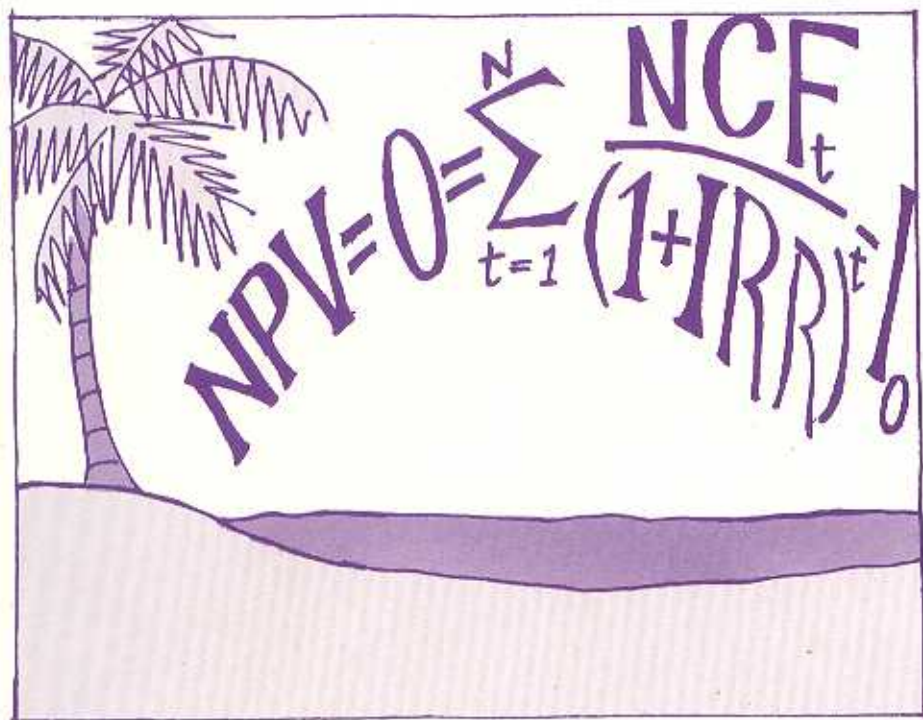


FINANCIAL INNOVATIONS IN THE CARIBBEAN

By M.G. Zephirin & Dave Seerattan



Caribbean Centre for Monetary Studies



FINANCIAL INNOVATIONS IN THE CARIBBEAN

This monograph examines the extent and significance of financial innovations in the Caribbean from the period 1985 to 1997. Structured from a largely policy-oriented perspective, the publication first examines the theoretical framework within which financial innovations are spawned, both in developed countries and emerging Caribbean economies. In a path-breaking effort, it then details and catalogues the key institutional instruments and policy innovations that have swept the financial sector of The Bahamas, Barbados, Belize, the Eastern Caribbean States, Guyana, Jamaica, Suriname and Trinidad and Tobago in the late 1980s and 1990s. The book suggests that such financial innovations in the Caribbean have been driven primarily by enhanced competitive forces, partly unleashed by aggressive programmes of financial reforms and liberalization in an environment of significant uncertainty in the region during that period. It finds that such innovations have also given, and will continue to give, rise to a need for more robust regulatory and supervisory frameworks and for better fine tuning of monetary policy conduct, as it appears that such innovations are already diluting the impact and effectiveness of those activities in Caribbean economies.

About the Authors

Dr. M.G. Zephirin is a financial consultant to the Caribbean Centre for Monetary Studies (CCMS) with special interest in applying micro-economics to public policy, especially financial sector policy. Previously an Advisor to the Governor of the Central Bank of Barbados, she has also worked in the UN system and is a graduate of the London School of Economics; Queen Mary College, University of London and the University of Warwick. She is co-Editor of *"Essays in Honour of William G. Demas: Towards a Caribbean Economy in the Twenty-First Century"*, published by the CCMS in 1997.

Mr. Dave Seerattan is a Junior Research Fellow at the Caribbean Centre for Monetary Studies. Previously he worked in the area of planning and research at the National Insurance Board and the Ministry of Social Development, Trinidad and Tobago. He holds undergraduate and graduate degrees in Economics from The University of the West Indies, where he specialised in Money and Finance. Mr. Seerattan has researched, written and published in the areas of capital market theory and development, the micro-structure of financial markets, the regulation and supervision of financial institutions and the impact of financial liberalization in emerging economies.



Caribbean Centre for Monetary Studies
*Established under the joint auspices of the
Central Banks of the Caribbean Community and
The University of the West Indies*

FINANCIAL
INNOVATIONS IN THE
CARIBBEAN

M.G. Zephirin and Dave Seerattan



Monograph (Special Studies) Series #25

Caribbean Centre for Monetary Studies
The University of the West Indies,
St. Augustine, Trinidad
Republic of Trinidad & Tobago

Published by the
Caribbean Centre for Monetary Studies
The University of the West Indies
St. Augustine, Trinidad
Republic of Trinidad and Tobago

©Caribbean Centre for Monetary Studies 1997

All rights reserved.

No part of this publication may be reproduced in any form or otherwise without the permission in writing from the publishers

ISBN 976 620 097 1 (Paperback)

ISBN 976 620 096 3 (Hardcover)

Printed by Zenith Services Limited
Building #22, Fernandes Industrial Centre
Eastern Main Road, Laventille
Republic of Trinidad and Tobago

Table of Contents

	Page No
Foreword - Governor Winston Dookeran	<i>vii</i>
Acknowledgements - Laurence Clarke	<i>ix</i>
List of Abbreviations and Acronyms in the Publication	xi
Chapter 1 - Introduction	1
SECTION 1 - CONCEPTS AND CONTEXT	
Chapter 2 - Why, Whence and Whither Financial Innovation? The Theory	5
2.1. Financial Innovation in the Nineteen Seventies and Eighties - The Explanations	6
2.2. Financial Innovation as Market Completion	11
2.3. Asymmetric Information and Transactions Costs	16
2.4. Corporate Control	17
2.5. A Theory of Financial Innovation in the Caribbean	19
2.6. Conclusion	22
Chapter 3 - The Products in Mature Financial Markets	23
3.1. The Products	23
3.2. Conclusion	34

Table of Contents - Continued

Page No

SECTION 2 - COUNTRY EXPERIENCES

Chapter 4 - Financial Innovations in the Caribbean and Their National Environments	40
4.1. The Bahamas: Innovations and Their Environment	41
4.2. Barbados: Innovations and Their Environment	59
4.3. Belize: Innovations and Their Environment	99
4.4. The Organization of Eastern Caribbean States (OECS): Innovations and Their Environment	107
4.5. Guyana: Innovations and Their Environment	145
4.6. Jamaica: Innovations and Their Environment	177
4.7. Suriname: Innovations and Their Environment	233
4.8. Trinidad and Tobago: Innovations and Their Environment	253
Chapter 5 - Offshore Finance	309
5.1. Offshore Institutions and Instruments	309
5.2. Caribbean Offshore Innovations	313
5.3. Caribbean-wide Developments	316
5.4. Taxonomy of Innovations by Area and Country	317

Table of Contents - Continued

	Page No
SECTION 3 - POLICY IMPLICATIONS	
Chapter 6 - The Implications of Innovation for Monetary Policy	353
6.1. Background: The Effects of Innovation on Transmission Mechanisms	354
6.2. Monetary Policy in the Caribbean	363
6.3. The Empirical Testing of Innovation and Monetary Policy: The Literature and Present Approach	367
6.4. Data and Estimation	375
6.5. Conclusion	389
Annex 6.1. Data Symbols, Definitions and Sources	395
Annex 6.2. Johansen ECMs	397
Annex 6.3. Engle-Granger Cointegration Results and ECMs	400
Chapter 7 - Implications for Regulatory Policy	405
7.1. Why (Enhanced) Regulation?	405
7.2. The Capital Requirements Approach	413
7.3. Some Innovations	415
7.4. Conclusions	424

Table of Contents - Concluded

	Page No
Chapter 8 - Conclusion	427
Bibliography	431
CCMS Monograph Series	445

Foreword

Over the last three decades the financial systems of CARICOM countries have grown and developed so rapidly that in several countries these financial systems may be classified as relatively sophisticated. These countries have not been insulated from the forces of financial innovation which swept the developed economies in the 1970s and 1980s. The financial innovation which was widespread in the industrialized world in the 1970s and 1980s also appeared in the CARICOM regions in the late 1980s and 1990s. Within the CARICOM region innovation has taken the form of new products, new markets and new institutions.

This study identifies several reasons for the pace and timing of the process of innovation in the Caribbean and also raises important issues for the regulatory authorities. In some jurisdictions environmental, institutional and competitive factors have been the major stimulus to financial innovation, while in others the stimulus has been in response to regulatory changes. One result of these developments is that in some economies there has been a great deal of pressure placed on the traditional relationships between money, income and prices. Empirical investigation by the authors suggest that these relationships differ in Barbados, when compared to Jamaica or to Trinidad and Tobago. These results have implications for policy makers, as questions are increasingly raised about the effectiveness of monetary policy, and the extent to which monetary policy could be viewed as a potential cure for economic fluctuations.

In my view, the study fills an important gap in the financial literature on monetary policy and financial innovations and for policy makers in the Caribbean. There are interesting insights to be gained

from the findings of the authors. The Caribbean Centre for Monetary Studies must be congratulated for their continuing contribution to research on the financial systems of the region.

Winston Dookeran

Governor

Central Bank of Trinidad and Tobago

Port of Spain, Republic of Trinidad and Tobago

December 1, 1997

Acknowledgements

This is the **Twenty-fifth Monograph** produced by the **Caribbean Centre for Monetary Studies (CCMS)** and its predecessor entity the **(Caribbean) Regional Programme for Monetary Studies (RPMS)**. Work of such a path-breaking, fundamental nature requires not only routine secondary research effort but a significant amount of primary research activity on the part of the authors and their support team in the field. In the production and publication of this book over the period 1996-1997, therefore, the Caribbean Centre for Monetary Studies incurred a significant debt to a number of individuals and institutions.

In this regard, special thanks are due to all of the CARICOM region's central banks and many of the operating financial agents and institutions in each of the countries researched. The specific names of some of these contributing individuals are detailed at the start of each country Chapter. Without the tolerance and support of these individuals and institutions, a vital part of the practical dimension of this book would have been sadly missing. As a result, the publication would have been so much the poorer.

Governor Winston Dookeran of the Central Bank of Trinidad and Tobago was very kind and gracious to write the Foreword for this Monograph, at our relatively short request. We are very grateful for his effort and kind words.

The quality of this final publication has undoubtedly been enhanced by the diligent and painstaking effort of its two external referees, **Mr. Roopnarine Oumade Singh**, Manager, Republic Bank of Trinidad and Tobago Limited and **Dr. Roland Craigwell**, Chief Economist of the Central Bank of Barbados. Mr. Singh was able to bring his unique blend of academic and practical strengths to the review process, while Dr. Craigwell's well-known quantitative strengths have been of tremendous value to yet another Centre publication. Their respective efforts are highly appreciated.

As usual, several staff of the **Caribbean Centre for Monetary Studies (CCMS)** were involved in the ‘spade-work’ so vital for an effort of this nature. These include **Michael Craigwell**, **Allisha Abraham** and **Anthony Birchwood**, the last of whom played a key role in the empirical section of **Chapter 6** which sought to measure the possible impact of innovations on monetary policy conduct. A special word of thanks is due to them all and to **Mrs. Donna Danns**, a consultant to the CCMS, who ably supported in the field work on Suriname and Guyana. Typing and layout of the publication were the exclusive work of **Mrs. Gloria Lawrence** and **Ms. Jessy Mitchell**. No expression of gratitude is too much for their sustained and meticulous effort.

Finally, this unique addition to the regional body of knowledge in the field of money and finance, would not have been possible without the dedicated and committed effort of its two authors, **Dr. M.G. Zephirin**, financial consultant to the CCMS and **Mr. Dave Seerattan**, a Junior Research Fellow in the CCMS. I, more than most, am particularly aware of the relentless effort they both painstakingly made, draft after draft, version after version, to make this final product the success I expect it will be, in and outside of the Caribbean region. Now that it is all complete, I am sure that both authors will look back on this product with much pride and satisfaction and, hopefully, say “it was truly worth it”. If they so do, their words, in my view, would be fully underpinned by the moral and professional authority which they have jointly and severally brought to this important piece of policy-based work in the field of money and finance in the Caribbean.

Laurence Clarke
Executive Director
Caribbean Centre for Monetary Studies

December 1, 1997

List of Abbreviations and Acronyms in the Publication

..	-	No data available, data missing
ASD	-	Annual Statistical Digest
ATM	-	Automatic Teller Machines
AVT	-	Agricultural Venture Trust
BA	-	Bankers Acceptances
BAB	-	British American Bank
BACT	-	Barbados Agricultural Credit Trust
BAICO	-	British American Insurance Company
BCCI	-	Bank of Credit and Commerce International
BIF	-	Barbados Investment Fund
BIS	-	Bank for International Settlements
BOG	-	Bank of Guyana
BOJ	-	Bank of Jamaica
BOLT	-	build/own/lease/transfer
BOOT	-	build/own/operate/transfer
BSOCS	-	Building Societies
CAD	-	Capital Adequacy Directive
CAFAS	-	Crown Agent's Financial Advisory Services
CAIB	-	Caribbean Association of Indigenous Banks
CATS	-	Citizens Accumulation Treasury Securities
CB	-	Commercial Banks
CBB	-	Central Bank of Barbados
CBTB	-	Central Bank of The Bahamas
CBTT	-	Central Bank of Trinidad and Tobago
CD	-	Certificates of Deposit
CET	-	Common External Tariff
CFSC	-	Caribbean Financial Services Corporation

CIBC	-	Canadian Imperial Bank of Commerce
CMC	-	Capital Management Certificates
CP	-	Commercial Paper
CU	-	Credit Union
CZARS	-	Certificates of Zero Rated Accrued Securities
DSB	-	De Surinaamsche Bank
EC	-	Eastern Caribbean
ECCA	-	Eastern Caribbean Currency Authority
ECCB	-	Eastern Caribbean Central Bank
ECHMB	-	Eastern Caribbean Home Mortgage Bank
ECM	-	Error Correction Model
EFA	-	Executive Flexible Annuity
E-G	-	Engle-Granger
ELGS	-	Exchange - Linked Government Securities
EU	-	European Union
FD	-	Fiscal Deficit
FET	-	Federal Excise Tax
FI	-	Financial Institutions
FIA	-	Financial Institutions Act
FIRA	-	Financial Intermediaries Regulatory Act
FPA	-	Flexible Premium Annuity
FSC	-	Foreign Sales Corporations
FY	-	Fiscal Year
GBTI	-	Guyana Bank of Trade and Industry
GDP	-	Gross Domestic Product
GDR	-	Global Depository Receipts
GNCB	-	Guyana National Cooperative Bank
HMB	-	Home Mortgage Bank
HMBTT	-	Home Mortgage Bank of Trinidad and Tobago

IBC	-	International Business Company
IBRD	-	International Bank of Reconstruction and Development
ICWI	-	Insurance Company of the West Indies
IDB	-	Inter-American Development Bank
IFC	-	International Finance Corporation
IFS	-	International Financial Statistics
IMF	-	International Monetary Fund
IRUA	-	Individual Retirement Unit Account
JSE	-	Jamaica Stock Exchange
LAR	-	Liquid Asset Ratio
LDC	-	Lesser Developed Countries
LIBOR	-	London Interbank Offered Rate
LLC	-	Limited Liability Company
LRS	-	Local Registered Stock
MMF	-	Market Mutual Fund
NASDAQ	-	National Association of Securities Dealers Automated Quotations
NBFI	-	Non-Bank Financial Institution
NBIC	-	National Bank of Industry and Commerce
NCB	-	National Commercial Bank
NFA	-	Net Foreign Assets
OECS	-	Organisation of the Eastern Caribbean States
OLFI	-	Other Local Financial Institutions
OMO	-	Open Market Operations
OTC	-	Over The Counter
PEARLS	-	Perpetual Automatic Roll-Over Loans Securities
PERLS	-	Principal Exchange Rate Linked Securities
POS	-	Point of Sale

QIC	-	Qualifying Investment Companies
QSD	-	Quarterly Statistical Digest
RBC	-	Royal Bank of Canada
Repos	-	Repurchase Agreement
RR	-	Reserve Requirements
SC	-	Securities Commission
SEB	-	Securities Exchange of Barbados
SEC	-	Securities Exchange Commission
SF	-	Surinamese Guilder
SIB	-	Securities and Investment Board
SINC	-	Secured Investment Note Certificate
SKNA	-	St. Kitts-Nevis-Anguilla
SMARTS	-	Six Month Automatic Rollover Term Securities
SRO	-	Self Regulating Organisations
TB	-	Treasury Bills
TBR	-	Treasury Bill Rate
TISP	-	Tax Incentive Savings Plan
USAID	-	US Agency for International Development
USD	-	US Dollar
UTC	-	Unit Trust Corporation
VAR	-	Value-at-Risk
VCC	-	Venture Capital Company/Corporation
VCIP	-	Venture Capital Incentive Programme
WA	-	Weighted Average

CODES TO TAXONOMY OF INNOVATIONS IN TEXT

Type: Provides the type of innovation by the following:

- **i,** institutional - where the innovation involves the formation of a new institution;
- **s,** security, product - where there is a new security or financial product;
- **m,** market promotion - where the innovation is one that promotes market growth, without creating a new product;
- **t,** transactions-related - where the innovation facilitates financial transactions.

Initiator: Names the organization or firm using the following keys:

- **g,** government;
- **ma,** monetary authority or central bank;
- **qg,** quasi-public or public or statutory body;
- **cp,** private commercial bank;
- **cg,** government-owned or controlled commercial bank;
- **ib,** investment or merchant bank,
- **ins,** insurance company;
- **f,** Other financial institution (where investment bank insurance co. etc is government-owned, this is indicated by the suffix “g”, e.g. fg, insg)

Chapter 1

INTRODUCTION

This monograph sets out to examine the extent and significance of financial innovation in the Caribbean in the ten years from about 1985. The perspective is largely policy-oriented. Innovation has been a marked feature in the financial sectors of some territories' and although financial innovations do generate tangible economic benefits such as completing markets, sharing risks and smoothing incomes, some aspects of such innovation have been a cause of concern to authorities in Jamaica and in Trinidad and Tobago, for example. At the same time, some innovations are clearly a result of a particular policy or regulation. We therefore have an interest in trying to understand the causes of innovation and its consequences.

The structure of the monograph is as follows. **Section 1**, treats with the conceptual underpinnings and literature review aspects of the study. Specifically, **Chapter 2** reviews general theories of innovation and postulates that competition among financial companies to maintain or increase market share and profits in macroeconomic environments characterized by stabilization, structural adjustment or simply highly restrictive policy is the source of many of the innovations observed in the Caribbean. **Chapter 3** describes the mature market versions of some of the instruments observed in Caribbean markets with a view to providing some indication of how the Caribbean versions have been adapted to their markets. **Section 2** consisting of **Chapters 4** and **5**, details the country experiences, and their innovations. **Chapter 4** has eight sections - one for each monetary jurisdiction in the CARICOM

grouping: The Bahamas, Barbados, Belize, the Eastern Caribbean, Guyana, Jamaica, Suriname, and Trinidad and Tobago. Each section describes the general economic and policy environment during the ten years under consideration and provides a taxonomy of the innovations found in each country. The environment and policy backgrounds help locate the innovations in their context and demonstrate those cases where the innovations are a direct result of policy. The descriptions of innovatory arrangements are almost surely incomplete - some territories were not visited by the writers and the information available from a literature review is inadequate. Short visits may also have been insufficient to ensure that information on all new instruments or arrangements was gathered. **Chapter 5** describes innovations in the offshore sectors which are a significant part of some countries' financial sectors, although the flows and balances are completely segregated from domestic accounts. However, the domestic and offshore sectors often share supervisory authorities and the offshore sectors may be important contributors to the domestic economies.

Section 3 explores and pulls together some policy implications from the study. **Chapters 6 and 7** look directly at central bankers' concerns with innovation - how will it affect monetary policy and what are its implications for financial sector regulation. Implications for monetary policy are examined by considering whether the instability of money demand functions attributed to innovation in industrialized countries is also present in the Caribbean. Implications for regulation are derived largely by considering some of the risks posed by new instruments and how these have been dealt with in mature markets. **Chapter 8** draws conclusions and recommendations from both the study and what the study has been unable to examine.



Section 1

Chapter 2

WHY, WHENCE AND WHITHER FINANCIAL INNOVATION? THE THEORY

Since much of the innovation that has taken place in the major financial markets in the eighties and nineties takes the form of derivative instruments, the theoretical examination of financial innovation focuses on explaining the development of new instruments, their purpose and contribution to an optimal financial structure. However, while there is increasing use of derivative products in the Caribbean, at least in the two largest and most active markets, Jamaica and Trinidad and Tobago, innovation in the Caribbean has generally taken the form of institution building and processes. The innovations to be discussed here are the additions of any instruments, institutions, processes or markets which have the potential for expanding the variety and extent of individuals' financial transactions. Existing financial market structures are the results of the series of interacting innovations that have taken place in each country. This study is not concerned with explaining these structures, *per se*, but rather with how they have changed - with the innovations that have taken place - over the last ten years.

Innovation tends to be considered an economic good - as welfare-improving. To some extent this belief reflects the presumption that if the innovation has succeeded, in the sense of being operational, it must be efficient. This is an example of the common hope that market-evolved institutions or products will be efficient because they result from profit-oriented decision-making. One must, however,

distinguish between benefits to society as a whole and the enhancement of profits or opportunities for an institution or some subset of economic agents. Much of the theoretical literature suggests that economic equilibria with innovation can be improved upon. There are thus innovations whose social costs, if calculated, would exceed their social benefits. More pragmatically, there will be innovations which do not meet the authorities' prudential standards. Therefore, in addition to attempting to understand the origin of and incentives for innovation, the study will be concerned with examining whether the results of innovation may have to be corrected through regulation and general policy. Furthermore, even a socially-beneficial innovation may change the market conditions governing the operation of macroeconomic policy, so the study will also consider the implications of innovation for monetary policy.

The literature attempting to explain financial innovation can be divided into two broad groups. In the early to mid-1980s there were a number of studies which used descriptions of prominent innovations to trace their origin. More recently, following the theoretical work on contract design in the economic literature of the 1980s, several economists are re-examining innovation as security design in a general equilibrium setting, the process of innovation and its welfare implications.

2.1. Financial Innovation in the Nineteen Seventies and Eighties - the Explanations

In the earlier literature, a major contender for cause of innovation has been regulation. **Kane (1983)** sees innovation as a part of a process of adaptation and re-adaptation by regulator and regulated to each other's moves in response to both structural and regulatory changes. **Miller (1991, Chapter 1)**, in an article first written in 1986, attributed innovation almost entirely to the incentives to evade or overcome restraints to profitable activity created by regulation and taxes, characterizing the most significant innovations as those that

survived removal of the original restriction. Thus, to give just one example, growth of the supply of private zero-coupon bonds resulted from the US Treasury's linear treatment of the bond yield for tax purposes, greatly increasing the present value of the interest deductions by issuers. Removal of that tax treatment did not, however, eliminate the bonds because, apart from favourable tax treatment in the Japanese market, they were attractive to those who wished to lock in a discount rate.

This explanation does not appear to capture the whole story, however. The timing of the innovation and the effective date of the regulation or tax do not always occur in a sequence, suggesting that an official wedge is the "sand in the oyster", as Miller argues. Miller attributes the Eurodollar market to the Regulation Q ceiling on deposit rates in the USA (which provided US banks with the incentive to attract dollar-denominated time deposits to their unregulated European branches), and it is widely known that the Eurodollar market was greatly stimulated when the US authorities allowed Regulation Q to become binding in 1966, but the Eurodollar market was already gaining prominence in the late 1950s (*see Podolski, 1986*). Miller acknowledges this imperfect sequencing, arguing that it may only be as the wedge becomes sufficiently constraining, that innovation is stimulated. The argument does not appear well-sustained by Miller's prize-winner for most significant innovation - the trading of financial instruments on impersonal futures exchanges - where he describes the sand in the oyster as the abandonment of the Bretton Woods fixed exchange rate system, making currency futures attractive. First, as Miller describes it, the innovator for exchange trading of currency futures was the Chicago Mercantile Exchange, following a period of experimentation in new contracts as they attempted to diversify. Second, the Chicago Board of Trade's earlier attempt at exchange trading of equity options had been frustrated by regulation. These two anecdotes of Miller's suggest that innovation was initiated by organizations or persons who saw an opportunity to expand their

range of operation, with the official action merely being the condition which made for a highly successful innovation.

Nor is it clear why the USA should be particularly affected by regulation. **Freedman (1983)** contrasts Canada and the USA, attributing Canadian innovation in the seventies and eighties, not to regulation as in the US, but to competition, technology and high interest rates. **Silber (1983)** questions whether regulation provides a sufficiently general explanation of innovation, hypothesizing that firms innovate to relax their financial constraints, one of those constraints being regulation. Thus, if the shadow price of deposits (where the volume of deposits is viewed as a constraint on profit maximization) increases, or increased interest rate volatility raises the shadow price of security financing, there is an inducement to innovate. He notes that these increased shadow prices must be sustained in order to justify the high cost of designing new contracts or running a market. In the **Van Horne (1985)** hypothesis, financial innovations occur in response to profit opportunities which are a result of operational inefficiencies (where it is possible to lower the cost of financial services) or incomplete markets. Regulatory change is just one of the exogenous changes which creates such opportunities. Others include changes in taxation, technology and economic activity, new academic work and volatile inflation and interest rates. This list is very similar to that of **Silber (op. cit.)** who, however, also included the effects of floating exchange rates and expanded international trade and omitted academic work. In these viewpoints, circumvention of regulation or regulatory change seems to provide a promotional environment rather than a general explanation. Silber and Van Horne each undertake a heuristic examination of the causes of financial innovation in terms of these factors for the periods 1970-1982 and 1978-1984, respectively, by assigning each of a number of innovations to a factor. They broadly agree that volatile interest rates and inflation, followed by regulation and technology, trigger most of the innovations in these periods.

This tendency to classify innovations is widespread (*see* our own efforts in **Chapter 4**).¹ In their major study of innovation in the financial markets of the Group of Ten,² the **Bank for International Settlements (BIS) (1986)**, provides a taxonomy in terms of their interpretation of the financial intermediary function performed by the particular innovation. Four functions are distinguished: risk (both price and credit) transferring, liquidity enhancing, credit generating and equity generating. A particular type of innovation is then said to be more likely, the greater the demand for the particular function, for example, price-risk-transferring innovation is more likely, the greater is the perception of the demanders of innovation that their positions are at risk from asset price change. The demand for vehicles that perform financial functions is the leading cause of innovation, with the willingness to supply as a constraint relaxed by the events of the eighties - lower costs and improved information from technology, regulatory demand for increased bank capitalization, increased competition and historical dynamics. The concern with explaining the eighties surge of new instruments is evident in all of this work.

As **Mayer (1986)** suggests, what was really innovative about the wave of the eighties may not have been the instruments themselves but the greatly increased volume of trades in them. This could indicate that conditions changed such as to make adoption and use of these

¹ Note that our taxonomy has tried to avoid discrimination among the many ways of classification by attempting to use several. This is less fence-sitting than a desire to explain and describe each innovation. Much of the economic work on the subject seems to assume that their audience knows about and understands the innovations discussed or, even if this is not the case, that they would be content with a relatively broad description.

² The Group of Ten are Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States.

instruments attractive in a variety of markets and among a number of agents. For example, commodity futures and their exchanges had long been active. Commodities are a notoriously risky area of economic activity buffeted as they are by climate and political events. The increase in instruments such as currency and interest rate futures has been linked to the increased volatility³ of exchange rates and interest rates. It may be that it was only as the risk attached to fluctuations in non-commodity goods increased that it became profitable - exchanges and dealers acquired, and increased, their incentive - to formulate instruments in them. At the same time of course, as Mayer notes, both the analytical and technological means were there to facilitate use of the instruments. Such a fortunate coincidence merits further examination. This discussion may appear to hold little interest in the Caribbean context where innovation can often seem to simply follow on the example of developed financial markets. However, there has been a wave of innovations in the Caribbean in the 1990s, apparently stimulated by factors not dissimilar from those put forward for the Western European and American markets. Thus understanding the conclusions about those markets may be helpful in understanding our own.

³ Consider how a derivative can help with interest rate volatility. An interest rate cap places a ceiling on the interest rate payments that a debtor would need to make on floating rate debt. The interest rate cap is a call option with a strike price of (say) $x\%$ per annum on the notional principal, with the loan payment coinciding with the expiration of the option. That is, the option holder purchases the right to receive $[(r-x)$ times notional principal times length of time since option purchase] if the rate of interest on the debt rises above $x\%$ to the new rate $r\%$. Since the amount the holder receives is equal to the additional amount he has to pay in interest on the floating rate debt if the interest rate rises, he has purchased insurance against a rate increase and obtained insulation against interest rate volatility. Note that if the rate of interest declines below $x\%$, the option expires worthless.

2.2. Financial Innovation as Market Completion

The later literature on innovation has been less concerned with understanding the immediate reasons for the innovations of the seventies and eighties and more with providing general models of innovation. **Allen and Gale (1994)** pool several of their articles on the subject of financial innovation. Largely because of their perception that, despite the role of financial markets in sharing risk and smoothing income, and the markets' recent plethora of new instruments, individuals in the 1990s, especially in the United States, are subject to many and perhaps more risks against which they cannot insure (unemployment, ill-health, inflation), Allen and Gale are concerned with the risk-sharing motivation for financial innovation. With complete markets all risks would be hedged, so financial innovation can be viewed as the process of introducing the missing securities. The Allen and Gale focus on the effect of unhedged risk on individual welfare, while framed largely in the US context, should be of considerable interest in the Caribbean where unemployment risk, the inability of firms to spread investment risk and individuals' limited ability to diversify their wealth are all of ongoing concern. They also note that the reduction of transactions costs, corporate control and asymmetric information provide other frameworks within which innovation can be examined. These categories summarize most of the work on financial innovation and we will examine the literature on each in what follows.

2.2.1. *Incomplete Markets*

Since the view of financial innovation as completing markets is central, we digress here to consider what is meant by completing markets and how financial innovation completes markets. The theoretical framework which explains the importance of complete markets is the Arrow-Debreu general equilibrium model. It provides the set of assumptions required for an economy of individual agents, with no conscious coordination, to achieve consistent welfare-

maximizing production and exchange transactions and outcomes. One of the requirements is a set of complete markets. Markets are complete when a price exists for each good such that agents can trade as much as they wish at that price. To take account of uncertainty, the goods referred to are contingent commodities identified by date, state of nature, location and physical characteristics. Thus a pound of sugar in Guyana if there is a drought in Europe is distinct from a pound of sugar in Guyana if Europe is having good weather. This means that there exists a price for every commodity in every eventuality at every date in the future. One can immediately infer that markets are missing - the range of futures markets alone is very limited. There will be many eventualities of which the individual cannot take account because s/he cannot choose to buy the contingent commodity that would permit her/him to achieve her/his preferred consumption if a particular expected state occurs. In other words, the lack of markets limits the ability to insure. The contingent goods need not be commodities, however. Securities which make a payment in the numeraire commodity contingent on the occurrence of a particular state of nature, and nothing otherwise, can replace complete commodity markets because individual purchase of the individual securities permit individuals to allocate risk (*see Arrow, 1964*). Individuals can purchase securities with payoffs which allow them to transfer income across states according to their random income and contingent on the revealed state of the world. Since the securities allow agents to transfer income across states, the required number of markets will be less and complete security markets permit the conclusions of the A-D general equilibrium model to go through. Complete markets then require that securities with state-contingent claims be priced for every state of nature so that the securities not only allow for postponement of consumption but allows the investor to choose consumption dependent on the state s/he expects in the future. This is very much what some of the new instruments appear to be doing. Allen and Gale provide an example to demonstrate that trading appropriate securities is a substitute for insurance because it allows individuals with different endowments in each state of nature to share

the risk of a low income outcome. When markets are incomplete there are risk-sharing gains which can be captured by the introduction of securities and when markets are complete, new securities are redundant. This encapsulates the relationship between complete markets and innovation. Financial innovation theory sets out to explain why and how new securities are supplied. The lack of markets (that is, there are insufficient securities to provide a money payment in every state of nature) implies that there are contingencies against which individuals cannot insure and a demand for such insurance implies that financial institutions can supply such insurance at a profit. This may explain why financial innovation is often assumed to be welfare-improving when it supplies an additional security. However, new securities may not always introduce new risk-sharing possibilities (for example some new instruments may be synthesized by combinations of financial transactions such as borrowing/lending and purchase/sale of an asset (*see Cooper, 1986*) or even reduce the transactions cost of risk-sharing.

There are several reasons for market incompleteness which motivate the other theoretical contexts in which innovation has been studied. **Geanakoplos (*op. cit.*)** lists the reasons for market incompleteness as:

- **Asymmetric information.** Consider the two problems created when an agent has private information about characteristics or actions. With adverse selection (hidden information), a market contingent on the quality of a producer cannot be established if only the producer can distinguish his quality. Moral hazard (hidden action - when agents can affect the probability of random events by their actions) requires insurance markets contingent on unobserved claims. Essentially, the implication is that there are risks which individuals cannot insure against.

- **Limited market access.** Many of the traders most interested in the supply of a particular asset may not have access to the markets. For example, they may lack the necessary knowledge or income.
- **Transactions cost.** The cost of establishing and specifying any particular asset market may be greater than the revenue that can be earned from it. These costs include (*see Laffont, 1989*) those of ensuring that promises are met, recording transactions, and the arbitration process. (These costs appear particularly relevant to innovations which affect trading processes, as opposed to instruments).
- **Bounded rationality and decision processes.** When these obtain (which, outside of our textbooks, is always) it will not be possible to specify all events which need to be insured against.

In addition to these, **Laffont (1989)** considers:

- Unpredictable events. If events cannot be forecast, degrees of probability cannot be attached to expected states of nature and thus insurance against them cannot be offered.

Results on incompleteness also indicate why innovation is not always welfare-improving. **Geanakoplos and Polemarchakis (1986)** demonstrated that general equilibrium with incomplete markets is not constrained efficient in that, even with the same limited set of markets, it is possible to find allocations which are Pareto-improving. Competitive behaviour by the market does not do this on its own because of a pecuniary externality: when markets are incomplete, a sequence of markets, with trade at every date and for every state of

nature is the appropriate model and individuals face a budget constraint for each but individuals choosing their asset portfolios do not take account of the effects their current decisions have on future allocations. Adding a market does not ensure a Pareto-improvement, unless that market completes the markets. General equilibrium with incomplete markets provides a case for government intervention that does not exist in the Arrow-Debreu competitive general equilibrium model (which remains the dominant paradigm in financial economics) - a point to which we shall return in discussing the extensive role played by Caribbean governments in the creation of institutions.

2.2.2. Allen and Gale on Optimal Security Design

It is the incomplete markets framework which informs Allen and Gale's consideration of the introduction of new securities. Markets are incomplete because security issue is costly and the cost implies that the issuer only has an incentive to issue because short sales are not possible. Since markets are incomplete investors' marginal rates of substitution between goods in different states of nature are not equated. This implies that individuals have different valuations of the security which is designed by its issuer to maximize his receipts from issue. Allen and Gale find that it is optimal for the firm to design securities to reflect the different marginal valuations of agents - the income stream is split so that in all states of nature all payoffs are allocated to the security held by the group that values it most. Market valuations are then perfectly exploited and the market value of the firm will be higher, permitting the original owners of the firm to increase the value of their holdings. However, the assumption of no short sales is unrealistic, implying as it does that individuals or owners cannot borrow. Recognizing the possibility of short sales provides support for Allen and Gale's argument that the incentive to innovate may require imperfect competition. In a large economy the innovator will tend to be worse off than the non-innovator because $s/$ he has incurred the cost of innovation. The incentive to innovate must

therefore come from the increase in firm value resulting from innovation. However, differences in market value provide opportunities for short sales which may be large relative to the market, allowing the firm to acquire market power.

2.3. Asymmetric Information and Transactions Costs

A number of studies which regard innovation as a response to asymmetric information between the firm and its investors have considered security design as a means of conveying the hidden information or compensating for its effects. These models often provide explanations for particular instruments. **Brennan and Kraus (1987)** view the choice of financing as a communication device when firms are unable to convey credibly their prospects to prospective investors, and derive properties which securities must have in order to be informative. For example, when there is private information about the distribution of returns of the firm and the distributions according to type can be ranked by a mean-preserving spread, value-revealing financing is said to include convertible bonds. **Ross (1989)** does not find market completion an adequate explanation of new securities because derivatives are priced precisely on the assumption that they are already spanned by their underlying securities. He attributes the innovations of instruments and trading strategies to the agency relations which constrain the institutions who have now replaced individuals as the main agents on the market. Retail derivatives permit institutions to take advantage of economies of scale by having standardized securities priced by the market, rather than having to evaluate the individual risk characteristics of specialized securities. For example, an option is a lower cost method of permitting an individual to borrow and invest in equity since it avoids the lender having to monitor the use of the funds. The different types of assets on the market are also seen as a response to agency problems. When the value of securities depends on information, uninformed traders can make trading losses as a result of the collusive behaviour of informed insiders (as in **Gorton and**

Pennachi, 1990). Liquid securities or high quality corporate debt such as commercial paper allow the uninformed to trade in such assets rather than in securities whose returns depend on information (equity). Since evaluation of the payoffs from equity is highly dependent on information, the uninformed are at a disadvantage relative to the informed. A similar idea motivates **Boot and Thakor (1993)** although they approach the issue from the perspective of the issuer. High quality firms whose quality is *a priori* unobservable have an incentive to issue both a senior security (debt) whose valuation requires less information and a junior security (equity) to be held by the informed. The junior security is attractive to the informed because they can be compensated for their information acquisition by the higher returns to becoming informed about it. Note that the senior security is that whose value is nearer to the uninformed assessment. Since diversification reduces the noise in informed traders' signals, and increases their demand, high quality issuers also have the incentive to pool their securities (asset pooling) and to partition the pooled securities' cash flows into securities ranked by seniority (securitization) in order to encourage the informed to hold the junior securities. The informed traders' demand in turn makes the market value of the junior securities a better reflection of their underlying value, to the advantage of the high quality issuer.

Merton (1992), with a concern similar to that of Ross, argues that mutual funds and derivatives provide important economic benefits to investors and issuers even though their prices are based on the underlying securities because they economize on the transactions costs of trading, avoiding the commissions required on each purchase or sale.

2.4. Corporate Control

The final motivation we shall consider for the form of securities observed on the market is that of corporate control. The overall theme in the literature is that the contest for control of

the corporation influences the form of financing employed by the corporation - the securities it issues. **Harris and Raviv (1988)** model an entrepreneur who must finance investment by selling equity claims. They find that it is optimal (in the sense of obtaining the best management) if the security issued has one vote per share and control of the corporation is determined by the majority rule (as is in fact the case empirically). The majority rule is optimal because it treats incumbent and rival management optimally, ensuring that better management can defeat the inferior management. Equality between the cash flow claim and the vote (one vote per share) ensures that the manager purchasing the most investors' votes (the winner) is the manager with highest total value (a similar result is obtained by **Grossman and Hart (1988)**). **Harris and Raviv (1988)** also analyse the structure of the firm when there is a conflict of interest between those who want to control the firm and outside investors because the contestants for control obtain private benefits from that control. When the entrepreneur goes public, investors anticipate opposition to a more able rival (for control of the firm) and reduce the amount they are willing to pay. In order to avoid this the entrepreneur needs to demonstrate a commitment not to oppose ability. He does this by security design: only one class of security (equity) can vote. By restricting his own access to votes so that the value of the only voting security is affected by the quality of management, the incumbent's ability to acquire votes is linked to his ability to maximize investors' portfolio value. This implies that debt securities have no votes, suggesting a rationale for the debt/equity forms that we observe. However, these models are not entirely satisfactory. The securities with aspects of both debt and equity, such as convertible bonds, are not accounted for, although those are the securities that initial intuition would suggest are issued for reasons closely linked to corporate control and management performance. In addition (*see Harris and Raviv, 1989*) the predictions of the model and its conditions do not always accord with observation. Experience in the Caribbean would nevertheless suggest that security design is important in ensuring good management and providing outside investors

with some form of control, or at least veto power. It may be that confining security choice to the entrepreneur fails to capture the influence of the important investors, such as institutions, who may, in practice, have a more important role in the design.

2.5. A Theory of Financial Innovation in the Caribbean

The maintained hypothesis in this study is that financial innovation is the response of competitive profit maximizing financial institutions to profit-making opportunities. Almost tautologically, therefore, when the cost of an innovative activity (which may itself lower the costs of financial intermediation) decreases, as computerisation implies, for example, more innovation will be undertaken. Similarly, when regulation restricts revenue-earning, innovation will take place to circumvent the restriction or take advantage of the rule. Since innovation is costly, however, even profit-maximizing financial institutions will not undertake it unless it provides an opportunity for profit that cannot be captured otherwise. Thus, in markets where there is less competition for market share because potential customers are not mobile, one would expect to see less innovation. “Aggressive” competitors would also be expected to lead in innovation in markets where share is fought over. Structural economic changes would, from this perspective, be expected to elicit a wave of innovation because the fundamental parameters that have governed existing arrangements and profits will have changed, requiring re-optimization - innovation - on the part of the financial institutions. Clearly, this “hypothesis” contains strands of much that has already been described by the literature. Competition is considered the driving force of innovation here, however, rather than a causative factor on a par with all the ‘causes’ discussed. A question to be answered is whether this notion has sufficient content to be useful. After all, in many of the precipitating factors for innovation will be the causes adduced by earlier writers.

Despite their proximity and similarity in terms of traditional banking practices, the market differences governing the financial sectors in the Caribbean appear to be having a significant influence on the development of their financial sectors. The types of innovation vary substantially between markets. While competition is the driving force, environmental differences, largely determined by government regulation, the policy framework and official stance, determines the form that competition takes, and the kind of innovation introduced. Thus, the service orientation of industry in The Bahamas means that innovation there, while limited, has concentrated on the introduction of retail banking services, influenced by technology and, it can be speculated, by the pervasive influence of an offshore banking sector which caters to a wealthy international clientele. In Barbados, on the other hand, the service orientation and offshore banking sector has not had a significant impact on retail services. Basic technological innovations such as ATMs are available but the retail services available remain very traditional and banks have not attempted to experiment in the introduction of market-segmenting deposit products. There are a few market leaders, in some cases squeezed by their inability to expand market share and profits in a well-banked market with relatively low growth, who are trying to introduce new products against traditional resistance. In Jamaica, where innovation has been most marked, competition has had to respond to a volatile regulatory and monetary policy stance. To a much lesser extent, this is also true of Trinidad and Tobago. This is not to say, however, that such innovations serve no purpose other than regulation evasion. If the regulation has provided the justification required to incur the up-front high learning cost of the innovatory product, the product may nevertheless continue to provide useful facilities that expand the options available to agents in the financial market. Market leaders appear to be produced by the need to be competitive and, to some extent, by company culture. For example, the indigenous banks in the Eastern Caribbean are those who are most innovative in the introduction and use of technology, despite their evident disadvantage in this area (no headquarters from

which to adopt technology and techniques), whereas in The Bahamas the technological innovations are led, it would appear, by the smaller (in terms of domestic market share) international banks. In both Guyana and Suriname, with lower incomes and less industrialized economies, the financial sectors compete, mainly for deposits, in anticipation of the need to fund investments that would result from stabilized economies.

