheme as the funds are used to pay benefits and meet administrative expenses and capital expenditure of the Board. The surplus funds are invested in order to yield returns that would allow the Board to continue to meet future payments of benefits. The operation of the Board has resulted in the accu-

mulation of substantial surplus funds over the past 12 years. Since 1981, the Board has been accumulating funds at an accelerated pace.

A scheme of this type is expected to accumulate funds in the early stages since individuals need to make specific numbers of contributions before they are eligible for benefits. This expectation also arises from the working age distribution in Belize which is skewed in favor of those under 30 years since this limits the number of workers that would qualify for retirement benefits in the first twenty years. After the first year of operation, the scheme collected \$2.6m in contributions and recorded a surplus of \$2.2m (see Appendix 1). By 1992 contributions had increased to \$13.5m, an increase of over 500 percent and surplus to \$14.1m, an increase of over 600 percent. Between 1981 and 1992 investment income rose from \$76,868 to over eleven million dollars. The proportion of income spent on administration during 1981 was 12.3 percent as compared to 4.4% on benefits. The latter ratio increased to 27.5 percent in 1992 while expenditure on administration as a percentage of total income rose slightly to 15.6 percent.

Social Security Board Deposits and the Financial System

In Belize there are basically two types of financial institutions, banks and non-banks. Most of these institutions accept deposits from individuals. However, it is the banks that have been instrumental in channelling funds from savers to investors. Belize does not have a well-developed financial market. Financial/savings instruments available are limited to Government securities (Treasury Bills, Treasury Notes, Defence Bonds, debentures, shares in public entities) and certificates of deposits. The financial/savings instrument that is most widely used by investors is certificates of deposit, and the Social Security Board is equally constrained. Since 1988, the process through which Social Security opens a certificate of deposit with commercial banks has been by a tender system and it is usually the bank which offers the

highest rate for deposits that is awarded the tender. In 1981, the Board had deposits of \$2.1m with the commercial banks. This figure rose to \$11.3m by 1985, a more than fivefold increase. At the end of 1993, this figure had increased to almost \$20m.

The large amount of surplus funds accumulated by the Social Security Board over the years (1981-1993) was placed primarily in time deposits accounts with commercial banks (see *Appendix 3*). This gave the Board an advantageous position when negotiating with Banks for deposit rates, and the upward influence on rates, of course, would also be reflected in lending rates. The significance of the Board's deposits can be seen by looking at the proportion of Social Security deposits to total deposits of commercial banks (See *Appendices 2 and 3*). In 1982, Social Security time deposits were 8.3 percent of total time deposits, but by 1989 the figure had risen to 21.4 percent, and was second only to total individual deposits. The proportion increased to 50.9 percent by 1991. This high level of deposits in the banking system by the SSB contributed to a situation where the commercial banking system experienced high levels of excess liquidity - levels unprecedented in the country's history.³ In 1988 excess liquidity of the banking system was \$8.8m and this figure increased by \$19.9m by the end of 1990. This excess liquidity in the banking system, which was caused by Social Security and Government deposits, allowed the banks to increase credit, even when there was a fall in exports earnings during the 92/93 crop year in the real sector.

Deposit Rate

As indicated earlier, the large amount of deposits put into the banking system by the Social Security Board increased the competition among banks as they were willing to offer rates above their weighted average rate. There were times when banks would offer a six-month rate for the Board's deposits, and the following six months would be willing to offer a rate as much as 15 basis points higher. This situation was characteristic of the banks'

offers for the Board's deposits up to 1987. In the period 1988 to early 1990 when banks started to experience conditions of high excess liquidity, some of them were refusing time deposits below a specified amount and for periods of less than six months. The high excess liquidity reflected a situation where the banks found themselves unable to transform deposits resources into loans and credits to the extent that they would have liked. It also had a dampening effect on interest rates.

The Effect of Shifting Deposits by the Social Security Board

In Belize, Approved Liquid Assets comprise the following: vault cash, balances with the Central Bank, money at call and foreign balances (due within 90 days), Treasury bills (maturing within 90 days) and other approved assets. Throughout the period (1988 - 1993) there were occasions when the Board and the Central Government shifted their deposits from one bank to another bank to take advantage of the higher interest rates offered. This usually impacted negatively on the liquidity position of the bank that lost the deposit. In most cases banks had structured their assets portfolio to reflect the large deposits of the Social Security Board. Since most loans extended by banks are usually for periods longer than the duration of deposits, banks placed in this position had extreme difficulty adjusting their assets portfolio and maintaining the required liquid assets and cash reserve ratio.

Perhaps recognizing the risks of too heavy a dependence on public sector deposits, the commercial banks since mid-1990 have been readily accepting smaller certificates of deposits from members of the public and are offering rates in the region of 8 -9 percent per annum, which are still below the rate offered during 1986 when Social Security deposit rates rose sharply. The easing of restrictions on time deposit rates became necessary in the context of smaller amounts of social security deposits being placed with the banking system since 1992. The amount of time deposits held with commercial banks at the end of 1993 was \$14.6m which

represented 30 percent of total time deposits in the banking system, as compared to averages of around 50 percent in the 1991-1992 period.

Lessons Learned from the Social Security Experience

Given the undeveloped nature of the country's financial market, i.e. limited types of savings instruments and the Central Bank's unwillingness to freely allow outward direct investment (based on prudent economic management), the principal type of savings instruments available on a regular basis is the certificate of deposit. In this situation the banks tend to offer rates above what is economically prudent in an effort to attract deposits. In such circumstances they often end up with liquidity far above what is considered adequate. This is likely to impact negatively on their profits as the cost of doing business increases. In the face of limited investment opportunities, the policy of attracting deposits through the offering of high deposit rates has consequences for the banks' financial management. It is difficult to properly structure an asset portfolio based on deposits which are volatile or speculative. Unpredictable movements of these deposits from one bank to another force readjustments of the banks balance sheet, and in some situations could create serious difficulties for these institutions.

Social Security Investment and Assistance

Given that the purpose of the Social Security Board is to provide for protection against economic insecurity, achieving this requires that the contributions collected from workers should be invested in such a way that funds are available in the future to meet payments as they fall due. In order to do this well, investment must be guided by sound investment principles.