The difference in reactions to high reserve requirements is illustrative of this difference. For about two years from the beginning of 1984, the reserve requirement in Jamaica was between 10% and 20% higher than the requirement in Barbados has been for almost 10 years (slightly less than one third), and after 1992 they rose to almost half of deposits. In Trinidad and Tobago the reserve requirement only recently reached as high as 25% of deposits. However, in both Trinidad and Tobago and Jamaica, reserve requirements have evoked compensating reactions - the formation of intermediaries not subject to the requirements, the creation of instruments which allowed banks to lend without the cost of the requirements. In Barbados, no such reaction is evident. What is the source of this difference in response? In Trinidad and Tobago, it is interesting to note, potential borrowers themselves requested that their banker arrange the instrument in order to reduce their cost. That is, the innovation was demand-driven by an agent with an investment opportunity and sufficient knowledge of the market to understand how to reduce costs. In Jamaica, the initial opening of merchant banks was a response of the banks themselves. Several environmental differences between the experiences of Jamaica and Trinidad and Tobago and that of Barbados suggest themselves: the former had market-leading banks or institutions which were aggressively competitive, they had greater volatility of prices, driven by the exchange rate. Barbados has a more conservative banking sector. In both Jamaica and Trinidad and Tobago, there were several intermediaries in the market, competing for customers and hence willing to make unusual arrangements. On the

other hand, the relative stagnation of the real sector in Jamaica does not suggest an investment-driven demand. In Barbados, especially in the periods of reserve increases, high public sector demand should have increased demand for financing by the sectors supplying government. Was such investment less interest-elastic? Was the demand less? Or did the relatively conservative banking sector, with few of the competitive forces available in the large markets, preclude these new instruments? Another reason may be related to the lower volatility and uncertainty in the Barbados market. Investors with lower expected costs in terms of exchange rate hedging, aggregate policy management etc. may have had a greater ability to pay higher costs. It may also have been that the banking sector, aware that circumvention may, in the longer run, have made stabilization more difficult, implicitly cooperated with the authorities. Barbados' ability to arrive at "social contract" in respect of wage increases supports this.

2.6. Conclusion

No test of the hypothesis that innovation is largely the result of competition conditioned by the environment of the competitors is carried out here. More extensive investigation would be needed to judge its validity. In any case, to the extent that innovation improves services to savers, investors and the economy, the encouragement of competition, already a factor in most sectors, would, according to this theory, promote innovation. The need for regulation remains and is incompletely addressed in **Chapter 7**.

Chapter 3

THE PRODUCTS IN MATURE FINANCIAL MARKETS

One of the striking aspects of this study is the fact that there are not only distinct differences and many similarities between products and facilities found in developing countries such as the Caribbean and their more developed counterparts, but in several instances instruments in developed countries with identical names do not share the same attributes or characteristics of these instruments in this region. The following descriptions are therefore provided in order to bring out the differences and similarities between the products or facilities developed in the Caribbean and those common in the large financial markets. While such descriptions are available from many sources, the focus here will be on the aspects most relevant to the Caribbean experience. The descriptions tend to be biased towards the US market because the predominantly North American origin of Caribbean financial institutions and the training/experience of their staffing suggest that the North American facilities will have the greatest effect on our markets.

3.1 The Products

3.1.1. Bankers Acceptances (BA)

These are short-term negotiable (i.e. they can be traded) discount notes (they do not pay interest, the return to the investor being the appreciation in the value of the rate, which is issued at a

discount from face value), drawn on, and accepted by, banks which pay face value at maturity. Initially, the BA is simply an order to the bank by a client (drawer), instructing the bank to pay a specified amount at a specified date to the named person or bearer. The order becomes an acceptance when the bank has signed and stamped it “accepted”. It is then an asset of the bank which the bank may hold in its own portfolio (in which case it is making a loan to the client) or may rediscount (in which case the bank is allowing the client to borrow in the money market, using the bank’s credit). The process is as follows: a client intending to make a purchase and its bank make an agreement allowing the client to draw a time draft on the bank, to be accepted by the bank and repaid by the client. The client may then write a draft on the bank which accepts and discounts for the client who uses the proceeds to pay his seller. Repayment of face value is made at the maturity date (**LaRoche, 1993**). BAs are usually used to finance international trade and for domestic trade and storage. However, they have also been used for working capital or general finance purposes, as opposed to the financing of specific goods trades, especially in the seventies when high interest rates made it attractive for banks to discount BAs rather than carry the reserves entailed by deposits. However, the market in the US is on the decline.

3.1.2. Commercial Paper (CP)

These are short-term unsecured negotiable promissory notes issued at a discount by non-financial firms. They may be backed only by the creditworthiness of the issuer or may be guaranteed by a third party. The largest market is in the USA where large well-rated firms find that they could obtain funds more cheaply by borrowing directly from the market rather than from banks, while investors could earn competitive rates on instruments tailored to their needs. One of the advantages of CP for the issuer is that, by maintaining certain characteristics, the issues do not have to meet the Securities and Exchange Commission’s costly registration requirements for marketable

securities. These characteristics have shaped the CP: the security must be short-term so maturities in the USA are mainly within 60 days, but may go up to 270 days; the security should not be of a type usually purchased by the public so CP are usually in large denominations (**see Hahn, 1993**). CP is usually rated by credit rating agencies. In the 1980s the market expanded substantially as a result of, initially, high bank borrowing rates, economic expansion and merger activity. Small corporations also began to take advantage of the lower financing costs. Most issues by smaller corporations were guaranteed by bank letters of credit, carrying the rating of the guarantor, rather than that of the issuer. Major investors in CP are money market mutual funds and bank trust companies on behalf of individuals (**Post, 1992**). The Securities and Exchange Commission (SEC) regulates the required credit rating and asset proportions which money market mutual funds may hold. Paper is placed by the corporation itself or a dealer, depending on the size and reputation of the issuer. Asset-backed commercial paper, securitizing credit card and trade receivables also became important in the 1980s. Banks were able to earn fees on arranging the asset backing through specially formed entities which purchased the assets and issued the securities. They also provide liquidity through lines of credit to issuers (**Post, op. cit.; Cocheo, 1992**). Banks were thus able to replace their traditional balance-sheet based intermediary role by one which reduced their use of capital at a time when intermediaries were under pressure to increase capital. The US market is by far the largest; in the UK bankers' acceptances tend to take the place of commercial paper.

3.1.3 Convertible Bonds

The holder of a convertible bond has the ability to choose to exchange the bond for other securities, usually for a fixed number of shares of the common stock of the issuer, without additional funds. The convertible bond provides the holder with greater safety than does common stock because interest payments have priority over dividends.

But its selling price is near to that of the stock price when the stock is doing well. The investor in a convertible bond can thus benefit from returns close to that of the stock while incurring less risk than would result from holding the stock.

3.1.4. Foreign Currency Options

Foreign currency options allow the holders to insure against an adverse change in the exchange rate by paying a fee. A company in Trinidad and Tobago, for example, which knows that it will require US\$100,000 at a particular date can insure against a depreciation of the exchange rate by paying a premium to buy a call option on US\$100,000 with an exercise price of say \$6.00 at that date. The company thus has the right to buy US\$100,000 at the exchange rate of TT\$6.00 per US dollar at that date. If the TT dollar depreciates to TT\$6.25 per US dollar, the company will have ensured its access to US dollars at the more favourable rate and this facilitates its planning (*see Options - part 3.1.7. below*).

3.1.5. Forward Contracts

A forward agreement is a contract to trade an asset at a specified price and time in the future. It differs from a futures contract in that it is a non-standardized agreement concluded between two parties and cannot be traded. They both serve to allocate risk by permitting purchasers to lock in interest rates or exchange rates against future transactions. In the absence of a futures exchange, one would expect to find forward agreements, rather than futures, in the Caribbean.

3.1.6. Mutual Funds

A mutual fund is a company which allows a group of investors (who need not, and usually do not, know each other) to pool their

funds to act as a single investor in stocks, bonds or short-term money instruments. Investors have to buy shares directly from the company and must redeem their shares from the company. New shares are therefore issued, and the fund's assets increased, whenever an investor purchases new shares. The fund must repurchase the investors' outstanding shares on demand. New shares are issued and old shares redeemed at a price equal to the fund's net asset value per share on the date of repurchase, where net asset value per share is the difference between total assets and liabilities of the fund divided by the number of shares outstanding. A mutual fund, therefore, does not have a fixed capitalization. Investors in a mutual fund are effectively buying securities which pay the prevalent rate less a commission to the managers of the fund. A major advantage of the mutual fund is the opportunity it provides to small investors to benefit from risk diversification and scale economies in professional management. Disadvantages may include high management fees relative to the performance of the fund and possible conflicts of interest in the management of the trust. In British-derived usage mutual-fund-type companies are known as unit trusts.

3.1.7. Options

An option is a contract which gives the right, but not the obligation, to buy (a call option) or sell (a put option) a specific financial instrument at a fixed price (the exercise or strike price) before or at a specific date (the expiration date). The buyer of the option is buying a commitment from the seller (the writer of the option) to buy or sell a specified number of units of the underlying financial instrument. The buyer pays the writer a premium (the option price) for this commitment. The value of an option depends on the prevailing price of the underlying asset. For example, an option to buy will not be exercised if the prevailing price for that instrument at or before the expiration date is less than the price stated in the contract, since the holder of the option would in that case find it cheaper to buy the asset at the lower prevailing price.

There are many forms of options. Among those used in the Caribbean are interest rate caps, collars and floors which are interest rate options used to fix the interest rate on variable (or floating) rate debt. In options on debt instruments (bonds, for example) the strike or exercise price refers to the interest rate and is usually quoted as a percentage on a notional amount of principal.

A call option on a loan with an exercise price of 8% per annum gives the option holder the right to pay only 8% if the rate on the debt is above 8% at the expiration date. It thus places a ceiling or a **cap** on the loan rate which the borrower will have to pay. If the interest rate on the floating rate debt is less than 8% at the expiration date, the call is worthless. If the interest rate is above 8%, the call pays the difference between the actual rate of interest and the strike price (8%) times the notional principal times the proportion of the year since purchase of the option. An **interest rate cap** is a series of interest-rate call options for successive payment dates (the reset dates) designed to hedge a series of cash flows on debt (*see Abken, 1993*).

Similarly, the holder of a variable interest bond (a lender) would lose if the rate of interest falls and can buy a rate of interest put option which provides a **floor** on the floating rate of interest on the debt. If the rate falls below the strike level, the put would provide the option holder with a payoff, compensating for the lower interest income on the loan. An **interest rate floor** is thus a series of put options on floating rate debt.

3.1.8. Participating Forwards

A participating forward is a combination of option purchase and sale which allows the agent effecting the combination to protect itself against unfavourable changes in foreign currency spot rates, while allowing for partial participation in favourable changes.

3.1.9. Principal Exchange-rate-linked Securities

A security whose principal repayment is linked to a specified foreign exchange rate. The size of the repayment in domestic currency increases (decreases) as the specified foreign currency appreciates (depreciates). The security acts as if the investor purchased a call option on the specified foreign currency and sold a put option on the same. It has been attractive to those who wish to speculate in foreign currencies but cannot purchase the foreign option directly.

3.1.10. Repurchase Agreement (Repos)

A repo or reverse repo is a contract between a holder of securities and an investor for the holder to sell the securities to the investor with agreement that the holder repurchase the securities from the investor at a fixed price and a fixed date. These contracts are called repos when viewed from the standpoint of the supplier of the securities (the original issuer) and a reverse repo from the standpoint of the investor. In effect, the investor is lending the original issuer of the securities the amount for which s/he purchases the securities and the price specified includes interest on the loan. Repos have characteristics of both secured loans and security purchase and sale transactions but cannot be classified as either. They are commonly used by dealers to finance their operations in the large financial markets and by monetary authorities in the conduct of monetary policy.

3.1.11. Secondary Mortgage Institution

These are institutions that purchase mortgages from the banks or other financial institutions that offer them, providing a secondary market for loans. Loans have been difficult to market because of the private information which lenders have about borrowers.

3.1.12. Securitisation

These constitute arrangements and contracts by which non-tradeable bank loans and other financial assets are transformed into tradeable securities or assets. The original assets are typically home mortgage loans, car loans and credit card receivables (The term is also used to describe corporate financing through the issue of tradeable securities, such as commercial paper, rather than bank loans. Commercial paper and similar securities are being treated separately here). Securitisation allows for the unbundling of the activities that go to make up a loan, as is most evident in the secondary mortgage market. Thus different institutions may specialize in origination of the loan, funding of the loan and servicing it. Loan sale was stimulated by regulatory pressure on banks to increase their capital; by high, unstable interest rates which encouraged banks to shed interest rate risk; by technological advances; and by deeper bond markets (**Berlin, 1992, and Bank for International Settlements, BIS, 1986**).

3.1.13. Short-term Investment Pools

Cook and Duffield (1993) define short-term investment pools as funds such as money market mutual funds which pool short-term financial instruments and sell shares in them to investors. They allow investors to gain access to returns which would usually require large investments, and can improve the liquidity and diversification available to investors.

3.1.14. Stripped Bonds

These are securities from which the coupon payments have been separated. “Strips” also refer to the coupons themselves. Zero-coupon (or single payment) securities are produced from an existing conventional bond, either by physically detaching the coupons (some

US government securities have been specifically designed to facilitate this) or by selling certificates representing separate entitlements to the interest payments and principal on the security held in trust. Zero-coupon securities appeal to investors who wish to lock in receipt of a sum of money at a future date or to institutions with a long-term predictable outlook such as pension funds and insurance companies. The fixed future payment also means that the price is very sensitive to interest rates. As a discount instrument the tax treatment may be a significant determinant of demand. Earnings are the difference between the price and the par value - the discount. When tax legislation does not explicitly recognize, or keep track of, such earnings, the holders may be able to avoid the tax that is payable on interest earnings of coupon-paying bonds. Or the tax may be postponed until the discount is received, providing a tax advantage which was removed in the USA in 1982. Several investment banks have set up trusts to issue 'strips', including Salomon Brothers in the USA with CATS (Certificates of Accrual on Treasury Securities). Similar instruments have already appeared in Trinidad and Tobago.

3.1.15 Swaps

A swap is an exchange of payment streams over time between two agents (referred to as counterparties). They transform underlying assets and liabilities into a preferred form. A firm can use interest rate swaps to access a wider range of asset and liability markets without issuing liabilities or acquiring assets which increase interest rate risk. Thus a firm with fixed interest liabilities which wishes to invest a portion of its portfolio in short-term variable rate assets without risking a divergence between its fixed liability payments and floating rate income, or wishes to lower costs, may agree to pay another a floating rate of interest in return for receiving a fixed rate. For example, take a bank with a high credit rating and a firm with a lower rating. The bank receives a larger quality discount (relative to the lower rated firm) on

the interest rate it pays in the fixed rate bond market than it does in the floating rate market: the bank (firm) borrows at fixed rate i ($i + 1.0\%$) and floating rate l ($l + 0.2\%$). The bank can issue fixed rate debt and make payments based on the floating rate (say l) to the B-rated firm which issues floating rate debt and makes fixed rate payments (say $i + 0.4\%$) to the bank. The interest payments on its bond issue and the swap are based on the following rates:

$$- i + (i + 0.4\%) - l = - (l - 0.4\%)$$

whereas its cost of floating rate debt is $-l$. The firm's interest payments on its floating rate debt and the swap are based on:

$$- (l + 0.2\%) + l - (i + 0.4\%) = - (i + 0.6\%)$$

whereas its cost of fixed rate debt is $-(i + 1.0\%)$. The counter-parties have each made a gain of 40 basis points (note that this equal sharing of the quality differential is entirely arbitrary). The interest paid on swaps is based on an agreed notional principal and usually only net interest payment streams are made. Interest rate and currency swaps are the most common. The term currency swap is used to describe two different kinds of transaction. It originally referred to an exchange of currencies at one delivery date with an agreement to reverse the transaction at a future date at an agreed exchange rate, only the principal amounts being exchanged at each date (**BIS, 1986**). The currency swap as derivative instrument refers to an exchange of both currency and interest payments. Banks now intermediate in the swap market, swapping with a counter-party, hedging the interest rate exposure while finding an offsetting swap to earn the spreads resulting from the operations. End-users use the market to obtain lower rate financing than otherwise available, as in the example above, to hedge interest rate or currency risks that arise in their operations and for asset/liability management and speculation (*see* **BIS, 1986**).

3.1.16 Syndicated Loan

A syndicated loan is a loan made by more than one bank to a borrower, with the loan usually having a floating interest rate. It allows several banks to share the risks of an activity and can facilitate the financing of large-scale activity.

3.1.17 Synthetic Securities

This represents a form of a security created after the issue of its original security with terms that might not previously have been available in the market. Alternatively, it could be a combination of securities that produces the same financial effects as the ownership of a different asset.

3.1.18 Universal Life Product

This constitutes a combination of term insurance and a tax-deferred savings plan paying a variable return. This product was a response to the high interest rates of the early eighties.

3.1.19 Warrants

The warrant is a tradeable instrument whose holder has the right to buy from or sell to the issuer of the warrant a fixed-income security or equity stock under certain conditions for a period of time. Warrants may be sold in conjunction with an equity issue giving the holder the right to obtain additional stocks identical to the original issue at a specified price. The value of the warrant will depend on the prevailing price of the stock. For example, a warrant to buy 3 shares at \$5.00 each has a minimum value of \$6.00 (3 x \$2.00) when the shares trade at \$7.00. Exercising the warrant would allow the holder to buy the shares for a total of \$15.00, whereas buying the same number of shares would require an expenditure of \$21.00.

3.2. Conclusion

The above broadly represent the principal types of innovative instruments found in more developed economies and are for the most part already evident in the Caribbean. In the Chapter that follows: **Chapter 4**, there are variants of these which are more closely examined within the specific contents and environments through which they have emerged or were innovated.

More specifically, the information in **Chapter 4** begins with a brief description of the economic environment and monetary policy during the period being considered, 1985 to 1995, roughly. This general background, though brief, was motivated by the observation that many innovations were a direct result of monetary policy initiatives. Even when the relation was not direct, macroeconomic trends, as well as financial sector structure appear to have had an influence on the innovations introduced. The background section, therefore, also attempts to describe the organizational structure of the financial, or at least banking, sector. The stress on the banking sector is, we would argue, too great. With more time and resources, we would have tried to obtain more information on, for example, the insurance business and securities markets. However, information in these areas is more difficult to obtain since there is no equivalent to the central banking arrangements that produce information on banks.

In order to describe the innovations themselves, we have adopted a framework which we, rather too ambitiously, call a taxonomy. Where sufficient information is available, each innovation is described under the following categories. The categories used are as follows:

- **Description.** Briefly describes the innovation.
- **Date.** Provides the date(s) at which the innovation was initiated. It helps to determine the causative factors for the innovation.

- **Type.** Provides the type of innovation by the following:
 - **i**, institutional - where the innovation involves the formation of a new institution,
 - **s**, security. product - where there is a new security or financial product,
 - **m**, market promotion - where the innovation is one that promotes market growth, without creating a new product,
 - **t**, transactions-related - where the innovation facilitates financial transactions

- **Initiator.** Names the organization or firm using the following keys:
 - **g** - government,
 - **ma** - monetary authority or central bank,
 - **qg** - quasi-public or public or statutory body,
 - **cp** - private commercial bank,
 - **cg** - government-owned or controlled commercial bank,
 - **ib** - investment or merchant bank,
 - **ins** - insurance company,
 - **f** - other financial institution (where investment bank, insurance co. etc is government-owned, this is indicated by the suffix “g”, e.g. fg, insg.)

- **Functioning.** Attempts to indicate how the innovation functions, essentially elaborating on the description - What is it operating to do? How does it work. Gives

examples of operation, the institutions operating and actual products or processes in existence.

- **Origin.** Indicates, where possible, the origin of the innovation, especially where it is directly based on an innovation in mature markets.
- **Data.** Provides, where available, data on the innovation. In the very great majority of cases no data are available on the actual volume or value of an instrument.



Section 2

Chapter 4

FINANCIAL INNOVATIONS IN THE CARIBBEAN AND THEIR NATIONAL ENVIRONMENTS

A dominant feature of this study is the fact that in cases where similar innovations have appeared in different jurisdictions within the Caribbean, they have invariably emerged at different times. This is so primarily because the policy, economic structure and technological environment which acted as catalyst for their emergence was usually present in different countries at different points in time. Moreover, in cases where particular innovations emerged in some jurisdictions but not in others, national environmental factors had a significant part to play in the presence or absence of these innovations. In light of this therefore, the country sections that follow contain not only a taxonomy of innovations that exist in each market but also detail the national contexts in which these innovations emerged. It should be noted also that for innovations which are common (same type, function, initiator and environmental catalyst) to many jurisdictions, details will not be repeated in later country chapters if the information on these innovations has already been outlined in previous national taxonomies, to avoid being repetitive.

4.1: THE BAHAMAS: INNOVATIONS AND THEIR ENVIRONMENT

In considering the financial innovations in The Bahamas, one must distinguish between innovations in the domestic economy and those in the offshore sector. The offshore sector innovations are discussed in **Chapter 5**. This section deals with innovations in the domestic economy. It should, however, be noted that the planned Securities Exchange will operate in both sectors. Most of the domestic innovations in The Bahamas have been aimed at expanding the retail market of the banks, with devices introduced from more mature markets. The environment and monetary policy appear to have influenced innovation only in so far as depressed economic conditions or policy tightened system liquidity, encouraging the banks' attempts to increase individual market share. Competition for market share, together with the availability of technological facilities, appear to have been the major influences on innovation.

4.1.1. Environment and Policy Influences

The policy instruments used by the Central Bank of The Bahamas (CBTB) include the Bank discount rate, interest rate controls, down-payment requirements on consumer credit and moral suasion to control consumer lending. The statutory cash reserve requirement and the required liquid assets ratios have not been changed during the period under review.

Liquidity fell from the mid- to late- 1980s, inducing upward movements in deposit rates and would have encouraged the introduction of new services in order to permit banks to maintain and increase their customer share in an unfavourable market. High interest rates also appear to have increased banks' interest expenses, reducing their profitability (*see Table 4.1.1*).

It is rather difficult to tell from aggregate data how policy movements affected financial system trends but some policy influence appears to be detectable for a period after 1988 when the fiscal deficit had risen (*see Table 4.1.2*). The CBTB attempted to discourage use of their discount window by raising the discount rate (*see Table 4.1.3*) and to limit competition by placing an eight per cent ceiling on new deposits. The 1989 issue of mortgage-backed bonds may have been a response to this, since it would have permitted the issuing bank to increase their liquidity by non-deposit means.

Tourism growth was slow or negative in the early 1990s, retarding growth. Partly in reaction to the weak economy, in 1992 the CBTB lowered its discount rate and interest rates commenced a downward trend; at the same time the fiscal deficit declined, and liquidity grew again. Declining liquidity in 1994 and 1995 (*see Table 4.1.1*) may also have stimulated loan sales.

4.1.2. The Organizational Structure

There are two authorized dealers and seven authorized agents and dealers in the Bahamian market, of which three are indigenous. These commercial banks are the Bank of the Bahamas, the Bank of Nova Scotia, Barclays Bank Plc, British American Bank, Canadian Imperial Bank of Commerce, Citibank, N.A., Gulf Union Bank (Bahamas) Ltd., Royal Bank of Canada and the Commonwealth Bank. The financial sector also includes savings

and loan institutions which deal only in Bahamian dollars. However, the statistics on “other local financial institutions” include some banks which choose to deal only with nonresidents. The domestic OLFIs are Barclays Finance Corporation, Finance Corporation of Bahamas Ltd. and Workers Bank Ltd..

In 1993, an increased level of authority for foreign exchange transactions was delegated to local commercial banks (authorized dealers), giving them delegated authority for the sale of up to B\$10,000 for credit card purchases by residents and up to B\$100,000 for non-oil imports. This has allowed banks to offer international retail services not previously available to residents such as expanded use of ATM services.

Retail banking in The Bahamas, perhaps influenced by their proximity to US processes, is placing greater stress on technology with domestically-oriented banks stressing a reduction in branch networks, increased use of electronic facilities, telephone banking etc. In addition, competition is pushing the more traditional banks to increase their sales efforts. The subsidiaries or branches of international banks are at an advantage in this respect because they need only introduce the technology, systems and products developed by their parent company.

4.1.3. Taxonomy of the Innovations in The Bahamas¹

Automatic Teller Machines (ATMs)

Description of

Innovation:	Teller machines
Type:	t
Date:	1989/1990
Initiator:	International commercial bank
Motive:	To save costs
Functioning:	As with standard ATMs
Data:	No data available.

Automation of Bank Functions

Description of

Innovation:	Computerized linking of banking functions
Type:	t
Date:	1990s
Initiator:	International commercial bank

¹ We wish to thank the following persons who very generously gave of their time, help and excellent information to allow us to complete the taxonomy: Ms. Wendy Craigg of the Central Bank of The Bahamas, Mrs. Betty A. Roberts, FCIB, of Coutts and Co. (Bahamas) Ltd.; Mr. H. Van Diah of Citibank, N.A.; Mr. Larry R. Gibson, CFA, of McDermott International Asset Management Ltd.; Mr. Owen S.-M. Bethel of Montague Securities International; Mr. Alfred Steward of British American Bank; and Mr. A.C. Allen of The Bank of Nova Scotia. Neither they nor their institutions are responsible for any of the *faux pas* we have committed in documenting the information they provided.

Motive:	To improve service and reduce cost
Functioning:	The teller platform has been automated, updating all records at the time of a transaction. This promotes selling relationships rather than accounts because it permits simultaneous examination of both the asset and liability accounts of a single client. It also permits bank to make better use of their own records for credit approval purposes (especially needed where there are no credit bureaux). The loan process is being revamped to allow loan decisions in 24 hours.

Differentiated Liability Products

Description of

Innovation:	Deposit products appealing to specific segments of the deposit market in retail banking.
Date:	1980s, 1993 - 1995
Initiator:	Commercial banks
Motive:	To increase market share and appeal to high income groups.
Functioning:	In 1993, a jumbo deposit with features similar to a zero coupon bond was introduced for local high income individuals who had few outlets for investment. Five and ten year bonds paying rates of up to 7.25% were offered at a time when short-term funds on the market were paying 5%. Money market accounts were made available in 1995. These were chequing accounts which paid rates of up to 5.05%; six cheques per month with no service charge were allowed on these accounts which were expected to appeal to consumers with incomes of \$50,000 and over. In the mid-1980s,

a local bank had introduced a fixed deposit to which new deposits could be made during the term of the deposit. In 1996 the same bank started a savings product intended to attract savings for educational purposes, it also provided life insurance coverage for the contracted amount. The account's maturity is tied to the date at which a child enters tertiary education.

Data: See deposit growth in **Table 4.1.1**

Electronic Cash Management Services

Description of

Innovation: Use of computer facilities for client transactions

Type: t

Initiator: International commercial banks

Date: 1990s

Motive: Cost reduction

Functioning: Retail and business customers are being given direct access to certain functions through computer terminals. Services include the ability to move balances, make payments to third parties, processing of employee payrolls, telephone banking etc. This has been facilitated by banks' ability to centralize their own functions - a feature also enabled by technology. Technology and exchange control relaxation have also permitted the introduction of services such as the international customer card which is programmed to dispense cash globally. In addition, telemarketing of loans and other remote banking service (such as ATMs located away from bank branches) have begun to appear.

Electronic Data Capture

Description of

- Innovation:** Credit card verification through point of sale terminals.
- Type:** t
- Date:** 1990-1996
- Initiator:** International banks
- Motive:** Reduced cost to banks and merchants.
- Functioning:** The discount rate charged to merchants on credit card transactions is reduced because EDC reduces the costs of credit card transactions for the bank, this increases the merchant market for cards. There is a zero floor limit operating in The Bahamas i.e. banks will absorb no charges on cards.

Loan Sales

Description of

- Innovation:** Sale of bank loans to a third party.
- Date:** 1995
- Initiator:** Commercial bank
- Motive:** Improve liquidity and achieve closer maturity matching of assets and liabilities.
- Functioning:** Mortgages were packaged and sold to insurance companies. These mortgages were sold without recourse. The bank continues to service them for a fee.

Mortgage-Backed Bonds

Description of

- Innovation:** Bonds issued with mortgage backing.
- Date:** 1982 onwards
- Initiator:** Commercial banks
- Motive:** In response to a cycle of tight liquidity as a result of poor tourism performance.
- Functioning:** An issue of \$10 million in bonds backed by a standardized set of mortgages was issued by an international retail bank in 1989. The mortgages were housed in a third party trust. The bonds paid a rate of 8%-8.5% at a time when the market rate was 5%. A similar securitization was done before the period under consideration (in 1982) by a domestic bank which placed two bond issues privately in 1982 and later placed several issues publicly. The latter bank has made no new issues recently.
- Origin:** Securitized mortgages
- Data:** Amounts outstanding for issues by the domestically-incorporated bank were as follows (B\$million):
- | | |
|-------|------|
| 1991: | 10.7 |
| 1992: | 12.6 |
| 1993: | 13.0 |
| 1994: | 4.5 |

Private Banking

Description of

- Innovation:** Improved services to high income clients
- Type:** m

Date: 1990s
Motive: Presumably to attract a reliable market segment.
Functioning: The environment (private offices) used in private banking was introduced and online systems were used to provide improved access to customer accounts and hence better service.

Public Sale of Bank Shares

Description of

Innovation: Sale of bank shares to the public.
Type: m
Date: 1995
Initiator: Domestic commercial bank
Motive: Defensive posture in the face of increasing competition.
Functioning: The British American Bank (BAB) sold 15% of shares outstanding to the public in 1995, and placed another 15% (2,500,000 shares or B\$5 million) privately. Only Bahamian citizens were eligible to purchase shares. After the issue, the majority shareholder would remain Fidelity Bank and Trust International Ltd., a Bahamian registered company owned by Bahamians, Caymanians and institutional investors, including the holding company of British-American Insurance.

Stock Exchange

Description of

Innovation: Establishment of domestic and international stock exchanges
Type: i

Date: 1995-97

Motive: To develop the capital market, improve cross-fertilization between the domestic and international markets and increase the facilities available for the offshore market.

Functioning: A series of steps are being taken to establish the market. In 1995 a regulatory body was established by the Securities Board Act. An automated system is expected to be provided through the IDB-funded project for capital market harmonization in the Caribbean. The central securities depository will provide for efficient settlement and be linked to international depositories such as CEDEL and EUROCLEAR. Such links would allow traders to buy and sell securities in The Bahamas, using CEDEL as the clearing and settlement system, so that global trading is possible. Industry would be overseen by the Securities Board created in 1995. The market would be expected to cater for: (a) global depository receipts (GDRs) as in Luxembourg, a product which can serve foreign companies tapping into national markets; (b) closed end mutual funds which are usually required to list and fulfil general reporting requirements (Bahamian-based mutual funds must now list on other exchanges); (c) listings of convenience, a market now dominated by Luxembourg. Other instruments such as bonds, futures and options will also be permitted. There is a draft Securities Industry Bill which proposes self-regulatory organizations; strengthening of prospectus requirements to desired disclosure standards; and listing of both

local and non-Bahamian securities with separate regulations and rules and procedures to ensure market transparency. The domestic and international securities markets will have different players, for example, trading in domestic stock will have to be carried out through a local subsidiary that has substantial local ownership, whereas traders on the international exchange can be totally foreign-owned. A company listed on an approved exchange will be able to list automatically in The Bahamas. Previously unlisted companies will have to go through a vetting and due diligence procedure but the requirements for listing are expected to be less onerous than on the major markets. It is proposed that foreign companies be permitted to list shares in The Bahamas using Bahamian GDRs which could be quoted in the domestic currency of the issuer. Such similar price quotations would facilitate valuation comparisons and avoid the costs of preparing two sets of accounts, in contrast to the listing of the American depository receipt. Bahamian GDRs would also allow the company to select another major currency of choice to facilitate placement. (**See Gibson, 1996, a and b**).

Data:

None available

Table 4.1.1: The Bahamas - Deposits, Liquidity and Earnings (1984-1995)

	1984	1985	1986	1987	1988	1989
FI total deposits, B\$, (B\$m) ^{1 & 2}	..	..	..	..	1,258.3	1,337.7
CB tot. dpsts, all crrn (B\$m) ^{1 & 3}	596.5	647.1	729.4	843.8	911.9	980.7
OLFI tot. dpsts, all crrn (B\$m) ^{1 & 4}	197.8	246.9	296.3	355.8	368.2	377.0
FI tot. dpsts., all crrn (B\$m)	794.3	894.0	1,025.7	1,199.6	1,280.1	1,357.7
FI tot. B\$ dpsts/GDP (%)	..	..	..	..	48.79212	44.49508
CB excess reserves (B\$m) ⁵	11.3	14.7	24.7	17.2	14.6	18
CB excess liquid assets (B\$m)	15.3	18	10.4	-22.5	-0.8	7.4
FI excess reserves (B\$m) ⁵	..	..	..	..	..	5.5
FI excess liquid assets (B\$m) ⁵	..	..	..	..	..	24
FI liquidity (%) ⁶	..	..	..	..	..	2.2
CB liquidity (5) ⁷	4.5	5.1	4.8	-0.6	1.5	2.6
NEM to Avr Assets (%) ⁸	..	2.63	3	3.59	3.05	2.57
Staff costs (B\$m)	..	26.4	27.6	28.3	30.7	34.6
Total operating costs (B\$m) ⁹	..	42.1	44.4	43.1	47.7	54.2
Staff as prprt Total OCs (%)	..	62.71	62.16	65.66	64.36	63.84

Table 4.1.1: The Bahamas - Deposits, Liquidity and Earnings (1984-1995) - Continued

	1990	1991	1992	1993	1994	1995
FI total deposits, B\$, (B\$m) ^{1&2}	1,445.7	1,538.7	1,604.1	1,751.3	1,902.2	2,049.1
CB tot. dpsts, all crm (B\$m) ^{1&3}	1,146.01	1,243.5	1,304.2	1,530.8	1,670.6	1,826.4
OLFI tot. dpsts, all crm (B\$m) ^{1&4}	325.3	326.3	338.3	253.9	258.2	258.4
FI tot. dpsts., all crm (B\$m)	1,471.3	1,569.8	1,642.5	1,784.7	1,928.8	2,084.8
FI tot. B\$ dpsts/GDP (%)	46.1708	49.79128	52.43699	57.1368		
CB excess reserves (B\$m) ⁵	13.4	31.4	23.2	24.8	26	26.4
CB excess liquid assets (B\$m)	20.3	44.5	38.2	81.5	67.3	35.4
FI excess reserves (B\$m) ⁵	6.5	31.9	22.7	25	26.1	26.5
FI excess liquid assets (B\$m) ⁵	32.7	57.2	62.7	97.2	83.3	49.8
FI liquidity (%) ⁶	2.7	5.8	5.3	7.0	5.8	3.7
CB liquidity (%) ⁷	2.9	6.1	4.7	6.9	5.6	3.4
NEM to Avr Assets (%) ⁸	NA	NA	1.09	0.92	1.59	1.33
Staff costs (B\$m)	NA	NA	51	54.8	61	66.5
Total operating costs (B\$m) ⁹	NA	NA	77.8	85.8	93.9	103.3
Staff as prprtn Total OCs (%)	NA	NA	65.55	63.87	64.96	64.38

- Notes:**
- .. Not available.
 - 1 CBTB, QSD
 - 2 FI = Financial institutions; non-financial Bahamian dollar deposits of residents at commercial banks and other local financial institutions.
 - 3 CB = commercial banks; crn = currencies; dpsts = deposits; residents' deposits in all currencies.
 - 4 OLFi = other local financial institutions.
 - 5 The statutory cash reserve requirement for commercial banks and other local financial institutions is 5% of Bahamian dollar deposits for the entire period.
Minimum required liquid assets are 20% of demand deposits, 15% of savings and fixed deposits and 15% of borrowings to/from the Central Bank and interbank.
Requirements refer to Bahamian dollar deposit liabilities.
Eligible liquid assets are notes and coin, government securities and, currently, Government-guaranteed low cost housing loans and public financial institutions' bonds.
 - 6 Total of excess cash reserves and liquid assets as a percentage of total Bahamian dollar deposits
 - 7 Measured as above but uses total deposits in all currencies, although the reserves are fixed on Bahamian dollar deposits.
CB data on deposits is not available for B\$ deposits alone.
 - 8 NEM = Net earnings margin, to average assets where net earnings margin is interest margin plus commission income less operating costs.
 - 9 Total operating costs are staff, occupancy and other.

Source: Central Bank of The Bahamas, *Quarterly Statistical Digest*.

**Table 4.1.2: The Bahamas - Selected Economic Indicators
(1984-1995)**

	1984	1985	1986	1987	1988	1989
Gross Domestic Product (B\$m) ¹	1,597.4	1,855.4	2,081.7	2,311.7	2,578.9	3,006.4
Real GDP Growth (%)		13.5	3.6	4.9	..	..
Change in NIR ³	-39.1	-18.7	30.8	59.9	0.7	26.6
Visitor Arrivals ('000s) ²		2,632	3,007	3,081	3,158	3,398
Fiscal Deficit (FD) (B\$m) ¹	-16.4	-28.4	-12.3	-21.4	-76	-123.5
FD as proportion GDP (%)	-1.03	-1.53	-0.59	-0.93	-2.95	-4.11
	1990	1991	1992	1993	1994	1995
Gross Domestic Product (B\$m) ¹	3,131.2	3,090.3	3,059.1	3,065.1	..	..
Real GDP Growth (%)	..	-10.8	-2.3	1.3	1.2	0.1
Change in NIR ³	-9.3	-13	28.7	-19	-9.4	3.1
Visitor Arrivals ('000s) ²	3,629	3,622	3,691	3,672	3,446	3,239
Fiscal Deficit (FD) (B\$m) ¹	-75.8	-132.5	-88.1	-88.6	-23.6	..
FD as proportion GDP (%)	-2.42	-4.29	-2.88	-2.83	..	..

Sources: IMF, International Financial Statistics
The Central Bank of The Bahamas, *Quarterly Statistical Digest*.

Notes: ¹ IMF, IFS
² The Central Bank of the Bahamas, *Quarterly Statistical Digest*, May 1996.
³ IMF, IFS, 1984-1993; CBTB, QSD, 1994-1995 (provisional); increase is negatively signed.
.. Data not available.

Table 4.1.3: The Bahamas - Selected Interest Rates

Year	Bank Rate	Treasury Bill Rate	Average Deposit Rate	Average Loan Rate
1984	9.5	6.88	7.44	11.00
1985	8.5	5.90	6.40	10.33
1986	7.5	3.47	5.57	9.25
1987	7.5	2.40	5.50	9.00
1988	9.0	4.46	5.97	9.00
1989	9.0	21	6.48	9.00
1990	9.0	5.85	6.57	9.00
1991	9.0	6.49	6.92	9.00
1992	7.5	5.32	6.13	8.08
1993	7.0	3.96	5.19	7.46
1994	6.5	1.88	4.30	6.88
1995	6.5	3.01	4.20	6.75

Source: IMF, *International Financial Statistics*

**Table 4.1.4: The Bahamas - British American Bank:
Share of the Domestic Commercial Bank Market**

	Commercial Banks		British American Bank (BAB)		BAB's Share	
	Domestic Assets	Capital & Surplus Accounts	Assets	Shareholders' Equity	Assets	Capital
	(\$M)	(\$M)	(\$M)	(\$M)	(%)	(%)
1991	1,705.9	91.1	128	12.4	7.50	13.61
1992	1,742.5	93.8	129.1	12.4	7.41	13.22
1993	2,013.2	128.7	140.8	14.3	6.99	11.11
1994	2,191.6	135.2	142.5	16.6	6.50	12.28

Sources: Central Bank of The Bahamas, *Quarterly Statistical Digest* and British American Bank, Offer for Sale of Ordinary Shares.

4.2: BARBADOS: INNOVATIONS AND THEIR ENVIRONMENT

Dramatic policy stimuli to innovation have largely been lacking in Barbados. The major changes in the policy framework only came near the end of the period under consideration, after institutions had learnt to adapt to the restrictions imposed by measures in place for many years. Further, while both the early 1980s and 1990s were characterized by balance of payments problems and the adoption of programmes with the International Monetary Fund, the crisis atmosphere induced was relatively short-lived and policies under the programmes avoided devaluation and capital account liberalization and thus reduced innovation-stimulating price volatility. Innovations therefore seem to take four forms: first, those institutions which have evolved over a long period as economic agents learned to circumvent restrictions, such as the growth of credit unions. Second, those individual initiatives undertaken by small institutions whose size and specialised range of operations were not sufficient of a threat to the dominant institutions to stimulate the follow-the-leader and competitive innovations seen elsewhere. Third, that being said, competition from smaller, local institutions trying to build a market, which has led to innovations; most of these directed at the retail market, such as ATMs and credit cards. Fourth, larger non-bank institutions seeking profitable investment opportunities have also produced some new arrangements.

4.2.1. The Environment, Monetary and Regulatory Policy

The monetary sector and the balance-of-payments in Barbados have tended to reflect election-type cycles in expenditure. Following its first International Monetary Fund (IMF)-supported stabilization programme from 1982 to 1984 (there had been an election in 1981), real growth in Barbados continued for some time, helped by buoyant tourism in the second half of the 1980s (*see Table 4.2.1*). Between 1985 and 1986, the authorities took advantage of declining international interest rates to reduce regulated rates and loosened both selective credit and hire purchase restrictions. However, a fall in international reserves and, one can speculate, anticipated increases in the fiscal deficit, prompted increases in the government security holdings stipulated for commercial banks later in 1986. In 1989, monetary policy was tightened through an increase in regulated rates and credit controls as foreign assets fell. With approaching elections, the fiscal deficit rose to over 8% of GDP in 1990, public sector credit returned to over a third of total domestic credit which itself rose to over 60% of GDP, fueling expenditure at a time of reduced tourism earnings. By 1991 the foreign reserves of the banking sector had fallen by near BD\$100 million for the third year in a row (*see Tables 4.2.1 through 4.2.3*). The subsequent stabilization and adjustment programme changed the approach to monetary policy but has had only a limited impact in terms of innovation.

Monetary and Financial Policy

The monetary authorities in Barbados have relied on a combination of selective credit controls (on consumer and distribution credit), interest rate controls (ceilings on loan, including mortgage rates, on deposit rates until 1981, floors on the deposit rate from the late 1970s), reserve requirements and discount rate changes (though the latter has served mainly as a signal of the monetary authority's wishes since it rarely represented a true opportunity cost to banks who could

usually meet liquidity shortfalls through the interbank market). As a major player, the Central Bank is also able to influence the rate determined by the Treasury Bill auction.

In 1993 the Financial Intermediaries Regulatory Act (FIRA) was passed, making provision for the establishment of merchant banks and giving the Central Bank supervisory authority over non-bank financial companies such as trust companies, finance companies and merchant banks, including the right to require assigned capital. The Act also enhanced the Bank's inspection powers, required commercial banks to publish audited financial statements of local operations and provided for the closure of licensed financial institutions. The Act further required that commercial business houses taking traditional 'deposits' insure these deposits by depositing funds with the Central Bank, acquire a guarantee from licensed banks or purchase government debentures. Most of the companies borrowing funds by this means obtained commercial bank guarantees. This section of the Act has been removed in the 1996 revision of the Act to eliminate any implication that the Bank is able to audit the assets of a non-financial company (*see Commercial Paper in Taxonomy*).