In the past, the Investment Committee was responsible for all investment decisions of the Board. The scope of the Committee's responsibilities was amended in 1986 so that the

Committee became an advisory body to the Board of Directors on investment matters. Up to 1991, the Board's investments were predominantly time deposits with commercial banks. Of a total investment of \$86.2m in 1991, \$50.1m (58.1 percent) were time deposits with commercial banks. The situation in 1993 shows that investment funds increased by 11 percent to \$97.9m, but funds held in certificates of deposits decreased significantly to \$39.0m (40 percent). This reduction reflects the decision made by the Board of Directors to broaden its investment portfolio and to undertake more long-term investment, with the aim of realizing higher returns. It is hoped this would enable the Board to meet future commitments and payment of benefits more easily, since these are expected to increase as more insured persons qualify for benefits. The Board has reviewed its investment portfolio and is now making more diverse investments into areas like housing, agriculture and tourism.

An examination of the Board's investment in recent years reflects an increasing diversification. Initially, the portfolio of the Board, as indicated earlier, was primarily time deposits with commercial banks. By 1990, however, bank deposits and other financial investments still accounted for 76% of total investment, the remaining 24% taking the form of equity in private companies and a single loan to the DFC. During 1992 the Board decided to establish a subsidiary company, Belize Investment Management Company, (BIMCO), which is responsible for managing housing investment for the Board, and advises on potential areas of construction investment which the Board could pursue. BIMCO is presently involved with the construction of houses in the Ladyville area and these houses will be sold to individuals on a hire-purchase basis.

Since 1991 the Board's portfolio has undergone greater diversification (see *Appendix 4*). In 1992 equity investment increased to approximately 27 percent. The most significant change was in mortgage, housing project loans and other real estate financing. These types of investments are for periods of 10 to 25

years, and they yield an average of approximately 10 to 12%. The challenge facing the Board is the formulation of an investment policy that allows it to maximize returns from its investible funds while meeting its daily cash flow needs.

The readjustment of the investment portfolio was based on realty reports done by the Actuary in 1986 and 1990. From all indications the most recent actuary report of 1992 should show a more balanced portfolio capable of meeting the Board's projected targets in fund management. The diverse investment undertaken by the Board in recent years reflects a growing involvement in the Belizean Economy. Besides the investments noted above, the Board provides financial assistance to a number of social and educational institutions in the country.

In this latter role, the Board provides financial assistance to the Ministry of Social Services of \$213,000 per annum to assist in its social assistance programme to senior citizens. The assistance is to non-contributory pensions. The Board also provides contributions to the Ministry of Health. In 1992 the Board pledged to contribute one million dollars each year to help upgrade hospitals and health centres throughout the country. Other agencies and organizations which have benefited from Social Security Board assistance include: Helpage, Home for the homeless, the Museum and the Red Cross. The danger in all this, of course, is that the Board may lose sight of its real objectives.

Concluding Remarks

Social Security has become a significant factor not only in the Belizean financial system, but in the Belizean economy. Between 1981 and 1992 contributions increased from \$2.6m to 13.5m, while investment income increased from less than \$100,000 to 11.3m. One suspects that with better management of the funds investment income could have been greater, thus providing enhanced benefits to contributors. With a different kind of investment policy, which is only now taking shape, the contribution to

the economy might also have been more significant. Institutional performance cannot be viewed separately from the overall objectives relating to savings, investment and growth.

The use of Social Security funds to influence conditions in the banking system has serious drawbacks. Seeking the highest interest rates for such funds may be good for the Board but not necessarily be consistent with the general needs of the economy. It also introduces a destabilizing factor which may not be in the best interest of the financial system or the overall economy. The availability of Social Security funds to the banking system seemed to have discouraged the banks from exerting their best efforts to mobilize the savings of the public.

Ultimately the critical issues revolve around how to link financial savings with the development of the real sector. Sadly, mechanisms to link the two are often slow in coming, even in situations where investment is recognized as critical to the transformation of under-developed economies.

End Notes

¹Section 28 (2) of Social Security Act, Chapter 34, Laws of Belize, 1980.

²Section 2 of the Social Security Act, Chapter 34, Laws of Belize 1980.

³Another major contributor to this situation over the period was the Government of Belize which placed funds in the banking system.

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APPENDIX TABLES

APPENDIX 1

Income and Expenses of Social Security Board, 1981-1992

Year	Contributions Collected	Investment Income	Total Income	Administrative Expenses	Benefit Payments	Total Expenses	Surplus
1981	2,604,610	76,968	2,681,578	329,504	119,118	448,622	2,232,956
1982	4,646,243	651,582	5,297,825	541,592	692,005	1,233,597	4,064,228
1983	5,927,434	1,051,438	6,978,872	622,077	892,774	1,514,851	5,464,021
1984	9,044,244	1,504,852	10,549,096	712,109	942,641	1,654,750	8,894,346
1985	7,172,328	3,016,996	10,189,324	978,739	1,224,826	2,203,565	7,985,759
1986	7,377,716	3,814,614	11,192,330	1,153,731	1,244,852	2,398,583	8,793,747
1987	8,201,142	3,839,185	12,040,327	1,278,463	1,664,367	2,942,830	9,097,497
1988	8,846,316	4,507,406	13,353,722	1,461,842	1,754,314	3,216,156	10,137,566
1989	9,512,682	5,688,664	15,201,346	1,680,300	2,201,516	3,881,816	11,319,530
1990	10,168,182	6,453,466	16,621,648	2,414,169	2,760,784	5,174,953	11,446,695
1991	12,000,888	8,244,087	20,244,975	3,382,018	4,481,429	7,863,447	12,381,528
1992	13,488,131	11,297,765	14,785,896	3,876,982	6,806,830	10,683,812	14,102,084

Source: Social Security Board, *Annual Reports*.

APPENDIX 2

**Social Security Deposits with Commercial Banks,
1982-1993**

Period	Bz.\$ '000		Percent SSB/Total Deposit
	Total Deposits with Commercial Banks	Social Security Deposits (SSB)	
1982	114,057	5,690	4.99
1983	138,438	7,919	5.72
1984	141,977	10,238	7.21
1985	150,024	11,256	7.50
1986	173,670	14,233	8.20
1987	211,829	15,048	7.10
1988	246,274	29,658	12.04
1989	302,719	38,092	12.58
1990	361,164	45,268	12.53
1991	410,773	50,826	12.37
1992	442,467	43,033	9.73
1993	445,332	19,950	4.45

Source: Central Bank of Belize.

APPENDIX 3
Breakdown of Social Security Board Deposits with Commercial Banks, 1982-1993

Year	Deposits with Commercial Banks Bz.\$ '000		Social Security Deposits Bz. \$ '000			(5) as a Percent of (2)
	Total (1)	Time (2)	Demand (3)	Savings (4)	Time (5)	
1982	114,057	66,869	82	38	5,570	8.32
1983	138,438	85,098	120	96	7,703	9.05
1984	141,977	81,108	119	312	9,807	12.09
1985	150,024	90,949	220	162	10,874	11.95
1986	173,670	105,117	185	222	13,826	13.15
1987	211,829	126,349	284	0	14,764	11.68
1988	246,274	136,965	217	1,128	28,313	20.67
1989	302,719	175,072	352	353	37,387	21.35
1990	361,164	214,184	339	468	44,461	20.75
1991	114,394	98,514	396	307	50,123	50.87
1992	89,379	75,572	3,555	1,446	38,032	50.32
1993	61,423	48,907	2,021	3,311	14,618	29.88

Source: Central Bank of Belize.

APPENDIX 4

Investment Portfolio of Social Security Board, 1990-1992

	1990 (\$)	1990 (\$)	1992 (\$)
Certificate Deposits with Commercial Banks	41,661,000	52,323,359	32,816,782
Government Treasury Bills	12,074,441	-	-
Deposit -Central Bank	1,323,403	963,052	5,000
Government Debentures	3,980,000	3,980,000	3,980,000
Development Finance Corporation Loan	4,000,000	5,250,800	5,896,545
Belize Telecommunications Ltd. Shares	7,750,000	7,750,000	19,017,949
Belize Food Holdings Limited Debentures	2,500,000	2,500,000	2,500,000
Belize Hotels Development Ltd. Shares	783,350	979,070	999,610
Atlantic Bank Shares	-	129,690	152,490
Vista Del Mar Development Co. Limited	-	1,648,800	1,789,400
Belize Marketing Board Loan	-	2,995,000	2,650,000
Government Loan - Banana	-	2,700,000	2,100,000
Belize National Building Society	-	1,217,534	6,719,576
Reconstruction and Development Corporation Loan	-	-	800,000
Belize Hotels Development Loan	-	-	222,222

APPENDIX 4 - Cont'd

Investment Portfolio of Social Security Board, 1990-1992

	1990 (\$)	1990 (\$)	1992 (\$)
Belize Hotels Development Convertible Loan	-	1,000,000	1,233,393
Belize Electric Company Ltd. Shares	-	-	3,340,000
Central Bank Bonds	-	-	250,000
Belize Investment Manage- ment Company Limited	-	-	573,641
Dinger Enterprises Ltd. Loan	-	-	634,000
Casa Blanca Hotel Loan	-	-	250,000
TOTAL	76,872,194	86,237,305	92,130,608

Source: Social Security Board.

APPENDIX 5

Selected Data on Social Security Board, 1990-1992

	1990	1991	1992
Number of Insured Persons (Accumulated)	74,952	82,663	90,921
Number of Employers (Accumulated)	8,477	9,622	11,378
Contributions Collected	10,168,182	12,000,888	13,488,131
Investment Income	6,453,466	8,255,647	11,152,433
Benefits Payments	2,760,784	4,407,429	7,366,294
Administrative Expenses	2,141,169	3,382,018	3,981,637
Number of Staff	100	118	122

Source: Social Security Board.

Section 4

Concluding Observations

Towards a Savings/Investment Policy in the Caribbean

Ramesh Ramsaran

Introduction

While the developed countries account for almost three fourths of world economic activity, developing countries contain almost 80 percent of the world population. Real per capita GDP in the former increased by some 23 percent in the period between 1983 to 1993. In the latter the increase was in the region of 20 percent. In fact, in some areas like Africa and Latin America per capita income hardly changed or actually fell.¹ In the Caribbean recent economic performance has been mixed (see *Table 1*). While per capita income continues to grow in most countries fragile economies, high unemployment rates and budgetary problems pose a serious challenge to policy-makers, particularly in the context of the changes taking place in the global economy.

Many countries in the developing world have been forced to rethink development strategies and policies in the face of not only the widening disparities between developed and developing countries, but also in the context of the success stories in the developing world itself. The evidence indicates that there are some countries which have performed better than others, and this has given rise to the view that there are some policies which are more

Table 1. Selected Economic Indicators in Caribbean Countries

	Per Capita GDP Real Growth Rate (%) 1985-92	Average Inflation Rate (%) 1985-92	Debt Service Ratio ¹ (%)		Gross Domestic Saving as a % of GDP 1990-92	Gross Domestic Investment as a % of GDP 1990-92
			1982	1992		
Antigua	1.1	5.9	13.0	12.6	31.8	34.6
Bahamas	5.5	-1.2	3.8	4.5	10.7	21.2
Barbados	4.3	0.6	3.2	12.4	18.5	14.9
Belize	6.3	3.2	2.6	4.6	26.1	30.9
Dominica	5.0	5.1	4.7	6.0	12.6	34.9
Grenada	5.2	4.4	1.5	6.5	16.0	40.0
Guyana	-5.4	67.3	34.5	50.4	30.9	38.5
Jamaica	2.9	28.6	26.5 ^a	27.1	26.7	27.9
St. Kitts-Nevis	5.3	8.8	1.3	2.3	23.4	45.8
St. Lucia	5.2	3.6	2.9	3.9	13.6	25.0
St. Vincent	4.7	4.3	n.a.	3.5	15.3	28.2
Trinidad & Tobago	-3.0	5.2	6.1	29.6	29.6	17.6

n.a. = Not Available

a = 1983

¹External Debt service payments as a % of exports of goods and services.