The last election cycle bust came in 1991 when IMF balance of payments support was obtained. It was accompanied by conditionality requiring relaxation of direct price regulation in the monetary sector, tax reform, sugar industry reform and restructuring of government-owned banks. The classic devaluation formula was, however, replaced by a sharp reduction in government spending accomplished through an 8% reduction in public sector pay. By directly reducing disposable income and the multiplier effects of government expenditure, this measure, together with monetary policy's continued tightening, was able to shrink aggregate demand and relieve foreign exchange pressure without the price volatility and continuing uncertainty accompanying other stabilization and

adjustment programmes in the region. Uncertainty was great at first but the commitment to reduced crowding-out and excessive expenditure evidenced by the fixed exchange rate maintenance reduced the length and severity of that uncertainty once it became clear that such maintenance was indeed feasible. It may be the resulting limits on volatility, together with a less competitive banking sector that reduced the tendency towards the introduction of new instruments.

Monetary policy measures have usually been aimed at reducing aggregate demand in the private sector when public sector demand became over-expansive, with the sub-goal of facilitating and controlling the cost of borrowing for productive purposes. In recent years these controls were increasingly viewed as signals to banks, rather than as direct limitations on bank costs and behaviour, since both banks and the central bank had learnt how the controls could be circumvented. Furthermore, the authorities tended to move officially-set rates in line with rates abroad. Removal of credit and interest rate controls between 1991 and 1992 may not therefore have been interpreted as a major regime shift. A plan to employ market-based arrangements (operations in government securities) to effect monetary policy has not yet been completely implemented, perhaps because of some doubts as to whether the thinness of the market will permit adequate implementation.

Although the reserve requirement, at almost one third of deposits, exceeds the requirement in Trinidad and Tobago and approaches those at which Jamaican institutions began measures to evade them, and although it is clear that, apart from high earnings on government securities, the banks' performance would have been affected by the adjustment measures (*see Table 4.2.4*) none of the compensating instruments was introduced in Barbados (*see discussion in Chapter 2*).

Financial Sector Organization

There are in 1997 seven commercial banks in Barbados:

- three branches of multinational banks - Barclays Bank, plc, the Bank of Nova Scotia, and the Royal Bank of Canada;
- one government-owned - Barbados National Bank;
- one former branch which floated on the regional exchanges in 1993 but retains Canadian-bank majority ownership - CIBC (Caribbean) Limited;
- one subsidiary of a regionally-owned insurance company - Caribbean Commercial Bank; and
- a single domestically-owned private bank - the Mutual Bank.

Each of these banks owns its own trust and/or finance company which operates primarily to provide mortgages. The two features that appear to set the sector off from that of other Caricom members is the absence of aggressively competitive multinational or domestic banks. Competition for customers centres on the retail segment and bank-induced innovation therefore revolves around service-improving, bank-cost reducing facilities like ATMs and credit cards.

The next largest group (based on assets) of financial institutions are the life insurance companies. There is a strong tradition of life insurance purchase for savings purposes in Barbados, despite its relatively poor returns. This demand is linked to future use of the relationship for mortgage borrowing for house purchase. In addition, until the income tax reform of 1991, life insurance premiums qualified for an allowance reducing assessable income.

Insurance companies have, it seems, been (quietly) responsible for a number of initiatives in Barbados. Two factors seem to explain this: small market size which would limit the companies' ability to diversify and increase their unit costs of operation (since the infrastructure in terms of buildings, equipment etc. is perforce spread over a smaller number of policyholders than would be possible in a larger population) and market saturation. Previous to 1985, the companies adopted several strategies to widen their market and sphere of operations - provision of segregated pension funds, expansion into other Caribbean economies. But having reached saturation even in these areas, in the last ten years they have moved into other areas of intermediation (banking, credit card processing, investigation of venture capital activities - although this last came to naught) and are even in the process of gearing up to offer services outside the English-speaking Caribbean and in Latin America. In this case it is a drive for profitable expansion, rather than competition *per se* that is the motivation for innovation. In addition, buffeted by the same market forces as the companies in North America (high interest rates in the eighties - *see Table 4.2.2*) they have responded similarly (*see Universal Life Products in Taxonomy*). Their susceptibility to fluctuations in the domestic macroeconomy may also have encouraged the search for a more diversified portfolio - the recession of the nineties is reflected in both their premium and asset growth (*see Table 4.2.5*).

Credit unions have been the growing institutions of the 1980s and 1990s. Fostered first by consumer credit ceilings which pushed personal borrowers to build deposits and hence borrowing capacity at the credit unions and then by income tax concessions for savings with credit unions introduced in the 1980s, they responded by adopting an actively competitive stance for market share (*see Taxonomy*) with the result that their deposits, insignificant in 1985 are now approaching 10% of commercial bank deposits (*see Table 4.2.6*).

4.2.2. Taxonomy of Innovations¹

Automatic Teller Machines (ATMs)

Description of

Innovation:	Machines that provide transaction facilities to bank customers.
Type:	t
Initiator:	Private commercial bank
Date:	Late 1980s
Motive:	To reduce bank costs
Functioning:	ATMs in Barbados operate like those elsewhere although it was only in 1996 that transactions began to be effected in real time. There also appear to be limitations on the facilities available to customers from branches other than their own.
Origin:	The ATMs became common in industrialized countries' financial markets in the early 1980s.
Data:	None available.

¹ We would like to thank the following individuals for the interviews they gave, the information they supplied or the help they provided in arranging these: Daniel Boamah, Desirée Cherebin and Muriel Saunders of the Central Bank of Barbados; Roger Cave of Fortress Fund Managers Ltd.; David DaCosta of CFSC; Pat Downes-Grant of the Mutual Assurance Co.; Hazel Highland of CFSC; Virginia Mapp of the Securities Exchange of Barbados; Angela Marshall of the Public Workers' Credit Union; Dodridge Miller of Mutual Financial Services. While we blame these individuals for all our errors and misinterpretations, it is not customary or possible for us to hold either them or their institutions responsible.

Bond-Equity Instrument

Description of

Innovation: Bond on which interest and repayments are made in the form of equity.

Type: s

Initiator: Private financial company (CFSC)

Date: 1993

Motive: To facilitate investment bank financing of small business in a situation where the low equity contribution of the entrepreneur would result in the bank's owning the firm if the financing was provided through equity, but equity-type financing (i.e. which can avoid cash payments in the start-up period) is desirable.

Functioning: Some four transactions have been carried out on these terms. The bond financing provided has been as much as 75% of equity. The entrepreneur has the option of redeeming the shares in five years' time. Interest rates (where interest is paid in shares) is 20% in the first year, falling to 15% thereafter. Such interest rates reflect both market rates and the high risk premium attached to such financing. Repayment may be made in cash. The entrepreneur may also redeem shares in the earlier years at a price set by the bank. The businesses financed under this arrangement tend to be very small so the arrangement is significant for the solution it provides to the problem of small-business financing, rather than for its market importance. It has mainly been used by the Barbados Investment Fund (*see Venture Capital*).

- Origin:** This instrument is reminiscent of a convertible bond but in this case it is the issuer of the bond rather than the holder of the bond (the investment bank) who has conversion option dependent on the cash flow of the business.
- Data:** No data available, but amounts are likely to be insignificant.

Caricard Limited

Description of

- Innovation:** Company to process credit card transactions domestically.
- Type:** i
- Initiator:** Private finance company
- Date:** 1993
- Motive:** Fee income to be gained from processing.
- Functioning:** Caricard, which is a partially-owned subsidiary of Mutual Financial Services which is part of the Barbados Mutual Life Assurance Company's group. It processes Visa transactions for three banks in Barbados as well as the credit cards for two companies. In the remainder of the credit card market, one bank does its own processing and the other banks use a Florida-based processor. Use of Barbados-issued Visa cards facilitates credit analysis of the Caricard system. Banks are able to check credit records within the system.
- Origin:** The processing arrangements usually required for credit card operations.
- Data:** None available.

Commercial Paper (CP)

Description of

Innovation: Barbados CP are unsecured debt instruments to be issued by commercial/industrial companies.

Type: i

Initiator: Monetary Authority

Date: 1996

Motive: A traditional practice of deposit-taking (such deposits were essentially loans provided to the companies by, it is believed, associated individuals and companies) by commercial companies was ‘sanctioned’ and regulated by FIRA legislation of 1993. In order to remove any expectation implied by FIRA that the Central Bank examined the commercial houses’ assets in a way similar to that of banks, the proposed 1996 Financial Institutions Act (FIA) will not include commercial houses under deposit-taking institutions and the Bank has encouraged commercial houses to replace such loans by explicit loan instruments.

Functioning: Details of the proposed instruments are available for only one major conglomerate. It proposes that the ‘deposits’ be replaced by two types of instruments: loans payable and ‘commercial paper’. The loans payable would, either be in the form of demand loans (seven days notice of withdrawal) paying 5% per annum or one-year loans paying 7%. Such loans may be phased out over a period of some years. The proposed commercial paper has been designated SMARTS (Six Month Automatic Rollover Term Securities) and PEARLS (Perpetual Automatic Roll-Over Loans). SMARTS would have a six-

month maturity and would roll-over automatically following notice to the investor and may be terminated with one month's notice on either side; they would pay interest at 6% (paid at maturity and subject to withholding tax) and would be available in denominations of \$10,000, \$25,000, \$100,000 and \$500,000. PEARLS, available in similar denominations, would have a minimum maturity of two years, and would roll-over automatically every two years in perpetuity, subject to notice to the investor and may be terminated with three months' notice on either side. The initial issue would pay interest at a guaranteed minimum rate of 8%, with the possibility of higher rates on the roll-over date, if warranted by market rates. Interest would be paid twice annually, in March and September. As had been required under FIRA, the issuing firm's paper would continue to be guaranteed by their commercial bank, up to \$20,000. Holders of the latter two instruments would be registered with the company and may be listed on the Exchange. Initial liquidity for the instruments is provided through the firm's guarantee of repurchase at any time with no penalty. Existing deposits were automatically converted to one-year loans payable at 30 September, 1996, unless the investor had notified the company otherwise, or opted for PEARLS or SMARTS.

Origin:

These instruments originate in name from the commercial paper most common in the USA. They are similar to commercial paper in that they provide direct financing for commercial companies and are offered only in denominations large enough to

deter the small investor. However, they differ in maturity and in structure since they are not discount instruments. The proposed structure, since similar to the familiar deposits, are more likely to appeal to the company's traditional investors.

Data: **Tables 4.2.6 and 4.2.7** indicates that the contribution of deposits of commercial houses to financing of the distribution sector has been falling relative to commercial bank loans, though remaining a substantial share most firms taking such deposits are in the distribution sector although, with their increasing diversification into the service sectors, this comparison is becoming less relevant). The deposits represent the potential size of the CP market.

Corporate Bonds

Description of

Innovation: Long-term debt instruments issued by a corporate entity, as compared with bonds issued by government

Type: s

Initiator: Private financial institutions

Date: Early 1990s

Motive: To provide long-term financing for corporations (that does not represent an ownership claim except in the event of failure to repay) with a marketable instrument which may be held by a number of institutions, as opposed to a single bank, for example.

Functioning:

There have been at least three attempts to issue bonds for Barbadian corporations. The largest corporations have previously evinced some reluctance to issue bonds when suggested by their financial advisers. In 1995, however, the largest local conglomerate listed a BDS\$20 million 10-year unsecured debenture with an interest rate set at 85% of the average prime rate. Subscriptions closed at \$5 million. Under-subscription may have been due to inappropriate pricing: in August 1995, when the bond opened, its effective rate of interest would have been 8.39% at a time when government paper of similar maturity was paying 8.5%. Unless there was a strong expectation of a rising prime rate, the issue would have appeared rather unattractive. It has also been suggested that the company's already high gearing may have dissuaded potential lenders. In addition to these purely private bonds, government-guaranteed bonds have been issued to support the sugar industry (*see Regional Bank Financing*).

Origin:

The corporate bonds which are a standard feature of financing in industrialized markets.

Data:

No data is available other than that noted under Functioning.

Credit Cards

Description of

Innovation:

These conform to the standard credit cards but, as a result of Barbados' exchange control restrictions, some banks issue separate cards for local and foreign transactions.

Type:

t

Initiator:

Private commercial bank

Date:

1993

Motive:

With the removal of selective credit controls on personal lending, the banks were able to take advantage of consumer inelastic demand for credit card borrowing.

Functioning:

Barclays Bank had in fact issued the card to its customers for some years but this was not issued by the domestic subsidiary and could only be used abroad. Furthermore, ownership of credit cards issued outside of Barbados appeared fairly widespread, and payments on these could be made legitimately by purchasing the necessary foreign exchange. When banks began to issue Visa and Master cards for foreign use, the credit limit on these cards was fixed at the foreign exchange allowance. Unlike the mass-market approach to credit card issue which has become common in the US market, limited market size dictates a cautious approach to issue by the banks.

Origin:

Markets of mature economies.

Data:

See Table 4.2.7.

Consumer Credit Rating Company

Description of

Innovation:	Company (Caribbean Credit Bureaus Ltd.) which provides customers' credit histories to retail stores.
Type:	i
Initiator:	Individual
Date:	1990s
Motive:	Profit earned from sale of services to lenders
Functioning:	Company gathers credit history of individual borrowers from all subscribing companies and uses this to compile a standardized credit rating. This information is electronically linked to the cashiers at some large retailers so that credit decisions can be made rapidly.
Origin:	Consumer credit bureaux in the USA provide a similar service.
Data:	None available.

Credit Union Products

Description of

Innovation:	Deposit account, pricing and other transaction facilities introduced by credit unions
Type:	s, i
Initiator:	Credit union
Date:	1994-1996
Motive:	To compete directly and aggressively for banks' market.
Functioning:	Credit unions have begun to introduce deposit accounts designed to attract deposits in competition with banks. In 1994 some credit unions began a policy of matching and besting commercial bank interest rates by offering a 25 basis point

premium over the rates at banks. In addition, special deposits carry these premiums even higher. In 1995, the largest credit union introduced a five-year time deposit account to which funds can be added and which pays a mounting rate over time: 5.7% in year 1, 6.1% in year 3 and 7.1% in year 5. In 1995 the commercial banks' time deposits offered interest rates up to 5.5% until the final two months of the year when the maximum rate rose to 6.5%. In 1995 the same credit union started its own ATM.

Origin: Similar products offered by banks.
Data: *See Table 4.2.8*

Debt Restructuring

Description of

Innovation: The purchase of impaired loans with government securities and establishment of companies to recover on the loans.

Type: i
Initiator: International Financial Institutions/Monetary Authority.

Date: 1993

Motive: To permit the rehabilitation or closure of government-owned financial institutions by removing impaired debt from their books, while allowing the beneficiaries of the debt financing to continue operation.

Functioning: The Barbados Agricultural Credit Trust (BACT) was established and capitalized through the issue of government securities which it used to purchase impaired sugar debt from the Barbados National Bank. A subsidiary

of the BACT was simultaneously established to manage the plantations on which the debt was incurred. BACT was charged with recovering on government's input by realizing, in cooperation with the indebted owners, on the plantation property not required for operation of the sugar industry and through any profits generated by its agricultural subsidiary. A somewhat similar arrangement has also been put in place for the hotel debt of the recently closed Barbados Development Bank.

- Origin:** The notion of a workout company comes from the US Resolution Trust established for the Savings and Loan industry in the USA.
- Data:** The Government issued some BDS\$284 million to purchase sugar industry debt.

Insurance Company Entry into Banking

Description of

- Innovation:** Establishment or purchase of commercial bank by Insurance company.
- Type:** i
- Initiator:** Insurance companies
- Date:** 1984, 1993
- Motive:** Possibly perception that the insurance market was near-saturation whereas there were high profits to be made in banking.
- Functioning:** In 1984 the CLICO group of Trinidad and Tobago opened the Caribbean Commercial Bank in Barbados. This has evolved as a retail bank. In 1993, the domestically-headquartered Mutual Life Assurance Company opened the Mutual Bank, having purchased in 1992 the assets

of the local branch of the Bank of Credit and Commerce International (BCCI), under special arrangement with the Monetary Authority. The insurance company is the majority shareholder with other owners, the National Insurance Fund (44%), Cave Shepherd and Company Limited and Goddard Enterprises Limited (4% each). Both insurance-company-owned banks remain small relative to the long-established banks.

Origin: Unclear
Data: None available.

Insurance Company Products

Description of Innovation: Life insurance with an important savings component.

Type: s

Initiator: Domestic private life insurance company.

Date: 1988

Motive: Higher interest rate levels in the first half of the 1980s shifted demand towards interest-sensitive instruments

Functioning: The usual premium is paid for life insurance and the individual has the option of paying more to increase the savings element of the plan. The company invests the additional payments and the individual earns about 8% per annum on the savings.

Origin: Similar to the universal life products also introduced in the USA during the eighties.

Data: *See Table 4.2.5*

Mutual Fund

**Description of
Innovation:**

Formation of a unit trust or mutual fund to act as a pool of securities in which individuals can buy units or shares.

Type:

i

Initiator:

Private financial institution or individuals.

Date:

Late 1980s, initially

Motive:

Originally, to attract funds taking advantage of a tax incentive provided by government; later interest in the formation of a unit trust saw it in part as a means of attracting money from international markets, benefitting from the international interest in emerging markets.

Functioning:

Several attempts have been made to set up mutual funds or unit trusts. The first one established was the Roybar Investment Corporation, set up by the finance company arm of the Royal Bank. After some initial success in attracting funds as a result of the tax incentive, little interest was shown, in part because the fund failed to promote itself, the tax incentive was removed in the tax reform of 1992. Other attempts at a regionally-oriented mutual fund, and to introduce Trinidad and Tobago-based funds in the Barbados market probably foundered on the difficulties presented by exchange control regulations. Barbados' tax legislation does not allow for the avoidance of double taxation that can arise with mutual funds. Sufficiently favourable tax incentives to hold shares may, however, compensate for this.

Origin:

Initiatives were based on the usual concept of a mutual fund.

Data: None available.

Mutual Fund, Regional

Description of

Innovation: Open-end mutual fund investing in equity and debt securities of both quoted and unquoted companies - Fortress Mutual Fund Ltd.

Type: i

Initiator: Retail company

Date: 1996

Motive: To take advantage of what is perceived as an unsatisfied demand (or need) for diversified equity investment domestically and to attract capital into the region by providing an easy-to-access investment instrument. The immediate impetus was probably the 1996 Barbados income tax concession allowing an income tax deduction of up to BDS \$10,000 for investment in publicly-listed equity or mutual funds, and removing taxation (otherwise 12.5%) on reinvested dividends, if held for at least five years. This measure would have compensated for the double taxation to which mutual fund income in Barbados is subject.

Functioning: The Fund is a growth fund aiming to achieve long-term capital appreciation. It is managed by an investment management company owned by a major retail firm (Cave Shepherd); a British investment management firm (Perpetual); the largest Barbadian holding company (Barbados Shipping & Trading); CFSC (the Barbados-based merchant bank); a newspaper company (Nation Corporation); and the Investment Manager, Cave. The lead promoters are Cave Shepherd and Cave.

The Fund initially aims to invest in Barbados, Jamaica and Trinidad and Tobago but also foresees eventual investment throughout the Caribbean including the OECS, other Commonwealth, Dutch-speaking, French and US territories, and the other larger islands. To compensate for the illiquidity of Caribbean markets, the Fund will invest up to 25% in international funds managed by Perpetual; it will acquire no more than 10% of the voting shares of any one company and will not invest in Cave Shepherd issues. Note that Barbados tax legislation mandates a 15% withholding tax on distributions to non-residents; however, several Caricom countries are not subject to this tax by agreement among the governments. Capital transactions are still subject to exchange control but “consistent with the exchange control regulations for cross-border trading” foreign shareholders can purchase and redeem up to BDS\$1.0 million in Fund shares. Potential investors in the Fund may open a monthly investment plan, invest lump-sums of a minimum of BDS\$100, exchange shares in a company for Fund shares or have dividends invested in Fund units (shares). The Fund has a front-end fee of 2% of amount invested and annual management fees of 1.75% of the net assets. Net asset value is to be calculated weekly and published in a local newspaper.

- Origin:** Emerging market funds available in mature markets.
- Data:** Not applicable - not available as yet.

Regional Bank Operations

Description of

Innovation: Banks based in other territories, particularly those in Trinidad and Tobago are increasingly entering the other (more traditional) Caribbean markets, in competition with the local incumbents.

Type: s, i,

Initiator: Private commercial and merchant banks.

Date: 1994-1995

Motive: To expand market

Functioning: While other attempts have been made, two successful incursions can be noted. In 1994, a multinational bank incorporated in Trinidad and Tobago arranged a government-guaranteed bond issue for government-owned company in the face of a desultory response by domestically-based banks to a general invitation to propose financing. In 1995 the same bank underwrote a US\$40 million government bond issue and acted as the paying agent. The bond was issued regionally. The bank kept US\$8 million of this issue in a trust on their books and synthesized a secondary issue for small investors who wished one to two year investments (the original maturity of the bond issue was 10 years). The regional issue had the effect of reducing administrative costs relative to those incurred in euromarkets and may have helped the regional bank overcome extra-regional competition for the issue.

Origin: Multinational activities of mature markets.

Data: Data other than that above is not available.

Sale and Leaseback

Description of

Innovation: An arrangement by which financial institution purchases the real estate owned by a company and leases back to the company with an option for the company to repurchase the property.

Type: s

Initiator: Insurance company

Date: 1980s

Motive: Sale and leaseback allows the company to use a custom-built building without committing its own capital.

Functioning: Sale and leaseback arrangements seem to have been primarily done by the insurance companies whose concern for long-term, low-risk investment gave them an especial interest in real-estate-related arrangements.

Origin: Similar sale and leaseback arrangements are made in industrial countries.

Data: None available.

Securities Exchange of Barbados (SEB)

Description of

Innovation: Stock market

Type: i

Initiator: g

Date: 1987

Motive: To foster the development of capital market conditions for investment financing.

Functioning: The SEB operates organized trading sessions at which brokers meet to offer and bid, executing

orders received from clients before the official trading session (an order-book trading system). The trading sessions are conducted by exchange personnel with securities called for trading one at a time, in alphabetical order. There are three trading sessions per week with trading sessions opened to the public in 1996. The shallow market often implies wide disparities between bid and offer prices or unmatched offers or bids. At the end of 1995 there were 18 companies listed on the exchange, two mutual funds (one offshore) and some government, but no corporate, bonds were traded. There are four *ex officio* members (two ministries, the Central Bank and the Chamber of Commerce) and 14 ordinary members.

Origin: Stock market systems of the USA and the UK.
Data: See Tables 4.2.9 and 4.2.10.

Syndicated Loans

Description of Innovation: Loans made by a consortium of institutions to a single borrower when the size and risk of a project is judged too large by a single institution.

Type: s

Initiator: Private financial institutions

Date: 1990s

Motive: To reduce the exposure of a single financial institution and/or permit participation in a loan that may exceed a single bank’s permitted exposure under prudential regulations.

Functioning: These are arranged by combinations of banks, insurance companies and other financial institutions

to provide financing for a single project or company. Information on these is difficult to obtain since no aggregate published source exists. One example is the nine-year loan arranged for Almond Resorts Inc. by a consortium of lenders in 1995 for \$29 million (*see Almonds Resorts Inc., 1996 Prospectus*).

- Origin:** Syndicated loans common in financial markets of industrialized countries.
- Data:** No data is publicly available.

Treasury Notes

Description of

Innovation: Long-term government securities issued as an alternative to debentures and treasury bills, with an intermediate maturity.

Type: s

Initiator: Monetary Authority

Date: 1989

Motive: To provide an alternative to the ten-year government debenture.

Functioning: Treasury notes have maturities of up to 10 years but are commonly issued with 3, 5 and 7 year maturities. These can be compared with government debentures which have maturities of 10 years or more. The Central Bank manages the issue of Treasury Notes, with the volume and price being determined by the Bank after approval by the Minister of Finance and taking account of the limit on outstanding issues fixed by legislation. This procedure applies to all long-term government securities.

- Origin:** Diverse maturities available on government securities in mature markets.
- Data:** Data on long-term government securities aggregate treasury notes with debentures.

Venture Capital

Description of

Innovation: Institutions to provide venture capital to start-up, small and medium-sized business in the forms of equity participation or loans. Three attempts have been made to establish support structures for venture capital in Barbados.

Type: i

Initiator: US Agency for International Development (USAID); Monetary Authority.

Date: 1986, 1989, 1992

Motive: To fill a perceived gap for risk capital in the market for finance.

Functioning: In 1986 USAID established in Barbados a regional non-profit company, Agricultural Venture Trust (AVT) to promote agricultural diversification through the provision of up to 49% (incorporated firm) or 100% (small farm) of capitalization. The AVT has not done well because of the farmers' reluctance to accept equity partners and because of overeagerness in fund disbursement in its early years. In 1989 the Venture Capital Corporation (VCC) was established to provide equity, long-term funding and support services for small and medium-sized businesses, with capital to be provided by the commercial banks (75%), Central Bank (20%) and other financial institutions or government. It

never became operational because most commercial banks were reluctant to participate without a government guarantee of the face value of their equity and government was reluctant to provide the guarantee. In 1992 the Barbados Investment Fund (BIF) was established by the Central Bank (five sixths) and the Caribbean Financial Services Corporation (CFSC) (one sixth). The BIF, totaling \$6 million, is managed by CFSC for a fee of 0.5% of the average investment portfolio balance per quarter. Most of the funds are invested in the tourism services sector. Operating margins are narrow or negative. The VCC was modeled on the successful 3i company, the UK's largest venture capital company. VCC had been owned by the six British clearing banks (whose equity investment was not, however, guaranteed) and the Bank of England until 1994 when its stock was floated.

Origin:

Data:

See Table 4.2.11.

Table 4.2.1: Barbados - Selected Economic Indicators (1984-1996)

	1984	1985	1986	1987	1988	1989
GDP, nominal at factor cost (\$m)	2,074.6	2,180.7	2,297.4	2,499.0	2,667.6	2,909.6
GDP, real growth rate (%) ¹	3.6	1.1	5.1	2.6	3.5	3.6
Tourist arrivals (nos) ²	367,652	359,135	369,770	421,859	451,485	461,259
Growth in Tourist arrivals (%)	11.97	-2.32	2.96	14.09	7.02	2.16
Sugar production ('000 tonnes)	100.4	100.2	111.1	83.4	80.3	66.3
Fiscal deficit (FD) (\$m) ³	-120.4	-125.5	-122.3	-219.7	-123.5	-66.4
FD as proportion GDP (%)	-5.80	-5.76	-5.32	-8.79	-4.63	-2.28
NFA of banking system (\$m)	221.8	303.2	279.2	247.5	319.4	223.5
Change in NFA (\$m)	2.3	81.4	-24	-31.7	71.9	-95.9
Domestic Credit (DC) (\$M)	1,133.8	1,123.4	1,160.6	1,261.7	1,401.7	1,495.8
DC as proportion GDP (%)	54.65	51.52	50.52	50.49	52.55	51.41
Credit to Public Sector (CG) (\$M)	379.2	340.8	331.9	341.3	386.9	375.5
CG as proportion DC (%)	33.45	30.34	28.60	27.05	27.60	25.10

Table 4.2.1: Barbados - Selected Economic Indicators (1984-1996) - Concluded

	1990	1991	1992	1993	1994	1995	1996
GDP, nominal at factor cost (\$m)	2,965.2	2,893.4	2,703.0	2,791.2	2,924.07	3,173.4 ^P	..
GDP, real growth rate (%) ¹	-3.3	-3.9	-5.7	0.8	4.0	2.9	..
Tourist arrivals (nos) ²	432,092	394,222	385,472	395,979	425,632	442,107	447,083
Growth in Tourist arrivals (%)	-6.32	-8.76	-2.22	2.73	7.49	3.87	1.13
Sugar production ('000 tonnes)	69.3	65.7	54	48.5	51.9	38.8	..
Fiscal deficit (FD) (\$m) ³	-248.2	-53.5	-52	-68.8	-36.4	-28.7	..
FD as proportion GDP (%)	-8.37	-1.85	-1.92	-2.46	-1.24	-0.90 ^P	..
NFA of banking system (\$m)	124.6	42.7	200.0	245.7	412.6	433.3	594.3
Change in NFA (\$m)	-98.9	-81.9	157.3	45.7	166.9	20.8	160.9
Domestic Credit (DC) (\$m)	1,817.9	1,861.7	1,927.3	1,916.3	1,990.1	2,108.2	2,278.1
DC as proportion GDP (%)	61.31	64.34	71.30	68.66	68.06	65.7	..
Credit to Public Sector (CG) (\$m)	649.5	654	742.3	743.9	667.9	591.9	694.3
CG as proportion DC (%)	35.73	35.13	38.52	38.82	33.56	28.08	30.48

Notes: .. Not available

¹ GDP growth rate is rate of growth of GDP at 1974 prices.

² Arrivals do not include cruise ship passengers whose numbers reached and surpassed visitor arrivals in the early nineties.

³ Fiscal deficit is for fiscal year (FY) beginning in the noted calendar year. e.g. 1984/85 FD is given in 1984.

^P Provisional

Source: Central Bank of Barbados. *Annual Statistical Digest*.

Table 4.2.2: Barbados - Interest Rates, Interest Rate Regulations and the Inflation Rate (1980-1996)

End of Year	1980	1981	1982	1983	1984	1985	1986	1987
WA deposit rate at CBs	5.6	8.4	8	6	6.2	4.8	3.5	3.7
Minimum (savings) deposit rate ¹	5	8	6	5	5.0	4.0	3.0	3.0
Median 3-month deposit rate ²	5.25	9	8	6.5	6.0	4.8	3.5	4.0
WA loan rate at CBs	5.6	8.4	8	6	12.0	10.9	10.2	10.3
Regulated WA loan rate	10	15	13	11.5	12.0	10.0	9.5	9.5
Prime rate ³	9.25	13.5	12	10.75	11.0	9.1	8.5	8.6
Treasury Bill Rate ⁴	6.19	13.82	11.34	6.81	7.19	4.58	4.34	4.99
Central Bank discount rate	7	22	20	16	16.0	13.0	8.0	8.0
Libor, 6 month ⁶	14.03	16.72	13.48	9.82	11.20	8.45	6.79	6.79
Rate of Inflation ⁵	14.4	14.6	10.3	5.3	4.6	3.9	1.3	3.4

Table 4.2.2: Barbados - Interest Rates, Interest Rate Regulations and the Inflation Rate (1980-1996) - Concluded

End of year	1988	1989	1990	1991	1992	1993	1994	1995	1996
WA deposit rate at CBs	4.5	6.3	6.1	7.4	5.0	4.8	5.0	5.2	5.2
Minimum (savings) deposit rate ¹	4.0	6.0	5.5	7.0	4.0	5.0	5.0	5.0	5
Median 3-month deposit rate ²	3.9	6.5	6.0	7.5	5.0	2.9	5.0	5.0	5
WA loan rate at CBs	11.1	12.7	12.1	15.0	12.6	11.3	11.9	11.8	11.9
Regulated WA loan rate	10.5	12.5	11.5	..	..	..	..	..	..
Prime rate ³	9.3	11.5	10.6	14.8	10.9	8.9	9.9	9.9	9.9
Treasury Bill Rate ⁴	4.71	5.82	8.06	11.30	6.60	7.23	7.77	8.27	5.61
Central Bank discount rate	8.0	13.5	13.5	18.0	12.0	8.0	9.5	12.5	12.5
Libor, 6 month ⁶	8.27	9.28	8.26	5.86	3.94	3.42	5.15		
Rate of Inflation ⁵	4.7	6.3	3.0	6.3	6.1	1.1	0.1	1.9	2.4

Notes: WA = Weighted Average; CB = Commercial Bank

.. denotes not applicable. All rates are those obtaining at end of year, unless otherwise indicated

¹ The Central Bank fixed the minimum savings deposit rate but in 1993, banks lowered the unregulated time deposit rate below the savings rate, prompting the Bank to fix the minimum deposit rate from 1994.

² Calculated as median of given range of 3-month time deposit range, except for 1994-1996 when minimum deposit rate was in effect.

³ Calculated as median of given range of prime rate.

⁴ The Treasury Bill Rate is the average discount rate at tender.

⁵ Rate of inflation calculated as rate of change in the annual average of the retail price index. 1995 rate taken from 1996 CBB Annual Report. Effective July 1995, index with base year 1994 replaced index with 1980 base.

⁶ Average annual Libor

Source: Central Bank of Barbados, *Annual Statistical Digest, Quarterly Statistical Digest*, Feb. 1997/

Table 4.2.3: Barbados - Reserve Requirements and Liquidity (1984-1996)

End of:	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Ratios (as % of deposits):													
Cash reserve	8	8	8	8	8	8	8	8	8	6	6	6	6
Stipulated Government securities ¹	19	19	22	22	22	22	22	25	23	23	23	23	23
Total reserve requirement	27	27	30	30	30	30	30	33	31	29	29	29	29
Excess liquidity ratio ²	4.9	4.2	5.0	7.0	7.1	2.0	3.2	-0.2	7.3	8.1	5.7	8.2	12.9

Notes: ¹ Separate requirements are fixed for treasury bills and debentures; the distinction is not made here. No account is taken of within-year changes in the requirements.

² Excess liquidity ratio is calculated as the ratio of excess reserves (cash and securities) to domestic deposits; from data in ASD 1984-1990, from AR 1991-96.

Source: Central Bank of Barbados, *Annual Statistical Digest (ASD) and 1996 Annual Report (AR)*

Table 4.2.4: Barbados - Commercial Banks - Deposit Costs and Earnings (1984-1995)

	1984	1985	1986	1987	1988	1989
Total Deposits (\$m)	1,046.2	1,120.3	1,184.1	1,343.0	1,525.7	1,570.7
Interest Expense on Deposits (\$m)	45.3	44.9	34.8	33.7	44.3	55.4
Int. Expense as Prop. Deposits (%)	4.33	4.01	2.94	2.51	2.90	3.53
Interest Income (\$m)	108.0	107.7	109.0	115.6	132.5	158.1
Int. Income as Prop. Deposits (%)	10.32	9.61	9.21	8.61	8.68	10.07
Deposit Growth (%)	11.16	7.08	5.69	13.42	13.60	2.95
Interest Expense Growth (%)	1.50	-0.88	-22.49	-3.16	31.45	25.06
Interest Income Growth (%)	3.70	-0.28	1.21	6.06	14.62	19.32

Source: Central Bank of Barbados, *Annual Statistical Digest*.

Table 4.2.4: Barbados - Commercial Banks - Deposit Costs and Earnings (1984-1995) - Concluded

	1990	1991	1992	1993	1994	1995
Total Deposits (\$m)	1,832.7	1,761.3	1,920.8	1,940.9	2,239.1	2,539.2
Interest Expense on Deposits (\$m)	78.5	85.3	85.5	63.9	65.3	94.0
Int. Expense as Prop. Deposits (%)	4.28	4.84	4.45	3.29	2.92	3.70
Interest Income (\$m)	176.2	195.6	208.3	168.8	187.8	297.6
Int. Income as Prop. Deposits (%)	9.61	11.11	10.84	8.70	8.39	11.72
Deposit Growth (%)	16.68	-3.90	9.06	1.05	15.36	13.40
Interest Expense Growth (%)	41.70	8.66	0.23	-25.26	2.19	37.10
Interest Income Growth (%)	11.45	11.01	6.49	-18.96	11.26	24.64

Source: Central Bank of Barbados, *Annual Statistical Digest*

Table 4.2.5: Barbados - Growth of Life Insurance Companies (1980-1994)

Year	Local Assets (\$'000)	Growth of Assets (%)	Life Premiums (\$'000)	Growth in Life Prms (%)	Life Prms. to Assets (%)	Annuity Annuities ('000)	Annuity Income as % of assets
1980	105,587	16.61	21,259	11.30	20.13	4,236	4.01
1981	134,661	27.54	24,931	17.27	18.51	4,982	3.70
1982	154,209	14.52	27,987	12.26	18.15	5,146	3.34
1983	178,843	15.97	30,584	9.28	17.10	5,169	2.89
1984	210,645	17.78	34,839	13.91	16.54	6,512	3.09
1985	227,114	7.82	38,947	11.79	17.15	7,305	3.22
1986	259,510	14.26	43,572	11.88	16.79	10,147	3.91
1987	284,973	9.81	50,676	16.30	17.78	7,312	2.57
1988	336,120	17.95	57,054	12.59	16.97	8,398	2.50
1989	422,437	25.68	63,455	11.22	15.02	12,190	2.89
1990	442,135	4.66	68,713	8.29	15.54	11,252	2.54
1991	500,487	13.20	75,783	10.29	15.14	10,902	2.18
1992	562,366	12.36	76,438	0.86	13.59	10,050	1.79
1993	538,632	-4.22	73,428	-3.94	13.63	13,609	2.53
1994	595,484	10.60	82,587	12.13	13.87	12,243	2.06

Note: Life Insurance Companies also offer Health Insurance, and some Property Insurance.

Source: Central Bank of Barbados, *Annual Statistical Digest*

Table 4.2.6: Barbados - Potential Market for Commercial Paper (1985-1993)

Year	Commercial Houses Total Deposits (\$M)	Commercial Houses' Deposits as Percentage of Commercial Banks'	
		Deposits	Loans to Distribution
1985	69.6	6.4	60.4
1986	61.1	5.3	45.4
1987	68.2	5.3	44.9
1988	68.6	4.7	36.7
1989	65.9	4.4	27.5
1990	70.5	4.1	34.4
1991	60	3.6	29.0
1992	56.2	3.1	27.2
1993	78.8	4.3	29.8

Source: Central Bank of Barbados

Table 4.2.7: Barbados - Loans on Credit Cards

	Credit on Credit Cards Outstanding at Year end (\$m)		Commercial Bank Credit Outstanding at Year end (\$m)		Ratio of Card Credit to Commercial Bank Credit (\$m)	
	Per- sonal	Busi- ness	Per- sonal	Busi- ness	Per- sonal	Busi- ness
1995	39.6	1.0	437.5	936.3	9.05	0.11
1996	55.4	1.3	526.8	911.6	10.52	0.14

Note: Commercial bank business credit is calculated as the difference between total credit and the sum of government, statutory board, personal and miscellaneous credit.

Source: Central Bank of Barbados, *Economic and Financial Statistics*, and unpublished data.

Table 4.2.8: Barbados - Credit Unions' Share of the Deposit Market (1980-1994)

Year	Credit Union Deposit and Shares (\$M)	Commercial Banks (CBs) dmstc Deposits (\$M)	Credit Union Deposits as per'tg CBs (%)
1980	3.52	738.10	0.48
1981	4.80	815.60	0.59
1982	7.20	874.00	0.82
1983	10.50	928.60	1.13
1984	15.30	1,027.40	1.49
1985	23.30	1,090.10	2.14
1986	36.30	1,163.00	3.12
1987	56.00	1,297.70	4.32
1988	78.90	1,453.90	5.43
1989	99.30	1,497.70	6.63
1990	123.70	1,738.60	7.11
1991	149.20	1,670.20	8.93
1992	152.20	1,811.00	8.40
1993	142.50	1,811.70	7.87
1994	147.70	2,043.50	7.23

Source: Central Bank of Barbados, *Annual Statistical Digest*.

Table 4.2.9: Barbados - Indicators of the SEB Performance (1988-1995)

Year	Market Capitalization at December (BDS \$M)	Ratio of Market Capitalization to GDP (%)	Total Value Traded (BDS \$M)	Turnover Ratio (%)
1988	..	..	4.17	..
1989	583.6	20.1	4.43	..
1990	563.1	19.0	10.14	1.8
1991	616.5	21.3	18.27	3.1
1992	518.3	19.2	4.40	0.8
1993	656.3	23.5	8.92	1.5
1994	1,035.4	35.4	11.50	1.4
1995	988.8	31.2	6.25	0.6

Notes: .. Not available.

Turnover ratio is the ratio of total value traded for the period to average market capitalization, where average market capitalization is the average of the current and previous periods. The increase in market capitalization in 1994 reflects the sale of CIBC W.I. Holdings.

Source: Central Bank of Barbados, *Annual Statistical Digest*.

Table 4.2.10: Comparison of the Caribbean Stock Markets by Securities Traded (at July 1996)

Type of Listing	Jamaica	Trinidad & Tobago	Barbados
Common Stock	47	25	18
Preferred Stock	18	5	3
Corporate Bonds	2	-	-
Government Bonds	-	-	5

Source: Stock Exchange Publications

Table 4.2.11: The Barbados Investment Fund - Indicators

	Mar 31, 1993	March 31, 1994	Aug. 31, 1995
Assets (\$'000)	2,069.5	2,048.9	6,012.0
Investments (\$'000)	1,180.0	1,990.0	3,712.0
Equity (\$'000)	1,180.0	1,990.0	3,462.0
Bonds, 15% redeemable (\$'000)	0.0	0.0	250.0
Fundholders' equity (\$'000)	2,000.0	2,000.0	6,000.0
Operating expenses (\$'000)	24.8	45.8	150.1
Operating expenses/Assets (%)	1.20	2.24	2.50
Net income (loss) before provision (\$'000)	45.7	-1.8	57.4
Net income (loss)/Assets (%)	2.21	-0.09	0.95

4.3: BELIZE:

INNOVATIONS AND THEIR ENVIRONMENT

Economic developments and policy changes have driven the developments in the financial system of Belize. The innovations that emerged were to a large extent driven by policy changes, especially those of a monetary and financial nature. Technological change and increased competition also played a large part in the emergence of innovations in Belize.

4.3.1. The Economic and Policy Environment

From 1985 onwards Belize experienced relatively bouyant economic conditions after a five year period, characterised by fiscal and balance of payment deficits, deteriorating foreign exchange reserves and IMF adjustment programmes. By 1986, however, the prudent monetary and fiscal policies adopted, increases in the prices of some of Belize's major agricultural exports, and increased investments, had together led to significant improvements in international reserves and the rate of economic growth (*see Table 4.3.1*).

Much of the growth in the 1990s was, however, driven by the government's infrastructural projects which, in conjunction with an increased wage bill, generated huge fiscal deficits which were financed by the local banking sector (*see Table 4.3.1*). This was not sustainable and as the government cut back expenditures, growth fell off (-1.5% real growth in 1996) inspite of relatively good

performances in the agricultural sector. The fiscal position of the economy continued to deteriorate in the 1990s, largely on account of increased government spending and in spite of cuts in capital expenditure. This situation was primarily due to a sizable increase in the wages and salaries bill.

Monetary and Regulatory Policy

A standby agreement with the IMF was entered into in December 1984 in the face of declining international reserves. Under this programme monetary policy was tightened considerably, the cash and liquid assets ratios were increased from 5% and 20% to 9% and 30% respectively. The Central Bank of Belize also increased the minimum lending rate from 12% to 14% and the minimum deposit rate by three percentage points. Additionally, commercial banks were directed to reduce the level of outstanding credit in an effort to curtail the deterioration in the level of foreign exchange reserves. These measures led to a reduction in loans and advances and an increase in deposits, which by 1986 led to a substantial increase in liquidity in the banking sector (*see Table 4.3.1*). This easing of liquidity in the banking sector and an increase in foreign exchange reserves led the Central Bank in 1989 to lower both the cash and liquid asset ratios by two percentage points. The cash and liquid asset ratios were further decreased in 1991 to 6% and 25% respectively. Adjustments to the reserve requirements and administrative limits on interest rates continued to be the main tools of monetary policy when liquidity declined after 1992 and monetary policy was tightened. Foreign exchange controls were relaxed in 1994.