Sources: *World Bank Atlas*, 1994; Caribbean Development Bank, *Annual Reports*, 1984 and 1993 and *Social and Economic Indicators*, May 1993.

effective than others. Despite this experience, however, our knowledge of the development process remains incomplete and our approach speculative. It is now increasingly recognized that the wholesale adoption of policies used elsewhere without regard to the context does not always produce the intended results.

It is now also widely accepted that widespread government controls in an economy can be costly in terms of resource mobilization and efficiency. The move to market-oriented frameworks is now a global phenomenon that encompasses Eastern Europe and the former Soviet Union - once bastions of state control. One extreme version of this philosophy is that unfettered market forces hold the key to welfare maximization at both the national and international levels. Governments which once viewed themselves as the 'engine' of growth in the 1960's and 1970's now increasingly see themselves as 'facilitators' of development, with the private sector being given a more critical role in the transformation process. This is a radical change in philosophy, and is being reflected in adjustments to the policy framework governing activities in both the 'real' and financial sectors of the economy. Liberalization and de-regulation are now the guiding principles in policies aimed at removing distortions, increasing resource mobilization and bringing about a more efficient allocation of resources.

The critical role of the financial system in the development process has long been acknowledged. There is general agreement that a high level of savings and investment is a necessary pre-requisite for growth and development. The case for saving and investment can be made as follows: "The stock of capital will decline in a closed economy if consumption equate production; the existing capital stock will gradually be consumed if funds are not set aside for its replacement. Gross saving must be positive and equal to economic depreciation to maintain the existing level of capital. If population growth is positive, still more must be set aside if the amount of capital per worker is to be maintained. And still more saving is required if a country wishes to increase the per capita level of capital stock. Historical evidence indicates that an

increase in per capita capital stock makes an important contribution to increased productivity and a rising standard of living".² In an open economy, of course, it is possible to maintain or increase the capital stock in the absence of domestic savings. But this is a tenuous situation, given the uncertainties surrounding access to foreign finance. Foreign savings need to be seen as a supplement to domestic resources, even though it is sometimes argued that reliance on external funds can weaken the domestic saving effort.

Historically, Caribbean nations, like most other countries in both the developed and developing world, have relied on a combination of domestic and foreign savings to finance capital formation. In the absence of significant or consistent public sector savings, governments have borrowed in various degrees both in local and foreign markets to finance infrastructural development, welfare and even consumption. Foreign private capital is also present in most countries in various degrees and forms. Despite commitment to a mixed economy framework, the private sector has not developed in a way that allows it to play a lead role in an increasingly open and competitive world economy. The policy framework has come into question. A less restrictive model of development with a miniaturized role for governments is now being widely pursued. The liberalization of the private sector is aimed at creating competition which could lead to greater resource mobilization and improved resource allocation. A more accommodating policy towards private foreign capital is intended to attract a greater volume of foreign savings as part of the effort to increase the investment rate. Structural adjustment measures in themselves, it is recognized, are not sufficient to induce growth. The level of investment remains a crucial variable.

Empirical studies on saving and investment in both developed and developing countries have shown that there is a wide variety of factors that affect these variables. The degree and the direction vary. The removal of exchange controls and de-regulation creates a new atmosphere that could influence the way savers behave. The freedom to move between domestic and foreign assets imposes greater responsibility on governments to pursue

sound and competitive policies that have national relevance and at the same time can appeal to both residents and non-residents. In the critical area of savings and investment, the experience of other countries can be drawn upon. The national context, however, matters significantly. The recent changes in economic policies and the international environment have created uncertainties which policy-makers cannot escape. This Paper is intended to draw attention to some issues and concerns which affect the level of savings and investment. We begin by examining global trends drawing on the experience of selected developed and developing countries.

Recent Trends in Saving and Investment

In the developed market economies, saving and investment as a percent of GDP was in the region of 22 percent respectively in the 1980's. There were, however, wide differences in the performance of individual countries. In Japan, for instance, the ratios tended to exceed 30 percent. In the United States both the investment ratio and the savings ratios tended to fall in the period reaching around 15 percent in the early 1990's. In Germany the savings ratio which averaged around 25 percent tended to exceed the investment ratio.

In developing countries, too, the performance has varied. In Africa both the saving and investment rate fell between the latter half of the 1970's and the first half of the 1980's (see *Table 2*). In more recent years both ratios have averaged around 20 percent. In Western Hemisphere developing countries there was a similar development. In Asia, which contains many of the high growth countries, the ratios have been increasing since the early 1980's and now average around 30 percent. In the Caribbean the saving and investment effort varies widely from country to country (see *Table 1*). With respect to savings there were a number of countries (e.g. Bahamas, Dominica, St. Lucia) with a ratio of around 15 percent or less in the early 1990's. At the upper end, a few countries (e.g. Antigua, Guyana), were associated with

Table 2
Saving and Investment in Developed and
Developing Countries (% of GDP)

	Averages				
	1976-80	1981-85	1990	1991	1992
Industrial Countries					
Saving	22.7	20.9	20.4	19.8	19.0
Investment	23.0	21.3	21.3	20.1	19.6
Net Lending	-0.3	-0.4	-0.8	-0.3	-0.6
Developing Countries					
Saving	26.0	21.9	25.2	24.1	24.6
Investment	26.3	24.4	25.9	25.7	26.2
Net Lending	-0.3	-2.5	-0.7	-1.6	-1.7
Africa					
Saving	27.5	20.5	20.4	19.8	19.6
Investment	30.4	24.2	20.8	20.8	21.7
Net Lending	-2.9	-3.7	-0.4	-1.0	-2.1
Asia					
Saving	26.2	25.8	30.4	30.5	29.5
Investment	27.0	27.6	31.1	31.0	30.6
Net Lending	-0.8	-1.8	-0.7	-0.4	-1.1
Western Hemisphere					
Saving	20.1	17.0	19.5	19.0	18.5
Investment	23.6	19.9	20.1	20.4	21.3
Net Lending	-3.4	-2.9	-0.6	-1.5	-2.8

Source: IMF, *World Economic Outlook*, Various Issues.

ratios of around 30 percent. For most countries the investment ratio was higher than the domestic savings ratio, giving an indication of the inadequacy of the domestic savings effort. In the OECS (Organization of Eastern Caribbean States), for example, the investment ratio on average was estimated to be almost fifteen percentage points higher than the savings ratio in the period 1990-92.

Generally, private savings account for the bulk of domestic savings. Governments' contributions behave erratically both in developed and developing countries. In few countries have government savings consistently exceeded 5 percent of GDP. Japan is one of them. The ratio reached almost 10 percent in the early 1990's. In the United States, on the other hand, expenditure has persistently exceeded revenue in the current account. In the major industrial countries the government savings ratio averaged less than 2 percent in the 1980's. In the Caribbean the Governments' saving effort has generally been poor as a result of weaknesses and inadequacies on both the revenue and expenditure sides. Poor economic performance, badly structured tax systems and weak collection efforts have impacted on the growth in revenues in some cases. On the expenditure side, the growth of subsidies, the provision of welfare services and wage and salary increases have fuelled public spending. The financing of the capital budget has relied heavily on grants, concessional funds and borrowing. In recent years a few governments (e.g. Jamaica, St. Lucia, Belize), have shown savings on the current budget that exceed 5 percent of GDP.

As indicated earlier there is a tendency, both in developed and developing countries, for the domestic investment ratio to exceed the domestic savings ratio. Foreign savings provide the bulk of the financing for the 'excess' investment. During the 1980's the investment ratio fell in a large number of developing countries reflecting not only declining domestic savings, but failure to access or attract foreign savings on the scale they did in previous decades. The 1980's, of course, were also characterized by the heavy net outflow of funds from a large number of developing

countries (see *Table 3*). The Latin American and Caribbean region was a major contributor to this drain. By the early 1990's, there were signs of a reversal with net positive flows to a number of countries. Servicing of the foreign debt, however, continues to be a major concern for many developing countries.

Competition for funds in international credit markets has grown increasingly fierce in recent years. While funds raised by developing countries just about doubled between 1983 and 1993 the amount raised by developed market economies increased more than fourfold (see *Table 4*). The so called 'economies in transition' will also no doubt increasingly look outside their borders for financial resources.

The Changing Context

Perspectives on the role of financial systems have been changing rapidly. One author has made the following observation:

Twenty years ago, developing countries saw financial systems primarily as tools to tap finance for their governments or state enterprises or to use to direct credit for the use of priority sectors. Today this approach is changing, and financial systems are increasingly viewed as important in their own right for the mobilization of resources; for the efficient allocation of credit; and for the pooling, pricing and trading of risk.³

In the 1950's and 1960's developing countries instituted a wide range of policies, not only to influence the direction of development in the 'real' sector, but also to promote financial development. Through incentives and controls, the state actively sought to influence behaviour and economic activity. In some countries, either through deliberate policy or through failure of the private sector to respond to the incentives provided, state activity grew to a position of overwhelming dominance in the economy. The widely adopted import-substitution strategy was fostered through an increasingly complex system of administra-

Table 3. Net Transfer of Financial Resources to Groups of Developing Countries, 1983-1993^a

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993 ^b
Africa	7.4	3.2	-7.3	1.9	-3.2	3.7	0.8	-10.6	-6.9	-4.5	-0.2
of which:											
Sub-Saharan Africa ^c	5.5	2.4	2.8	5.5	5.5	7.1	5.6	7.2	7.8	9.8	8.6
Latin America and the Caribbean	-25.7	-34.9	-30.2	-11.8	-17.9	-21.4	-28.5	-25.8	-7.2	12.2	18.9
West Asia	30.8	13.5	20.2	26.9	18.3	19.2	10.1	-2.0	41.9	32.2	21.0
Other Asia	6.0	-4.1	4.1	-11.6	-30.1	-17.2	-10.1	-3.0	-2.6	-1.4	6.7
of which:											
China	-3.0	-0.4	12.3	7.1	-0.5	3.6	4.7	-10.9	-12.0	-5.8	9.7
Four exporters of manufactures ^d	-4.6	-9.1	-12.1	-23.1	-30.3	-25.4	-21.1	-10.4	-5.3	-5.4	-9.1
All developing countries	16.2	-23.0	-15.0	5.2	-33.7	-20.3	-27.7	-31.3	32.9	43.7	54.0
Memorandum Items:											
Sample of 93 countries ^e	-6.9	-28.9	-17.3	-4.2	-33.7	-31.6	-29.9	-22.0	-0.5	18.9	44.2
15 heavily indebted countries ^f	-23.9	-40.6	-40.6	-22.0	-28.4	-30.9	-37.8	-31.8	-12.0	3.8	14.6

Source: UN, *World Economic and Social Survey*, 1994.

- a. Expenditure basis (negative of balance of payments on goods, services and private transfers, excluding investment incomes)
- b. Preliminary estimate.
- c. Excluding Nigeria and South Africa.
- d. Hong Kong, Republic of Korea, Singapore and Taiwan Province of China.
- e. 93 countries, for which adequate data are available to make a financial decomposition of the transfer.
- f. Argentina, Bolivia, Brazil, Chile, Colombia, Côte d'Ivoire, Ecuador, Mexico, Morocco, Nigeria, Peru, Philippines, Uruguay, Venezuela and former Yugoslavia.