Prudential supervision and monitoring were strengthened during the period 1985 to 1995. The frequency of examinations was substantially increased after 1987 and the financial institutions Act was enacted in 1995, to combat some of the problems for

supervision caused by the passage of the International Business Companies Act in 1990.

The Financial System

The financial system in Belize is dominated by commercial banks, the majority of which are branches of foreign banks (4 of the 5 commercial banks are branches of foreign branches). During the late 1980s, which was a period of buoyant growth, these banks substantially increased the number of branches which resulted in about 33.4% of the adult population having access to at least a savings account. This was followed in the 1990s by the introduction of electronic banking services, as competition increased, driven mostly by the increasing popularity of credit unions which offered higher rates on deposits and a relatively simple loans approval process. By 1995 there was 21 active credit unions in Belize. Additionally, there are about 20 insurance companies, 11 of which offer both life and non-life insurance. The Government Savings Bank and the Development Finance Corporation also formed part of the financial system.

4.3.2. Taxonomy of Innovations

Automatic Teller Machines (ATMs)

Description of

Innovation:	Machines that provide retail banking transaction facilities to customers 24 hours a day.
Type:	t
Initiator:	International Commercial Bank.
Date:	1993
Motive:	To reduce cost and offer more convenient services to customers.
Functioning:	Electronic bank cards which allow clients to access

their bank accounts and conduct a number of transactions, usually withdrawals, deposits and account balances.

Origin: Developed at headquarters of international bank and transferred to Belize.

Data: None

Credit Cards

Description of Innovation:

Cards used to make payments locally and internationally from credit extended up to a prescribed limit at the time approval granted for card.

Type: t

Initiator: Local Commercial Bank

Date: 1994

Motive: To offer better services to customers and to compete for a greater share of consumer credit market. With the relaxation of exchange controls there was more impetus for this service as individuals could now pay for foreign purchases with the card.

Functioning: Credit cards were introduced to a select clientele.

Data: None.

Debit Card

Description of

- Innovation:** An ATM card which allowed clients to buy goods from merchants and automatically debit their bank accounts electronically.
- Type:** t
- Initiator:** International commercial bank
- Date:** 1994
- Motive:** To offer more convenient payment mechanisms to bank customers and to attract depositors.
- Functioning:** Electronic data system which connects merchants to banks and allows for the debiting of customers' accounts from point-of-sales cash registers.
- Origins:** Parent Companies of International Banks.
- Data:** None.

Public Investment Company

Description of

- Innovation:** This is an off-shore company which also conducts business on-shore through subsidiaries.
- Type:** Institutional
- Initiator:** Financial institutions and other companies
- Date Initiated:** 1990
- Motive:** To take advantage of the off-shore status but at the same time exploit business opportunities on-shore.
- Functioning:** The passage of the International Business Companies Act in 1990 led to the formation of Public Investment Companies to exploit the off-

shore opportunities. These companies, however, also formed subsidiaries which conducted business on-shore. The financial transactions between parent company and subsidiary was difficult to monitor.

Data: None Available.

Quick Cash Cards

Description of

Innovation: Membership card which allowed users to withdraw cash up to a prescribed limit at cashier's of a pawn brokerage enterprise.

Type: Security/Process

Initiator: Pawn brokerage enterprise

Date: 1993

Motive: To exploit opportunities for consumer lending to clients who would not normally qualify for commercial bank consumer credit.

Functioning: Cards issued to individuals on the presentation of a job letter. Client could withdraw cash up to a prescribed limit at the cashier's of the establishment. The amount granted increased and interest rates charged on the principal decreased as the customer acquired a good credit rating.

Data: None available.

Table 4.3.1: Belize - Selected Economic Indicators (1984-1995)
(%)

Year	Growth ¹ Rate of Real GDP%	BOP Current Account to GDP	Liquidity ² (Loans/ Deposits)	Growth ² Rate of Bank Deposits	Growth ¹ of Int'l Reserves US\$M	Fiscal ² Balance to GDP	% of ² Domestic Credit to Gov't
1984	2.0	-2.5	113.4	2.6	-34.4	-6.2	41.6
1985	1.0	4.4	96.0	5.6	142.6	-10.3	43.6
1986	4.6	5.3	77.7	15.7	81.8	-5.2	44.2
1987	11.6	3.4	77.4	21.9	35.3	11.2	37.0
1988	9.0	-0.8	85.4	16.4	42.0	0.3	17.0
1989	13.0	-5.3	78.9	22.6	15.9	0.3	6.8
1990	9.3	-3.8	76.9	19.6	16.5	-5.5	-1.1
1991	4.6	-6.4	81.6	13.5	-24.1	-7.9	11.9
1992	9.0	-6.1	84.3	9.0	-0.2	-6.3	10.8
1993	4.2	-9.4	87.0	-0.1	-26.7	-7.5	18.3
1994	1.5	-4.2	86.9	5.4	11.1	..	21.5
1995	3.8	-2.5	84.3	11.3	9.0	..	24.1

Note: .. Not available

Sources: ¹ IMF, International Financial Statistics.

² Central Bank of Belize, *Quarterly Review* June 1995

Table 4.3.2: Belize - Interest and Inflation Rates (1985-1995)
(%)

Year	Savings Deposits	Time Deposits	Lending Rate	Rediscount Rate	Treasury Bill Rate	Inflation Rate
1985	7.8	12.0	14.7	20.0	12.8	4.2
1986	6.6	11.0	14.4	12.0	9.2	0.8
1987	7.8	9.4	13.8	12.0	8.8	2.0
1988	4.9	7.6	13.3	10.0	7.4	5.3
1989	5.3	8.0	14.0	12.0	7.4	0.0
1990	5.4	8.3	14.3	12.0	7.4	3.0
1991	5.4	8.3	14.3	12.0	5.9	5.6
1992	5.4	8.1	14.4	12.0	4.9	2.6
1993	5.4	8.3	14.6	12.0	4.4	1.6
1994	5.3	8.7	15.0	12.0	4.2	7.6
1995	5.3	9.4	15.7	12.0	4.1	2.9

Source: Central Bank of Belize, *Quarterly Review*.

4.4: THE ORGANIZATION OF EASTERN CARIBBEAN STATES (OECS):

INNOVATIONS AND THEIR ENVIRONMENT¹

The macroeconomies, key prices and policy variables in the states of the Organization of the Eastern Caribbean States (OECS) have in recent years tended to exhibit little volatility. As a result, the circumvention of regulation or avoidance of monetary policy effects which stimulated innovation elsewhere have largely been absent. OECS countries have, however, experienced periods of economic difficulty and the effects these periods have had on the position of local banks prior to 1985 may have been one motivation for increasing assertiveness of the indigenous banks. Three factors appear to account for most of the innovations in the states of the Organization of Eastern Caribbean States (OECS). First, the competitive push of the indigenous banks, greatly facilitated by their membership of the Caribbean Association of Indigenous Banks (CAIB), stimulated several new practices aimed

¹ Much of the information in this section has been obtained thanks to the management and staff of the Eastern Caribbean Central Bank who were unfailingly helpful in their provision of references, information and data. In particular, we would like to thank Mr. Eustace Liburd, Ms. L. Mignon Wade and Ms. Gail Archibald. Neither these individuals, nor the ECCB, is responsible for any errors.

at the retail market. As a corollary, the foreign banks reacted to the increase in rival banks' service with their own new services. Second, private innovation has also been influenced by the entry of regional financial institutions. Third, the ECCB has taken an active role in the promotion of capital market development and new institutions have been established, or are planned, as a result of their initiatives.

4.4.1. The Economic and Policy Environment

The OECS countries have in large part avoided the stabilization problems of the larger Caribbean islands in the 1970s and 1980s.² **Table 4.4.1** indicates that, although several islands have experienced fluctuations in growth, monetary indicators exhibit noticeable stability, for the most part. Domestic credit has hovered between 60% and 68% of GDP while overall net foreign assets, having risen from 1987 to 1989, returned to around 20% of GDP thereafter. Interest rates, including Treasury Bill Rates (*see Table 4.4.2*) have been remarkably stable, if not unresponsive, with time deposit rates in some islands only rising for a time after 1989, when liquidity decreased (*see Table 4.4.1*).

² This congenial outcome is probably due to the restricted scope imposed by the ECCB arrangements on monetary financing of fiscal deficits. The ECCB is required to maintain minimum cover in external reserves of 60% of the currency in circulation and other demand liabilities, and that ratio may only be changed by *unanimous* agreement of its Monetary Council, composed of one Minister of each participating government. In addition, ECCB's holding of the Treasury Bills (TBs) of any member government cannot exceed 10% of that government's current revenue for the current year. Nor can ECCB's holdings of government securities other than TBs exceed 15% of its currency in circulation and other demand liabilities. The ECCB may make temporary advances to meet a member government's seasonal needs. (**See Crown Agent's Financial Advisory Services (CAFAS) (1987)**). It may be worth noting that these arrangements imply that no one government can easily indulge in excessive central-bank-financed deficit spending.

The exchange rate has never moved from EC\$2.7 per US dollar since being set at that level and inflation has been very modest.

Monetary and Regulatory Policy

In addition to bank inspection, the ECCB has the power to impose reserve requirements on the deposit (or similar) liabilities of financial institutions in terms of cash or deposits. It can also impose a government security requirement of up to 10% of these liabilities, with this requirement varying among the territories if required by the Monetary Council. Prior to the establishment of the ECCB (which formally succeeded the Eastern Caribbean Currency Authority (ECCA) in October, 1983), territories were required to hold special deposits ranging from 3% of deposit liabilities in St. Kitts and Nevis to 20% in Grenada, as well as non-interest-bearing balances of at least 0.25% of deposits to facilitate clearing. In 1984 the ECCB assumed these liabilities, adjusting countries' ratios such that, by March 1987, an effective 6% cash reserve requirement (non-interest-bearing) was imposed on banks in all territories. This remains in place. **Table 4.4.3** indicates that overall actual reserves have stayed very near the statutory requirement, although they rose to 7.8% in 1995 as liquidity increased (*see Table 4.4.4*).

In addition, the ECCB can prescribe minimum and maximum interest rates on deposits and maximum rates on loans, with such rates varying between countries if required by the Monetary Council, as well as the method of computation and manner of disclosure to the public of loan and deposit rates. It may also determine purposes, aggregate ceilings, maximum maturities and the cash margins or security required for loans.

Other monetary policy instruments include the power to discount and rediscount bills of exchange and promissory notes for up to 91

days at rates it may choose. Reserve requirements have been the Bank's primary monetary policy instrument and the unchanged cash reserve requirement indicates the stability of the system. In order to foster competition, the Bank imposed a minimum savings deposit rate in 1985 (set at 4% where it has remained ever since). It has also stipulated that interest payments be calculated on the minimum monthly balance, although the payments are usually made quarterly. It has also mandated that the effective annual percentage rates be included on loan documents and be given in advertisements.

The Banking System³

As at the end of 1996 there were 25 commercial banks⁴ operating in the Eastern Caribbean (EC) area covered by the ECCB

³ This section focuses almost exclusively on banks, rather than all financial institutions, as would be preferable, because we have not had the information or resources to examine the entire sector which includes building societies, credit unions, finance companies, insurance companies, and development banks and foundations. Since it is likely that the commercial banks are the most important, by a very wide margin, of these institutions, this may not be as limiting as it appears. The taxonomy in Section 4.4.2 does include innovations in the insurance field.

⁴ Note that this number counts banks by ownership, rather than counting each branch as a separate bank. Counting in the latter manner results in a total of 44 banks. That is, Barclays Bank is here counted as a single bank, whereas the latter enumeration would record Barclays as eight banks. This assumes that foreign banks, although separately incorporated in the different territories, tend to operate with single competitive policy in the ECCB area. While supported by informal inference from discussion with commercial bankers in the region and, indeed, suggested by the policy adopted by the indigenous banks, this issue should be subjected to further investigation.

(*see Table 4.4.5*). Five were incorporated outside of the territories: the Bank of Nova Scotia; Banque Française Commerciale; Barclays Bank, plc; CIBC Caribbean Ltd. and the Royal Bank of Canada. Only Barclays Bank still operates in all eight territories of the EC and the Banque Française Commerciale is represented only in Dominica. Seventeen of the 19 locally-incorporated banks are owned domestically or by regional banks (the indigenous banks). Two banks (in St. Lucia and St. Vincent and the Grenadines) are government-owned and governments have shares in four others (in Dominica, Grenada, Montserrat and St. Kitts and Nevis). Each territory has a dominant indigenous bank.

The ownership pattern is of interest because the indigenous banks, under the umbrella of the Caribbean Association of Indigenous Bankers (CAIB), appear to have adopted a strategy of innovation in an effort to acquire market share in the face of the long-standing dominance of the foreign branches. The CAIB was formed in 1970 but remained dormant until 1985 when, having realized the benefits of (informal) correspondent relationships, they were spurred to a more active stance by localization in Trinidad. In the ECCB area, local⁵ banks' profitability was adversely affected by slow economic growth between 1982 and 1984, resulting in tight liquidity (*see Liburd and Ferracho, 1985*). Local banks' net income before tax fell unevenly from 1.96% of average assets in 1982 to 1.69% in 1985 (*see Table 4.4.6, taken from CAFAS, 1987*). Not only did the profitability of foreign banks remain above that of local banks, but it continued to grow. The relatively poorer performance of the local banks was attributed to a number of factors by **Liburd and Ferracho** (*op. cit.*) and **CAFAS (1987)**. First, the foreign banks' early entry (*see Table 4.4.7*) gave them a dominant and loyal market share so that, in 1984, they held just over two thirds

⁵ Until 1995, there was only one non-indigenous local bank.

of total deposits. Second, the local banks tried to compete on the deposit rate (*see Tables 4.4.8 and 4.4.9*) but this was expensive. Third, with a high proportion of government loans (**Table 4.4.10**) in their portfolio, since government loan rates are usually lower, their interest earnings were not favourable. Low personnel costs and non-interest income prior to 1985 do not appear to have offered much scope for profitability increases (**Table 4.4.6**). Although their share of deposits was 36% in 1984 and increased to 39% in 1988, over thirty per cent of these were deposits of government (*see Table 4.4.10*). The local banks would therefore have found it useful to compete by offering improved banking services, many of which depended on high fixed-cost technology.

Active membership of the CAIB and joint adoption of technology enabled the indigenous banks to improve their services. In effect, the CAIB appears to operate to provide the mass that the small indigenous banks require to benefit from economies of scale. Most private innovations came on stream in the nineties as the alliance became effective. Through the CAIB, the indigenous banks were able to buy a common computer system, join Visa credit cards as a group, and launch products such as ATMs and real time banking which depend on technology. To learn whether these innovations did succeed in changing the balance of power in the banking structure, it would be clearly desirable to obtain ratios similar to those in **Table 4.4.6** for the 1985-1995 period, but these are not publicly available. However, the average after-tax returns on indigenous banks' assets in 1994 and 1995 were 1.16% and 1.24%, respectively, (*see CAIB, 1996*) as compared with 0.05% in 1983 (the latter is the only year for which this information is available in **CAFAS, op.cit.**). Over the brief period for which they are available, the 5-bank concentration ratios indicate (**Table 4.4.11**) a slight decline in deposit concentration and a probably insignificant increase in loan concentration.

Note that while we focus on common tendencies in the ECCB area, each country has its peculiar features. For example, the entry in 1982 into St. Kitts and Nevis of a foreign bank which is particularly active in retail banking put pressure on the incumbent banks and may have made the St. Kitts banking system especially competitive in retail banking.

The influence of competition and overall macro conditions on innovation can be seen in the response to the tightening of liquidity after 1988 (*see Table 4.4.4*). Not only did time deposit rates rise (*Table 4.4.1*), but the differentiation of retail deposits became very active.

Credit unions catering to the retail market have also grown in importance, as indicated by the rising proportion of their deposits and loans relative to those of the commercial banks. The taxonomy of innovations should probably include certain of their activities but the only source of information is **Peter Adrien's 1996** paper which specifically requests that it not be quoted.

4.4.2. Taxonomy of Innovations in the OECS⁶

Annuity-Type Products

Description of

Innovation: Products that combine insurance and investment properties.

Type: s

Initiator: Regionally-headquartered insurance company.

Date initiated: 1994

Motive: To assess of market demand, following introduction of such products in Trinidad and Tobago.

Functioning: There is a contract between the individual and, typically, the insurance company which provides for flexible payments by the individual to the company. Interest is paid to the individual on the amounts outstanding at a rate which is typically greater than that on time deposits, is tied to the performance of the insurance company and is market-sensitive. Unlike the usual insurance products, endowment and whole-life policies, after the first eight years no charges are paid for early

⁶ We would like to thank the following individuals for their assistance in arranging interviews, agreeing to be interviewed, responding to questions and supplying information: Peter Adrien, ECCB; Trevor Blake, ECCB; James L. Fleming, ECCB; Nathan Lee, The Bank of Nova Scotia; Eustace Liburd, ECCB; Warren Nisbet, St. Kitts-Nevis-Anguilla (SKNA) National Bank Ltd.; Ernest E. Pistana, SKNA National Bank Ltd.; St. Bernard J. Sebastien, Eastern Caribbean Home Mortgage Bank; John Venner, ECCB; Anne Verity, ECCB; and L. Mignon Wade, ECCB. Naturally, we cannot hold them responsible for any errors or misinterpretations that may remain in the taxonomy.

surrender. Like an insurance product, a beneficiary receives a benefit in the event of death of the insured/investor but that benefit will depend on the amount saved unless the particular product includes an element of term insurance (as with a product introduced in 1996). The annuity has to mature in a given age interval, but the point of maturity can be chosen by the individual who takes it out.

Origin: US insurance market.

Data: None available.

ATMs

Description of

Innovation: Automated teller machines.

Type: t

Initiator: Indigenous bank.

Date initiated: 1992

Motive: To maintain and attract customers; introduced when appropriately priced equipment identified.

Functioning: As usual.

Origin: ATM machines of mature financial markets.

Data: None available.

Banking Acts

Description of

Innovation: Legislation to govern and regulate the activities of banks.

Type: i

Initiator: ECCB

Date initiated: 1988, 1993.

Motive: To update and improve the bank supervision

- process.
- Functioning:** Banking Act of 1988 was repealed by the Banking of 1993.
- Origin:** Consistent with region-wide trends as part of financial adjustment.
- Data:** None available.

Consumer Banking Differentiation

Description of

- Innovation:** Bank accounts with features tailored to attract a particular segment of the market.
- Type:** m
- Initiator:** Extra-regionally-incorporated commercial bank.
- Date initiated:** 1992
- Motive:** To attract deposits in periods low liquidity and in response to threats to market share.
- Functioning:** The accounts introduced by the international banks appear to have mimicked the features of accounts existing in their Head Office countries. Account types include those requiring a large minimum deposit (EC\$25,000, for example) with a rate premium of 25 basis points over that of the regular savings rate, increasing with specified increments in deposit size and no fixed term; fixed deposits with rate premiums (as high as 1.5%) over the savings rate, guaranteed for the deposit period; fixed deposit accounts offering free or cheaper additional services to senior citizens; accounts for those below 18 years of age with higher interest. Several of these accounts pay interest on the daily balance rather than a quarterly or monthly balance. Loan products are also offered. Introduction by one bank appears to be closely followed by similar

- Origin:** products at other banks.
Marketing programmes of mature financial markets.
- Data:** None available.

Credit Cards

Description of Innovation:

Cards used to make payments for goods from the credit extended to cardholders at the time of issue of the card.

Type:

t

Initiator:

International commercial banks.

Date initiated:

1993

Motive:

To maintain and attract customers. They presumably provided a competitive advantage at a time when the system appeared to be tighter. Liquidity in the ECCB area had been falling since 1989 with the loan/deposit ratio in some territories as high as 90% (*see Table 4.4.4*).

Functioning:

Credit cards were introduced to a select group of customers with processing done via US-based branch of the foreign bank.

Origin:

Mature financial markets.

Data:

None available.

Credit Card Processing

Description of Innovation:

Innovation:

Limited liability company established to issue and process credit card transactions locally.

Type:

i, t

Initiator:

Indigenous commercial banks.

Date initiated:	1994
Motive:	To maintain and attract customers. Branches of international banks had been able to offer credit card services to their customers by having the head office issue the card and processing done by a third party processor. By joining Visa International as a group, the indigenous banks have been able to benefit from economies of scale which help to make the credit card service financially feasible.
Functioning:	The Caribbean Credit Card Corporation, a company registered in Antigua, is the processing company which issues the international Visa card on behalf of 12 member banks of the CAIB. The assets of the company are the credits guaranteed by the banks. Banks approve the credit and fund the Corporation. The Corporation is jointly owned by the banks.
Origin:	Processing company originates from companies issuing cards in mature markets, idea of bank cooperation may not.
Data:	None available.

Debit Cards

Description of Innovation:	Cards used to make payment for goods, the funds for payment being debited directly from the payer's account, a substitute for cheque payments.
Type:	t
Initiator:	Indigenous banks.
Date initiated:	1995.
Motive:	To maintain and attract customers and enhance payment systems.

Functioning: System uses the ATM card.
Origin: Mature markets.
Data: None available.

Fiscal Finance Management

Description of

Innovation: Proposal for setting up of a fiscal agent to governments which would be within but not necessarily part of the Monetary Authority.

Type: i

Initiator: ECCB

Date initiated: 1997

Motive: To widen and deepen the market for government securities, presumably.

Functioning: Agent would coordinate debt issues on a fiscal basis, auction Treasury Bills (TBs), analyze the market for government debt, advise on terms and conditions, design the issue, auction the TBs on a repurchase basis so that the central bank determines the quantity to sell and the auction determines the price, and provides information to the market.

Origin: Unknown

Data: *See Table 4.4.2.*

Inter-bank Market

Description of

Innovation: Market to permit borrowing and lending among the commercial banks of the ECCB area, brokered by the ECCB.

Type: i

Initiator: ECCB

Date initiated:	1986
Motive:	To improve liquidity in the EC region and allow funds in current account balances with the ECCB to earn a return. Originally, the market also helped indigenous banks to obtain funds on the inter-bank market.
Functioning:	Commercial bank members of the clearing house operated by the ECCB can place excess funds on current account at the ECCB on the inter-bank market for a period of at least seven days. Bids are also on the market for seven days and the ECCB acts as broker matching bids and offers and guarantees the loans. Participating banks borrow against a deposit of Treasury Bills and /or private commercial paper acceptable to the ECCB. Loans on this market earn a rate of 5% fixed by the ECCB since inception. Up to 1987, as a result of the high liquidity in the system, the market was little used. The market has helped to recycle liquidity through the region and to promote competition by allowing anonymous borrowing among competing banks.
Origin:	Mature markets.
Data:	None available.

Real Time Banking

Description of Innovation:	Transactions are posted at the time carried out.
Type:	t
Initiator:	Indigenous banks
Date initiated:	1985-1990
Motive:	To reduce costs and facilitate customers.
Functioning:	Accounts can be accessed and operations carried

out at any branch with the computer system automatically posting the general ledger. Only vouchers are manually prepared. A similar system is used by 16 banks in the Caribbean. Examples of cost reduction include those of information retrieval, especially dated information, and reduction of the risk of fraud from the use of dormant accounts (dormant accounts are a significant feature of Caribbean banking) through implementation of an automatic control system.

Origin: Mature markets.
Data: None available.

Regional Banking

Description of

Innovation: Expansion of banks based in one country of the region into other countries.

Type: i

Initiator: cb, regional.

Date initiated: Mid-1980s.

Motive: Possibly to exploit opportunities for profit in other islands in the region.

Functioning: Purchase of banking company by Trinidadian-based bank.

Origin: Multinational banking common with mature market banks in 1970s and 1980s, and related wave of mergers and acquisitions.

Data: None available.

Secondary Mortgage Market Institution

Description of

Innovation:

Establishment of the Eastern Caribbean Home Mortgage Bank (ECHMB) to purchase residential mortgage loans from mortgage initiators, thus increasing the liquidity of those institutions and of the mortgage market in general. The ECHMB is a company set up by Agreement among the eight member countries of the ECCB and with capital subscribed by the ECCB, the social security schemes, commercial banks, insurance companies and credit unions, the International Finance Corporation (IFC) of the World Bank and the Home Mortgage Bank of Trinidad and Tobago (HMBTT).

Type:

i

Initiator:

ECCB

Date initiated:

1994

Motives:

(i) To provide liquidity for banks in a period when they have begun to allocate a larger proportion of their loan portfolio to residential mortgages; (ii) to provide instruments which could attract a wider group of investors; (iii) to provide opportunities for improved asset/liability management through closer maturity matching of assets and liabilities; and (iv) to support housing finance.

Functioning:

ECHMB launched a promotional campaign in the Windward islands and is undertaking a number of other steps: the development of criteria for approved lenders (lenders whose mortgages they will purchase), the development of documents modelled on those of the HMBTT for trust

arrangements, prospectuses, mortgages and mortgage sales. The issue of bonds will finance mortgage purchases. The first bond issued in October, 1996, for EC\$20 million was oversubscribed.

Origin:

Fannie Mae and Freddie Mac of the USA

Data:

An EC\$20 million bond was issued between October 14-18, 1996 in denominations of EC3,000. Two types of bonds were issued three years secured fixed-rate (tax free) bonds with interest at 5.5% and secured fixed rate (non-tax free) bonds.

Swift

Description of

Innovation:

Network for telecommunications transmission of funds and information.

Type:

t

Initiator:

Indigenous banks.

Date initiated:

1996

Motive:

To significantly reduce cost and timeliness of international movement of funds.

Functioning:

All indigenous banks are joining. The system apparently allows indigenous banks to provide international payments services at similar cost and with similar speed to those provided by the foreign banks which benefit from their transnational network.

Origin:

Mature markets.

Data:

None available.

Treasury Bill Market

Description of

Innovation:	Secondary market in treasury bills operated by the ECCB.
Type:	i
Initiator:	ECCB
Date:	1986
Motive:	To promote liquidity in the government security market and assist the commercial banks in managing their liquidity.
Functioning:	The ECCB purchases Treasury Bills but under their Act is limited in the amount it can hold (up to 10% of current revenues of any member government). Commercial banks hold settlement balances with the ECCB. When banks have excess liquidity, the Bank sells them Treasury Bills from its own holdings.
Origin:	Mature markets.
Data:	See Table 4.4.2.

Underwriting of Securities Issue

Description of

Innovation:	Underwriting by a financial institution of the shares being sold by a company.
Type:	i
Initiator:	International private commercial bank
Date initiated:	1996
Motive:	To possibly provide banks with an opportunity to earn fee income, especially in situations where market presence, and hence profits from standard commercial bank intermediation, are being eroded.

Functioning:	Presumably operates with the usual underwriting procedure whereby underwriter agrees to purchase, for own account and later sale, any unsold shares. In the particular case reported, Cable and Wireless services is divesting its shares in the Grenada telecommunications company and the local branch of a multinational branch has agreed to underwrite the resulting share issue. The same bank also underwrote the share issue of the electric power generating company in St. Lucia.
Origin:	Mature markets
Data:	None available.

US Dollar Accounts

Description of

Innovation:	Deposit accounts denominated in US dollars - St. Kitts and Nevis.
Type:	s
Initiator:	Commercial bank
Date initiated:	1996
Motive:	Demand for US dollar accounts by US-dollar-earning workers (especially from Nevis) could be satisfied because of the 1996 relaxation of exchange controls to allow Kittitians to buy up to EC\$100,000 without specific authorization.
Functioning:	The rates of interest paid on these accounts are fixed at discounts of 1%-1.5% below New York rates, depending on whether they are savings or fixed term accounts, but is paid quarterly. The accounts are expensive for banks to operate because they require maintaining non-earning US cash balances.
Origin:	Common outside of exchange-controlled systems.
Data:	See Table 4.4.12.

Table 4.4.1: OECS - Selected Economic Indicators (1984-1995)

	1984	1985	1986	1987	1988	1989
OECS Nominal GDP (EC\$M)	1,740.7	2,065.8	1,04.7	2,804.7	2,717.3	3,200.7
Real Growth Rates (%)						
Anguilla	..	..	..	..	..	9.71
Antigua and Barbuda	..	8.77	9.71	9.02	7.72	6.26
Dominica	..	1.75	6.8	6.85	7.34	-1.2
Grenada	..	4.92	5.51	5.88	5.28	16.54
Montserrat	..	..	..	..	..	..
St. Kitts and Nevis	..	5.55	6.17	7.43	9.79	8.72
St. Lucia	..	5.79	11.91	1.49	12.1	4.16
St. Vincent and The Grenadines	..	5.41	7.28	6.35	8.57	7.17
Domestic Credit (EC\$M)	1,209.5	1,375.9	1,531.3	1,660.3	1,973.1	2,424.2
Dom. Crd./ (%)	69.50	66.60	84.85	61.10	61.65	68.56
M2 (EC\$M)	1,492.0	1,666.0	2,005.0	2,282.0	2,349.0	2,713.0
M2/GDP (%)	85.73	80.65	111.10	83.98	73.39	76.72
Net Foreign Assets (EC\$M)	345.2	423.0	598.2	762.2	908.8	861.9
NFA/GDP (%)	19.83	20.48	33.15	28.05	28.39	24.37

Note: .. Not available

Table 4.4.1: OECS - Selected Economic Indicators (1984-1995 - Continued)

	1990	1991	1992	1993	1994	1995
OECS Nominal GDP (EC\$M)	4,453.9	4,371.6	5,075.8	5,305.9	5,597.7	4,268.5
Real Growth Rates (%)						
Anguilla	6.6	3.7	7.1	7.5	7	-4.3
Antigua and Barbuda	3.49	4.25	1.67	3.38	5.3	-3.8
Dominica	8.53	2.27	2.83	1.82	1.8	1.8
Grenada	5.22	2.93	0.57	-1.3	2.3	2.8
Montserrat	14.1	..	1.3	1.9	-0.8	-2.9
St. Kitts and Nevis	2.98	..	3.54	3.96	4.1	3.4
St. Lucia	3.97	1.6	6.56	2.3	2.2	4.1
St. Vincent and The Grenadines	7.04	3.11	6.54	1.37	0.4	7.4
Domestic Credit (EC\$M)	2,665.9	2,988.0	3,252.3	3,584.0	3,804.9	4,245.0
Dom. Crd./ (%)	59.86	63.15	64.07	67.55	67.97	99.45
M2 (EC\$M)	3,006.0	3,255.0	3,521.0	3,818.0	4,173.0	4,786.0
M2/GDP (%)	67.49	68.79	69.37	71.96	74.55	112.12
Net Foreign Assets (EC\$M)	856.8	941.8	1,848.8	1,076.6	1,050.0	1,311.3
NFA/GDP (%)	19.24	19.90	20.66	20.29	18.76	30.72

Note: .. Not available

Table 4.4.1: OECS - Selected Economic Indicators (1984-1995) - Continued

	1984	1985	1986	1987	1988	1989
Net Foreign Assets by Territory (EC\$M)						
Anguilla	..	..	..	..	..	48.1
Antigua and Barbuda	..	-6.16	-2.28	15.13	24.76	
Dominica	..	-21.67	-0.08	51.59	77.33	51.38
Grenada	..	37.42	37.92	45.33	55.18	5.1
Montserrat	..	..	..	..	..	63.1
St. Kitts and Nevis	..	30.05	44.45	64.86	65.26	68.6
St. Lucia	..	48.13	100.38	146.3	179	147.5
St. Vincent and The Grenadines	..	36.03	70.25	75.96	113.55	112.22
Maximum Available 3-Month Time Deposit Rates by Territory (%)						
Anguilla	7.5	6.5	5.75	5.75	5.25	5.25
Antigua and Barbuda	11	11	8	6.5	6.5	6.5
Dominica	5	5	5	5	4	4.5
Grenada	7	7	6.5	5.5	5	6
Montserrat	4.5	4.5	4.5	4.5	4.3	6.4
St. Kitts and Nevis	6	6	6	5	7	7
St. Lucia	8.5	8.5	6.5	4	5	5
St. Vincent and The Grenadines	6	6	6	4	4.25	4.25

Table 4.4.1: OECS - Selected Economic Indicators (1984-1995) - Continued

	1990	1991	1992	1993	1994	1995
Net Foreign Assets by Territory (EC\$M)						
Anguilla	25.4	40.4	384.8	52	84.7	132.5
Antigua and Barbuda	6.13	84.3	99.36	113.39	168.45	244.12
Dominica	31.12	34.56	45.85	26.95	0.51	38.9
Grenada	41.88	36.19	64.48	68.41	117.06	153.41
Montserrat	28.8	15.8	13	17.5	31.6	37.5
St. Kitts and Nevis	71.22	82.34	72.22	81.42	78.44	-86.12
St. Lucia	105.21	179.39	182.76	149.35	80.99	99.35
St. Vincent and The Grenadines	152.73	125.4	131.96	132.07	..	..
* Maximum Available 3-Month Time Deposit Rates by Territory (%)						
Anguilla	9	8	6.5	6.5	5.25	5.25
Antigua and Barbuda	8.5	8.5	8	7	6.5	5.5
Dominica	4.5	4.5	4	4	4	4
Grenada	7	6	5	5	4	4
Montserrat	6.38	4.25	6	3	4	4
St. Kitts and Nevis	7	7	5.5	5.5	5.5	5.5
St. Lucia	6	6	5.25	4.5	4.5	7
St. Vincent and The Grenadines	4.5	4.25	5.5	4	4	5

Table 4.4.1: OECS - Selected Economic Indicators (1984-1995) - Continued

	1984	1985	1986	1987	1988	1989
*Lowest Prime Lending Rate Available by Territory (%)						
Anguilla	10	10	9	10	10	10
Antigua and Barbuda	12.5	9	11	10	10	10
Dominica	9	9	9	9	9	9
Grenada	9	10.5	10.5	10.5	10.5	10.5
Montserrat	8.5	9.5	9.5	9.5	9.5	9.5
St. Kitts and Nevis	8	8	8	9.5	9	9
St. Lucia	13	12	10.5	9	10	10
St. Vincent and The Grenadines	9	11	12	11	11	11
**Inflation Rate (%)						
All OECS States	3.1	2.2	1.3	3	1.6	4.8
Anguilla	..	..	..	..	..	4.83
Antigua and Barbuda	..	..	..	..	..	5.3
Dominica	..	3.75	2.77	3.99	2.93	8.25
Grenada	..	2.85	0.45	-0.82	4.06	5.53
Montserrat	..	..	..	..	..	..
St. Kitts and Nevis	..	2.62	0	1	0.22	5.04
St. Lucia	..	1.47	2.05	7.58	0.77	4.03
St. Vincent and The Grenadines	..	2.13	1.04	3.32	0.22	2.77

Table 4.4.1: OECS - Selected Economic Indicators (1984-1995) - Concluded

	1990	1991	1992	1993	1994	1995
*Lowest Prime Lending Rate Available by Territory (%)						
Anguilla	10	10	10	10	11.5	11.5
Antigua and Barbuda	10.5	11	11	10.5	10.5	10
Dominica	9	9	9	9	9	9
Grenada	10.5	10.5	10.5	10	9.5	9.5
Montserrat	9.5	9.5	9.5	10	10	10
St. Kitts and Nevis	9	10	10	9.5	9.5	9.5
St. Lucia	10.5	9	9	9	9	9
St. Vincent and The Grenadines	11	11	11	11	10.5	9.5
**Inflation Rate (%)						
All OECS States	6.5	3.9	2.8	4.1	2.1	2.7
Anguilla	5.1	4.9	3	3.1	4	1.6
Antigua and Barbuda	7.7	2.1	..	..	7.1	0.6
Dominica	3.2	5.6	5.4	1.62	1.5	-2
Grenada	2.77	2.6	3.8	2.82	2.65	3.02
Montserrat	8.8	9.2	1.4	0.79	2.8	4.4
St. Kitts and Nevis	4.28	4.2	2.88	2.88	1.77	2.68
St. Lucia	4.71	5.7	5.11	0.81	5.8	2.62
St. Vincent and The Grenadines	7.54	5.5	3.41	4.31	1.05	1.74

Notes: * The ECCB Statistics provide interest rate ranges and this Table gives the lower end of the prime rate range. For St. Lucia, only single rates a given for 1988 and 1989; and similarly for St. Vincent and the Grenadines in 1986 and 1993, and for Grenada in 1988. All rates at December 31st.

** The OECS inflation rate is calculated as a weighted average of members' inflation rates

.. Not available

Source: GDP and Growth Rates - Monetary Aggregates - Interest Rates: ECCB, Commercial Banking Statistics. Inflation Rates - ECCB.

Table 4.4.2: OECS - Treasury Bills in the Member States (1985-1995)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Total TBs Outstanding	65.30	65.90	69.70	55.50	65.20	81.50	85.10	95.80	109.10	107.50	108.00
TBs held by ECCB		41.40	41.40	26.80	29.40	48.80	50.30	11.00	15.20	10.00	7.10
Average Yield on TBs, OECS	6.58	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.65	6.65
TB Rates by Territory											
Anguilla	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Antigua & Barbuda	6.5	6.5	6.5	6.6	6.5	6.5	6.5	6.5	6.4	6.4	6.4
Dominica	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Grenada	6.5	.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Montserrat	..	..	..	..	..	..	..	..	..	..	..
St. Kitts & Nevis	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
St. Lucia	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
St. Vincent & the Grenadines	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5

Notes: OECS Yield on TBs calculated as simple average of individual territories' rates.

.. Not Available

Source: Eastern Caribbean Central Bank

Table 4.4.3: OECS - Commercial Banks' Statutory Reserves and Deposits at Central Bank as Percentage of Residents' Deposits (1984-1995) (%)

	1984	1985	1986	1987	1988	1989
ECCB Area	0	0	6.05	6.31	6.40	6.46
	1990	1991	1992	1993	1994	1995
ECCB Area	6.27	6.51	6.38	6.70	7.15	7.81

Source: Calculated from ECCB, Commercial Banking Statistics.

Table 4.4.4: OECS - Loan/Deposit Ratio for All Banks (1984-1995)
(%)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
ECCB Area	80.8	81.3	75.9	72.5	74.6	80.7	82.6	83.2	83.3	83.8	82.5	81.6
Anguilla	31.7	30.1	32.5	34.4	46.5	61.6	82.4	85.2	89.7	79.7	70.4	63.3
Antigua & Barbuda	82.9	89.4	87.9	90.3	92.3	94.8	96.7	88.6	86.1	84.9	81.9	80.1
Dominica	82.0	84.5	67.3	52.8	57.5	70.6	81.6	85.1	81.5	90.5	91.7	85.9
Grenada	64.2	72.8	76.5	79.6	77.8	88.9	82.0	83.0	80.1	84.0	74.2	73.2
Montserrat	84.7	81.5	75.2	62.3	57.7	44.2	76.0	93.8	101.3	79.7	64.7	59.0
St. Kitts & Nevis	79.3	80.8	77.5	66.9	78.1	84.0	83.1	88.2	90.2	85.9	87.4	89.2
St. Lucia	97.7	88.9	79.2	76.3	75.9	84.1	82.4	81.2	83.7	91.9	93.1	92.9
St. Vincent and the Grenadines	86.7	82.6	72.4	66.5	64.8	67.5	64.6	68.6	68.6	67.3	69.8	75.0

Source: ECCB Commercial Banking Statistics.

Table 4.4.5: Ownership Structure of Banks in the ECCB Area

BANKS			
Territory	Foreign Incorporated	Locally Incorporated	<i>Of Which: Indigenous</i>
Anguilla	Barclays Bank, plc	Scotia Bank Anguilla Ltd.	National Bank of Anguilla Caribbean Commercial Bank
Antigua and Barbuda	Barclays Bank, plc Bank of Nova Scotia CIBC Caribbean Ltd. Royal Bank of Canada	Swiss American National Bank	Antigua Barbuda Investment Bank Antigua Commercial Bank Bank of Antigua Caribbean Banking Corp. (1)
Dominica	Barclays Bank, plc Bank of Nova Scotia Banque Francaise Commerciale Royal Bank of Canada		National Commercial Bank (G)
Grenada	Barclays Bank, plc Bank of Nova Scotia		Grenada Bank of Commerce (G)(3) Grenada Co-Operative Bank National Commercial Bank (2)

Table 4.4.5: Ownership Structure of Banks in the ECCB Area - Concluded

BANKS			
Territory	Foreign Incorporated	Locally Incorporated	<i>Of Which: Indigenous</i>
Montserrat	Barclays Bank, plc Royal Bank of Canada		Bank of Montserrat (G)
St. Kitts and Nevis	Barclays Bank, plc Bank of Nova Scotia Royal Bank of Canada		Bank of Nevis Nevis Co-Operation Bank St. Kitts Nevis Anguilla National Ba
St. Lucia	Barclays Bank, plc Bank of Nova Scotia CIBC Caribbean Ltd. Royal Bank of Canada		National Commercial Bank (G) St. Lucia Co-Operative Bank Caribbean Banking Corporation (1)
St. Vincent and the Grenadines	Barclays Bank, plc Bank of Nova Scotia CIBC Caribbean Ltd		Caribbean Banking Corporation (1) National Commercial Bank (G)

- Notes:** G: Partially or wholly- owned by Government.;
 1: Owned by Neal and Massy and Royal Bank, Trinidad & Tobago Ltd.
 2: Owned by Republic Bank of Trinidad and Tobago.
 3: A 50 percent share was bought by Royal Bank, Trinidad and Tobago Ltd. in April 1997.
- Source:** Eastern Caribbean Central Bank (ECCB)

Table 4.4.6: OECS - Foreign and Local Banks - Comparison of Operating Performance (1982-1985)
(In Percent of Average Assets)

	1982	1983	1984	1985
Net Interest Margin				
Foreign Banks	5.33	4.9	4.5	5.05
Local Banks	4.24	3.38	3.44	3.4
Non-Interest Income				
Foreign Banks	2.48	2.57	2.4	2.32
Local Banks	1.83	1.76	2.11	1.99
Personnel Expenses				
Foreign Banks	2.69	2.7	2.59	2.32
Local Banks	1.65	1.68	1.77	1.99
Income Before Tax				
Foreign Banks	2.24	2.66	2.93	2.94
Local Banks	1.96	1.4	1.62	1.69

Source: Table VIII in CAFAS (1987).

Table 4.4.7: OECS - Entry of Banks Into the Area by Ownership

	1960s and Before			1970s			1980s			1990s		
	Frgn. Inc.	Local	Indig.	Frgn. Inc.	Local	Indig.	Frgn. Inc	Local	Indig.	Frgn. Inc.	Local	Indig
Anguilla	1	0	0	0	0	1	0	0	1	1	0	0
Antigua & Barbuda	4	0	1	0	0	0	0	1	1	0	0	2
Dominica	2	0	0	1	0	1	1	0	0	0	0	0
Grenada	2	0	1	0	0	1	0	0	1	0	0	0
Montserrat	2	0	0	0	0	0	0	0	1	0	0	0
St. Kitts & Nevis	2	0	1	0	0	1	1	0	1	0	0	0
St. Lucia	4	0	1	0	0	0	0	0	1	1	0	0
St. Vincent and the Grenadines	2	0	0	1	0	1	0	0	1	0	0	0
ECCB Area	19	0	4	2	0	5	2	1	7	2	0	2

Source: Eastern Caribbean Central Bank.

Table 4.4.8: OECS - Foreign and Local Banks - Comparison of Interest Rates (1982-1985)

	1982	1983	1984	1985
Average Deposit Interest (%)¹				
Foreign	3.86	4.54	4.44	5.18
Indigenous	4.88	5.64	6.09	6.32
Average Loan Interest (%)²				
Foreign	11.13	11.97	12.5	12.88
Indigenous	9.23	9.5	9.61	10.39

Notes: ¹ Interest paid on Deposits and % of Average Interest-earning Deposits.