Table 4. Funds Raised on International Credit Markets, 1983-1993
(Billions of US Dollars)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
World Total	157.8	228.8	279.1	321.4	303.7	371.9	385.3	361.4	432.5	458.3	620.0
Grouped by Borrower											
Developed Market Economies	112.5	181.2	230.5	285.2	260.2	330.3	345.0	312.4	374.0	398.4	521.7
Economies in Transition	1.1	3.4	5.3	3.9	3.7	4.3	4.7	4.7	1.7	1.5	6.3
Developing Countries	36.6	34.4	30.1	22.2	27.8	26.9	22.7	28.9	42.2	37.5	71.3
Multilateral Institutions	7.7	9.8	13.2	10.1	11.9	10.5	12.9	15.4	14.7	20.9	20.7
Grouped by Instruments											
Bonds	77.1	111.5	169.1	228.1	180.8	229.7	255.8	229.9	308.7	333.7	481.0
International Bonds	50.1	81.4	136.5	187.7	140.5	178.9	212.9	180.1	258.2	276.1	394.6
Foreign and Special Placements	27.0	30.1	32.5	40.4	40.3	50.8	42.9	49.8	50.6	57.6	86.4
Loans	80.7	117.3	110.1	93.3	122.9	142.2	129.5	131.5	123.8	124.6	139.0
Bank Loans	67.2	62.0	61.1	63.2	91.7	125.6	121.2	124.5	116.0	117.9	130.8
Other Facilities	13.5	55.3	48.9	30.0	31.2	16.6	8.4	7.0	7.7	6.7	8.2

Source: UN, *World Economic and Social Survey*, 1994.

tive and exchange controls that in many cases has proved self-defeating. In the financial sector, besides the structural and prudential controls designed to encourage the growth of the financial system, a wide range of macro-economic and allocative controls was used to influence financial behaviour (e.g. selective credit controls, interest rate controls, restrictions on foreign investment). Operating within the constraints dictated by the state has become a way of life in many countries. Given the instinct for self-preservation and maximizing individual welfare, residents (both individuals and firms) have been creative in devising ways and means to get around government restrictions which, in many cases, have become ineffective.

In the Caribbean, as in a number of other developing countries that adopted the restrictive model, there are now serious questions about the wisdom of this approach to development given the results after three decades of political independence in some cases. Much of the earlier rhetoric like 'economic nationalism', 'taking control of the commanding heights of the economy', 'development planning' has faded in the context of declining economies and a heavy dependence on international financial institutions and foreign resources. Some of the earlier strategies have simply failed. Maintaining bureaucracies has been costly.

The new model being widely embraced envisages a more open policy towards foreign investors and has as its main plank a liberalized 'real' and financial sector relying on market forces to determine resource allocation. But not all is well on the 'liberalized' front. There are reports of both successes and failures. Even some of the earliest protagonists of this model are sounding a word of caution. "Without retreating to the other view, which elevates repressive financial measures to being potentially desirable instruments of public policy, we now recognize that our knowledge of how best to achieve financial liberalization remains seriously incomplete. The order in which the monetary system is stabilized in comparison to the pace of deregulation of banks and other financial institutions must be more carefully considered than had previously been thought".⁴

Besides the sequencing question, there are other issues that are far from resolved. Which are the variables on which policy should be concentrated? For instance, is the interest rate variable a significant one in influencing saving and investment? If so, which version, the nominal or the 'real'? To what extent should attention be paid to the 'real' interest rate, if at all, given the questions surrounding the responsiveness of savings to real interest rates. What should be the nature and extent of government intervention? What is the appropriate exchange rate policy?

Whatever its merits, de-regulation could not mean the complete absence of controls. There has to be regulation and surveillance of various kinds to ensure public confidence in the financial system. Even in a de-regulated environment financial institutions cannot be left to fashion their own rules. While there must be space for innovation and competition to encourage efficiency, the public has to be protected and there has to be supervision with respect to capital resources, the kind of risks undertaken, the conduct of management boards, etc. The primary consideration in formulating a framework of regulation for the operation of financial institutions must be to encourage public confidence. The collapse of a financial institution has repercussions that go far beyond the financial system.

Factors Affecting Savings

Government spokesmen as well as scholars constantly underline the need to encourage savings which provide the financing for investment. The policies in place, however, are not always consistent with what they want to achieve. Some measures in place have a positively anti-saving bias. This often happens where several objectives are being aimed at. One of the dilemmas is that very often one is not sure how and to what extent certain measures and instruments influence savings. The empirical work done on the Caribbean bears this out (see the survey by Augustine Nelson in this volume). There has been a very haphazard approach to the question of saving and investment in the

Caribbean. Instead of public policy leading from the front, it has been more of a reactive nature responding to a combination of intuition, historical practice, occasional events and what is done elsewhere. In certain cases public policy has been downright irresponsible, particularly in cases where the government has used the printing press in a large way to finance budgetary deficits.

It is generally agreed that a stable macro-economic environment is essential to the encouragement of savings and investment. Inflation not only leads to a loss in the value of the local currency, but also puts pressure on the exchange rate which in turn can feed back into domestic prices, thus creating a spiral which is not easy to control. In an inflationary situation people tend to protect themselves by avoiding financial assets and acquiring assets that hold their value. This reduces the significance of the financial system. Financial savings are so important in the intermediary process that sometimes indexation policies have to be instituted to encourage savings. But this policy itself often creates problems of its own. It is sometimes argued that inflation would force people to save more in order to maintain real savings. Of course, if they decide to maintain their real living standard they would have to spend more and this reduces savings. Once the local currency loses its function as a store of value, other implications set in. When savers seek a safe haven in foreign currencies, domestic savings are likely to be lost to the local economy in the absence of mechanisms to encourage the deployment of foreign currencies locally. High interest rates on local currency accounts may not be sufficient to discourage the flight of savings in an unstable situation. Concern over the loss of value in the local currency may outweigh the attractiveness of real interest income. Even in the presence of exchange controls, flight will take place if people lose confidence in domestic economic management. The removal of exchange controls means they can do legally what they were inclined to do illegally, in a regulated environment.

In some countries inflation is closely linked to deficits in the government budget, particularly where such deficits are fi-

nanced by the printing of money by the Central Bank. Fiscal reform aimed at balancing the budget or generating a surplus not surprisingly tends to be seen as a major ingredient in the creation of a stable environment. Fiscal reforms, of course, are also closely linked to the question of saving and investment. Government (or public sector) savings form one component of aggregate domestic savings. In order to eliminate a deficit, a government is faced with the option of either increasing revenue or reducing expenditure. Tax policies can affect both savings and investment by eliminating some forms of taxes, reducing tax rates or by creating exemptions and incentives. Savings can also be generated by compressing expenditure.

There is some debate over who save more - corporations or individuals. The saving propensity may vary from one context to another. The argument is that if the objective is to encourage greater savings, then the groups with the higher propensity to spend should be taxed more heavily. But such comparisons can be simplistic. Where companies are concerned, one also has to look at the rates in other countries if the aim is to attract foreign investment.