² Interest from Loans as % of Average Total Loans.

Source: 1982-83: Table IV in Liburd and Ferracho (1985); 1984-85: Table VI in CAFAS (1987)

Table 4.4.9: OECS - Deposit Rates in the ECCB Area (1980-1994)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Minimum Savings Deposit Rates															
ECCB Area	..	..	..	2.5	2.5	3.0	3.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
Indigenous	3.0	3.0	3.0	2.5	2.5	..	..	..	..	..	..	..	..	..	..
Foreign	2.5	2.5	2.5	2.5	2.5	..	..	..	..	..	..	..	..	..	..
Maximum Savings Deposit Rate															
ECCB Area	..	..	..	6.25	6.30	8.50	6.00	5.30	6.50	6.50	7.75	7.75	8.00	8.00	8.00
Indigenous	5.00	5.00	5.00	6.00	5.00	..	..	..	..	..	..	..	..	..	..
Foreign	3.50	7.50	5.00	6.30	6.30	..	..	..	..	..	..	..	..	..	..

Note: .. Not available

Source: Table II in Liburd and Ferracho (1985); ECCB, Commercial Banking Statistics, July 1995.

Table 4.4.10: OECS - Indicators of Banking Market Structure in the ECCB Area (1984-1995)

Units %	1984	1985	1985	1987	1988	1989
Indigenous Banks' Share of Deposit	36	..	..	..	39.39	38.81
Proportion of Total Deposits held by the Private Sector	74.52	75.49	77.23	78.21	77.05	78.96
Indigenous Banks' Share of Private Residents' Deposits	27	..	..	..	35.79	34.52
Proportion of Residents' Deposits at Indigenous Banks held by the Private Sector	64	..	..	..	69.99	70.22
Proportion of Residents' Deposits at Indigenous Banks held by the Public Sector	..	..	..	..	30.01	29.78
Indigenous Banks' Share of Public Sector Loans	..	..	..	..	59.69	62.04
Indigenous Banks' Share of Private Sector Loans	..	..	..	..	35.8	34.5
Proportion of Indigenous Banks' Loans & Advances made to Public Sector	38.00	..	..	..	20.99	19.57
Proportion of Foreign Banks' Loans & Advances made to Public Sector (Estimated)	13.50	..	..	..	8.74	7.28

Table 4.4.10: OECS - Indicators of Banking Market Structure in the ECCB Area (1984-1995) - Concluded

Units %	1990	1991	1992	1993	1994	1995
Indigenous Banks' Share of Deposit	38.93	39.83	40.88	43.56	44.46	46.50
Proportion of Total Deposits held by the Private Sector	79.26	80.49	78.47	79.55	79.34	79.88
Indigenous Banks' Share of Private Residents' Deposits	33.75	34.74	36.13	39.19	40.20	42.11
Proportion of Residents' Deposits at Indigenous Banks held by the Private Sector	68.71	70.22	69.36	71.57	71.73	72.34
Proportion of Residents' Deposits at Indigenous Banks held by the Public Sector	31.29	29.78	30.64	28.44	28.27	27.66
Indigenous Banks' Share of Public Sector Loans	59.07	60.34	61.80	60.35	59.26	60.22
Indigenous Banks' Share of Private Sector Loans	33.7	34.7	36.1	39.2	40.2	42.1
Proportion of Indigenous Banks' Loans & Advances made to Public Sector	18.77	18.08	17.93	16.03	16.16	18.07
Proportion of Foreign Banks' Loans & Advances made to Public Sector (Estimated)	7.70	7.45	6.89	7.70	8.41	10.51

Notes: .. Not Available; Proportion of Foreign Banks' Loans after 1988 Estimates as a Residual

Sources: 1984: from Liburd and Ferracho (1985); 1988 onwards: ECCB, Commercial Banking Statistics and Specially-provided Information.

Table 4.4.11: OECS - Five-Bank Concentration Ratios (1993-1995)

Concentration Ratios	1993	1994	1995
Deposits (%)	27.1	25.3	25.1
Loans (%)	26.6	27.2	27.8

Notes: Concentration ratios are the proportion of aggregate deposits or loans held by the five largest banks.

Source: Eastern Caribbean Central Bank (ECCB).

**Table 4.4.12: OECS
Commercial Banks US Dollar Deposits
in the Eastern Caribbean Currency Area**

Year end of Period	Total US Dollar Deposits (US\$M)	US Dollar Deposits as % of Total Deposits
1992	99.4	7.0
1993	110.1	7.5
1994	136.6	8.1
1995	173.7	8.1
1996	186.9	9.2

Source: Table 9 in Bennett (1997)

4.5: GUYANA :

INNOVATIONS AND THEIR ENVIRONMENT

Most financial innovations in Guyana took place rather late in the period being reviewed because state domination of the economy precluded not only private initiatives but, presumably, also restrained official actions until the early 1990s. Three features of financial innovations in Guyana can be highlighted. First, as state control has been reversed and following the implementation of an adjustment programme, private banks have re-entered the market in anticipation, it can be hypothesized, of being able to finance the increasing demand for goods, services and infrastructure. Second, these banks have begun to offer a range of products aimed at attracting deposits from different sectors and providing loans geared to customer needs. Third, the Bank of Guyana initiated new instruments and systems in the government securities market to facilitate monetary policy, enhance the money market and promote market determination of interest rates.

4.5.1. Environment and Policy

Output in the Guyanese economy was severely affected by the suppression of private sector initiative implied by the statist philosophy and system adopted by the Government during the 1970s and 1980s. Nationalisation had created state enterprises subsidised by government through borrowings from the central bank. As a result, the fiscal deficit absorbed over half of domestic product (*see Table 4.5.1*). Real GDP fell sharply in the first half of the 1980s and, after a few years of marginal recovery, again became negative in 1988 before recovering in 1991.

Recovery followed on the structural adjustment programme started in 1989 which aimed to divest state enterprises, reduce and eliminate the severe imbalances between the demand and supply of both internal and foreign resources and thus permit positive growth.

Monetary Policy

Prior to 1989 when the adjustment programme started, policy actions appear to have centred on the exchange rate, with a multiple exchange rate system in operation - there were rates for gold purchases, diamond purchases (introduced in 1987) and a central currency rate. In 1984, the central rate was pegged to a composite of currencies, with an effective devaluation. In 1989 there was a 230% devaluation (*see Table 4.5.1*), the exchange rate system was unified and price increases were allowed to permit the pass-through of the devaluation. Legislation was also introduced to allow licenced dealers to buy and sell foreign currencies at dealer-determined rates (*see Table 4.5.2*). These measures not only allowed the exchange rate and prices to closely reflect the open (black) market levels but instituted a system that would reveal that open market rate (the opportunity cost of foreign exchange). In 1991, the Bank of Guyana took advantage of that system and induced devaluation to the cambio rate, at the same time instituting a system to allow the exchange rate to fluctuate with the cambio rate. From October 1991, the official exchange rate has been determined on a daily or periodic basis as the average of the Telegraphic Transfer Rate of the three largest commercial banks.

Official determination of interest rates was not intended to influence market behaviour, as evidenced by the inflexible rates on commercial bank deposits and lending until 1989 (*see Table 4.5.3*). After 1989, however, the Bank of Guyana adopted a very restrictive monetary policy for stabilization purposes, setting the commercial bank prime lending rate at 33.5% in February 1991, and gradually lowering it until June 1993 when the Bank's control of the rate was relinquished.

The restrictive monetary policy also entailed, from 1991, a doubling of reserve requirements, to 20% of deposits, and central bank discount rate to over 30%. As a result, commercial bank liquidity increased, the loan/deposit ratio falling from 46.9% in 1988 to 30% in 1993. It was during this period that the financial institutions were very active in introducing deposit accounts geared to a varied clientele and paying competitive effective rates, calculated, for example, on the daily balance. The effects of this activity are difficult to see on a macro level, however, partly because official attempts to mop up liquidity have diverted funds into government securities. Total deposits of commercial banks and trust companies have fallen relative to GDP (*see Table 4.5.4*) but, in addition to bearer bonds, there has been some increase in the public's holding of treasury bills, probably encouraged by the market determination of treasury bill rates (*see Table 4.5.5*) and perhaps encouraged by the expanded range of treasury bill maturities.

Organizational Developments

The banking structure in Guyana reflects a series of entries, exits and bank creation initiated by both private profit considerations and official changes in economic philosophy and policy. During the years of state domination, the Government established its indigenous banks and the economic depression hastened the departure of several multi-nationals. As state control has been reversed, private banks have re-entered the market in anticipation, one presumes, of being able to exploit the recovery in the demand for credit. There are currently seven commercial banks: the Guyana Bank of Trade and Industry (GBTI), the National Bank of Industry and Commerce (NBIC), the Guyana National Cooperative Bank (GNCB), Bank of Baroda, the Bank of Nova Scotia, Citizens Bank (Guyana) Ltd., established by the Jamaican bank of the same name, and the Demerara Bank. In 1970 GNCB was created by the Government to promote tri-sectoral development; it was once the largest bank in the country but is currently the third largest. In 1984 Royal Bank of Canada (RBC) exited the Guyana market, selling

its assets to Government for a token sum, Government vesting the assets in a new bank, NBIC. In 1985, Chase Manhattan also exited, and was replaced by the Government-owned Republic Bank. In 1987 Barclays Bank International, plc, after 60 years in Guyana, also exited. As a result of the rapid devaluation of the Guyana dollar, the bank had shown little profit since 1975 and restrictions had been placed on its ability to remit profits. By 1986 it had closed all but one of its 17 branches before selling its assets to Government for a token payment, the assets being used to create the GBTI. In 1990 Government amalgamated Republic Bank with the GBTI and began selling its commercial bank ownership. Seventy percent of Government's ownership was sold to individuals in 1991 and the remaining thirty percent in 1994. GBTI is therefore a privately owned bank while NBIC remains partially government-owned.¹ In 1995 the Guyana Agricultural Industrial Development Bank, a failing bank, was amalgamated with the GNCB. The banks all own trust companies, incorporated as subsidiaries. The GBTI, whose major shareholder is also an owner of the Beharry group, a trading and manufacturing conglomerate, is now the market leader and second largest bank. The recent entry of two private institutions, a commercial bank, the Demerara Bank, and a trust company, the Globe Trust Investment Company, opened by domestic investors, as well as the establishment of a regionally-owned subsidiary, Citizens Bank (Guyana) Ltd. suggests that there are perceived opportunities for profitable financial inter-mediation in Guyana.

¹ In November 1997, Republic Bank of Trinidad and Tobago bought over the Government's share in NBIC and now control 51% of these shares.

4.5.2. Taxonomy of Innovations

Automatic Teller Machines

Description of

Innovation: A transaction related process which is relatively new to the Guyanese financial sector.

Type: t

Initiator: cp

Date: 1994

Motive: This process was initiated to reduce transaction time, modernize banking in Guyana and to gain an upper hand on competitors who also planned to establish ATMs.

Functioning: The ATM service as first introduced by GBTI (the second largest bank) functions well. The ATMs provide normal teller functions, give balances, transfer funds from one account to another and pay utility bills. The GBTI has teller machines at its branches and at one off-site location. No inter-bank linked facility exists.

Origin: ATM machines in mature financial markets.

Data: None available.

Bearer Bonds

Description of

Innovation: The Bearer bond is a tax-exempt 5-year security issued by the Central Bank on behalf of the government.

Type: s

Initiator: ma/g

Date: 1994

Motive: This bond was introduced on the initiative of

government to mop up liquidity outside of the banking system. It was initiated during a period of exchange rate instability.

Functioning:

There was only one issue of the bearer bonds in August 1994 to the value of G\$1 billion. The bond carried a fixed yield of 20% at a time when small savings carried an average interest of between 9 and 10% and treasury bills carried discount rates of between 18 and 19%. Maturity was 5 years and the bonds were tax-exempt while a 15% withholding tax was in place on the yields of other financial instruments. Commercial banks were debarred from subscribing to the issue. Government initially offered G\$500 million in bonds but on the day of its introduction the first purchaser (in institutional investor) purchased the entire initial offer. Another G\$500 million was then issued to other members of the public.

The issue of these bonds had little impact on the exchange rate. In addition evidence suggests that the bonds issue did not attract liquidity outside of the banking system. Rather funds within the banking system (time deposits) were seemingly withdrawn in order to purchase the bonds.

Origin:

Originated in developed markets for government securities.

Data:

None available.

Cambios

Description of

Innovation: A foreign exchange bureau for the purchase and sale of foreign currencies.

Type: t

Initiator: cp, f

Date: 1990

Motive: To foster a legally approved free market environment for trading in foreign currencies and to neutralize the operations of the “street banking system”.

Functioning: Cambios came into existence through the “Dealers in Foreign Currency Licensing Act” of 1989. The Act gives licensed dealers the right to buy and sell foreign currencies and to determine the rates of such transactions. This grew out of a system of widespread blackmarketing of foreign currencies during a period of economic crisis and shortages. Cambios were established at all commercial banks and at other financial institutions. In addition, licenses were granted to other businesses and individuals for the establishment of cambios. Cambios primarily trade in the US dollar, Canadian dollar and British pound but some CARICOM currencies are also traded. They do not engage in intermediation. Guyana’s exchange rate was unified in 1991. The official exchange rate is now determined on a daily basis using an average of some cambio rates. Cambios at the end of 1995 number approximately 28 (seven Bank cambios and 21 non-bank cambios).

Origin: Unclear

Data: *See Table 4.5.2*

Commercial Bank Branch Network

Description of

Innovation: The National Bank for Industry and Commerce expanded its branch network with the establishment of three branches within the last ten years.

Type: i

Initiator: cp/g

Date: 1987 - 1995

Motive: NBIC expanded its network to regain a foothold in growth areas outside of the capital city of Georgetown, which its predecessor, the Royal Bank of Canada, had lost in the 1970s, when foreign commercial banks were nationalised in Guyana.

Functioning: NBIC is a locally owned bank with its Head Office in Georgetown. Its predecessor, the Royal Bank of Canada, operated several branches within Guyana in the 1970s but, as was earlier noted, closed down as economic circumstances worsened during the late 1970s and early 1980s. In 1984, the Royal Bank closed its doors in Guyana and the assets were transferred to the new entity the National Bank of Industry and Commerce. Branches were opened at three other locations. Branch operations are reportedly working well. NBIC is exploring other areas within Guyana for branching.

Origin: Mature financial markets

Data: None available

Customer-Tailored Credit

Description of

Innovation: Adoption of a new approach to lending where banks makes loans to suit customers' needs.

Type: m (market promotion)

Initiator: cp

Date: 1992

Motive: Initiated to provide credit more suited to customer needs.

Functioning: The National Bank of Industry and Commerce adopted a new approach to lending in 1992. For example, if customers need longer grace periods, interest rate changes, different maturity structures etc. the bank will seek to accommodate. Since the introduction of this approach the banks credit portfolio comprises a variety of loans including longer term loans.

Origin: Mature financial markets

Data: None available

Daily Interest Accounts

Description of

Innovation: Savings accounts which pay interest calculated on the daily balance outstanding, even though such interest may only be credited at wider periods.

Type: s

Date: 1992

Initiator: cp

Motive: To attract interest sensitive clients in a high rate environment.

- Functioning:** The first of these accounts was geared to corporate clients - interest was calculated on a daily basis and credited to the account monthly at a competitive rate, depositors must maintain a daily balance of G\$1.0 million or more. A regional bank offered in 1994 an account aimed at the consumer market, requiring a minimum balance of G\$20,000 and accruing interest on a daily basis. This may have proved too expensive or ineffective because in 1996, the bank reverted to calculating interest on the minimum monthly balance. The incentive then was the offer to participate in a 'jack-pot' allowing the depositor to win cash prizes.
- Origin:** Industrial markets, where most financial institutions pay interest on a daily balance.
- Data:** None available

Demand Deposits Paying Interest

Description of

- Innovation:** Current accounts which pay interest.
- Type:** s
- Dates:** 1986
- Initiator:** cp
- Motive:** To increase customer base

- Functioning:** These include the corporate cash management account which gives the holder the option of automatic transfer to a current account. Interest is calculated on the minimum weekly balance; a ceiling was placed on the amounts in this account and the bank replaced it in 1991 by a savings account aimed at a wider group and with none of its features. In 1992 a call account with daily

calculation of interest (paid monthly) was introduced for corporate clients able to maintain a daily balance of G\$1.0 million or more. In 1994 an interest-paying chequing account with a high opening balance was introduced by a regionally based bank.

Origin: NOW accounts which appeared in the USA in the 1980s

Data: None available

Differentiated Deposit Accounts

Description of

Innovation: A range of deposit accounts with special features aimed at appealing to a particular market segment within the retail or corporate banking markets.

Type: m

Initiator: cp, g

Motive: To increase customer base of the originating bank and in response to competition from other banks in the same area.

Functioning: It appears that once a specialized deposit was offered by one bank several other market segmenting accounts were opened by rivals. Included in this category are: the instant interest deposit (1992), the early savers club (1992), the excel savings accounts (1994), the premium chequing account (1994) and the trustee investment account (1995). The instant interest deposit is a three-month time deposit making interest payments, computed on a daily basis, which the depositor may receive as soon as the deposit is made. The early savers club is a deposit account, aimed at children, which pays a slightly above-

market rate of interest and offers the additional inducement of participation in a raffle for deposits of \$500 and over. The excel money account with a high opening balance and slightly better rate of interest was aimed at those with capital. The premium chequing account paying 2% interest and with a similar opening balance was presumably aimed at the same market.

Origin: Outside of the Caribbean, it has become usual to offer a range of deposit accounts to allow for different time horizons and initial investments. It is also usual to pay interest on the daily balance.

Data: None available

Domestic Private Commercial Bank

Description of

Innovation: The Demerara Bank is a new private commercial bank with mainly local shareholders.

Type: i

Initiator: cp

Date: 1994

Motive: To capture a share of the financial market.

Functioning: The Demerara Bank is a new commercial bank with mainly local shareholding which includes private individuals, pension funds, private companies, financial institutions, including insurance companies. One American bank has a less than 4% shareholding in the Demerara Bank. The entity entered the new banking environment determined to make a difference and provide modern services. Shortly after establishment, ATMs were installed and debit cards granted for POS terminals. The

bank's terminals are located at over seventy-five locations in Georgetown. The bank caters especially for the rice, fishery and forestry sectors. It provides export trade-financing facilities (both free and post shipment arrangements) and a revolving fund for the rice, fishery and forest industry. In October 1995 the bank completed arrangements for the issue of American Express Cards for both corporate and personal usage.

Origin: The wave of localisation of commercial bank ownership in the Caribbean.

Data: None available

Domestic Private Trust Company

Description of

Innovation: Globe Trust Investment Co. is a deposit-taking institution which also provides trust services.

Type: Institutional

Initiator: f

Date: 1991

Motive: To capture a share of the financial market.

Functioning: The Globe Trust Investment Co. provides trust services, issues time deposit certificates, provides loans to firms and individuals, provides bridging finance and discounting facilities. The company plans getting into the leasing of agricultural and business machinery very shortly.

Origin: Usual trust companies found in mature markets.

Data: None available

Efts Pos Services

Description of

Innovation: The installation of point-of-sale terminals for use in payment for goods and services.

Type: t

Initiator: cp

Date: 1995

Motive: Initiated to provide additional service and again beat competitors.

Data: None available

Functioning: The Kaieteur Classic Debit Card (POS) facility functions well. Special POS terminals are installed at several shopping locations from which card holders pay for their purchases by transfer of funds. Two other commercial banks now provide this facility. The commercial banks are seemingly not disposed to having inter-bank linked facilities.

Origin: Usual point-of-sale electronic transactions found in mature markets

Data: None available

Foreign Currency Accounts I

Description of

Innovation: Foreign-currency-denominated accounts for foreign currency owners.

Type: s

Initiator: cp

Date: 1993

Motive: Initiated in response to new regulations by the Central Bank. The bank relaxed foreign exchange restrictions in keeping with the dictates of the Economic Recovery Programme. This facility was

aimed at allowing exporters and non-residents to bring and maintain foreign exchange in the economy.

Functioning: Exporters were allowed to retain portions of their foreign exchange earnings in accounts at GBTI and other commercial banks in Guyana. Non-residents with a stream of payments in foreign currency were also granted the opportunity to deposit foreign currencies in the local banking system. The commercial banks paid interest comparable to rates in the USA. While this facility has worked well for depositors, the banks complain that lending regulations have restricted growth.

Foreign Currency Accounts II

Description of

Innovation: A foreign currency fixed deposit, converted to local dollars equivalent, upon which some interest is paid.

Type: s

Initiator: cp

Date: 1993

Motive: Initiated to take advantage of new regulations which allowed banks to hold foreign currency accounts for clients and to provide additional funds for the bank's cambio.

Functioning: Foreign currencies are converted into local dollars and deposited for a fixed period. The account is denominated in local dollars allowing the customer the advantage of a higher interest rate. Customers, however, bear the exchange risk. This instrument

Origin: had met with limited success and was discontinued.
Data: Usual outside of ceiling controlled system.
Data: None available

Leasing

Description of Innovation:

A leasing facility which allows the lease holder to acquire the equipment after five years at a token value.

Type:

s

Initiator:

cp

Date:

1996

Motive:

To respond to customer needs and to produce a product suitable to the economic climate.

Functioning:

Commercial bank purchases equipment for client. Such equipment remains in the bank's ownership for a maximum of 5-years while the leaseholder makes monthly lease payments. Capital equipment financing under lease arrangements has been popular in Jamaica where Citizens Bank is headquartered.

Origin:

Usual leasing arrangements in mature markets.

Data:

None available

Mortgage Loans Arrangements

Description of Innovation:

Mortgage loans given to individuals for the purpose of financing housing purchase only within a specified housing development scheme.

Type:

s

Initiator:

cp

Date:	1994
Motive:	To help facilitate Government's housing drive.
Functioning:	This GBTI credit product is as basic as any other but the mortgage loans were provided to individuals within a particular housing development scheme in which the houses were built by one contracting company. Housing loans were granted at low interest rates and for long terms. This type of lending is new for banks in Guyana. Loans were granted to the individual rather than the developer.
Origin:	Usual mortgage arrangements in mature markets
Data:	None available

Regionally-Headquartered Commercial Bank

Description of

Innovation: Citizens Bank (Guyana) Ltd. is a subsidiary of Citizens Bank (Jamaica) which is part of a larger network of the ICWI Insurance Co. of Jamaica. Citizens Bank (Guyana) operates only one office in Guyana. It has very minimal local ownership.

Type: i
Initiator: cp
Date: 1994

Motive: The Jamaican-based banking institution developed in response to its mandate to establish offices throughout the Caribbean and saw an opportunity for growth in Guyana.

Functioning: The Citizens Bank entry into the Guyana market came at a time when Guyana was introducing new banking legislation but this entity satisfied conditions for entry. The institution has recorded a first year growth in assets of G\$1.7 billion in 1995. Its entry has triggered new levels of competition in the

Guyana financial sector. It offers a broad mix of financial products and services. The bank offers ATM and Debit Card services and Agency services for an international credit card company. Citizens Bank needs to increase its market share as a new entrant has induced it to offer a number of differentiated deposits accounts (see differentiated deposit accounts) including interest rate bearing current accounts.

- Origin:** Cross-border banking operations is commonplace in mature markets.
- Data:** None available

Solidarity Lending

Description of

Innovation: A separate arm of the Bank of Nova Scotia that caters for micro - enterprises - Scotia Enterprise Centre.

- Type:** i
- Initiator:** cp
- Date:** 1993
- Motive:** Initiated to provide credit to small businesses and groups and to fill the need in the credit market.

Functioning: The Scotia Enterprise Centre is an arm of the Bank of Nova Scotia which operates branches in Guyana. It specialises in lending to micro-enterprises. Unsecured credit is given to groups of not less than five persons.

Origin: Similar to Grameen Bank in Bangladesh.

Data: None available

Treasury Bill Market

Description of

Innovation: This process allows a market-determined discount rate on treasury bills to emerge.

Type: monetary policy instrument (open market operations)

Initiator: ma/g

Date: 1991

Motive: Competitive bidding for treasury bills - process was aimed at arriving at a market-determined discount rate for treasury bills around which financial institutions may set their deposit and lending rates and the Central Bank its bank rate. The competitive bidding for treasury bills was in keeping with the aims of Guyana's Economic Recovery Programme which promised a movement towards a market oriented economy.

Functioning: Treasury Bills were always a feature of Guyana's financial system. During the period of high fiscal deficits treasury bills were issued as a financing device. Discount rates, as indeed most interest rates, were administratively determined and mostly fixed for a long period. The introduction of structural adjustment measures allowed open market operations to further emerge. The Central Bank estimated, on a monthly basis, the level of excess liquidity in the banking system and offered treasury bills to that level. Banks and other institutions competed for these bills through an auction system which allowed them to bid at varying rates. Allocations were made from total bids to the estimated amount of liquidity, eliminating any bids outside an average range of discount rates.

Origin:	Amounts attributed to the treasury bills sales were sterilised as a liquidity controlling strategy. The market in government securities usually used for open market operations.
Data:	<i>See Table 4.5.5</i>

Treasury Bills with Maturities over Three Months

Description of

Innovation: Treasury bills with longer maturities - 182 days and 364 days.

Type: s

Initiator: ma/g

Date: 1993

Motive: Initiated by government to enhance money market and secondary market operations in Guyana.

Functioning: Similar to the 91-day treasury bills. It is issued by the Bank of Guyana on behalf of Government. These securities are mainly subscribed to by the banking and financial sector. Despite the intention to encourage a secondary market, there was very little evidence of any trading prior to maturity. Banks basically held the security to maturity as they remain fairly liquid. The competitive bidding system was applied to arrive at market-determined rates. On the introduction of these bills, the emerging discount rates was lower than for the 91-day bill giving rise to a downward sloping yield curve. As the market and instrument were better understood higher discount rates emerged but they were never significantly different from the 91-day discount rate. Interest remains relatively high on this instrument.

Origin: The United States Treasury issues treasury bills with maturities of from three months to one year.

Treasury Bills, Records System

Description of

Innovation: Book entry system for treasury bills that allowed the Central Bank to debit and credit the accounts of commercial banks held with it if the banks traded with each other in treasury bills.

Type: t

Initiator: ma

Date: 1995

Motive: This process was aimed at fostering and facilitating secondary and interbank trading in money-market securities.

Functioning: The Central Bank facilitated by debiting and crediting accounts held with it based on advice from the commercial banks. To allow this system to function more adequately, the Bank increased penalties for early rediscounting of bills with that authority. This made it more difficult for banks to seek re-discounting facilities. This facility is very rarely used by banks as little inter-bank trading ever takes place.

Origin: Usual in any developed government securities market.

Data: None available

Table 4.5.1: Guyana - Selected Economic Indicators (1980-1996)

	1980	1981	1982	1983	1984	1985
GDP at market prices (G\$m)	1,508	1,597	1,446	1,468	1,700	1,964
Real GDP, growth rate (%) ¹	1.6	-0.3	-10.4	-9.3	2.1	
Inflation rate (%) ²	14.16	22.04	21.13	14.88	25.17	15.05
Fiscal balance (G\$m) ³	(440)	(589)	(592)	(958)	(693)	(1,036)
Fiscal deficit as prop. GDP (%)	-29.18	-36.88	-66.25	-40.33	-40.76	-52.75
Exchange rate (G\$ per US\$) ⁴	2.5	2.81	3	3	3.83	4.25
NFA of the banking system (G\$m) ⁵	(208)	(314)	(311)	(488)	(969)	(1,283)
Domestic Credit (DC) (G\$m) ⁵	1,450	1,790	2,467	3,172	4,010	5,352
Credit to Public Sector (CG) (G\$m) ⁵	1,252	1,523	2,150	2,789	3,545	4,829
CG as proportion DC (%)	86.34	85.08	87.15	87.93	88.40	90.23
	1986	1987	1988	1989	1990	1991
GDP at market prices (G\$m)	2,220	3,357	4,137	10,330	15,665	38,966
Real GDP, growth rate (%) ¹	0.2	0.9	-2.6	-3.3	-4.7	6.0
Inflation rate (%) ²	7.86	28.76	39.93	3.99	3.71	2.29
Fiscal balance (G\$m) ³	(1,234)	(1,353)	(1,235)	(570)	(3,584)	(2,433)
Fiscal deficit as prop. GDP (%)	-55.59	-40.30	-29.85	-5.52	-22.88	-6.24
Exchange rate (G\$ per US\$) ⁴	4.27	9.76	10	27.16	39.53	111.8
NFA of the banking system (G\$m) ⁵	(1,533)	(3,846)	(3,914)	(17,812)	(24,472)	(62,845)
Domestic Credit (DC) (G\$m) ⁵	6,183	8,210	13,191	30,350	40,415	81,796
Credit to Public Sector (CG) (G\$m) ⁵	5,503	7,218	11,596	27,477	36,255	75,062
CG as proportion DC (%)	89.00	87.92	87.91	90.53	89.71	91.77

Table 4.5.1: Guyana - Selected Economic Indicators (1980-1996) - Concluded

	1992	1993	1994	1995	1996
GDP at market prices (G\$m)	46,734	59,124	75,412	88,271	100,685
Real GDP, growth rate (%) ¹	7.8	8.2	8.5	5.1	7.9
Inflation rate (%) ²	2.56	..	..	..	..
Fiscal balance (G\$m) ³	(3,975)	(1,039)	(342)	(2,456)	(3,115)
Fiscal deficit as prop. GDP (%)	-8.51	-1.76	-0.45	-2.78	-3.08
Exchange rate (G\$ per US\$) ⁴	125	126.7	138.33	142.0	140.4
NFA of the banking system (G\$m) ⁵	(60,607)	(57,086)	(55,004)	(56,601)	(16,647)
Domestic Credit (DC) (G\$m) ⁵	120,749	122,314	123,830	139,796	119,495
Credit to Public Sector (CG) (G\$m) ⁵	112,010	112,031	109,916	118,616	83,003
CG as proportion DC (%)	92.76	91.59	88.76	84.85	69.46

- Notes:**
- ¹ GDP at 1990 prices; **Source:** IMF, *IFS*
 - ² Rate of change annual average consumer price index, 1990 = 100; **Source:** IMF *IFS*
 - ³ For year ending December 31; **Source:** IMF, *IFS*
 - ⁴ Period average; Before 1991 exchange rate fixed by authorities, from 1991 average of telegraphic transfer rates of 3 largest commercial banks; **Source:** BOG, *Statistical Bulletin*
 - ⁵ **Source:** IMF, *IFS*
 - .. not available

Source: International Monetary Fund (IMF), *International Financial Statistics Yearbook*; Bank of Guyana, *Statistical Bulletin*.

Table 4.5.2: Cambio Transactions (1990-1996)

Year	Sales (US\$m)			Purchases (US\$m)		
	CBs	Dealers	Total	CBs	Dealers	Total
1990	59.74	17.37	77.11	63.53	17.75	81.28
1991	124.47	39.90	163.37	124.97	39.86	164.83
1992	180.83	46.22	227.05	181.09	46.81	227.90
1993	219.24	61.36	280.60	216.91	61.45	278.36
1994	270.56	47.91	318.47	272.80	47.44	320.24
1995	372.97	59.15	432.12	382.45	61.38	443.83
1996	423.50	66.99	490.49	417.19	66.81	483.90

Notes: Transactions are valued in US dollars, irrespective of currency transacted.
 CBs = commercial banks;
 Dealers = non-bank dealers.

Source: Bank of Guyana, *Statistical Bulletin*

Table 4.5.3: Guyana - Liquidity and Interest Rates (1984-1996)
(% unless otherwise noted)

	1984	1985	1986	1987	1988	1989
Commercial Bank Loan/Deposit ratio	67.21	79.28	47.15	40.83	46.91	45.30
Reserve requirements	10	10	10	10	10	10
Excess reserves (G\$m)	16.1	-2.5	25	25	17	-73
Excess liquidity ratio ¹	1.08	-0.14	1.17	0.75	0.37	-1.03
Bank of Guyana discount rate	14	14	14	14	14	35
CB small savings deposit rate	11.5	11.5	11.5	11.5	10.5	31.5
CB 12-month deposit rate	13	13	13	13	13	34.3
Lending rate ²	15	15	15	15	15.1	18.9
Commercial bank weighted average prime rate ³	..	..	..	..	..	..
Commercial bank weighted average lending rate	..	..	..	..	..	..

Table 4.5.3: Guyana - Liquidity and Interest Rates (1984-1996) - Concluded
(% unless otherwise noted)

	1990	1991	1992	1993	1994	1995	June 1996
Commercial Bank Loan/Deposit ratio	45.66	37.21	32.18	29.99	37.46	45.50	61.86
Reserve requirements	10	20	20	20	30	30	30
Excess reserves (G\$m)	60	-240.9	286.1	313.3	62.8	1663.7	2873.6
Excess liquidity ratio ¹	0.56	-1.26	0.93	0.83	0.16	3.41	4.78
Bank of Guyana discount rate	30	32.5	24.3	17	20.3	17.3	12.0
CB small savings deposit rate	27.5	26.2	16.6	9.5	11.2	10.5	7.7
CB 12-month deposit rate	29.5	31.5	30.7	12.3	14.3	14.4	9.5
Lending rate ²	32.8	33.6	28.7	19.4	18.4	19.2	17.8
Commercial bank weighted average prime rate ³	..	..	..	18.7	18.8	19	17
Commercial bank weighted average lending rate	..	35.2	29.8	18.2	20.8	20.4	19.7

Notes: ¹ Excess liquidity ratio is the ratio of excess reserves to total commercial bank deposits

² Source: IMF, International Financial Statistics

³ ... indicates not available; 1993 rate is at September
Rates are at end of period, except where noted.

Source: Bank of Guyana, Statistical Bulletin.

Table 4.5.4: Guyana - The Deposit Market (1984-1996)
(G\$m unless otherwise noted)

	1984	1985	1986	1987	1988	1989
Commercial Banks (CBs), Total Deposits	1,494.8	1,780.0	2,138.9	3,318.3	4,572.3	7,105.8
CB Demand deposits						
- of business enterprises, private	100.9	123.5	129.7	246.0	301.8	439.5
- of individuals	59.2	71.8	70.7	98.2	166.2	212.6
Bus. dpsts: demand as proprtn total bus. dpsts	53.5	49.6	46.0	49.4	46.9	35.2
CB Savings & Time deposits						
- of business enterprises, private	87.7	125.5	152.0	251.0	342.3	810.3
- of individuals	887.9	1,089.8	1,301.5	1,592.1	2,120.2	2,999.1
Indiv S&T dpsts as proprtn CB dpsts (%)	59.4	61.2	60.8	48.0	46.4	42.2
Trust Companies (TCs), Total Deposits	56.9	72.8	89.5	125.7	183.3	245.8
TC Deposits						
- of business enterprises, private	2.3	2.9	3.6	5.0	7.3	1.2
- of individuals	47.8	61.1	75.2	105.6	154.0	208.2
Other TC liabilities to private sector	6.8	8.7	10.7	15.1	22.0	36.5
Total Deposits at CBs & TCs	1,551.7	1,852.8	2,228.4	3,444.0	4,755.6	7,351.6
Total Deposits as proprtn GDP (%)	91.28	94.34	100.38	102.59	114.95	71.17
CB dpsts as proprtn Tot. dpsts. (%)	96.33	96.07	95.98	96.35	96.15	96.66
CB dpsts as proprtn Tot. dpsts & TC prv. liabilities (5)	95.81	95.48	95.35	95.64	95.01	95.63

Table 4.5.4: Guyana - The Deposit Market (1984-1996) - Concluded
(G\$m unless otherwise noted)

	1990	1991	1992	1993	1994	1995	1996
Commercial Banks (CBs), Total Deposits	10,765.9	19,059.2	30,751.6	37,602.7	40,250.0	48,776.4	60,077.3
CB Demand deposits							
- of business enterprises, private	748.2	1,414.4	1,389.7	1,693.3	2,692.1	2,345.5	2,539.2
- of individuals	311.6	489.1	689.2	771.9	824.0	1,955.9	2,592.1
Bus. dpsts: demand as proprtn total bus. dpsts	54.7	54.0	35.9	35.6	51.3	49.01	49.61
CB Savings & Time deposits							
- of business enterprises, private	619.1	1,203.6	2,476.8	3,059.4	2,559.0	2,441.1	2,579.5
- of individuals	5,363.9	9,053.3	15,878.2	20,932.3	24,290.3	32,891.6	38,963.6
Indiv S&T dpsts as proprtn CB dpsts (%)	49.8	47.5	51.6	55.7	60.3	67.4	64.9
Trust Companies (TCs), Total Deposits	379.3	664.8	1,039.7	1,309.7	1,536.3	1,913.3	1,963.1
TC Deposits							
- of business enterprises, private	7.0	34.9	59.7	16.8	9.5	13.8	22.9
- of individuals	63.1	85.9	276.7	1,130.9	1,201.0	1,339.8	1,727.2
Other TC liabilities to private sector	119.5	234.9	509.3	859.6	1,628.7	2,518.1	3,258.2
Total Deposits at CBs & TCs	11,145.2	19,724.0	31,791.3	38,912.4	41,786.3	50,684.4	62,040.4
Total Deposits as proprtn GDP (%)	71.15	50.62	68.03	65.81	55.41	57.39	61.62
CB dpsts as proprtn Tot. dpsts. (%)	96.60	96.63	96.73	96.63	96.32	96.23	96.27
CB dpsts as proprtn Tot. dpsts & TC prv. liabilities (%)	95.57	95.49	95.20	94.55	92.71	91.67	92.00

Source: Bank of Guyana, *Statistical Bulletin*.

Table 4.5.5: Guyana - Government Securities Market (1980-1996) - Continued

	1986	1987	1988	1989	1990	1991
Treasury Bills (TB) Outstanding (G\$m)	3,908.4	4,783.6	4,822.7	7,262.6	8,226.2	6,601.6
Commercial Bank Holdings (G\$m)	1,056.8	233.1	455.0	2,581.4	4,082.3	2,798.4
NBFI Holdings (G\$m)	144.2	185.4	151.3	374.3	818.7	1,446.4
Bank of Guyana Holdings (G\$m)	2,185.6	3,878.3	3,654.7	3,230.0	1,767.1	34.4
Private sector (G\$m)	455.4	211.1	180.0	600.5	901.0	1,601.8
Commercial Bank share (%)	26.55	4.87	9.43	35.54	49.63	42.39
NBFI share (%)	3.62	3.88	3.14	5.15	9.95	21.91
Bank of Guyana share (%)	54.91	81.07	75.78	44.47	21.48	0.52
Private sector share (%)	11.44	4.41	3.73	8.27	10.95	24.26
Treasury Bill yields (%): ¹						
- 91 day bills ²	12.8	11.3	11	15.2	30	30.9
- 182 day bills ³	..	..	..	..	..	..
- 364 day bills ³	..	..	..	..	..	..

Table 4.5.5: Guyana - Government Securities Market (1980-1996)

	1980	1981	1982	1983	1984	1985
Treasury Bills (TB) Outstanding (G\$m)	1,191.3	1,245.7	2,069.3	2,967.4	2,980.8	3,627.8
Commercial Bank Holdings (G\$m)	258.1	241.3	412.4	539.4	623.7	804.3
NBFI Holdings (G\$m)	24.0	42.2	31.9	65.8	107.6	142.6
Bank of Guyana Holdings (G\$m)	826.1	860.8	1,412.9	2,059.7	1,887.4	2,222.4
Private sector (G\$m)	30.4	42.4	128.7	175.5	211.9	343.1
Commercial Bank share (%)	21.67	19.37	19.93	18.18	20.92	22.17
NBFI share (%)	2.01	3.39	1.54	2.22	3.61	3.93
Bank of Guyana share (%)	69.34	69.10	68.28	69.41	63.32	61.26
Private sector share (%)	2.55	3.40	6.22	5.91	7.11	9.46
Treasury Bill yields (%): ¹						
- 91 day bills ²	10.7	11.6	12.3	12.8	12.8	12.8
- 182 day bills ³	...	...	...	...	...	...
- 364 day bills ³	...	...	...	...	...	...

Table 4.5.5: Guyana - Government Securities Market (1980-1996) - Concluded

	1992	1993	1994	1995	1996
Treasury Bills (TB) Outstanding (G\$m)	13,000.0	22,800.0	23,938.8	22,788.3	27,534.7
Commercial Bank Holdings (G\$m)	8,058.6	16,457.3	10,782.7	10,107.1	12,882.9
NBFI Holdings (G\$m)	2,318.3	2,916.6	5,422.7	6,058.1	5,964.9
Bank of Guyana Holdings (G\$m)	70.9	699.1	2,491.3	350.5	810.3
Private sector (G\$m)	1,810.4	1,575.3	2,996.9	2,492.6	2,621.9
Commercial Bank share (%)	61.99	72.18	45.04	44.35	46.79
NBFI share (%)	17.83	12.79	22.65	26.58	21.66
Bank of Guyana share (%)	0.55	3.07	10.41	1.54	2.94
Private sector share (%)	13.93	6.91	12.52	10.94	9.52
Treasury Bill yields (%): ¹					
- 91 day bills ²	23	15.44	18.64	15.49	9.94
- 182 day bills ³	...	15.45	18.38	15.69	11.00
- 364 day bills ³	...	14.78	17.85	15.28	11.16

Notes: ¹ End of period rates; ... denotes not applicable

² **Sources:** 1980-1991, *IFS*; 1992-1995, *BOG Statistical Bulletin*

³ **Source:** *BOG, Statistical Bulletin*. These maturities were introduced in 1993.

Source: Bank of Guyana, *Statistical Bulletin*, December 1995

4.6: JAMAICA:

INNOVATIONS AND THEIR ENVIRONMENT

Many, if not most, of the innovations that have evolved over the past decade in the Jamaican economy appear to have arisen as a result of differential regulations across institutions together with a macroeconomic environment characterized by high liquidity, high rates on government securities, and volatile prices, and the interaction between these two factors. High interest rates and unstable prices increased the elasticities of demand and supply of intermediaries' customers, as well as made them more open to the use of non-traditional instruments and arrangements. In addition, the offer of new instruments by Jamaican intermediaries was influenced by contact with foreign markets where such instruments were common. Competition within the sector has improved, if only because of the increase in the number of institutions and such competition would itself have encouraged innovation, as new institutions sought to attract customers and established intermediaries responded. Competition has thus had some benefits in terms of the development of new instruments, improved lending practices and the narrowing of spreads. At the same time, however, the need for prudential regulation has increased, as the opportunities presented for financial intermediation appear to have produced some degree of adverse selection into the management and ownership market. One would also expect an increased potential for moral hazard problems with the entry of financial institutions into tourism and agricultural activities, the entry of

manufacturing firms into the financial sector and increased competitive pressures. Official innovation has mainly been directed at improving monetary policy and enhancing the regulatory framework.

When large differences between commercial banks' and other institutions' reserve and capital requirements coincided with a demand for services, non-banks entered the market, introducing new products. The commercial banks, forced to respond to these initiatives, established similar subsidiaries, entered new areas of economic activity, and offered a wider range of products. In some cases, as the authorities responded by tightening regulations in one direction, institutions flowed into the non-regulated area. Comprehensive legislation is being developed and the challenge lies in developing rules that do not themselves induce such change that continual revision is necessary to keep up with the adapting private sector. The risk of this phenomenon is especially large where interest rates are high and volatile, prices are volatile in general and the authorities are under continual pressure to contain liquidity. In effect, this has created considerable scope for arbitrage between foreign and domestic returns, and inter-institutional returns, encouraging entry.