Direct and indirect taxation may have different effects on savings behaviour. There is an argument that despite their regressive nature, taxes on expenditure have the beneficial effect of encouraging savings. The Value Added Tax being introduced in a number of countries is essentially expenditure or spending taxes. It tends to complement direct taxes rather than replace them. It serves as a revenue raiser rather than as a mechanism to encourage savings. Taxes, of course, forcibly shift resources from the private to the public sector. To the extent that governments have a high propensity to spend, aggregate savings are not likely to increase. It is worth noting that there are instances where direct tax levels were initially intended to come down with the introduction of spending or consumption taxes, but they have not done so to any significant extent. Governments can always make a case for maintaining high levels of public revenues. If the economy

does not grow, however, the effect will quickly be felt on government revenues. There are limits to what increases in taxes can yield.

There is some debate as to whether changes in the marginal rates have a 'saving' effect. The empirical work here is sparse. Whether greater disposable income induces greater expenditure or greater saving may depend on the prevailing macro-economic context which influences savings and spending behaviour. Despite the urge to spend, the desire to acquire consumer durables to enhance one's living standard and concern about the future are fairly strong instincts. Return on savings, available investment opportunities, age, family situations and inflation rates will all exert some influence on the decision.

The tax system can also be used to encourage savings by exempting interest income from taxation. Surprisingly, some countries do tax interest income. How effective exemption or taxation of interest income is in encouraging or discouraging household savings is difficult to say since people save for a variety of reasons, of which interest returns is only one. A number of countries (including Japan and Sweden) believe exemption encourages saving, and extend preferential treatment to interest income. At least such a policy sends a signal in a certain direction, even if the effect on savings is not significant.

The tax system can be used to encourage indirect savings, e.g. to acquire homes or to become members of credit unions. It can also exempt contributions to insurance schemes and pension plans. There is an argument, however, that depending on how social security arrangements are viewed, individuals may adjust their savings habits with a view to reducing current savings. Besides the wealth effect, this is another of the arguments being put forward to explain the declining savings rates in the United States which has attractive welfare arrangements.

Taxation is a powerful tool and can be used destructively or constructively. Unfortunately, the revenue motive often be-

comes all-pervading to the neglect of other considerations. In recent years, due to pressure from the international aid agencies, greater attention is being paid to the expenditure side of the budget. The tendency in the past has been to use expenditure to determine the level of revenue and borrowing. Rationalization of expenditures provides the opportunity for more imaginative use of the tax system.

There is the possibility that reduced government subsidies will be reflected in higher prices for certain essential services and this will take a larger part of personal disposable income, thus impacting adversely on private savings. Overall, there may be no increase in savings. This will depend to some extent on the increase in prices. If there is greater efficiency in the delivery of services, and incomes also grow as a result of the structural adjustment measures, the adverse effect on savings may not take place.

Some Thoughts on Investment

The question 'what determines investment' has no clear answers in the literature. Public sector investment often depends on the availability of funds, the extent to which government can borrow or is prepared to borrow and government's perceptions on the provision of welfare services and infrastructure. The availability of resources is critical. Once a government has money, it can always find a reason to spend it. Whether the expenditure is on consumption or investment often depends on a range of factors which do not lend themselves easily to analysis. A decision to grant an increase in public sector wages and salaries, for instance, rather than repair the roads, or provide an improved water supply, may be difficult to analyze in terms of logic or sense. To say it is a policy decision does not explain much. All governments walk a thin rope in terms of trying to satisfy the population's current needs and contributing to an expansion of the productive capacity of the economy. Having said this, however, the scarcity of resources should be a more serious consideration in decisions

affecting current and capital spending, the choice of projects and the range of action needed to obtain higher returns from public spending. Very often the problem is not the level of spending. Sometimes an institution may be unable to deliver the quality and level of services required of it because of organizational and management problems. Policy makers are too apt to quote how much they are spending in a particular area as a measure of performance.

The greater emphasis now being placed on the private sector as an 'engine' of growth has raised the question of how best to promote local private investment and to attract private foreign capital. The opening up of the world economy allows for the easy movement of capital across national borders. Traditional fiscal incentives do not have the same force as vibrant growing economies with good infrastructure and displaying an increasing range of opportunities in the production of goods and services, both for the local and foreign markets. As for local investors, the major challenge lies in adjusting to a competitive environment within an appropriate time frame. Foreign investors have developed techniques for dealing with both political and economic risks and are not easily discouraged once opportunities are present. The operating framework devised in a competitive situation is one in which it would be difficult to discriminate between local and foreign investors. To the extent that governments are inclined to assist local investors, new approaches will have to be devised.

Savings are important for investment, but they are not the only factor affecting it. Sometimes the lack of credit is a serious constraint. Even in the presence of available investible funds, however, the desired level of capital formation may not materialize. It is possible to have a declining or stagnant economy with a high unemployment rate existing side by side with lending institutions which are unable to attract farmers and other potential investors. A simplistic explanation is to say that there are no 'bankable' projects. The explanation, however, may be more complex. Societies steeped in commercial activity and lacking a culture in risk-taking would find it difficult to discern opportunities in areas calling for conceptualization of projects from scratch, and touch-

ing concerns relating not only to finance, but to technology, competition, marketing, etc. An entrepreneurial class in the Caribbean is far from present. Projects grow out of imagination able to spot an opportunity even in a bleak environment. To say there are no bankable projects is to say there is no development challenge. The failure to make use of available finance in an under-development context is part of the development *problematique* and has to be addressed by a wide range of policies. In the absence of a more deliberate policy to cultivate communities with a keener business sense and more alert to investment opportunities, the present agitation to create or access larger markets is unlikely to have the desired effect. One of the major problems at the moment is the inability of 'packagers' and 'assemblers' to meet value-added criteria in foreign markets available to the Caribbean.