As a result, there has been a proliferation of investment advisory services, unit trusts, fund management schemes etc. This may have spurred the request for a securities market regulatory body. These institutions do not play the roles usually associated with them. For example, the merchant banks do not carry out restructuring activities or raise venture capital. This may in part be because the adoption of new functions is limited by the market structure (for example, company restructuring is inhibited by the prevalence of closely held shares) and the volatility of market prices.

4.6.1. The Macroeconomic Background and Financial Sector Reform

In 1985 a World Bank structural adjustment programme imposed the condition that the financial sector be liberalized - restrictions on financial institutions such as interest rate ceilings and credit controls were to be removed. Jamaica thus began the process of removing direct controls on interest rates, credit and the exchange rate. Over a period of ten years it has largely replaced the conduct of monetary policy through price and quantity controls by open market operations (though it has had to maintain high reserve ratios for commercial banks) and has liberalized foreign exchange transactions. Initially open market operations (OMO) were conducted with the Bank of Jamaica's (BOJ) own paper, certificates of deposit (CDs). These were eventually replaced by OMO in Government securities and a formal institutional underwriting or market making arrangement has been put in place. The process of reform has not always been uni-directional - at times of high demand and poor balance of payment results, policy reverted to direct controls. However, over the ten year period, direct controls have largely been phased out.

The interaction of an unstable macroeconomic environment and policy attempts to combat this have given rise to substantial changes in the institutional structure of the financial sector, with both the opening of new types of financial institutions, the expansion (with functional changes) of existing institutions and what is termed the "conglomerisation" of the financial sector as established banks, insurance companies and other institutions created subsidiaries and diversified across a range of institutional forms in order to avoid the costs imposed by, principally, reserve requirements. At the same time, both the need to hedge against the uncertainties of volatile exchange rates and of high, volatile interest

rates and the increase in the number of market competitors, have produced a larger range of instruments developed and used by all market participants. The detailed information required to track and understand this process is not always available but this section attempts to describe the macroeconomic changes and policy reactions that gave rise to them, as well as to describe the process of financial reform (official innovation) undertaken by the authorities themselves. Some indicators are provided in **Table 4.6.1**.

Monetary policy had originally been conducted through changes in the reserve requirement (liquid asset ratio - LAR) imposed on commercial banks and the deposit-taking institutions regulated by the Protection of Depositors Act (now replaced by the 1992 Financial Institutions Act). The two sets of institutions were subject to different requirements and institutions which were not regulated by the Bank of Jamaica did not have to meet either of these requirements. The overall liquid assets ratio, held in the form of cash and government securities, has traditionally been much higher for commercial banks, in terms of cash and secondary reserves of short-term local registered stock (LRS) and treasury bills. The LAR for commercial banks rose from 36% at the beginning of 1984 (5% cash) to 44% (14% cash) and to 48% (20% cash) in 1985 (*see Table 4.6.2*). This not only acted to greatly increase the cost of lending to the private sector but represented captive financing for government. A ceiling on commercial bank credit to the private sector was also employed to limit expenditure. The exchange rate was determined by a weekly auction with bids within a prescribed band and periodic changes in the limits of the band. At the end of 1984 the auction system was changed to remove the band.

In the first move towards domestic financial reform, the BOJ introduced CDs at the end of 1985 to provide an instrument whose rate would be market-determined and in an attempt to de-link monetary policy from fiscal financing. Total credit was frozen

except for loans to development banks. More favourable economic indicators in 1986 permitted the reduction of the LAR, the cash reserve requirement was made less onerous by introduction of interest payments on a portion of the funds held to meet the requirement and the minimum savings rate was reduced. However, to counteract the possibility of a demand-facilitating increase in liquidity, a penalty was introduced for the early redemption of treasury bills. A liquidity support fund was also introduced. Credit to the private sector, lower in 1985, rose steadily relative to GDP from 1986, in contrast to public sector credit which peaked in 1986. Economic indicators remained good in 1987 with faster growth, a lower fiscal deficit and lower inflation. By 1988, the savings rate floor was again lowered (from 15% to 13%). The secondary reserve requirement was eliminated so that the LAR and cash reserve ratio were unified. This forced active marketing of treasury bills for fiscal financing through an auction administered by the BOJ (*see Peart 1995*). Demand remained buoyant, with both M1 and quasi-money growing relative to GDP. Following the devastating 1988 hurricane, Gilbert, the economic situation did not stabilize and liquidity increased with reinsurance flows and increased government expenditure for post-hurricane rehabilitation. In July 1989 the secondary reserve ratio was reintroduced and in September credit was again frozen, the savings deposit floor increased to 18% and access to the liquidity support facility was limited and available only at punitive interest rates. The exchange rate continued to depreciate and the foreign exchange auction was suspended.

During this period merchant bank expansion and the creation of conglomerates become significant. In 1986, there had been eight merchant banks but by 1995 there were 25 and their share of private financial assets had risen to over 10% from 5.7% in 1986 (*see Tables 4.6.3 and 4.6.4*). Their emergence can be attributed to both significant differences in the reserve and capital requirements of

PDA institutions and banks and to the demand for credit. During 1989 financial institutions were redeeming government securities in order to satisfy private sector credit demand and the both the treasury bill and CD auctions were under-subscribed. At the same time, although the differential in reserve requirements had been reduced relative to 1985 when the LAR for merchant banks had been 25% as compared with 48% for commercial banks, at 15 percentage points (20% for banks and 5% and later 4.5% for near-banks) it remained high. The formation of merchant banks helped to satisfy business demand for leasing facilities at a lower cost, through avoidance of the higher reserve requirement imposed on commercial banks.

The path towards financial reform was resumed in 1990 with the final deregulation of the savings rate and the decentralization of the foreign exchange market. Under the interbank trading system, all foreign exchange other than that from exports could be sold to the commercial banks. However, aggregate demand was still high and the LAR for both commercial banks and merchant banks was increased twice that year, rising to 32.5% for commercial banks and 8.5% for merchant banks. In 1991, credit controls were removed, the non-cash portion of the LAR was eliminated and exchange controls were terminated. The removal of exchange controls produced capital outflows, exchange rate depreciation and increased inflation. At the end of 1992, the non-cash portion of the liquid asset ratio had been reimposed with the statutory non-cash reserve fixed varied by bank but this arrangement was changed in mid-year, the overall LAR being set at 50% and the cash reserve at 23%. By the end of the year commercial banks' interest rate margins were over 20% (comparing the weighted average loan and deposit rates) while the non-bank deposit-taking institutions' margins were over 30%.

Those high margins were probably the impetus for the formation of the investment banks whose originators saw an opportunity to

intermediate between savers and borrowers at lower margins than the deposit-taking institutions which had to meet reserve requirements, during a period of high private sector loan demand. In addition, the rates on even short-dated government LRS had spreads of over 10% above deposit rates, representing a further intermediation opportunity. Throughout 1993 and 1994 tight monetary policy kept interest rates high and the reserve requirements remained at their 1992 levels. The primary dealership system was established by the Bank of Jamaica in 1994 in an attempt to improve the BOJ's access to information about appropriate responses and improve the effectiveness of monetary policy. In addition, the network of cambios was recognized and the number of authorized dealers increased to unify the parallel and official foreign exchange markets; investment banks also registered as cambios. The credit market was further liberalized with removal of the minimum down payments and maximum repayment periods on installment credit. The balance of payments improved over the year with a lower merchandise trade deficit from restrictive demand policies, surpluses on the services and transfers and net capital inflows (*see Table 4.6.5*). During 1994, the Bank of Jamaica was therefore able to reduce the mandated purchases of foreign exchange from the cambios. Monetary policy was at first eased in 1995, the exchange rate was stable and nominal interest fell. Increases in the monetary base originated from foreign exchange purchases but by the end of the year the balance of payments surplus fell because of a net current account deficit, and reduced capital inflows. In the second half of 1995, restrictive monetary policy was once again put in place - in August selective special requirements of 4.4% of prescribed deposit liabilities at banks were imposed. The requirements were fixed in terms of cash and Treasury, so that, although the liquid asset ratio was reduced to 47% from 50% (with 25% cash), the effective rate was 51.4%, although interest of 22% was paid on the cash portion of the special deposit requirements.

Regulatory Background

Jamaican authorities reacted to the proliferation of institutions and expansion of financial functions by legislative revision. The Banking and Financial Institutions Acts (both enacted in 1992) provided for an increase in capital requirements, tightened the licensing provisions, increased prudential controls on loans and investments, and provided for increased scrutiny of the persons controlling the institutions. In addition, supervisory powers were enhanced and arrangements specified for the winding-up or transfer of bank assets. The Financial Institutions Act replaced the Protection of Depositors Act which had previously regulated non-bank deposit-taking institutions - merchant banks, trust companies and finance houses. In 1991 the Exchange Control Act was in large part repealed. In 1992 the Bank of Jamaica Act was amended to take account of recent features of the banking environment such as BOJ losses and provisions required by the repeal of the Exchange Control Act. These related to licensing of foreign exchange dealers and provisions to prevent holders of “public” funds from acquiring foreign assets to place abroad. The 1992 amendment to the BOJ Act also recognized the Department of Bank Supervision and made its existence, with competent officers, a legal requirement.

The Bank of Jamaica (Amendment) Act, 1995, empowered the Minister to lay down prudential criteria and minimum solvency standards for commercial banks and specified financial institutions and made it an offence for financial institutions not to provide information required by the BOJ. It also dealt with the cambio system established in 1994, prescribing licence fees and penalties for operators of exchange bureaux. Legislative provision was also made for building societies.

The Securities Act, 1993, required that security dealers be licensed and established the conditions for licences and rules for the accounts to be kept by dealers. It also required that a stock exchange be licensed (the existing Jamaica Stock Exchange was deemed so licensed under the Act) and maintain a compensation fund to compensate victims of fraudulent dealer activity. The Act also provided rules to govern trading in securities and dealer activity; including margin requirements, short sales, the prohibition of insider trading and, in general, to prohibit activities to manipulate the market and to limit the effects of conflicts of interest. The Securities Commission was established as the body to supervise the industry.

Organizational Adaptations

One hesitates to classify some of the institutional changes in Jamaica as innovations because they appear to represent, not new services or institutions, but the incursion of other financial firms into an existing industry sub-sector to avoid regulatory constraints and/or taxes. Building societies are a case in point.

Building Societies (BSocs) have served the traditional role of intermediation between small savers and mortgage lending since the nineteenth century in Jamaica - the first Building Societies Act was apparently enacted in 1864, with a replacement in 1896 (*see Johnson, 1995*). In the last ten years, not only have long-established building societies expanded the scope of their activities, but a number of new firms have entered the market. Two traditional building societies, the Jamaica National Building Society and the Victoria Mutual, initiated active mobilization of foreign remittances following difficulties in obtaining funds; as a result, the foreign accounts at BSocs rose from US\$23.5 million in 1991 to US\$90.4 million in June 1995, with an average annual rate of growth of 52% between 1990 and 1994 (*see Johnson, op. cit.*). In the

1990s the number of building societies more than doubled from six in 1990 to 14 active societies in 1996. The increase has been attributed to avoidance of the high reserve requirements imposed on commercial banks and other deposit-taking institutions (*see Table 4.6.2*) and to the lower rate of taxation on BSocs. However, during the period when reserve requirements rose to their highest levels, the liquid asset (including cash reserves) ratios rose to 48% of bank deposits and 20% of other institutions' deposits in 1985 - the number of BSocs fell. In 1981, for instance, there were seven but only four in 1986. It may be that tight liquidity during that period did not leave potential entrants with the funds for which to seek higher returns possible through the building society structure. There are, in addition to the benefits of more relaxed regulation, tax incentives for operating BSocs. Interest income is usually subject to a withholding tax but mutual companies are not obliged to pay it. Further, commercial banks pay the corporate tax of 33 % on profits, whereas BSocs are only liable for corporate tax when their reserves exceed 5% of their assets and tax they pay has usually been minimal. As an increasing number of financial institutions established BSocs and transferred capital into them, BSocs capital rose from less than 1.5% of monetary liabilities in 1985 to 4% in 1990 but the new societies were not investing in mortgage loans - as indicated by the decreasing significance of loans in their portfolio (*see Table 4.6.6*). This indicates that the influx of building societies bore little relationship to supplying traditional building society services.

BSocs were self-regulated by the Building Society Association which reported to the central bank. Whether to discourage the transfer of capital assets into BSocs, in response to poor performance or simply because the growth of the sub-sector appeared to require it, in 1994 the BSocs were placed under the supervision of the BOJ. In 1995, licencing requirements were prescribed, minimum capital (J\$25 million) was set, as was a capital adequacy ratio, maintenance of a reserve fund and reserve ratios. Prudential restrictions

were placed on loans. Returns and account submission are now required. An amendment to the Building Societies Act provided for the winding down of a building society and for its amalgamation.

In general, the differences between institutions in Jamaica have become somewhat blurred, though this is neither unexpected nor necessarily welfare-reducing. In other jurisdictions, as one would expect, high interest rates and deposit rate regulation have encouraged entry into the commercial bank market and product diversification. Jamaica has experienced similar effects from high rates and reserve requirements, although in the Jamaican case the commercial banks and other near-banks themselves expanded into new areas of activity. Some differentiation remains: both finance houses and merchant banks are deposit-taking institutions with similar reserve requirements, but merchant banks cater to the corporate sector while the finance houses cater to the consumer market. Several future tendencies can be identified. High interest rates since 1993 have produced declines in stock market values (*see Table 4.6.7*), leaving financial institutions which invested in the real sector, or held on to shares when investors realized their values with lower asset values. In addition, the Jamaican financial market is seen as being saturated in terms of financial services, relative to the requirements of the real sector. As a result, several institutions have located subsidiaries offshore (this also allows their domestic customers to hedge by maintaining offshore accounts) and have begun to bring in capital and consolidate activities in Jamaica in order to build stronger balance sheets. There is some trepidation about the resilience of the sector, especially in view of a recent bank closure and the fact that the real sector growth has been outpaced by the financial sector. The latter phenomenon is evidenced not only by rates of growth but by the illiquidity of real sector assets in financial intermediaries and the nonperformance of loans as companies cope with high interest rates.

4.6.2. Taxonomy of Innovations in Jamaica

Bond Market

Description of Innovation:	Development of an active bond market in both government and private securities.
Type:	s
Date:	1990s
Initiator:	ma, cp
Motive:	Monetary authority would have wished wider participation in government securities in order to reduce their contribution to government financing. This created opportunities for banks.
Functioning:	This market has flourished with the issue of government bonds, increased use of securities by central bank for monetary management and the issue of bonds for private companies.
Origin:	Bond markets are very active sources of finance in financial sectors of industrial countries.
Data:	<i>See Table 4.6.8</i>

Cambios

Description of Innovation:	Institutions licensed to trade in foreign exchange
Type:	i
Date:	1994
Initiator:	ma
Motive:	To give authorities improved information on and access to foreign exchange inflows since the ease of transactions with informal purchasers attracted funds to them.

Functioning:

Existing unauthorized foreign exchange dealers were licensed. In order to obtain a licence, the dealer had to agree to surrender a portion of the foreign exchange obtained; initially this was set at a maximum of 40% and a minimum of 20% on a biweekly period at the weighted average selling rate of all dealers. The range set for foreign exchange to be sold to the central bank is now (September 1996) a maximum of 10% and a minimum of 5%. Annual fees per location of the equivalent of US\$2,500 was fixed; initially, licences to purchase foreign exchange in the form of currency and travellers cheques in unlimited amounts and up to a maximum of US\$2,500 in drafts and money orders, were required. Only cash sales were permitted. Record-keeping and reporting were also required. The regulations have changed considerably since being introduced - licence renewal fees have been reduced to US\$1,500 and the ceiling for drafts and money orders now stands at the equivalent of US\$100,000. The dealers buy the foreign currency to sell on the open market which is vibrant - foreign exchange dealing is a large lucrative business with consistent demand throughout the year. Cambios successfully compete with commercial banks by offering better exchange rates and better service in terms of delivery. They maintain branches in the tourist areas such as Montego Bay and Ocho Rios and supply the demand that comes mainly from large businesses such as hotels, agricultural companies and traders.

Data: See Table 4.6.9 showing foreign currency purchases by cambios and sales to BOJ.

Capital Management Certificates

Description of

Innovation: Non-tradeable securities which promise the holder a rate of return issued by investment bank(s)

Type: s

Date: 1990s

Initiator: ib

Motive: To enable intermediation by non-deposit-taking institution between investor (lender) and borrower

Functioning: Capital Management Certificates (CMC) record the rate of interest desired by the investor. They provide the bank with funds which it lends out, keeping the difference between the recorded rate of interest and the rate at which it is able to lend the funds. A CMC document states explicitly that the investor is assuming the loan risk. Essentially, therefore, it acts as a distant deposit-substitute. There is a call CMC and one with a 30-90 day maturity. Investments (loans) by the investment bank can be for as long as three years but are funded by short maturities in CMCs. Approximately 20% of one bank's assets is long-term, matched by core funds. It is not clear how many investment banks use a similar instrument.

Origin: Unclear

Data: None available.

Certificates of Deposit (CDs)

Description of

Innovation: Liabilities of the Bank of Jamaica

Type: s

Date: 1985 - 1995

Initiator: ma

Motive: To provide an instrument to the BOJ for independent monetary policy.

Functioning: Open market operations were conducted through the sale and purchase of CDs. They were mainly used to contract the money supply as a result of high liquidity. The stock of CDs rose rapidly as the liquid asset ratio was reduced from 1986. Interest rates were determined through an auction system. CDs outstanding rose substantially from 1986 to 1992, peaking at J\$7,081.7 million at July 1992 (*see Peart, 1995*). Their use apparently increased as the liquid asset ratio requirements were reduced, the LAR eventually being set at different percentages for different banks in the first half of 1992. In July 1992, the LAR was reimposed at 50% for all banks. The 1994 decision to stop issuing CDs may have been influenced by the fact that, especially at very high interest rates (CD rates were over 50% in 1992), the payment of interest was itself directly contributing to monetary expansion.

Origin: Central banks in other systems have previously issued their own securities for monetary management purposes.

Data: *See Table 4.6.10* of CDs outstanding at various dates of issue.

Commercial Paper

Description of

Innovation:	Short-term promissory notes traded among brokers and intermediaries
Type:	s
Date:	1992
Initiator:	Businessmen
Motive:	CP allows investors to earn a better rate on their investments and borrowers to pay a lower rate.
Functioning:	The rate on CPs is nearer to that of deposit rates since they are an alternative to deposits for investors and are competitive with deposits because there are withholding taxes on the income of corporate (33 %) and personal (25%) deposits while investors are able to avoid income tax on CP earnings. Financial intermediaries act as brokers, facilitators or guarantors of commercial paper; they do not purchase themselves i.e. they find the investor for the borrower and broker the transaction for a fee. CP is issued by either listed companies where information is available from the stock market, or guaranteed by licensed financial institutions, in which case the guarantees have to be accommodated within their lending limits. CP originated in the loan participation market of the early 1980s where banks matched borrowers and lenders in order to enable both to benefit from better interest rates by avoiding reserve requirements. Money market brokers later moved into the market but desisted when requested by the BOJ. The market later developed to allow trading of CP, properly-speaking.

Origin:	Commercial paper market in USA.
Data:	Guarantees of CP by commercial banks stood at J\$2.4 million, and by other FIA institutions at J\$1.7 million, at the end of June 1996. Earlier data on guarantees do not distinguish between guarantees given on CP and those on other instruments (<i>see Table 4.6.11</i>). Preliminary work indicates that total commercial paper outstanding was J\$6.4 billion at March 1995.

Conglomerates

**Description of
Innovation:**

A process by which both financial and non-financial companies have formed conglomerates with subsidiaries or associated companies in both the financial and non-financial sectors.

Type:

i

Date:

1988 onwards

Initiator:

Unclear

Motive:

Often undertaken to compensate for regulatory restrictions or their costs; some companies also saw opportunities for profit arising from real sector.

Functioning:

The holding company structure allows funds from one subsidiary to be passed through another easily. High reserve requirements on commercial banks encouraged the creation of merchant banking subsidiaries and, as reserve requirements on those increased, in building societies. In addition, financial institutions' profit levels appear to have been high in the late 1980s when they benefitted from high rates on risk-free government securities. At the same time high loan rates reduced loan demand

so banks used their profits for real sector investments. They, therefore, invested in real assets in the agricultural and tourism sectors, opening subsidiaries to do so. There has also been investment abroad - both to facilitate a flow of foreign exchange and because the large number of financial institutions in Jamaica leave few opportunities for further investment in the financial sector. Investment offshore could, however, provide value to domestic operations.

Data: *See Table 4.6.12* summarizing information on conglomerate structures.

Deposit Insurance

Description of

Innovation: Development of a system for providing deposit insurance, expected to commence in 1997

Type: i

Date: 1997

Initiator: ma

Motive: To create a fund which can insure depositors' funds.

Functioning: Currently, there is a Task Force working on the development

Origin: Deposit insurance arrangements of the USA and Canada.

Data: None available

Equity Investment Bonds (Debit/Equity Swaps)

Description of

Innovation: Government bonds issued to finance swaps of foreign debt for local equity.

Type: s

Date: 1987

Initiator: g

Motive: To reduce government's external debt while encouraging financing of domestic investment

Functioning: This was an arrangement reached between the GOJ, the World Bank and the Paris Club to swap a portion of debt to commercial banks for local debt. Purchasers paid 30 cents for \$1.00 of foreign debt and the debt was repaid to the new purchasers in Jamaican dollars at face value. Those Jamaican dollars were then to be used to invest in specified projects - those that were labour-intensive and export-oriented - and were expected to bring in additional funds in the form of either cash or equipment. The swap was financed off-budget by the issue of equity investment bonds. The bond rate was the treasury bill rate plus 2%, less 33% corporation tax. Bonds had maturities of six years and could be used by commercial banks to meet their liquid asset requirement. A single bank could hold no more than \$30 million in such bonds and the amount outstanding was limited to \$500 million. A total of US\$125 million in debt was reduced in this fashion. The arrangement was wound down because of their effect on base money expansion.

Origin:	Other international programmes of debt-equity swaps.
Data:	None available

Exchange Rate Support (Private)

Description of

Innovation:	Support by private sector individuals of the exchange rate.
Type:	i
Date:	1992
Initiator:	Businessmen
Motive:	To prevent continuing depreciation of the Jamaican currency.
Functioning:	In mid-April, 1992, a prominent businessman 'Butch' Stewart announced a commitment to sell US\$1.0 million per week at a price below the then market rate in order to support the Jamaican dollar. The media encouraged the public to stop hoarding foreign exchange and sell holdings to the official market (<i>see Bennett, 1993</i>). The Jamaican dollar appreciated from "just under J\$28 per US dollar" to "just over J\$22 by the end of the second week of July", remaining there until June 1993. There were also increased currency flows on to the market and a reduction in the accumulation of foreign currency balances. However, the Stewart initiative was small relative to the average daily flow to the market of US\$5.0 million so that Bennett (<i>op. cit.</i>) argues that it was the limit placed on financial institutions' power to set the exchange rate, rather than the private initiatives, which lowered the exchange rate. In

other words, it was exchange rate management, rather than the expectations influenced by market initiatives, that provided the basis for the signal that it would be profitable to sell foreign exchange.

Origin: Initiative seems original to Jamaica.

Data: *See Table 4.6.1.*

Forward Market-Type Transactions

Description of

Innovation: Contracts or arrangements by financial institutions which allow their clients to improve their forward planning.

Type: s

Date: 1990s

Initiator: International banks

Motive: Enabled banks to earn fees by providing services to clients

Functioning: These arrangements are not true forward agreements because the spreads between rates of interest in Jamaica and foreign rates of interest are too wide to allow for forward agreements. The banks therefore use matched transactions to permit their clients to obtain forward exchange. During 1990-94, when supply rather than the exchange rate was the major concern, banks with the ability to source foreign exchange sold customers the assurance of foreign exchange for a fee, but the customer bore the exchange rate risk. Banks are now becoming willing to use forward transactions because interest rate volatility has declined.

Origin: Forward agreements

Data: None available.

Government Securities

Description of

Innovation: The marketing of an enhanced range of government securities

Type: s

Date: Late 1980s to 1990s

Initiator: g, ma

Motive: To increase the range of investors in government securities and improve Government financing.

Functioning: Originally, Jamaica had two types of government securities - the treasury bill with maturity of up to one year and local registered stock (LRS) with legally-permitted maturities of from nine months to sixty years. A number of new types of bonds have been issued since the late eighties (*see Equity Investment Bonds*). In 1992 retroactive salary bonds were issued to finance civil service salary increases, that is, the bonds were issued to civil servants in lieu of about two years' lump sum back pay. Two types were issued: one maturing in 1995 (to junior doctors) and the other in 1999. They were issued at a floating rate - the six-month treasury bill rate in the period preceding the end of the relevant interest period, plus a margin of 2%. They are administered by the BOJ and are negotiable. J\$650 million, 70,000 bonds, were issued. This would have proven an expensive method of financing the salary increase. US dollar-denominated bonds were first issued in 1993/94 when there was a US\$20 million local bearer issue at 7.5%, in 1994 there was a US\$25 million issue with a 5-year term at LIBOR plus 1.125%, a registered bond. In 1996, there was a US\$70

million issue for the local and regional markets at a 12% fixed rate of interest and 1999 maturity. It was arranged by the Bank of Nova Scotia and Citibank Merchant Bank. In June 1996, debentures were issued for the first time - the short term debenture matures at February 28, 1997 while the long-term has a 5-year maturity. While similar to the LRS the minimum application has been lowered to \$1,000 (it is \$5,000 for the LRS) in order to encourage small investors. It is also a bearer instrument, while the LRS is a registered instrument.

Origin: Bonds issued in several other territories.
Data: None available

Government Securities Fund

Description of

Innovation: A fund which guarantees that 85% of its assets is invested in government securities.

Type: s

Date: 1990s

Initiator: ib

Motive: Presumably enables the bank to earn a spread between the rate paid to investors in the fund and the actual rates earned on securities

Functioning: This probably operates by providing a convenient form in which non-financial investors may participate in the government security market which provides high rates of return on a risk-free instrument. Investment is for a minimum of 90 days. Although it is only guaranteed that 85% of holdings are held in government securities, the entire fund is so held in practice. It allows investors to move

their funds in and out of the market at fairly short notice. The fund itself tends to invest in short-term securities because high and volatile interest rates have made the market short-term.

Origin: Seems to resemble a mutual fund.
Data: None available.

Investment Bank

Description of

Innovation: Banking vehicles without licence to take retail deposits, but only wholesale funds.

Type: i

Date: 1992

Initiator: ib

Motive: To take advantage of the profit opportunities presented by the spreads between loan and deposit rates at commercial and merchant banks

Functioning: The first of the investment banks is now a primary dealer and one of the major cambios. They appear to act as competitors to both the commercial and merchant banks, narrowing interest rate spreads so as to provide better rates to both first tier borrowers and lenders. Their loan processing time is faster than commercial bank and they are able to disburse funds in a week. They also provide a range of financial services. (**See instruments such as Capital Management Certificates, Options**). Some, at least, are active in the inter-bank market.

Origin: They appear to be modelled on the investment banks in the USA, though they have a narrower range of activities.

Data: There are six investment banks, some being subsidiaries of other institutions such as the National Commercial Bank (NCB) and the Victoria Mutual Building Society. (*see Table 4.6.3*)

Merchant Banks

Description of

Innovation:

Vehicles virtually identical to investment banks in operation, but tending to emphasise more traditional capital market-type and trade financing activities.

Type:

i

Date:

1989-1992

Initiator:

Unclear

Motive:

Ability to provide lease financing at lower cost through avoidance of the reserve and capital requirements imposed on commercial banks at a time when price inflation of durable equipment increased demand for its financing.

Functioning:

There has been rapid growth of the number of merchant banks which increased from 8 in 1986 to 22 in 1990 and to 29 in 1996. The costs of operating a merchant bank have recently been lower than the cost of operating commercial banks because of differential regulation. Merchant banks were not required to hold as much paid up capital as commercial banks. Similarly, reserve requirements for merchant banks have been lower than those for commercial banks. This permitted the merchant banks to offer lease financing at a lower cost of funds than could commercial banks. Merchant banks are licensed to take deposits

under the Financial Institutions Act, 1992, funding their loans by deposits drawn from a market which is willing to forego current and savings accounts for higher interest rates. Deposits are less flexible than those at commercial banks - withdrawals from merchant banks are prohibited within 14 days of opening an account. Lease financing has mainly been used for the funding of motor vehicles and industrial equipment. In general, merchant banks appear to have been more active in offering new choices to the market, representing equity issues and developing investment instruments, such as mutual funds, for small investors.

- Origin:** The UK also has deposit-taking merchant banks which provide underwriting and similar services to clients.
- Data:** *See Table 4.6.4* showing the changing structure of the financial market.

Options, Foreign Currency

Description of

Innovation: Contracts allowing the borrowing of foreign currency with an option to purchase at a specific price before an agreed 'exercise' date.

- Type:** s
- Date:** 1990s
- Initiator:** ib
- Motive:** To allow a bank to obtain the use of foreign currency without losing on the exchange rate.
- Functioning:** This instrument essentially operates by arbitrage between the interest rates in Jamaica and those abroad. A bank borrows foreign exchange at a rate of 21%-22% presently

(compare rates available in the USA), with the option to purchase the foreign currency at an 'exercise' exchange rate by some 'exercise' date. If the Jamaican dollar depreciates, the bank exercises the option.

Origin: Options in developed markets.
Data: None available.

Primary Dealerships/Open Market Operations

Description of

Innovation: Identification and establishment of primary dealers to make a market in government securities for sale to, and purchase from, the central bank

Type:

Date: 1994

Initiator: ma

Motive: To facilitate monetary policy

Functioning: The primary dealers were to provide underwriting support for the sale of government securities, thus helping to determine interest rates and providing the central bank with market information on supply and demand. Dealers have tended to operate on behalf of clients, rather than on their own account. Hence, the central bank is receiving less information on market demand and supply than it had hoped for. Dealers are less price sensitive than if they were in fact making a market. The dealers are able to provide general market intelligence and the system has allowed the central bank to control the money supply and made monetary policy credible (*see Repos*).

- Origin:** The arrangement is used for monetary policy implementation in North America.
- Data:** **Table 4.6.13** showing the volume of reverse repurchase agreements indicate the activities in this market. In 1996 there were 14 primary dealers: six stock-brokers, five merchant banks, one commercial bank, one money market broker and one investment bank

Remittance Agencies, Foreign

Description of

- Innovation:** Active encouragement and solicitation of remittances into Jamaica from foreign residents
- Type:** i,
- Date:** Mid-1980s
- Initiator:** f
- Motive:** To substitute for domestic savings mobilization at a time when the latter had become difficult.
- Functioning:** Establishment of offices abroad permitted the building societies to mobilize funds among Jamaicans abroad. These remittances proved an important source of foreign exchange, especially when others were in short supply. Several other agencies, including banks and manufacturing, have entered the market with offices being set up abroad in several locations. The money is remitted to the beneficiary in Jamaican dollars with the institution benefitting from the foreign exchange, the fee for the transaction being paid abroad by the remitting party. The exchange rate used is the Bank of Jamaica rate on the day of the transaction. For some agencies, the gain comes from the volume of many small transactions.

- Origin:** The Caribbean, like other LDCs with large migrant communities, have a long tradition of remittances. Active solicitation of these has adopted the systems of agencies such as Western Union.
- Data:** *See Table 4.6.5* for private transfers column in the balance of payment.

Repos and Reverse Repos

Description of

Innovation: Contracts, mostly used between central bank and dealers, to temporarily exchange securities - seller of security agrees to repurchase them.

Type:

s

Date:

1991

Initiator:

ma

Motive:

To allow a temporary supply of liquidity

Functioning:

Repurchase agreements for Treasury Bills were formally introduced into Jamaica in February 1991. Central bank tends to employ reverse repos - that is, to sell securities to the dealers so as to reduce reserves and the money supply, with an agreement to repurchase the securities at a specified time and price. Since the repo rate is higher than that on the interbank market, dealers would prefer to purchase from the central bank than to lend their excess reserves on the interbank market.

Origin:

The traditional instrument used in monetary policy transactions in the USA.

Data:

See Table 4.6.13 on reverse repurchase transactions since 1994

Securities Commission

Description of

Innovation: A body consisting of five persons created to regulate securities other than those issued by banks and to license and regulate the Jamaica Stock Exchange.

Type: i

Date: 1993

Initiator: g

Motive: To meet the conditions of an IBRD loan

Functioning: The Securities Commission licenses the Jamaica Stock Exchange (JSE), its ten broker members as well as the other dealers and investment advisers operating in the market. Licensing has been required from June 1994. There are about fifty dealers and investment advisers. Educational and financial criteria have been set for these. Rules governing the operations of the JSE are subject to the SC's approval. The SC has approved a revised takeovers and merger code for listed companies and a disciplinary code for broker members. The SC has set up a compliance unit to monitor and enforce the 1993 Securities Act. It will respond to the public's complaints and undertake investigations. At mid-1996, six investigations had been undertaken. Investment funds remain under the jurisdiction of the Superintendent of Insurance since such funds are held by insurance companies and unit trusts. However, as mutual funds do not operate under a trustee arrangement, they will be regulated by the SC. Among the regulations planned are requirements for the issue of

Origin: prospectuses, and rules related to insider trading.
Securities Exchange Commission of the USA
Data: None available.

Securitization

Description of

Innovation: Sale of a company's debt to a third party, with or without recourse.

Type: s

Date: 1980s and 1990s

Initiator: International banks

Motive: To provide financing that had no impact on government budget (in one case), access foreign exchange and take advantage of lower rates in foreign markets.

Functioning: Jamaican securitized loans have been sold in Mexico, Japan and the USA. The receivables of the government-owned telephone company were securitized and sold in the Japanese market in 1988 and 1989, for a total of US\$50 million. Transactions related to that securitization have now been completed. A local bank also sold credit card receivables in 1991 and 1994 in Japan and the USA, respectively, in amounts totalling US\$30 million and US\$60 million. These enabled local financial institutions to establish their rating and credibility in foreign markets - the securities received a triple B rating.

Origin: Securitization was first introduced by the secondary housing mortgage agencies in the USA and is now in widespread use for a range of loans.

Data: No data, other than total given above.

Swaps

Description of

Innovation:	Currency and interest rate swaps are occasionally used.
Type:	s
Date:	1990s
Initiator:	International banks
Motive:	To enable banks to earn fees and hedge exchange, interest and other portfolio risks.
Functioning:	The first swap in Jamaica was apparently made in 1992 for a utility company which swapped debt for more beneficial rates. Both currency and interest rate swaps have been arranged since but the market is not active.
Origin:	The swap instrument is common in large markets
Data:	No data is available on these instruments because there are individual transactions rather than part of a sustained market.

US-Dollar Denominated Shares

Description of

Innovation:	A listing of US-dollar denominated shares on a domestic stock exchange.
Type:	s
Date:	1996
Initiator:	cp
Motive:	To provide shareholders with capital and return insulated from exchange rate fluctuations, which would increase attractiveness of share.
Functioning:	Citizens Bank listed US dollar convertible

- cumulative redeemable preference shares at a price of US\$1.00 each, with a dividend of 9.5% per annum.
- Origin:** Listing of non-domestic currency securities in other markets
- Data:** 2,551,000 shares were offered to shareholders in the first quarter of the year and listed in July 1996. Their largest holder is a Puerto Rican financial corporation.

Universal Life Contracts

Description of

- Innovation:** Life insurance contracts linked to equity markets
- Type:** s
- Date:** Late 1980s
- Initiator:** ins
- Motive:** To retain the attractiveness of life insurance at a time of high inflation
- Functioning:** These contracts are assigned a portion of the monthly premium to purchase equity, linked or not to the stock exchange index. The policyholder, therefore, could benefit from capital appreciation. However, many of these policies were terminated when policyholders cashed in their policies in 1993/94 as the rate of interest increased and the stock market declined.
- Origin:** Universal life insurance products
- Data:** None available

Warrants

Description of

Innovation: Derivative securities offered to prospective purchasers of shares - an option to purchase at the 'exercise' price

Type: s

Date: Possibly 1987

Initiator: Non-resident international investment bank.

Motive: To encourage the purchase of a company being privatized.

Functioning: In 1987 when government re-privatized the cement company, with an international investment bank arranging the sale, a warrant was offered as an inducement, since the cement company had had a chequered profit history. So purchasers of the stock received warrants with their subscriptions. Apparently, however, the nature of the instrument was misunderstood by the shareholders many of whom exercised the option, purchasing at the conversion date, even though the strike price was higher than the market price at the time. It should be noted that stock market values have suffered from high rates of interest available on the money market.

Origin: The sale of warrants in conjunction with security issues is common.

Data: None available.

**Table 4.6.1: Jamaica - Selected Macro-economic Indicators
(1982-1994)**

	E Rate	CPrC Index	Inflation (%)	Real GDP (J\$M)	Growth (%)
1982	1.781	30.1	6.5	24,848	1.2
1983	1.932	33.6	11.63	25,417	2.29
1984	3.942	42.9	27.68	25,192	-0.89
1985	5.559	54	25.87	24,029	-4.62
1986	5.478	62.1	15.00	24,436	1.69
1987	5.487	66.2	6.60	26,322	7.72
1988	5.489	71.7	8.31	27,082	2.89
1989	5.745	82	14.37	28,934	6.84
1990	7.184	100	21.95	30,513	5.46
1991	12.116	151.1	51.10	30,670	0.51
1992	22.96	267.8	77.23	31,204	1.90
1993	24.949	327	22.11	31,645	0.68
1994	33.086	441.6	35.05	31,882	0.75

Notes: **E Rate:** Exchange Rate in Terms of J\$ per US\$, (Period Average Market Rate).

CPrC Index: Index of Consumer Prices (1990 = 100)

Inflation: Rate of Exchange in Consumer Price Index

GDP: 1990 = 100

Source: IMF: International Financial Statistics

Table 4.6.2: Jamaica - Reserve Requirements (1983-1996)
(As % of Deposit & Other Prescribed Liabilities)

		Commercial Banks		Merchant Banks		Trus Cos.	Building Soc.	
		Total LAR	Cash RR	Cash RRFX	Total LAR	Cash RR	Total LAR	Cash RR
1983	Feb	34.5						
	Apr	36						
1984	Jan	36	5		10			
	Feb	40	7		10			
	Mar	40	9		15			
	Mar	See Note 1						
	Apr	40	10		15			
	Sep	44	12		15			
	Oct	44	14		15			
	Oct	See Note 2						
	Oct	See Note 3						
1985	Apr	48	15		15			
	Jun	48	17		20			
	Jun	48	19		20			

Table 4.6.2: Jamaica - Reserve Requirements (1983-1996) - Continued
(As % of Deposit & Other Prescribed Liabilities)

		Commercial Banks			Merchant Banks		Trus Cos.	Building Soc.
		Total LAR	Cash RR	Cash RRFX	Total LAR	Cash RR	Total LAR	Cash RR
1985	Jun	48	20		20			
	Oct	48	20		21	1		
	Nov	48	20		23	3		
	Dec	48	20		25	5		
1986	Jan							
	Feb	44	20		25	5		
	May	38	20		21	5		
1987	Mar	35	20		13	5		
1988	Jan	30	20		13	5		
	Feb	25	20		9	5		
	Mar	20	20		5	5		

Table 4.6.2: Jamaica - Reserve Requirements (1983-1996) - Continued
(As % of Deposit & Other Prescribed Liabilities)

		Commercial Banks			Merchant Banks		Trus Cos.	Building Soc.
		Total LAR	Cash RR	Cash RRFX	Total LAR	Cash RR	Total LAR	Cash RR
1989	Jul	20	19		4.5	4.5		
1990	Apr	25	19.5		7.5	5		
	May	27.5	20		7.5	5.5		
	Jun	27.5	20		7.5	6		
	Nov	32.5	20		8	6		
	Dec	32.5	20		8.5	6		
1991	Jan	33.5	20		9	6		
	Apr	20	20		9	6.5		
	May	20	20		9	7		
	Jun	20	20		9	7.5		
	Jul	20	20		9	8		

Table 4.6.2: Jamaica - Reserve Requirements (1983-1996) - Continued
(As % of Deposit & Other Prescribed Liabilities)

		Commercial Banks			Merchant Banks		Trus Cos.	Building Soc.
		Total LAR	Cash RR	Cash RR FX	Total LAR	Cash RR	Total LAR	Cash RR
1991	Aug	20	20		9	8.5		
	Sep	20	20		9	9		
	Oct	20	20		9.5	9.5		
	Nov	20	19		9.5	9.5		
	Dec	20	19		9.5	9.5		
1992	Jan	df	19		9.5	9.5		
	May	df	21		11	11		
	Jun	df	23		11	11		
	Jul	50	25	25	12	12		
	Sep	See Note 5.		25				
	Oct			25	13	13		

Table 4.6.2: Jamaica - Reserve Requirements (1983-1996) - Continued
(As % of Deposit & Other Prescribed Liabilities)

		Commercial Banks			Merchant Banks		Trus Cos.	Building Soc.
		Total LAR	Cash RR	Cash RR FX	Total LAR	Cash RR	Total LAR	Cash RR
1993	Jan				14	14		
	Apr			25	15	15		
	Jul			25	16	16		
	Sep			25	17	17		
	Sep	See Note 6.		25				
1994	Jan	See Note 7.		25				
	Apr			22				
1995	Jun	47	25				5	1
	Aug			20	20	17		
	Aug	Special deposit requirement in Tbs/cash						
	Nov				25	17		
	Dec							

Table 4.6.2: Jamaica - Reserve Requirements (1983-1996) - Concluded
(As % of Deposit & Other Prescribed Liabilities)

		Commercial Banks		Merchant Banks		Trus Cos.	Building Soc.	
		Total LAR	Cash RR	Cash RR FX	Total LAR	Cash RR	Total LAR	Cash RR
1996	Feb				30	17		
	Mar						5	dual: 5 on 1
	May			20	17			

Notes: LAR = liquid asset ratio which consists of the cash reserve and secondary reserve requirements
df = different percentages used for different banks
The Cash RR FX refers to a cash reserve on foreign currency accounts

1. Commercial banks no longer permitted foreign currency float as part of LAR
2. Statutory Reserve Acct of commercial banks of BOJ as average of deposits satisfying cash RR on daily basis
3. Clearing House Account of commercial banks at BOJ can be held, at average TBR, as part liquid assets
4. BOJ Act amended to allow commercial bank specific LARs for specific periods
5. Variable rate local registered stock, 1994, qualified as liquid assets
6. GOJ US\$ bearer bonds, 1994, qualified as liquid assets
7. GOJ variable rate LRS, 1995, qualified as liquid asset

Source: Bank of Jamaica

Table 4.6.3: Evolution of the Jamaican Financial System (1981-1995)

	1981	1986	1990	1995
Commercial Banks	8	10	11	11
Merchant Banks	6	8	21	25
Finance Houses	10	8	5	4
Building Societies	7	4	6	15
Trust Companies	10	9	3	1
Credit Unions	96	91	80	87
Life Insurance Companies	13	10	10	11
Unit Trusts	..	..	..	4
Insurance-related Funds	..	..	..	11
Investment Banks				7
Development Banks	..	..	..	4
Cambios	..	..	..	98
Stockbrokerage Firms	..	..	..	10

Note: .. Not available

Source: Lim (1991); Financial Sector Unit, Research Services Dept. BOJ (1996)

Table 4.6.4: Jamaica - Asset Shares of Financial Institution (1976-1995)
(%)

	1976	1981	1985	1986	1987	1988	1989
Commercial Banks	69.01	73.86	72.98	73.76	71.64	70.15	68.74
Merchant Banks	8.23	2.60	3.84	5.70	8.96	10.71	16.48
Finance Hses and Trust Cos.	10.12	6.22	9.82	7.21	5.52	5.75	1.48
Building Societies	9.23	10.87	8.84	9.37	10.10	10.19	10.22
Credit Unions	3.40	6.45	4.53	3.96	3.77	3.20	3.08
Total Assets/GDP (%)	..	..	77.73	80.38	80.53	93.86	95.32

Table 4.6.4: Jamaica - Asset Shares of Financial Institution (1976-1989) - Concluded
(%)

	1990	1991	1992	1993	1994	1995
Commercial Banks	66.62	70.22	69.03	71.12	69.30	70.51
Merchant Banks	17.40	15.29	15.74	12.47	10.70	10.07
Finance Hses and Trust Cos.	1.44	0.98	0.54	0.56	0.22	0.08
Building Societies	11.41	11.10	12.81	13.66	17.83	16.95
Credit Unions	3.12	2.41	1.88	2.18	1.95	2.38
Total Assets/GDP (%)	85.23	87.82	93.11	89.82	106.72	..

Note: .. Not available

Sources: Bank of Jamaica, *Statistical Digest*, various issues; Appendix VIII in Lue Lim (1991); Building Societies of Jamaica Research Department

Table 4.6.5: Jamaica - Balance of Payments (1982-1992)
(US\$M)

Year	Mer- chandise	Net Services	Net Private. Transfers	Capital	Reserve Change (BOJ; incr = -)
1982	-435.9	-81.4	153.2	223.2	72.6
1983	-247.9	66.3	111.6	9.5	24
1984	-358.4	36.4	117.2	358.6	-208.2
1985	-357.3	182.8	135.6	148.9	-180
1986	-606	-14.4	135.2	136.1	161.4
1987	-784.9	180.2	1512.3	432.8	-92.7
1988	-654.3	250	167.7	77.6	54
1989	-721.8	392.9	248.2	319.4	-330.3
1990	-1120.7	548.1	267.8	337.3	-98.1
1991	-957.7	500.7	447.2	367.1	-385.4
1992	-1343.9	547.6	521.8	240.2	-23.5

Source: 1990-1995: BOJ *Statistical Digest*, earlier years: BOJ *Annual Report*.

Table 4.6.6: Jamaica -Profile of Building Societies (1986-1995)
(JS Million)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Total Assets	1,049	1,354	1,864	2,280	2,968	4,376	8,738	13,807	26,252	29,156
Total Savings Fund	980	1,259	1,740	1,097	2,669	3,732	7,531	12,228	23,471	25,491
Loan balances	580	680	844	1,092	1,595	2,106	2,884	3,779	7,066	9,593
Reserves	64	89	116	159	266	572	1,071	1,245	1,574	2,477
Liquid funds	433	633	947	962	1,178	1,675	3,880	6,422	12,176	10,231
Annual loans	81	168	219	327	519	742	906	1,270	3,881	4,318
Loan bal. as % savings fund	59.25	54.04	48.49	99.59	59.75	56.44	38.30	30.91	30.11	37.63
Loan bal. as % total assets	55.31	50.25	45.25	47.90	53.74	48.13	33.01	27.37	26.92	32.90
Rate of growth of loans (%)		107.66	30.42	49.16	58.72	42.95	22.23	40.15	205.51	11.28
No. of deposits	15,733	14,748	12,028	11,380	10,991	11,143	11,734	41,542	26,900	13,328
No. of shares	517,185	527,385	553,831	585,664	626,505	666,333	731,830	776,156	877,703	887,000

Source: Building Society Association

Table 4.6.7: Jamaica - Stock Market Capitalization (1982-1995)

End	J\$Mn	US\$Mn
1982	315.96	177.41
1983	359.20	185.92
1984	697.73	176.95
1985	1,456.59	262.02
1986	3,085.77	563.30
1987	3,468.66	632.16
1988	4,290.29	781.62
1989	6,228.38	1,084.14
1990	7,321.29	1,019.11
1991	22,214.72	1,833.50
1992	76,974.28	3,352.54
1993	41,879.31	1,678.60
1994	58,018.06	1,753.55
1995	50,755.75	1,428.13

Source: JSE Annual Report, 1995

Table 4.6.8: Jamaica - Government Local Registered Stock Outstanding (1988-1996)

Year	Amount Outstanding (J\$M)
1988	6,691.6
1989	6,052.8
1990	5,829.1
1991	6,029.5
1992	11,962.9
1993	15,908.0
1994	28,090.1
1995	37,049.4
1996	54,0444.3

Source: Bank of Jamaica, *Statistical Digest*. 1997

Table 4.6.9: Jamaica -Cambio Operations (1991-1996)
(in US\$ million, unless otherwise stated)

	Spot Purchases		Spot Sales	Sales to BOJ		Sales to BOJ as % of Purchases	
	Cambios	Ath FXDlrs	Ath FXDlrs	Cambios	Ath FXDlrs	Cambios	ATH FXDlrs
Mar 1991	..	57.2	28.3	..	37.7	..	65.91
Jun	..	42.2	23.5	..	23.8	..	56.40
Sep	..	45.5	30.8	..	13.6	..	29.89
Dec	..	79.1	91.6	..	..	..	..
Mar 1992	..	93.3	74	..	..	..	..
Jun	..	104.5	107.1	..	..	..	..
Sep	..	96.4	84.1	..	..	..	..
Dec	..	90.9	94.8	..	..	..	..
Mar 1993	..	68.9	72.9	..	18.6	..	27.00
Jun	..	49.8	51.4	..	14.3	..	28.71
Sep	..	47.9	46.6	..	11.2	..	23.38
Dec	..	78.7	79.6	..	28.1	..	35.71
Mar 1994	..	99.3	96.3	..	41.5	..	41.79
Jun	5	110.7	111.3	4	38.7	80.00	34.96
Sep	35.1	106.7	110.4	26.2	57.8	74.64	54.17
Dec	59.7	128	126.2	25.8	42.2	43.22	32.97

Table 4.6.9: Jamaica -Cambio Operations (1991-1996) - Concluded
(in US\$ million, unless otherwise stated)

	Spot Purchases		Spot Sales	Sales to BOJ		Sales to BOJ as % of Purchases	
	Cambios	Ath FXDlrs	Ath FXDlrs	Cambios	Ath FXDlrs	Cambios	ATH FXDlrs
Mar 1995	71	124.1	125.4	18.7	39.9	26.34	32.15
Jun	20.1	91.5	90.1	3.8	8.4	18.91	9.18
Sep	17	90.1	92	3.6	9.2	21.18	10.21
Dec	34.3	108.9	110.1	6.2	62.2	18.08	57.12
Mar 1996	56.3	130.9	134.1	5.2	27.4	9.24	20.93
June	81	164.2	154.6	9.5	31.7	11.73	19.31

Notes: .. Not available

Ath. FXDlrs = Authorized foreign exchange dealers

From 07 Feb, 94, licensed cambios required to sell 20% of gross foreign currency purchases to BOJ

From 03 Oct 94, cambios required to sell 20% of gross purchases to BOJ, at least once per fortnight, maximum BOJ purchase 6.

From 01 Nov 94, maximum BOJ purchase 50%, 05 Dec 94, maximum purchase to 45% of cambio purchases

From 16 Jan 95, maximum purchase reduced to 40%; 03 Apr 95, to 30%.

From 08 Nov 95, cambios required to sell a minimum of 5% of gross purchases to BOJ at least once per week

04 June 1996, BOJ suspended required cambio sales, temporarily. 05 Jun 95 5% minimum reintroduced, 10% maximum

Source: Bank of Jamaica, *Statistical Digest*

**Table 4.6.10: Jamaica - Outstanding BOJ Certificates of Deposit
(1985-1995)**

	J\$million	Date of Issue	
December 1985	23.80	Dec	30
March 1986	23.40	Mar	27
June	131.50	Jun	19
Sep	265.00	Aug	18
Dec	516.60	Dec	16
March 1987	1,225.40	Mar	17
June	1,355.10	Jun	8
Sep	1,277.70	Sep	30
Dec	1,666.00	Dec	18
March 1988	1,683.80	Mar	10
June			
Sep	2,127.40	Sep	6
Dec	2,299.60	Dec	6
March 1989	2,792.30	Mar	7
June	3,235.40	Jun	14
Sep	2,663.70	Sep	18
Dec	2,426.00	Dec	11
March 1990	2,525.00	Mar	2
June	2,899.30	Jun	11
Sep	2,790.40	Sep	10
Dec	2,986.00	Nov	8
March 1991	2,711.30	Mar	11
June	2,470.50	Jun	10
Sep	3,255.60	Sep	20
Dec	3,618.00	Dec	20
March 1992	5,618.70	Mar	10
June	5,958.90	Jun	10
Sep	6,247.60	Aug	21
Dec	3,491.70	Dec	21
March 1993	3,864.90	Feb	23
June	3,320.70	May	25
Sep	3,057.40	Sep	27

Table 4.6.10: Jamaica - Outstanding BOJ Certificates of Deposit - Concluded (1985-1995)

	J\$million	Date of Issue	
Dec	3,128.30	Dec	13
March 1994	3,623.60	Mar	15
June	4,528.80	Jun	15
Sep	5,549.50	Aug	18
Dec	2,738.00	Dec	21
March 1995	2,857.00	Jan	10

Note: CDs Outstanding at Date of Auction Nearest to and Preceding End of Month.

Source: Bank of Jamaica, *Statistical Digest*.

Table 4.6.11: Jamaica - Balances Outstanding on Specified Financial Transactions (at June 30, 1996)
(in J\$'000)

	Commercial Banks	Other Financial Instits.	Building Societies
Acceptances	206.3	109	0
Guarantees	9661.8	2564.9	0
Commercial Paper	2445.2	1664.3	0
Other Guarantees	7216.6	900.6	0
Credit Card Receivable	458.6	0	158.7
Loan Participations	1034.6	235	125.5
Acquired by the Institution	801.4	235	125.5
Conveyed to Others	233.2	0	0
Syndicated Loans	755	188.1	85.7
Lead Institution	147.8	23	39
Participating Institution	607.1	165.1	26.7

Notes: Note that these are the first numbers that differentiate between all guarantees and guarantees given on commercial paper only, following implementation of new regulations, effective March 96.

Source: Bank of Jamaica.

Table 4.6.12: Jamaica - Conglomerates in Existence (Beginning 1996)

Holding Companies - Type		General Finance							Non-Financial		
Name	Caldon	Citicrps	Corp.	Hrzn	Jellp.	NCB	UGI	Weststr	Dyoll	Glen'a	Man. I
Subsidiary Types:											
Commercial Banks	1	1		1	1						
Merchant Banks	1	1	1	1	1	2	1	1		1	1
Investment Banks	1	1			1						
Building Society				1	1			1			
Insurance			1	2	2	1	2	1	2	1	
Finance Hse		1									
Other Finance				1		yes					yes
Foreign	1				2	1					
Non-Financial	2		several	several	several	several			2		yes

Table 4.6.12: Jamaica - Conglomerates in Existence (Beginning 1996) - Concluded

Holding Companies- Type	Commercial Banking			Merchant Bank		Insurance			Building Societies		
	Name	BNS	CIBC	Trflgr	Intercon	Knf. Ca	1st Life	Lf. of Jc	ICWI	Jca Ntl	Vic. Mu
Subsidiary Types:											
Commercial Banks			1				1	1			1
Merchant Banks	2	1		yes	yes	1	1	1			1
Investment banks					1	1	1	1			
Building Society	1	1					1			yes	yes
Insurance	1				1		1			1	
Finance Hse									yes		1
Other Finance	2		1							2	yes
Foreign								1			yes
Non-Financial				1	several	several					

Notes: In order, groups are: Caldon Finance Group Ltd. (Caldon); Citicorp, Corporate Group of Companies (Coop); Horizon Group Ltd. (Hrzn); Jellapore Investments Ltd. (Eagle Group), (Jellp); National Commercial Bank Group Ltd. (NCB); UGI Group Ltd. (UGL); Weststar Group Ltd. (Weststr); Dyoll Group (Dyoll); Glenrosa Ltd. (Glen'a); Manufacturer's Investment Ltd., (Intercon); Bank of Nova Scotia (Jca) Ltd.(BNS); CIBC (Jca) Ltd. (CIBC); Trafalgar Commercial Bank (Trflgr.); Intercontinental Merchant Bank (Intercon); Knutsford Capital Finance Bank (Knf.Ca); First Life Insurance Company, Life of Jamaica Ltd. (Lf.of Jc) Insurance Co. of the West Indies (ICWI) Group (ICWI); Jamaica National Building Society (Jca Ntl); Victoria Mutual Building Society (Vic Mu). Several indicates that the Group has several companies in the indicated category; "yes" indicates that Group has at least one company in the category but number is unclear

Source: Financial Sector Unit, Research Service Dept., BOJ, 1996.

Table 4.6.13: Jamaica - Reverse Repurchases (1994-1996)

	1994		1995		1996	
	Amt. Outst J\$ million	Int. Rate %	Amt. Outst. J\$ million	Int. Rate %	Amt Outst. J\$ million	Int. Rate %
January	..	..	6,394.07	27.01	5,073.26	43.50
February	..	..	8,041.87	23.5	5,960.56	43.50
March	..	..	3,494.72	23.5	8,328.08	43.50
April	539.74	48.94	5,068.17	24.5	7,123.97	43.50
May	2,415.61	43.38	4,435.41	24.5	9,961.81	43.50
June	1,359.93	44.40	4,341.63	24.5	10,113.35	42.00
July	2,687.49	41.19	7,073.46	25.5	13,133.03	40.00
August	1,845.91	38.30	6,508.33	29.5	14,591.43	38.50
September	1,455.97	37.12	6,826.49	31	16,230.82	33.00
October	3,842.32	34.16	4,761.37	37.5	16,602.30	33.00
November	4,287.45	32.49	2,453.94	41.5	17,348.05	31.00
December	3,554.41	38.75	2,101.76	41.5	16,661.04	27.00

Note: .. Not available

Source: Bank of Jamaica.

4.7: SURINAME:

INNOVATIONS AND THEIR ENVIRONMENT

During the period of crisis (1980 to 1988) the Surinamese economy was characterised by relatively low growth, balance of payment problems, a large monetary overhang, high inflation and excess liquidity. Most financial institutions adopted a “wait and see” approach. (The excess liquidity problem became so acute at one point that some banks had to place upper limits on deposits), resulting in large stocks of cash being held by firms and individuals. This in turn led to capital outflows, the acquisition or purchase of real assets as a hedge against inflation and a thriving black market in foreign currencies. As the economy recovered, banks began to offer a wide range of differentiated deposit products to attract funds with which to supply the renewed demand for credit. The policy changes designed to address some of the economic imbalances also generated a number of innovations, especially in the foreign exchange market as agents sought to deal with the different risk/return challenges created by this new dispensation.

4.7.1. The Economic and Policy Environment

Suriname, like many CARICOM countries, had to undergo structural adjustment to correct economic imbalances that developed over time. The uncertainties created by political instability between 1980 and 1988, the suspension of Dutch aid in 1982 because of the political problems and the steep decline in the price of bauxite and its derivative products (the chief exports of Suriname) contributed

to the poor growth performance of the Surinamese economy over the period 1985 to 1995, but particularly so until 1989, when a new civilian government began addressing some of these problems. The fall-off in economic growth in 1992 and 1993 was due in large part to decreased prices for aluminum in those years. These developments also contributed to the deterioration in the overall balance of payments position and decreased foreign exchange reserves (*see Table 4.7.1*).

The above-mentioned problems were compounded by the Government's use of Central Bank resources to finance the fiscal deficit which was accommodated by the Bank increasing narrow money and consequently inflationary pressures. The introduction of a more restrictive system of trade and foreign exchange which created large price distortions and the development of parallel markets for foreign exchange and commodities, also compounded the problem (*see Tables 4.7.1 and 4.7.2*).

In this environment domestic credit was channeled largely to the Government until 1989 when the new civilian Government set about reversing this trend. (*see Table 4.7.2*) Interest rates were static until 1993 when the changes to the exchange rate regime and the resultant inflation forced the nominal rate of interest up. However, these increases in interest rates were not sufficient to generate positive real rates of interest. The real rates to depositors were particularly dismal.

By 1989 the cumulative impact of these developments had led to high inflation, huge fiscal deficits, depleted foreign exchange reserves, an overvalued currency and a flourishing black market for foreign currency and goods. With the urging of the international community the new civilian Government finally undertook a formal adjustment program which started in late 1992. This programme was first formulated by Coopers and Lybrand 1990, revised by the Warwick Institute in 1992 and finally passed by the Parliament in November 1992. The programme which was financed by Dutch aid

had as its key elements, the reduction of the monetary overhang, fiscal restraint, liberalisation of the foreign exchange regime and the updating of commercial banking laws.

Monetary and Regulatory Policy

The Central Bank of Suriname regulates the banking sector via off-site monitoring, prior to 1992 and a combination of off-site and on-site examinations thereafter. In terms of monetary policy, the Central Bank made little use of reserve requirements prior to 1983. Thereafter, banks were prohibited from using demand deposits as loanable funds and only 75% and 90% of the monthly increase in savings and short-term time deposits respectively were allowed to be used for on-lending. In spite of this, monetary conditions were extremely liquid as the central bank continued to finance the fiscal deficit.

In 1986, the Central Bank began issuing certificates of deposit with maturities of 6 months, 1, 2 and 3 years with rates at 3%, 3.5%, 4% and 5% respectively, with the objective of mopping up liquidity. This was buttressed in 1990 by the issuing of government bonds, while some of the certificates of deposit which had not matured were converted into government bonds. Further efforts to mop up liquidity saw the introduction in 1995 of the Gold Certificate (*see Taxonomy for details*).

The Central Bank continued until 1992 to hold the exchange rate at Sf1.78 to US\$1 even though it was patently evident that the exchange rate was overvalued, the rate at that time on the parallel market being approximately Sf28.9 to US\$1. Further evidence that the parallel rate had escalated prior to the fundamental changes to the exchange rate regime beginning in 1993 can be gleaned from the fact that the inflation started to increase in 1990 and escalated further in 1992 (*see Table 4.7.1*). In an effort to deal with this problem, a system of multiple exchange rates was introduced in October 1992.

This was followed by the freeing up of the sale of foreign currencies to financial institutions but the demand side was still restricted. Eventually, the multiple exchange rate system was unified in July 1994 and the exchange rate was now taken as the weighted average of the selling rate determined by the trading activities of authorised dealers in foreign exchange. However, restrictions on the demand side still remained. These policy changes provided the impetus for the introduction of innovations such as foreign currency deposits and loans, foreign exchange insurance products and ‘cambios’.

The Development of the Financial Sector

The financial sector in Suriname is presently comprised of six commercial banks, six finance companies, 27 credit unions, 12 insurance companies, 29 pension funds, five provident funds, one development bank, a stock exchange and a central bank. The system is dominated by commercial banks which account for about 90% of the credit extended in Suriname. These banks have also set up finance companies that offer trust and hire purchase services. These companies depend on the banks for funds.

During the earlier period of crisis (before 1992), banks and other financial institutions had adopted a “wait and see” attitude. The high liquidity because of low loan demand in that period even led to banks’ placing upper limits on deposits. With the advent of the civilian government in 1988 and subsequent adjustments in policy, confidence returned and institutions began to restructure to take advantage of emerging opportunities. In 1991 two banks merged into ABN-AMRO, with offices incorporated in the Netherlands. This bank had branches in many other parts of Latin America and the Caribbean and with its 49% share in DSB (another large bank) controlled most of the banking business in Suriname. Together, ABN-AMRO and De Surinamsche Bank (DSB) set the pace in the banking sector in Suriname in the post-1988 period by introducing innovative

products such as differentiated deposits, ATMs and Debit Cards. This expanded range of services was reflected in the increased competition for funds with which to meet the increased demand for loans.

The insurance industry also underwent some changes. In 1991 three insurance companies merged into the ASSURIA N.V. company and in 1995 CLICO, a Caribbean multinational, established itself in Suriname by buying out the operations of ALICO which had operated in Suriname for 40 years. These changes set the stage for increased competition in the financial sector as the economy rebounded.

4.7.2. Taxonomy of Innovations

Automatic Teller Machines (ATMs)

Description of

Innovation: A transaction related process which is relatively new to the Suriname financial sector.

Type: t

Initiator: cp

Date: 1994

Motive: This process was initiated to reduce transaction time and to modernize banking in Suriname. The bank found that it was always crowded and retail banking procedures took up too much time.

Functioning: The ATM service as first introduced by the ABN-AMRO functions well. The ATMs provide the normal teller functions, including account balances and transfer of funds. The ABN-AMRO's ATMs are jointly used by De Surinamsche Bank. Another commercial bank is currently considering the use of the inter-bank

Origin: facility.
Mature Markets
Data: None available

Cambios

Description of Innovation: A foreign exchange bureau for the purchase and sale of foreign currencies.

Type: t

Initiator: ma, cp, f

Date: 1995

Motive: To foster a legally approved market environment for trading in foreign currency and to neutralize the operations of the parallel market for currencies.

Functioning: Cambios are granted permission to buy and sell foreign currencies and to determine the rates of such transactions. As in Guyana, this grew out of a system of widespread black-marketing of foreign currencies during a period of economic crisis and shortages. There are currently eleven cambios operating in the Surinamese economy (six are bank cambios). Cambios in Suriname do engage in lending foreign currencies. They primarily trade in the US dollar and the Dutch guilder.

Origin: Common in markets which are not exchange controlled

Data: None

Consolidation of Central Government Debt

Description of

Innovation: This constitutes advances given to government on an 'ad hoc' basis by the central bank during the period of monetary financing which were consolidated into a long term debt with specific terms of repayment.

Type: s

Initiator: ma

Date: 1995

Motive: To respond to demands of the structural adjustment programme.

Functioning: During the period of monetary financing the Central Bank advanced to Government sums to cover its budgetary deficit. These were never repaid by the Central Government. A law was passed allowing the Ministry of Finance and the Central Bank to engage in long term loan arrangements. Advances were consolidated as at January 1995 at a value of Sf.5.2 billion. The Government will make amortization payments of Sf30 million per month with interest at a level of 3% per annum, paid also on a monthly basis. Sums falling due are automatically transferred into a special account at the Central Bank and sterilized.

Origin: Unclear

Data: None available

Debit Cards

Description of

Innovation: Transaction related cards used at point-of-sale terminals.

Type: t

Initiator: cp

Date: 1996

Motive: Initiated to provide additional service and modernize banking in Suriname.

Functioning: The Gold Card facility initiated by the ABN-AMRO functions well. POS terminals are also used by De Surinaamsche Bank. These are installed at 15 locations in Suriname. The debit card allows some holders to go into debit positions on current accounts without formal overdraft facilities.

Origin: Common in mature markets

Data: None available

Differentiated Deposits

Description of

Innovation: Deposit accounts appropriate to a high inflation environment and differentiated so as to appeal to different segments of the market.

Type: s

Initiator: cp

Date: 1993-1995

Motive: To create deposit instrument appropriate to the economic conditions with the hope of attracting customers' accumulated savings in order to satisfy loan demand.

Functioning: The Flexible Deposit introduced in 1993 is a

five-year deposit with the interest rate adjustable every six months. The interest rate is $\frac{3}{4}$ of the prime lending rate and is paid monthly. In the same year, banks introduced a Super Savings Account which pays interest at a premium of 50% above the usual savings rate. A minimum deposit of Sf250,000 is required, with two withdrawals allowed per month (Sf50,000 each); withdrawals over this level attract a penalty of 0.5%. In 1995, other banks opened rival savings accounts aimed at attracting institutions like public utilities and hospitals which had accumulated local currency because they could not access foreign exchange. These accounts offered rates of 18% as compared with the usual 10% and have become an important liability of banks, funding a quarter of their loan portfolios. ABN-AMRO introduced two new accounts in 1995: short-term deposits (maturities of one to four weeks) with interest rates above the usual savings rate, which allow deposit holders to move funds without loss of interest. Capital market savings accounts were not offered to corporate clients. The latter computed and credited interest every two weeks and penalized withdrawal above 25% of the deposit.

Origin:

While differentiated accounts are usual, the features of these accounts seem geared to the peculiar circumstances of Suriname.

Data:

None available

Finatrust

Description of

Innovation:	This is a finance company that also attracts deposits from the public.
Type:	i
Initiator:	f
Date:	1988
Motive:	To attract small depositors
Functioning:	This entity Finatrust is a near-bank which offers regular saving deposits, five-year fixed deposits and discounted bills. This entity encourages low income earners to save in groups similar to saving associations. It also holds deposits for other financial institutions. On the assets side Finatrust provides credit to small business entities. The institution also does investment of funds left in trust by individuals.
Origin:	This institution is found in any developed market
Data:	None

Foreign Currency Deposits

Description of

Innovation:	This is a foreign currency deposit converted to the local currency for the purpose of interest calculations
Type:	s
Initiator:	cp
Date:	1993
Motive:	Initiated to attract foreign exchange for foreign currency lending.

Functioning: The Double Deposit (Double Dep) as initiated by De Surinaamsche Bank attracts foreign currency held by individuals. Sums are deposited for a pre-determined period usually between 2 months and 2 years. The bank buys the currency at the Central Bank foreign currency rate. The Suriname guilder counter-value is deposited and attracts the local interest rate which is higher than the US dollars rate. Interest is paid on a monthly basis. The capital is repaid in foreign currency upon maturity. The pre-determined exchange rate of repayment allows the depositor to gain a premium on the deposited foreign exchange. The gain to the customer is in local currency as well as foreign currency (*see example below*).

One year deposit of US\$10,000; today's rate US\$1 = Sf400.

Counter-value = Sf4,000,000; Pay back rate US\$1 = Sf399.

Local interest rate = 16 %; Annual interest = Sf640,000.

Monthly payments of interest = Sf53,333.

Repayment in US\$ = 4,000,000/399 (approx. US\$10,022)

Origin: Common in markets with no exchange controls.

Data: None available

Foreign Currency Insurance Policies

Description of

Innovation: Life insurance and general insurance policies denominated and paid in foreign currencies.

Type: s

Initiator: ins

Date: 1993

Motive. To respond to the economic climate of high inflation and a depreciating guilder.

Functioning: This insurance policy was initiated by the ASSURIA insurance company. Policies are usually denominated in Dutch guilders and US dollars. Inflation and exchange rate instability caused the price of houses to increase significantly. Foreign currency policies effectively indexed mortgage insurance against inflation and depreciation of the exchange rate. Premiums are also paid in foreign currency. The insurance company offering these policies reinsures with companies abroad, mainly the UK, the Netherlands, Canada and the USA, as well as reinvesting in its Curacao subsidiary. These arrangements were made possible through unification of the exchange rate and the relaxation of exchange controls.

Origin: Common in markets with no exchange controls

Data: None available

Foreign Currency Loans

Description of

Innovation: Loans provided in foreign currencies.

Type: s

Initiator:	cp
Date:	1994
Motive:	To exploit the relaxation of the foreign exchange regulations.
Functioning:	After the foreign exchange authority permitted the establishment of foreign currency accounts and the exchange rate was unified banks in Suriname attracted sizeable sums of foreign exchange. Lending in foreign currencies became relatively easy and the ABN-AMRO did this on a wide scale. However, later restrictions imposed by the Central Bank on foreign currency loans caused the ABN- AMRO to call in many of its Forex loans. Loans can only be granted now to exporters who are not obligated to sell foreign exchange to the Central Bank Otherwise permission must be obtained from the Central Bank and foreign exchange committee. The cash flow of the borrower must be in foreign currency. These loans are in great demand but cannot be easily issued. Other banks established this loan product around the same time as the ABN-AMRO.

Gold Certificate

Description of Innovation:	A five year instrument developed by the Central Bank - the Powisi Gold Certificate.
Type:	s
Initiator:	ma
Date:	1994
Motive:	To absorb liquidity and set a floor for interest rates.

Functioning: The Central bank in March of 1995 introduced a gold certificate, a financial instrument denominated in grams of gold and indexed to the international price of that commodity. The gold certificate also carries a 5% interest rate. The yield received in Surinamese guilders then varies with the international price of gold as well as the exchange rate. The Central Bank received an initial enthusiastic response to its gold certificate but demand declined in the latter part of 1995 after the continued appreciation of the Suriname guilder.

Housing Site Development

Description of

Innovation: Insurance company financing development of housing site

Type: s (investment product)

Initiator: cp

Date: 1993

Motive: To provide avenues for investment of funds.

Functioning: The Assuria Insurance Company acts as a developer in the housing market. It buys land and provides infrastructure like roads, water and electricity then sells house lots individually. The company is now contemplating developing the houses and selling as a final product.

Origin: Normal in developed markets.

Data: None available

Promissory Note

Description of

Innovation:	Discount note issued by financial subsidiary of a commercial bank
Type:	s
Initiator:	cp
Date:	1990
Motive:	Initiated to attract funds
Functioning:	The promissory notes of five, three and two years were issued by De Surinaamsche Bank on behalf of Finapar (financial subsidiary) to attract funds. These carried discount rates of 11%, 9% and 8% respectively. Funds were used to finance the operations of Finapar which provides hire purchase facilities.
Origin:	Commonly found in developed markets.
Data:	None available

Regional Insurance

Description of

Innovation:	The establishment of CLICO (SURINAME) LTD.
Type:	i
Initiator:	cp
Date:	1995
Motive:	CLICO entered the local market with the intention of expanding its lines of business and to gain a leading position in the insurance market.
Functioning:	This entity bought over the assets of ALICO which operated in the Surinamese economy for over 40 years. The Colonial Life Insurance company CLICO (Suriname) is a branch of a privately

owned foreign entity with its Head Office in Guyana. CLICO Guyana Ltd. in turn is a subsidiary of CL Financial Ltd. of Trinidad and Tobago. It is the only financial entity in Suriname which has such Caribbean connections. CLICO's intention is to expand into all areas of insurance in Suriname but it was easier to enter the market as an established life insurance company. It has investments in fixed deposits and government bonds and extends mortgage loans. It caters to the needs of the middle and higher income groups. CLICO has also taken over the assets of the British American Insurance Co. (BAICO) Suriname office on September 4, 1996.

- Origin:** Cross-border and establishment of banking operates is common in any developed market.
- Data:** None available

Second-Tier Development Finance

Description of

Innovation: A Fund provided through Dutch Aid and administered by the National Development Bank in collaboration with commercial banks.

- Type:** s
- Initiator:** cp, cg, fg
- Date:** 1996
- Motive:** To administer a business development fund to the private and public sectors in Suriname.
- Functioning:** The Dutch government has provided a sum of Df100m to develop the industrial and business sector in Suriname. Df25m has been disbursed. The National Development Bank is the coordinator and manager of the Fund. The difference between

this fund and those of other international donor assistance programmes is that the fund seeks to bring together the commercial banks and fund administration in a type of syndication of loans. The commercial banks present a case for clients and finance the project to a tune of 10%. The business sector provides 20% and the Fund 70%. In this way the risk is partly borne by the commercial bank on behalf of the client it represents. A committee comprising representatives of the Suriname Bankers Association, the Dutch Embassy, the Association of Businesses and three government ministries approves the projects for funding. Lending products will be the traditional long term loans and working capital finances.

Origin: Development banks.
Data: None available

Stock Exchange

Description of

Innovation: A stock exchange which encourages trading in stocks of local entities.

Type: Institutional

Initiator: i

Date: 1994

Motive: The Suriname Stock Exchange was initiated to further develop the capital market, and to achieve greater public participation in the business sector.

Functioning: The Suriname Stock Exchange is one of the latest institutional developments in the Surinamese financial sector. It was established in January of

1994 at the initiative of the Assuria Insurance Company. Prior to a formal stock exchange and a trading floor, limited trading of stocks was done through two of the larger Surinamese banks - De Surinaamsche Bank and the Hakrinbank. These institutions played mainly brokerage roles for their clients. The Stock Exchange initially operated through a working committee. The institution is now a legal entity and is run by a management committee. There are currently seven brokers through whom trading is done. Dividends are, however, low and unattractive when compared with other investments.

Origin:

Over the counter markets found in developing markets.

Table 4.7.1: Suriname - Selected Macroeconomic Indicators (1985-1995)
 (% unless otherwise stated)

Year	Growth Rate of Real GDP	Price of Aluminum (US cents/Pound)	Inflation	Growth Rate of Total International Reserves	BOP/GDP
1985	2.0	47.21	10.8	-6.02	-0.87
1986	0.8	52.15	18.7	-10.68	-3.95
1987	-6.2	70.99	53.4	-27.75	-0.85
1988	8.2	115.51	7.3	-16.56	-0.40
1989	3.8	88.48	0.8	-26.19	-0.01
1990	0.03	74.37	21.7	126.88	0.59
1991	3.5	59.15	26.0	-14.79	-2.10
1992	5.8	56.98	43.7	1472.73	-0.42
1993	-4.5	51.71	143.5	2.3	0.19
1995	-1.2	66.93	368.5	124.29	..
1995	-3.84	81.88	235.6	234.81	..

Notes: .. None available

Source: Central Bank of Suriname.

Table 4.7.2: Suriname - Selected Financial Indicators (1985-1995)
(%)

Year	MI/GDP	Domestic Credit to Government	Net Domestic Credit to GDP	Loan Rate	Deposit Rate
1985	50.42	62.5	105.36	..	..
1986	68.16	68.9	129.58	..	..
1987	79.12	73.1	145.29		
1988	83.81	73.4	151.87	..	..
1989	79.80	71.8	151.92	..	..
1990	72.95	65.7	138.28	..	..
1991	77.63	65.3	141.46	7.5	4.5
1992	63.12	60.0	120.73	7.5	4.5
1993	50.94	63.1	71.60	12.0	5.5
1994	..	37.0	..	22.0	12.5
1995	..	-39.4	..	42.5	27.5

Notes: .. Not available

Source: Central Bank of Suriname.

4.8: TRINIDAD AND TOBAGO: INNOVATIONS AND THEIR ENVIRONMENT

The interaction of environmental, institutional and competitive factors appears to have been the major stimulus to financial innovations in Trinidad and Tobago over the past decade. Conditions in the macroeconomy, the official policy stance, as well as specific fiscal or monetary policy actions, have either directly stimulated, or provided the enabling framework for, several innovations. Official innovation, in the form of institution-building, created institutions which themselves tended to be innovators because the unfamiliarity of their product and their fledgling customer base made innovation a condition of survival and profitability. Some private financial institutions have also been leaders in innovation, while competitive pressures drew others behind them. Several institutions cited competition as a major motivation and described training and staffing as important contributors because of the skills required to design or adapt designs from other markets, in order to produce innovative products. This is supported by the apparent leadership offered by foreign-owned financial institutions. In some instances, the absence of a deep, broad market may have led the institutions to play more of a matching function for market securities than is usual in developed financial markets, inserting the financial institution between two transactors. Rather than disintermediation, therefore, instruments such as commercial paper become a modified form of intermediation. Since such instruments were also largely a reaction to costly reserve requirements, the innovations helped banks or non-bank financial institutions (NBFIs) to reduce their cost of funds while providing controlled-cost services to clients.

4.8.1. Environment and Monetary Policy

National income in Trinidad and Tobago fell sharply at the beginning of the 1980s as petroleum production fell in 1983 and oil prices almost halved in 1986. Reflecting the economy's heavy dependence on oil, reserves declined, employment fell sharply, the fiscal balance became negative and government's petroleum revenue fell from over half of revenue and expenditure to about one third. In order to constrain demand, the central bank rediscount rate was raised in 1983, tight exchange controls were imposed and the Trinidad and Tobago dollar was first devalued in 1985. In 1986 selective credit controls were tightened and the secondary reserve requirement more than doubled. There was a further devaluation in August 1988 and a loan was obtained in 1988 under the IMF Compensatory Financing Facility. In 1989 a Stand-by arrangement was reached with the Fund and, later, a Structural Adjustment Loan was obtained from the World Bank. Conditionalities under the latter loans required liberalization of the trade, exchange and financial sectors. The financial and business sectors were thus exposed, sequentially, to tight demand, foreign exchange shortages, devaluation and exchange uncertainty and liberalization which, while it has permitted them greater flexibility, also continues to require that they operate with market-determined, and hence uncertain, prices (*see Table 4.8.1 and Central Bank of Trinidad of Tobago, 1994*).

Institutional Developments and Competition

Non-bank financial institutions which had become active suppliers of credit in the oil boom years were casualties of the decline. Legislation to regulate them did not become effective until 1981 when they were given a grace period to meet the new requirements. In 1983, however, when the companies began to experience problems, there were bank runs, several depositors were

severely affected and the Central Bank set up, in association with the commercial banks, a liquidity support facility for companies with cash flow problems. As a result, financial legislation was amended in 1986 to increase the Central Bank's ability to deal with problem institutions and to create the Deposit Insurance Corporation (*see Brown, 1989*).

The Government also created two secondary mortgage institutions in the early 1980s: in 1981, before the period on which we are focusing, the Trinidad and Tobago Unit Trust Corporation (UTC), and in 1985, the Home Mortgage Bank (HMB). These have increased competitive behaviour in the market and, since they both served new functions and needed to establish themselves, have been innovators. The reversal of indigenization' policy in the mid-1980s which allowed the entry of foreign-owned banks, and the greater uncertainty accompanying macro instability, as well as the closing or restructuring of several government-created institutions, all appear to have contributed to a significantly more-competitive stance in the industrial climate.

In 1987 the commercial bank ownership structure was as follows (**Brown, 1989**):

Bank	% Public Ownership
The Royal Bank of Trinidad and Tobago Ltd.	100
Republic Bank of Trinidad and Tobago Ltd.	59
Bank of Nova Scotia of Trinidad & Tobago Ltd.	51
Workers' Bank of Trinidad & Tobago Ltd.	100
National Commercial Bank of Trinidad & Tobago Ltd.	49

Bank	% Public Ownership
Bank of Commerce of Trinidad & Tobago Ltd.	52
United Bank of Trinidad & Tobago Ltd.	30

Following the policy shift away from localization and the restructuring of three indigenous banks into a single bank, by the end of 1996, the structure had evolved as follows:

Bank	% Public Ownership
The Royal Bank of Trinidad and Tobago Ltd.	100
Republic Bank of Trinidad and Tobago Ltd.	100
Bank of Nova Scotia of Trinidad & Tobago Ltd.	52.4
Bank of Commerce Trinidad & Tobago Ltd.	81.5
First Citizens Bank of Trinidad & Tobago Ltd.	100
Citibank (Trinidad & Tobago) Ltd.	0

By end-1996 there were also six trust and mortgage finance companies but since these were all subsidiaries of the commercial banks (Royal Bank had incorporated both a merchant/finance company and a trust company, while Citibank had no trust or mortgage arm) their competitive behaviour can be identified with those of the banks. In addition to the HMB and the UTC, there were ten non-bank financial institutions (*see Central Bank of Trinidad and Tobago, 1984-1996*). Further, the demise of troubled institutions and the creation of several private companies during the 1990s, had established the following non-bank financial institutions by 1996 (years in which the more recent institutions commenced operations are indicated in brackets after their names):

*General Finance Corporation Ltd.,
Caribbean Finance Co. Ltd.,
Amalgamated Finance Co. Ltd.,
Total Finance,
Citicorp Merchant Bank (1988),
Fidelity and Leasing Finance Co. (1989),
CLICO Investment Bank (1986/87),
First Citizens Merchants Bank (1994),
Fleming Ansa Merchant Bank Ltd.,
CL Financial Holdings (1993),
Development Finance Ltd. (1994).*

These represent both the entry of insurance companies into company financing (CLICO Investment Bank and Fidelity and Leasing Finance Company) and the participation of foreign companies or partners (Citicorp Merchant Bank and Fleming Ansa Merchant Bank Limited). At least two of these companies can be classified as market leaders: Citicorp and the Clico or CL companies (CL Financial Holdings is the holding company for the Clico companies).

The effect of the competition among these institutions can be seen in creation of retirement savings plans and mutual funds (*see Section 4.8.2*). Introduced by an insurance company in 1986, the former idea was adapted by the UTC in the form of “Individual Retirement Unit Accounts” (IRUAs) in 1992, Republic Bank following with the “Tax Incentive Savings Programme” (TISP) in 1992 and Royal Bank with the “Future Cash Plan” in 1993. It can also be seen in the creation of mutual funds, with the introduction of the foreign fund, Chaconia, in 1992 followed by Republic Bank’s “Growth Equity Fund” in 1993.

However, the enabling effect of policy on these innovations should also be taken into account. For example, the retirement savings accounts exploited provisions of the income tax laws which allowed one sixth of assessable income to be tax-free if contributed to a retirement annuity. Similarly, the mutual funds with foreign portfolios only became feasible with the removal of exchange control restrictions on capital transactions in 1993. More generally, several features of the macro-environment and policy stimulated innovatory behaviour.

The Macroeconomic Environment and Policy

Following the decline in foreign reserves and the decline in oil earnings, a foreign exchange budgeting system was introduced in 1983 and in 1985 the currency was devalued (from TT\$2.40/US\$1.00 to TT\$3.60/US\$1.00). A dual exchange rate system instituted until 1987. Tight foreign exchange controls were maintained, with a new foreign exchange allocation system and a further devaluation in 1988, until 1989 when the Stand-by Arrangement with the IMF required progressive relaxation of exchange controls (*see Hilaire, 1995, and Central Bank of Trinidad and Tobago, 1994*). During this period of exchange

control, new instruments were introduced to provide more reliable access to foreign exchange when required. “Exchange-linked Government Securities”(ELGSs) and “principal exchange-rate-linked securities” (PERLs) are examples of these. However, little information is available about these instruments precisely because they were a specific response to the then-problem and have ceased to exist.

In 1993, a floating exchange rate system was introduced in Trinidad and Tobago and again the banks appear to have responded to the increased need to hedge with instruments such as swaps. Further, the exchange rate float appears to have been managed by cooperation between the Central Banks and the commercial banks to maintain the rate in the region of TT\$6.00 per US dollar. It could be argued that this was a sensible solution to the shallow TT market, reducing the instability and risks that the economy would otherwise have suffered. The removal of exchange controls enabled the introduction of mutual funds invested in foreign assets, such as the Chaconia and Global Equity Fund (*see Section 4.8.2*).

The loans from the IMF and World Bank also entailed another major environmental change in the form of removal, starting in 1988 and, to a greater extent, in 1991, of imports from the negative list. Together with the reduction of tariffs to the Caricom Common External Tariffs (CET) levels, this effectively ended the policy of import substitution. The change in production conditions with new financing demands stimulated institutions with investible resources to alter their structure in order to take advantage of the resulting income-earning opportunities. Thus CL Financial Holdings was formed in 1993. Further, as a result of the need to maintain government expenditure in the face of financing constraints imposed by the conditional arrangements, and to

improve the efficiency of expenditure, the banks began to take a larger role in financing government projects (*see Government Project Financing in Section 4.8.2*).