The Caribbean has a large catalogue of failed ideas, incentives and measures intended to encourage investment. Tax incentives, factory sites, industrial development corporations, investment codes, etc. failed to provide the industrial thrust that was to create employment and transform these economies. The new package takes the form of a liberalized environment, including removal of exchange controls, lower tax rates, one-stop decision centres, less restrictions, etc. The transition from operating in a protected environment to a competitive one will require some time for adjustment. As far as the foreign private investment is concerned, the competition is more intense than ever, given the high growth areas and the entry of the former socialist economies into the world market economy. In this kind of situation there is need for greater attention not only to the mobilization of resources, but to technology, marketing and laying the groundwork for a new breed of investors with the capacity to compete both in local and foreign markets.

As part of the reform process the need to reconcile the needs of savers and investors is an issue for more urgent consideration. Essentially this involves not only measures to encourage savings, but how to make these savings available to prospective investors at various levels. The gross investment rate can hide

serious problems in the distribution of investible resources over various groups and over various sectors. In this respect one of the major problems arises from the apparent inability in a number of situations to forge mechanisms to make credit available to people who normally do not have access to the resources of conventional institutions. The result of this is that not only may existing enterprises, particularly in rural areas, fail to grow, but many new ideas may never get translated into productive assets.

The state needs to review its role in a number of areas. Infrastructural decay has to be reversed. The utility services are critical to production. The education system must take new directions with a view to instilling a wide range of skills and expertise in the labour force. The issue of technology is basic and the questions of access and development have to be placed on the forefront of the new agenda. Institutional reform over a broad front must proceed with greater urgency. Management must be recognized as a key resource in both public and private enterprise.

Government's management of the economy and general administration often exert a far greater influence on public behaviour than is commonly believed. The image projected by a government is critical to the development process. Decisions in the private sector are guided by government's actions and conduct. Government's budgetary policy, for instance, or the management of the public debt, gives clear signals about economic policies which the private sector takes into account in making investment plans. Saving and investment are more likely to be affected by public administration and management than by simple changes in incentives and regulations. In an era of increasing deregulation the monitoring and over-seeing of the financial sector must have as a basic plank the protection of individual and institutional savers. The legal framework ought to be transparent, effective and up to date. In some situations the low level of investment may have nothing to do with interest rates, but with uncertain investment codes, land tenure systems, complex company laws, poorly functioning stock markets, inefficient administration of

justice, poor industrial relations climate, lack of information, restrictive regulatory practice, punitive tax and rates systems, confusing foreign investment regulations, etc. Governments have found themselves prisoners of some of the most archaic laws imaginable. Change comes extremely slowly and with trepidation. The disincentive of the legal and administrative framework to investment tends to be seriously under-estimated.

Concluding Observations

A great deal has been written on the question of savings and investment. It is recognized that the issue is not simply the level of investible resources available in an economy. Equally important is the use that is made of these resources. There are examples of countries which have been able to attain a high gross savings rate, but this has not been translated into high growth rates. And there may be many reasons for this. One may be the profitability in lending for consumption. Another may be the choice of projects. Some savings institutions (e.g. national insurance boards, credit unions, etc.) are so poorly managed and administered that their contribution to the national saving/investment effort is far less than it should be. The legal structures of some institutions are simply archaic. The welfare of the people that specialized institutions are intended to serve is important. But this welfare itself is undervalued through poor management, high administrative costs and investment policies that bear no relationship to national economic objectives. A major objective should be a review of all the legislation governing the various financial institutions with a view to improving their efficiency and ensuring the people they serve are protected.

There is an increasing tendency for financial institutions to become 'financial supermarkets' i.e. to provide as wide a range of services as possible. There is some danger inherent in this. The state needs to keep under constant review, not only prudential controls, but the structural controls as well. Through false or misleading advertising of their products, an increasing amount of confusion is being created. Products need to be clearly defined.

More than this, mechanisms must be put in place to allow recourse to the public when the latter feels it is wronged or its complaints are not being properly addressed. Persons should not find themselves in a position where they have to write the newspapers to get action from a particular financial institution or go to court over a simple matter. Such a situation undermines public confidence in the financial system.

Creating a robust financial system and putting in place financial policies that can lead to a more efficient allocation of resources go hand in hand. Solvency is not simply a function of internal management, but also of the prudential and macro-economic framework in which institutions operate. Very often private financial institutions are forced to hold assets with returns that bear no relationship to the cost of funds, and this tends to result in lending rates not only being higher than they should, but in speculative lending policies. Projects which might be undertaken if rates were lower also become unattractive. Governments and government agencies need to have instruments which give them influence over the private sector and allow them to protect the public, but these have to be fashioned in such a way that they do not severely distort resource allocation. Many legislative requirements in force are more effective in making resources available to the government than in protecting the public. The collapse of several financial institutions in the region reflects serious shortcomings in traditional modes of management and surveillance.

Reliance on a private sector-driven economy requires new approaches to economic management. Fiscal policy has to be formulated in a way that does not increase dependence on local capital markets, and 'crowds out' private investors. The tax system itself has to be seen as more than a means of raising revenue for the government. While there will always be a re-distributive role for governments, taxes should not be at levels which discourage effort and investment. Given the critical dependence on private sector savings, the tax system has to be sensitive to concerns which affect the propensity to save.

Observations are frequently made linking the rise in poverty in the region to reductions in government spending. To the extent that the capacity to spend is linked to the performance of the economy, this is inevitable in situations of declining activity. The solution is not increased borrowing which has its limits; or increased taxation which could further discourage growth. The response has to be in more efficient use of available resources and the provision of a framework which could encourage capital formation and lay a solid foundation for the emergence of stronger and more vibrant economies.

End Notes

¹See U.N., *World Economic and Social Survey 1994*, United Nations, New York, 1994, pp. 15 and 259.

²Roger S. Smith, "Factors Affecting Saving, Policy Tools and Tax Reform: A Review", *IMF Staff Papers*, Vol 37, No. I, March 1990.

³See Alan Roe, "Financial Systems and Development in Africa" in Phillipe Callier (ed.) *Financial Systems and Development in Africa*, The World Bank, Washington, D.C., 1991, p. 7.

⁴R.I. McKinnon, "Financial Liberalization in Retrospect: Interest Rate Policies in LDCs". Paper presented to a conference on *The State of Development Economics*, Yale University, April 11-13, 1986.

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470 / Contributors

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