The major instrument of monetary policy for the Central Bank of Trinidad and Tobago has been the reserve requirement, with increases imposed whenever tighter demand policy was required. The high reserve requirements imposed on commercial banks after 1983 have been one of the major stimuli to innovation (*see Table 4.8.2*). The reserve requirements acted to greatly increase the cost of deposits to banks; interest expense rose from an average of 36.22% of total operating income in 1981-85 to 42.2% in the next five years and 42.6% in 1991-1995 (*see Table 4.8.3*).¹ The increased reserve requirements may also have put downward pressure on commercial bank deposit rates, at a time when the Treasury Bill Rate (TBR) was rising (in 1985 to 1989). The cash requirement imposed on NBFIs from 1983 seems to have had a similar effect on those institutions. In addition, between 1983 and 1992, the central bank's discount rate was increased three times, rising from 7.5% to 13% (*see Table 4.8.4*), but banks were discouraged from borrowing at the higher rates. In 1992, following a reserve decline and with a higher fiscal deficit, the Central Bank suspended lending to commercial banks and imposed the maximum penalties on deficits on the banks' reserve accounts. The profits of commercial banks, finance companies and merchant banks declined in the mid-1980s, recovering somewhat in the early 1990s (*see Table 4.8.3*). Both economic conditions and the tight

¹ Reserve requirements act to deprive banks of income on a portion of their liabilities, thus reducing operating income; banks would tend to react by lowering their deposit rates and raising their loan rates. The statistic, interest expense to operating income, would capture this overall effect. A more direct measure of the cost of reserve requirements to banks would be the ratio of interest expense to total deposit liabilities. However, this is not available.

monetary measures would have contributed to this - non-performing loans rose in the late 1980s (note that fluctuations in the ratio of non-performing loans to assets could also reflect the effects of institutional closure). The rising loan rate (the prime rate in **Table 4.8.4** reflects this to a limited extent) stimulated the use of bankers' acceptances and commercial paper as an alternative to loans, since they enabled the banks to on-lend funds on behalf of investors (who would, presumably, have otherwise been depositors) without having to hold non-earning cash reserves on such funds. **Table 4.8.5** provides some indication of the size of this market between 1994 and 1996. The reversal of growth in the second quarter of 1995 reflects the guidelines for BA use (they were restricted to use for, mainly, trade transactions). Similarly, **Table 4.8.3** indicates a declining proportion of loans and deposits in commercial banks' asset/liability portfolios. A similar trend for non-banks may be less indicative of the effects of innovation since fee-earning activity is the usual activity of NBFIs towards which one would expect maturing institutions to move. The structure of consumer credit may also be changing, as credit card lending rises as a portion of total consumer credit (*see* **Table 4.8.6**).

4.8.2. Taxonomy of Innovations²

ABMs/LINX

Description of

Innovation: Automated teller machines together with the LINX system allow customers to have access to account information and cash from other banks' machines in and outside of Trinidad and Tobago. A fee of \$3.50 is charged for each transaction at another bank's machine.

Type: t

Initiator: The now-defunct Worker's Bank introduced ATMs; all banks now have them.

Date: 1985; 1995

Motive: Permits banks to economize on transactions costs of retail banking.

² We wish to thank Kelvin Sergeant of the Central Bank of Trinidad and Tobago, and Alvin Hilaire, formerly with the Central Bank, for information and discussions on the subject of innovation and policy in Trinidad and Tobago. We would also like to thank the financial institution managers who took the time to explain and discuss the innovations they had made or observed: Clarry Benn, Executive Manager, Investments, Financial & Trust Accounting, Trinidad and Tobago Unit Trust Corporation; Steve Bideshi, Managing Director, Citibank (Trinidad & Tobago) Ltd.; Margaret Chow of Colonial Life Insurance Co. Ltd.; Lawrence Duprey, Chairman, CL Financial Holdings; John Jardim, former Managing Director, Republic Bank Ltd.; Peter Johnson, Manager, Corporate Finance, The Home Mortgage Bank; James McKenzie, Manager, Economic Research, The Royal Bank of Trinidad and Tobago Ltd.; Renrick Nickie, Executive Manager, Marketing & Operations, Trinidad and Tobago Unit Trust Corporation; Lindsay Lloyd Samaroo, former Executive Director, Republic Bank Ltd., Roopnarine Oumade Singh, Manager, Foreign Exchange & Dealing, Republic Bank Ltd. None of these individuals is responsible for how we have interpreted the information they provided or for any of the errors we have perpetrated in using it.

- Functioning:** Since it is common for consumers to visit banks for regular transactions, there is an easily accessed market for the sale of insurance products. In addition, certain bank products, such as mortgages, require insurance and this can be supplied by the allied company at the same location. By saving the customer search and transactions costs, in-bank insurance products may help 'tie' the bank customer. While the 1993 Financial Institutions Act prohibits intermediaries from coercing customers into buying related products, this is difficult to enforce.
- Origin:** Europe where banks are allowed to distribute insurance products
- Data:** None Available

Banker's Acceptance

Description of Innovation:

A time draft written on and accepted by a bank. It is the primary liability of the bank and a secondary liability of the drawer.

Type:

s

Initiator:

fg

Date:

1986/87

Motive:

To allow a financing institution (the secondary market investor) to earn a better rate of return while possibly, retaining the low-risk character of bank-guaranteed investment. To do this in Trinidad and Tobago required that the reserve requirements imposed on banks be circum-vented.

Functioning:

Served as an alternative to bank loans for drawers and as an alternative to deposits to secondary

market investors. It would appear that they are almost always discounted by banks in Trinidad and Tobago, rather than held in portfolio. And they may even be the bank be a means of providing cheaper credit to a good client. These were eventually used by all the banks in an effort to avoid the high costs of reserve requirements. In 1995 the Central Bank of Trinidad and Tobago introduced new regulations which required that BAs be used only for trade transactions and have tenors below 12 months.

Origin: The traditional bankers' acceptance

Data: *See Table 4.8.5.*

Cats, Czars

Description of Innovation:

Zero coupon bonds stripped from a coupon-paying bond, consisting of the face value and coupon payments traded as separate instruments. CZARS (Certificates of zero-rated accrued securities) were created in 1994 by stripping 20-year Government bonds. CATS (Citizens Accumulation Treasury Securities) were a duplication.

Type: s

Initiator: ibp

Date initiated: 1989

Motive: These instruments were created in response to investor needs - the long-term government paper available did not meet the range of investor needs. Providing for them was therefore profit-generating.

Functioning:	A 'Treasury Security' was introduced in 1989. This process has been duplicated by the same investment bank itself with several government issues since the initial stripping. A government-owned commercial bank entered this market in 1995. The bank buys a portion of a long-term government bond issue and strips the coupons to issue government-backed paper with tenors in line with varied market demand. For example, in 1995 15.33% of a TT\$150 million 10-year issue was stripped in this fashion. The bonds are off-balance sheet items. Approval of the Supervisor of Insurance is obtained in order to permit the strips to be eligible insurance company investment instruments.
Origin:	U.S. market - strips
Data:	No data is available.

Commercial Paper

Description of Innovation:

Short-term security issued by a non-financial institution. The form and function of this security appears similar to that traded in the US market but seems to be issued by a range of companies which do not necessarily have the credit rating and financial standing commonly demanded of issuers in the USA. Perhaps as a result, most appear to be guaranteed by banks. The most common maturities are 180 to 270 days, rather longer than those common in the USA. Financing is used for funding short-term receivables, working capital, inventory and trade.

Type:	s
Initiator:	cp
Date initiated:	1994 (became significant)
Motive:	The motive is similar to that in large financial markets - use of CP allows the issuer to reduce borrowing costs. In Trinidad and Tobago, high reserve requirements have increased the cost of bank borrowing and provided stronger incentives for the use of direct funding.
Functioning:	They may have been initiated in Trinidad and Tobago by investors seeking more lucrative investment areas by direct approaches to strong companies. For example, one financial institution selected five companies with strong performance and lent them money through their issue of commercial paper. The investing company saved some two percentage points on the interest rate through avoiding bank guarantees etc. and the borrowing company gained by paying a lower interest rate. The borrowing companies then themselves approached banks to arrange similar transactions, leading presumably to the arrangement, whereby the CPs tend to be guaranteed/arranged by the merchant banking arms of commercial banks. While maturities are less than one-year, they can be rolled over. The rate on CP is usually a fixed discount on the prime rate.
Origin:	The US market
Data:	Discounted paper, including CP, value outstanding (\$ M):
	1990:178
	1994:325.3
	May 1995:543

Deposit Insurance Corporation

Description of

Innovation: Establishment of a public institution to insure bank deposits.

Type: i

Initiator: ma

Date: 1986

Motive: The Corporation appears to have been formed as a result of the difficulties being experienced by several banks and non-bank financial institutions - immediately after its formation, in December 1986, four NBFIs were closed.

Functioning: Depositors in licensed financial institutions are insured up to a maximum of \$50,000. All deposits except foreign currency deposits, inter bank deposits, deposits from affiliated agencies and letters of credit are insured. Deposits by the same depositor in branches of the same bank and different deposit accounts in the same institution are not considered separately for insurance cover, that is, these deposits will be aggregated and insured up to the maximum \$50,000. However, deposits at different institutions, separately constituted subsidiaries and associated companies are recognised as district entities for deposits insurance coverage. Membership of the deposit insurance fund is compulsory for all financial institutions regulated by the Central Bank. The scheme is funded by an annual premium of 0.2% of the average of total eligible deposit liabilities from all institutions supervised by the Central Bank. An initial contribution of 0.4% of the average of

total deposit liabilities at the start-up of the scheme was also paid by all institutions in 1986. The Deposit Insurance Corporation could also levy special premiums if the need arose. The Corporation has acted as liquidator in the closure of several financial institutions acting in tandem with the Central Bank (*see Central Bank of Trinidad and Tobago, 1994*).

- Origin:** Federal Deposit Insurance Corporation of the USA.
- Data:** *See Table 4.8.7*

Educational Marketing

Description of

- Innovation:** Explicit organisation of educational pro-grammes, with a long-term marketing goal, arranged by financial institutions.
- Type:** m
- Initiator:** fg
- Date:** 1984
- Motive:** It was found that the ability to attract clients was hampered by low literacy on investment and financial matters.
- Functioning:** A series of country-wide seminars are con-ducted. In the seminars, which last from one hour to one hour and thirty minutes, at most one third of the time is devoted to the direct concerns of the UTC. An overview of the financial system and financial counselling is provided. In order to diminish the marketing aspect of the seminars, the presenters are not paid commissions. They have also been found useful in learning market requirements, resulting in new services or products.

Origin: Not known, possibly local.
Data: Not applicable.

Exchange Rate Float Management

Description of

Innovation: Arrangement among commercial banks to stabilize the floating exchange rate.

Type: i

Initiator: ma

Date: 1993

Motive: In the absence of a deep market, floating exchange rate could result in high volatility. Banks have, therefore, agreed to ration the supply among themselves, avoiding unstable exchange rate movements.

Functioning: Banks pool their foreign exchange purchases above the agreed limit of US\$500,000. Initially, the CBTT put funds into the market but no longer does so. The process has been helped by the energy-based industries - banks know the companies which are foreign exchange earners and are able to appeal to them in case of need. The CBTT apparently exerts sufficient moral suasion to sustain the system. The commercial banks manage their pool of funds so as to maintain the exchange rate around the agreed exchange rate. The US dollar equivalent of \$100-120 million is sold in a month. If long in the US dollar, banks determine the rate by looking at the market the previous day and their own position to determine the strategy for the following day. If a bank needs to sell foreign exchange, it posts a rate lower than the rest of the

market, if it wants to buy it posts a rate higher than the rest of the market. Competitors' rates are obtained from speaking to customers.

Origin: Arrangement appears unique to Trinidad and Tobago.

Data: None available.

Forward Agreements

Description of

Innovation: Forward purchase of foreign exchange deposits in US branch of domestic bank by domestic branch.

Type: s

Initiator: ib-p

Date: 1988

Motive: To earn fees on contracts which permitted clients to have foreign funds available to make a payment during the period when exchange controls prohibited them from holding hold foreign assets.

Functioning: Bank makes a US dollar denominated loan to the client in TT dollars. The bank hedges by buying forward a US deposit of a foreign-exchange-earning entity, generally of the same duration. The original client is able to buy the foreign exchange from the bank when required but carries the exchange rate risk in that its loan is US dollar denominated but repaid in domestic currency.

Origin: Forward contracts are a traditional means of hedging against interest rate and exchange rate movements.

Data: None available

Government Project Financing

Description of

Innovation: Financing from private institutions is arranged through, and works monitored by, banks for the projects of government and official bodies.

Type: i,s

Initiator: cp

Date: 1988

Motive: The 1988 IMF programme raised the issue of how the private sector could finance government projects while avoiding the lack of controls commonly encountered in government capital works.

Functioning: Bank hires consultants to evaluate the proposed project; consultants point out initial conceptual flaws; an interim participation certificate is issued to the financing institutions for each disbursement of funds to the contractor, the contractor issuing a certificate to certify that the expenditure has been carried out. Every six months, the participation certificates are called in and the financiers are issued with interim bonds which show the principal and capitalized interest on the certificates. At the end of the project the interim bonds are rolled into a long-term bond. Principal and interest are paid half yearly. The interest rate is fixed at prime with a discount. **Sergeant (1995)** distinguishes three variants: (a) the “design/finance/construct” model which predominated in 1989-1995; (b) the “build/own/

operate/transfer” (BOOT) and (c) the “build/own/lease/transfer” (BOLT). BOOT and BOLT facilities, which were started in 1994, advance funding to developers who are responsible for the project and transfers ownership and control to the Government following completion.

Origin: These arrangements originate from similar project financing facilities in developed markets.

Data: *See Table 4.8.8*

Guaranteed Pricing Mechanism

Description of

Innovation: An arrangement which guarantees the price of the unit trust unit - if unit is held for a minimum of 3 years, the unit holder is guaranteed the price s/he paid as the minimum redemption price.

Type: m

Initiator: fg

Date: 1985

Motive: In 1985 the stock market was falling and, as the value of their units fell, the holders were redeeming units.

Functioning: This mechanism insures the unitholder against stock market declines and hence greatly reduces the risk of equity investment. The insurance is funded through a reserve fund to which an allocation is made at the time of a distribution. The reserve was fully funded by 1996.

Origin: Mechanism originated with the financial institution in response to the need to build the confidence of clients who were inexperienced in financial markets and frightened by the falling market and the collapse of several financial

companies. A similar mechanism was introduced in the UK in 1989/90.

Data: Not applicable

Home Mortgage Bank

Description of

Innovation: A secondary mortgage institution designed to be similar to the Federal Home Loan organizations in the USA.

Type: i

Initiator: ma

Date: Legislation enacted 1985

Motive: The shortage of mortgage funds during the Trinidad oil boom prompted the authorities to find a way of moving funds into the mortgage market.

Functioning: The HMB purchases mortgages with the proceeds of tax-free bonds, in the main. The bonds are mainly taken up by corporations and have been approved by the Supervisor of Insurance as suitable for insurance company investment. They are stock exchange-listed. Bond rates were originally tied to prime but are now tied to the mortgage rate of the large mortgage lenders. Maturities range from five to 25 years. By issuing, on an experimental basis, one pass-through mortgage-backed security, the HMB, like its sister institutions in the USA, is itself becoming a source of innovation.

Origin: Federal Home Loan Mortgage Corporation (Freddie Mac) and Federal National Mortgage Association (Fannie Mae), USA

Data: *See Table 4.8.9*

Investment Certificates

Description of

Innovation: Promissory note issued by a bank and secured by a pool of government securities. The government securities are usually placed in a trust which issues the securities. It is sold mainly to institutions, corporations and some high net-worth individuals. Whether or not they are negotiable appears to depend on the bank issuing them and whether or not they find it worthwhile to undertake the administrative requirements of transferability.

Type: s

Initiator: cp

Date initiated: 1991

Motive: To allow the bank to raise funds that do not incur reserve requirements since the certificates are classified as borrowings rather than deposits.

Functioning: Introduced as “Secured Investment Note Certificate” (SINC) secured by a pool of government bonds. The SINC were not transferable because the introducing bank did not wish to keep a register of transfers. Other banks issued variations on the certificate: “Negotiable investment certificates” targeted institutions with \$500,000 or more to invest and can be traded; non-negotiable “Secured investment certificates” were issued by a merchant bank and aimed at investors with at least \$100,000. The underlying securities had various maturities and interest rates and the certificates themselves were issued with maturities that ranged from call to one year. Since the rates reflect market liquidity these securities

- allow the investor to have access to market rates that would not be available on deposits.
- Origin:** They appear similar in concept to short-term investment pools, since maturities are less than a year, but cannot be classified as money market mutual funds (MMFs) which are usually operated by non-banks and regulated by the SEC. Furthermore, in the USA MMFs invest in a variety of money market instruments, except for tax-exempt funds which invest in government issues whose interest is exempt from income tax.
- Data:** One bank had guaranteed investment certificates outstanding of \$77 million and \$44.8 million in 1991 and 1992, respectively.

Money Market Mutual Funds

- Description of Innovation:** Mutual fund that invests exclusively in money market instruments.
- Type:** s
- Initiator:** fg
- Date:** 1989
- Motive:** To correct perceived disquiet of institution's customers (holders of the first unit scheme based on equities) when it referred them to commercial banks for short-term investments.
- Functioning:** The Fund is able to offer a better rate of interest than banks because it must operate with the small profit margin prescribed by the Act establishing the UTC.
- Origin:** Money market funds are internationally common but initiated as an instrument in the USA.

Data: See Table 4.8.10 (Second Unit Scheme) and Table 4.8.11

Mortgage-backed Securities

Description of

Innovation: Pass-through asset-backed security issued by the HMB, pooling mortgages in a separate trust which issued securities.

Type: s

Initiator: The Home Mortgage Bank

Date: 1991

Motive: HMB expects such securities to become the major source of their funding and used the issue to test the market.

Functioning: Issue was for \$10 million based on mortgages for which there was ultimate recourse to banks and which were guaranteed by HMB - a virtually risk-free security. In 1993 Republic Bank also issued a pass through mortgage-backed security which was sold privately.

Origin: Closely modelled on but custom-made locally, Freddie Mac offerings in the US mortgage market

Data: None available.

Mortgage Indemnity Scheme

Description of

Innovation: Insurance for mortgages originated for HMB via approved lenders, provides insurance against credit risk for a fee of 1.5%

Type: i

Initiator: The Home Mortgage Bank

Date:	1996
Motive:	In order for pass-through securities to be marketable, some provision must be made to deal with the risk of default by homeowners. By purchasing loans with recourse, the HMB was able to put the bank's creditworthiness behind the securities. If insurance is provided for mortgages, the scope for mortgage-based instruments will be widened.
Functioning:	Large reserves will be required to back this insurance. Profits from mortgage discounting would be used for this purpose. HMB's audit of its mortgage portfolio will provide monitoring.
Origin:	Canadian secondary mortgage institution provides insurance for the loans it finances.
Data:	None available.

Mutual Funds, Foreign-Invested

Description of Innovation:	Mutual funds based on investment in foreign equity and bonds. Managed by foreign asset managers on behalf of local institutions who market locally. Funds intend, or have started, to market themselves in the remainder of the Caribbean.
Type:	s
Initiator:	fg
Date:	1993
Motive:	To provide additional source of fee income.
Functioning:	The Chaconia Income and Growth Fund (CIGF) is an open-end fund registered with the U.S. SEC. The fund's investment strategy is aimed at both income growth and capital appreciation

with a minimum of 25% of assets to be held in each of debt and equity. Investments are in US government securities, investment grade corporate bonds and foreign government bonds, Canadian, Trinidad & Tobago and US equity, UTC schemes and money market instruments. It should provide a means for domestic investors to diversify their portfolio. In 1995 a private commercial bank started their “Global Equity Fund” which is tax-exempt because the trustee of the Fund is resident in the Cayman islands. These funds have only become practical in Trinidad and Tobago since the 1993 revision of the Exchange Control Act. However, their organizers have or intend to market them in other Caribbean territories.

Origin:	Mutual funds have become an increasingly popular investment vehicle in developed financial markets.
Data:	None available

Open Market Operations

Description of Innovation:	Purchase and sale of government securities by the central bank in order to increase and reduce liquidity.
Type:	i
Initiator:	ma
Date:	1995
Motive:	Monetary policy was traditionally conducted through reserve requirements, discount rates, selective credit controls, interest rate and exchange controls and moral suasion. Liberalisation has removed some of these instruments. Further, OMO will reduce reliance

on reserve requirements which, by taxing the banking systems, can be a source of un-warranted distortion. It is also hoped that a wider menu of government paper will assist in developing the money market.

- Functioning:** OMO will be conducted through treasury bills with maturity of up to one year and treasury notes with maturities of between one and five years. The latter were introduced in 1995. Operations are conducted through major participants in the treasury bill market. A range of indicators is used to assess the nature of activity required: inflation, money supply, fiscal situation, exchange rates, interest rates, domestic credit and liquidity, market sentiment (*see Hilaire, 1995*).
- Origin:** In addition to the standard models of OMO, the experience of Jamaica has helped to inform the framework adopted.
- Data:** Treasury notes which were introduced in 1995 have grown steadily in the recent past. In September 1996 the amount outstanding was \$90 million, by September 1997 the amount outstanding was \$555 million.

Regional Banking

Description of Innovation:

Trinidad-based banks are successfully penetrating markets in other Caribbean countries in competition with domestic and foreign banks.

Type:

m

Initiator:

cp

Date:

1994, 1995

Motive:

To increase revenue by developing as wide a

market as possible. In some cases, also the investing companies see regional expansion as part of a risk management strategy, since it allows them to diversify their uses of funds.

Functioning:

Regional expansion has taken two forms. First, the Trinidad and Tobago-headquartered bank purchases part or all of the equity of banks in, principally, the Eastern Caribbean states. Second, the bank offers investment banking or similar services to government or business in other territories. In the first, companies such as Clico, Republic Bank and Royal Bank have purchased or established banks abroad. The following is an example of the latter: Citibank has arranged two loans for the Barbados government - one a US\$20 million domestic bond issue guaranteed by government for the government-supported sugar industry and the second a US\$40 million government bond largely marketed in Trinidad. In the latter case, Citibank was underwriter and paying agent, while CIBC Trust was the trustee. Issuing bonds in the regional market, rather than eurodollar bonds, enables the issuer to economize on legal fees since the prospectus and a trustee agreements are simpler. Similarly, Trinidad government-issued bonds are sold regionally and other Caribbean government issues may be made regionally. Following Citibank's lead, other Trinidad-based banks have attempted to expand in the Barbados market without success to date, largely, it appears, because they received no official support.

- Origin:** Regional international transactions have been late in coming to the Caribbean, probably because of the exchange controls which have recently been relaxed in Jamaica and Trinidad and Tobago.
- Data:** None available.

Repurchase Agreements

Description of

Innovation: Purchase by an investing institution of long-term government bonds with an agreement that the issuing agent would repurchase the paper on demand before maturity.

Type: s

Initiator: fg

Date: 1991

Motive: Institution had a large body of funds invested in short-term instruments whose return was low. However, they wished a liquid portfolio. There was also a large amount of government paper on the market with attractive returns but tenors of 20-25 years.

Functioning: To enabled an institution to effectively convert a long-term instrument into a short-term to meet their needs. The repurchase agreement has never been activated and it may not be appropriate to classify this arrangement as a repo: neither the price or time of repurchase was fixed in the agreement. The agreement appears to have characteristics more akin to a put option: there was a right, but not an obligation, to sell which could be exercised by the investing institution -

- presumably the price would have been face value - a puttable bond.
- Origin:** Repos have principally been used for monetary policy purposes.
- Data:** None available.

Retirement Savings Plans

Description of

Innovation: Savings products which require a commitment to regular payments into a trust fund which pays an annuity when the depositor reaches retirement age.

Type: s

Initiator: ins

Date initiated: 1986

Motive: These products were aimed at attracting deposits (or a substitute for) or investment funds by providing a vehicle through which the individual depositor or investor could take advantage of the tax relief measures in Trinidad and Tobago's income tax laws. Specifically, one sixth of assessable income is tax-free if contributed to a retirement annuity. Banks offer them in part to maintain their market share in the face of competition from other financial institutions.

Functioning: The 'Flexible Premium Annuity' (FPA) introduced by CLICO insurance took advantage of the tax rules by allowing clients to vary their premium so as to ensure that the entire contribution (premium) was tax-free. At retirement (for which the individual is eligible between 50 and 70 years of age), 25% of principal and interest can be withdrawn as a

tax-free lump sum, the remainder being placed in an annuity. It was originally a no-load scheme but was revised in 1991 to be a back-end load if surrendered within eight years. In 1994, the 'Executive Flexible Annuity' (EFA) was introduced to allow the investor to place the 25% lump-sum of the FPA in an annuity whose income is tax-free and to which further contributions can be made. Interest is paid monthly on an EFA if it totals over \$100,000 and, a further incentive, that interest income, since the EFA is an insurance product, is not subject to the 15% withholding tax imposed on bank interest income. Republic Bank's 'Tax Incentive Savings Plan' (TISP) is also classifiable in this group of products. The tax-free contributions are placed in a trustee account which matures (provides an annuity) when the client has reached retirement age. There is a minimum contribution rate of \$2,400 (in 1996) per annum and the effective rate of interest paid has been 10%. These plans are not described or treated as deposits but are regarded as deposit substitutes. Similar products have been introduced by other banks (*see Sergeant, 1995, p.16*). Computer processing is credited with making these products possible because the accounting requirement costs of frequent changes in contributions become very small.

Data:

The only data available relate to the UTC's Investment Retirement Unit Account:
(TT\$ million): **1992:** 4.2; **1993:** 12.9; **1994:** 12.7;
1995: 24.7

Swaps

Description of

Innovation: An exchange of payment flows, in this case through a bank, for the purpose of hedging interest rate and currency risks.

Type: s

Initiator: ib-p

Date: 1993

Motive: Swaps assist the institutions to hedge their risks and enables the arranging bank to make a profit.

Function: A number of these have been carried out in Trinidad for state enterprises. In 1993 the Urea Company swapped fixed LIBOR rate for floating rate debt; the Telephone Company swapped its US floating rate debt for LIBOR-fixed payments. Local currency interest rate swaps between financial institutions have also taken place.

Origin: US/UK

Data: None available

Synthetic Security

Description of

Innovation: Retention by a bank of a portion of a bond issue for its own portfolio, placing the securities in a trust which issued shorter term securities to meet the demands of investors with shorter term horizons. The original security was a 10 year bond and the synthesized securities had tenors of 1 to 2 years.

Type: s

Initiator: ib -p

Date: 1995

Motive:	Expand the underwriting function of the bank by expanding the demand market by the issue of shorter-term securities in response to market demand.
Functioning:	Also permits spreading of the risk of the securities.
Origin:	US market
Data:	None available

Exchange-Linked Government Securities (ELGS)

Description of

Innovation:	Local security indexed to an US dollar asset placed in a trust. The income was paid in US dollars since exchange control allowed the receipt of foreign currency income although foreign assets could not be held.
Type:	s
Initiator:	ib -p
Date:	1989
Motive:	To create a security before the removal of exchange control restrictions aimed at compensating for the effects of exchange controls.
Functioning:	This was in effect a synthetic security - since it allowed investors to hold an instrument that was not otherwise available.
Origin:	US market
Data:	None available.

Take-or-Pay Contract

Description of

Innovation: A contractual agreement by which a marketing partner agrees to purchase the output produced or pay the equivalent cost.

Type: s

Initiator: ins

Date: 1987

Motive: To provided an arrangement whereby a foreign bank willing to fund a large risky project at a time when Trinidad and Tobago's country risk discouraged export banks.

Functioning: A take or pay contract with marketing company provided guarantee for a financing bank. Equity in venture was from Germany (as was the financing bank), Canada and Trinidad and Tobago. The same formula has been repeated for three further similar operations.

Origin: Similar contractual agreements are used as collateral by electric companies to finance generating plants.

Data: None available.

Venture Capital

Description of

Innovation: An official programme to encourage the provision of equity capital to small and medium enterprise through tax incentives to the investor.

Type: i

Initiator: g

Date: 1996

Motive: To offer small and medium businesses an

- alternative to traditional debt financing.
- Functioning:** The Venture Capital Act (1996) established the Venture Capital Incentive Programme (VCIP) through which individual or institutional equity investors are eligible for two tax incentives: i) a tax credit of the highest marginal rate of tax (currently 35%) and/or; ii) the carrying forward of any unused portions of their tax credit if the investor's tax liability is less than the credit received under the VCIP. Recipient companies must qualify under the VCIP for venture capital funding - Qualifying investment companies (QICs). The investor provides equity funds, for a minimum of five and a maximum of 10 years, as well as managerial and business expertise through a limited liability Venture Capital Company (VCC) which serves as the channel through which the investor may seek funds (presumably from third parties). Quasi-equity instruments such as convertible securities are not eligible for the tax incentives. The Office of the Administrator of the VCIP essentially acts to monitor the arrangements for government ensuring, for example that the incentive regulations are observed. (*See Drakes and Maynard (1996)*).
- Origin:** Both the UK and USA have official venture capital organisations.
- Data:** None available.

Table 4.8.1: Trinidad & Tobago - Selected Economic Indicators (1980-1995)

	1980	1981	1982	1983	1984	1985	1986	1987
Total GDP at mrkt prices nominal, \$m	14966.1	16,438.0	19,175.5	18,719.4	18,614.8	17,800.7	17,259.7	17,271.9
Rate of growth of real GDP (%)	10.4	4.6	4	-9.2	-6.2	-4.1	-3.3	4.6
Inflation (%)	17.5	14.3	11.6	15.2	13.3	7.6	7.7	10.8
Unemployment (%)	10	10	10	11	14	16	22.9	22.2
GDP petroleum sectors (\$m) nom.	6,412.3	6,087.1	5,411.1	4,541.3	5,065.8	4,814.7	3,920.8	4,353.4
Petroleum contrib. to GDP (%)	42.85	37.03	28.22	24.26	27.21	27.05	22.72	25.21
Price of crude oil (US\$ per barrel) ¹	28.67	32.5	33.47	30.43	29.38	27.96	14.87	19.14
Price of crude oil (US\$ per barrel) ²	28.67	32.5	33.47	29.31	28.47	28	15	17.25
BOP Current Account (\$m)	944.8	751.3	(2,119.9)	(2,327.0)	(1,336.9)	(263.0)	(2,275.0)	(890.5)
BOP Capital Account (\$m)	1,498.9	1,350.5	(527.1)	(2,161.6)	(1,749.0)	(261.0)	(2,387.5)	(915.0)

Table 4.8.1: Trinidad & Tobago - Selected Economic Indicators (1980-1995) - Continued

	1988	1989	1990	1991	1992	1993	1994	1995
Total GDP at mrkt prices, nominal, \$m	17,284.6	18,372.9	21,539.3	22,558.6	23,118.1	24,883.0	28,571.0	30,726.0
Rate of growth of real GDP (%)	-3.9	-0.08	1.5	2.9	-1.1	-2.6	5.1	2.6
Inflation (%)	7.8	11.4	11.1	3.8	6.6	10.7	8.8	5.3
Unemployment (%)	22	22	20	18.5	19.6	19.3	18.4	17.2
GDP, petroleum sector(\$m), nom.	4,173.9	4,999.4	6,368.8	5,903.2	5,464.1	5,815.4	7,548.2	..
Petroleum contrib. to GDP (%)	24.15	27.21	29.57	26.17	23.64	23.27	32.27	..
Price of crude oil (US\$ per barrel) ¹	15.95	19.58	24.12	21.62	20.57	18.47	17.19	18.44
Price of crude oil (US\$ per barrel) ²	..	..	..	..	..	..	..	..
BOP Current Account (\$m)	(117.8)	(66.8)	(430.0)	(20.8)	56.6	(84.5)	239.4	193.0
BOP Capital Account (\$m)	(167.5)	(136.0)	(190.0)	(341.1)	(111.5)	151.3	186.5	40.6

Table 4.8.1: Trinidad & Tobago - Selected Economic Indicators (1980-1987) - Continued

	1980	1981	1982	1983	1984	1985	1986	1987
Net Foreign Exchange								
Reserves (\$m)	..	3,203.0	2,983.4	2,082.7	1,187.5	1,461.2	329.07	9.1
Change in net FX								
Reserves (\$m)	..	..	(219.6)	(900.7)	(895.2)	273.7	(1,132.2)	(249.9)
CENTRAL GOV'T OPERATIONS								
Fiscal Balance (\$m)	820.0	236.8	(2,652.8)	(2,344.1)	(1,756.2)	(1,361.8)	(1,379.7)	(1,248.0)
Fiscal Balance as prop. of GDP (%)	5.48	1.44	-13.83	-12.52	-9.43	-7.65	-7.99	-7.23
Total Govt. revenue (\$m)	7,590.8	8,629.0	8,432.2	8,042.2	7,579.3	6,632.6	5,644.7	5,530.7
Total Govt. expenditure (\$m)	6,345.9	7,596.1	11,156.5	10,635.2	9,304.0	8,053.3	7,094.0	6,503.2
Petroleum revenue	4,136.5	4,253.0	3,274.2	2,461.4	2,759.7	2,457.1	1,690.6	1,958.0
Petrim rev. as prop. of total rev. (%)	54.49	49.29	38.83	30.61	36.41	37.05	29.95	35.40
Prop. of G financed by petroleum rev. (%)	65.18	55.99	29.35	23.14	29.66	30.51	23.83	30.11

Table 4.8.1: Trinidad & Tobago - Selected Economic Indicators (1980-1995) - Continued

	1988	1989	1990	1991	1992	1993	1994	1995
Net Foreign Exchange								
Reserves (\$m)	(6.2)	102.2	187.5	3.4	36.7	207.4	514.5	467.9
Change in net FX								
Reserves (\$m)	(85.3)	108.4	85.3	(184.1)	33.3	170.7	307.1	(46.6)
CENTRAL GOV'T OPERATIONS.								
Fiscal Balance (\$m)	(1,113.4)	(763.8)	(274.2)	(504.0)	(644.0)	(235.0)	(6.3)	125.7
Fiscal Balance as prop. of GDP (%)	-6.44	-4.16	-1.27	-2.23	-2.79	-0.94	-0.03	0.41
Total Govt. revenue (\$m)	5,371.3	4,950.5	5,727.7	6,719.1	6,216.2	6,853.0	7,500.6	8,409.3
Total Govt. expenditure (\$m)	6,458.6	5,593.7	5,906.8	6,996.3	7,009.4	6,578.4	7,314.8	8,332.9

Table 4.8.1: Trinidad & Tobago - Selected Economic Indicators (1980-1995) - Concluded

	1988	1989	1990	1991	1992	1993	1994	1995
Petroleum revenue	1,538.3	..	2,316.9	2,717.0	1,817.3	..	1,996.0	2,531.3
Petrim rev. as prop. of total rev. (%)	28.64	..	40.45	40.44	29.23	..	26.61	30.10
Prop. of G financed by petroleum rev. (%)	23.82	..	39.22	38.83	25.93	..	27.29	30.38

Notes: .. not available; CBTT = Central Bank of Trinidad & Tobago.

Sources: GDP, petroleum sector: 1980-82: CBTT - Handbook of Key Economic Statistics (series are at factor cost so crudely adjusted by ratio of total GDP at market prices to factor cost); 1983-95

GDP at market prices: 1980-82: CBTT, Handbook and 1983-95

Government Expenditure: CBTT, *Quarterly Statistical Digest*.

Price of crude oil/1: 1980-1982: CBTT - Handbook; 1983-95: Central Statistical Office (CSO), *Statistical Digest*.

Price of crude oil/2: CBTT - Handbook, series to show continuation of 1980-82 series, since there is a break at 1982 but these years not available in CSO statistics.

Real GDP growth, Inflation, Unemployment, BOP balances, Fiscal Balance: CSO - *Statistical Digest*.

Government petroleum revenue, 1980-87: CBT - Handbook of Key Economic Statistics.

Net foreign exchange reserves: CSO, *Statistical Digest*.

**Table 4.8.2: Trinidad and Tobago - Reserve Requirements
(Selected Years)**

Effective Date	Statutory Cash RR ¹	Secondary RR held in TBs	Total RR
(as percentage of deposit liabilities)			
1980, February	9 + 15 mrgnl	5	14 + 15 mrgnl
1984, November	17	5	22
1986, 02 July	15	5	20
1987, 16 December	9	11	20
1989, January	no Δ	9	18
03 May	no Δ	7	16
26 July	12	5	17
1991, 02 January	no Δ	-	12
22 August	16	-	16
1994, 13 April	18	-	18
25 May ²	no Δ	2 (equivalent)	20
06 July	20	no Δ	22
1995 ³	no Δ	no Δ	22
1995	additional	no Δ 22 \$100 M in same ratio as cash RR	
1996, October 16	23	5	25

Notes: ¹ Non-bank financial institutions were subject to a cash RR of 5% of total deposit liabilities from March 1983 to September 1996. In October 1996 their cash RR was raised to 8%.

² Commercial banks were asked to hold the equivalent of 2% of deposit liabilities in treasury bills (TBs) for six months.

³ The request was renewed.
mrgnl = marginal. Refers to additional reserve requirements imposed on increases in deposit liabilities since specified dates.
no Δ = no change in the previous requirement; = zero requirement

Source: Central Bank of Trinidad and Tobago.

Table 4.8.3: Trinidad and Tobago - Performance Indicators for Financial Institutions (1981-1995)
(%)

Year	1981	1982	1983	1984	1985	1986	1987	1988
COMMERCIAL BANKS								
Loans/Total Assets	67.0	63.8	63.9	66.5	67.8	65.5	65.7	64.5
Int. Expense/Income	35.5	35.8	33.5	37.9	40.4	38.8	41.6	44.3
Profit before Tax/ Total Assets	3.0	2.9	2.9	2.6	1.8	0.7	0.5	0.5
Other Assets/ Total Assets	..	..	..	..	..	10.9	10.5	11.1
Non-Performing Loans/Total Loans	..	..	..	..	..	11.7	16.5	19.3
FINANCE COMPANIES & MERCHANT BANKS								
Loans/Total Assets	90.2	75.9	74.8	85.5	76.9	58.0	54.1	51.6
Int. Expense/Total Income	51.4	52.8	56.8	65.9	72.2	49.9	55.2	56.2
Profit before Tax/ Total Assets	4.1	3.6	2.8	0.6	0.5	1.7	2.1	2.5
Other Assets/Total Assets	..	..	..	..	..	9.3	13.0	15.8
Non-Performing Loans/ Total Loans	..	..	..	..	..	20.7	17.2	20.7
Investments/ Total Loans	..	..	..	..	..	1.5	3.9	4.5

Table 4.8.3: Trinidad and Tobago -Performance Indicators for Financial Institutions (1981-1995) - Continued (%)

Year	1989	1990	1991	1992	1993	1994	1995
COMMERCIAL BANKS							
Loans/Total Assets	62.1	59.1	57.7	57.7	52.4	43.0	38.1
Int. Expense/ Income	43.6	42.7	40.9	44.2	41.5	42.8	43.6
Profit before Tax/ Total Assets	0.8	0.7	1.2	1.5	1.9	1.5	1.5
Other Assets/Total Assets	12.2	15.5	18.3	19.4	21.8	25.0	23.4
Non-Performing Loans/Total Loans	24.6	14.7	14.5	14.2	13.2	10.0	9.7
FINANCE COMPANIES & MERCHANT BANKS							
Loans/Total Assets	47.8	46.5	47.4	55.9	54.3	37.1	35.4
Int. Expense/Total Income	52.8	56.3	54.1	64.9	76.8	62.8	64.3
Profit before Tax/ Total Assets	3.5	2.9	3.6	3.1	2.0	3.4	2.9
Other Assets/Total Assets	19.6	18.5	12.9	4.5	11.2	19.56	26.2
Non Performing Loans/ Total Loans	12.6	9.8	5.4	7.4	10.6	7.8	10.2
Investments/ Total Loans	5.1	6.4	17.9	14.4	11.9	18.5	25.1

Table 4.8.3: Trinidad and Tobago - Performance Indicators for Financial Institutions (1981-1995) - Continued (%)

Year	1981	1982	1983	1984	1985	1986	1987	1988
TRUST AND MORTGAGE FINANCE COMPANIES								
Loans/Total Assets	86.5	76.4	77.2	82.0	80.9	85.1	83.8	78.8
Int. Expense/Total Income	67.0	67.1	66.9	67.4	68.1	66.7	63.9	67.9
Profit before Tax/Total Assets	3.0	2.9	3.2	3.0	2.9	2.4	2.1	0.8
Other Assets/Total Assets	-	-	-	-	-	4.6	4.3	6.5
Non-Performing Loans/Total Loans	..	..	..	..	..	42.5	37.1	44.1
Investments/Total Assets	..	..	..	..	..	0.8	2.0	3.0

Table 4.8.3: Trinidad and Tobago - Performance Indicators for Financial Institutions (1989-1995) - Concluded

	1989	1990	1991	1992	1993	1994	1995
TRUST AND MORTGAGE FINANCE COMPANIES							
Loans/Total Assets	79.0	73.9	68.1	62.3	55.0	53.3	49.3
Int. Expense/Total Income	66.8	65.0	63.2	69.5	72.6	69.8	64.3
Profit before Tax/ Total Assets	1.4	1.6	2.5	2.1	2.2	2.6	3.3
Other Assets/Total Assets	5.6	6.1	5.1	6.4	3.3	4.1	3.4
Non-Performing Loans/Total Loans	36.1	33.6	9.9	8.3	8.8	7.0	6.5
Investments/ Total Assets	5.0	11.0	19.4	22.6	29.3	32.5	37.5

Source: Central Bank of Trinidad and Tobago.

Table 4.8.4: Trinidad & Tobago - Interest Rates, Inflation, Exchange Rate (1980-1996)

	1980	1981	1982	1983	1984	1985	1986	1987	1988
CBTT Rediscount Rate (%)	6.00	6.00	6.00	7.50	7.50	7.50	7.50	7.50	9.50
Treasury Bill Rate (%)	3.07	3.05	3.05	3.16	3.67	3.06	4.42	4.63	5.07
Commercial bank prime (%)	10.00	11.38	11.50	11.50	12.69	12.69	12.00	11.50	12.50
Commercial bank WADR (%)	..	..	..	..	6.76	6.42	6.08	6.03	5.83
Commercial bank 3-mth DR (%)	7.38	8.00	7.88	7.50	7.94	7.57	6.72	6.09	7.25
NBFI WALR (%)	..	..	..	..	13.91	13.62	13.67	12.70	12.43
NBFI WADR (%)	..	..	..	..	10.80	9.81	9.44	8.72	9.17
Inflation rate (%)	17.50	14.30	11.60	15.20	13.30	7.60	7.70	10.80	7.80
Exchange rate (TT\$ per US\$)	2.40	2.40	2.40	2.40	2.40	3.60	3.60	3.60	4.25
	1989	1990	1991	1992	1993	1994	1995	1996	
CBTT Rediscount Rate (%)	9.50	9.50	11.50	13.00	13.00	13.00	13.00	13.00	
Treasury Bill Rate (%)	7.19	7.51	7.55	9.26	9.46	10.22	8.53	10.45	
Commercial bank prime (%)	13.50	12.88	12.88	15.50	15.50	15.88	15.00	15.50	
Commercial bank WADR (%)	5.90	5.53	5.50	6.34	6.53	6.50	5.84	6.39	
Commercial bank 3-mth DR (%)	6.34	5.94	5.70	7.79	7.74	7.19	6.31	6.44	

Table 4.8.4: Trinidad & Tobago - Interest Rates, Inflation, Exchange Rate (1989-1996) - Concluded

	1989	1990	1991	1992	1993	1994	1995	1996
NBFI WALR (%)	12.60	12.42	12.02	12.20	12.51	12.90	12.44	12.56
NBFI WADR (%)	9.02	8.69	8.74	10.34	11.11	10.67	9.92	9.64
Inflation rate (%)	11.40	11.10	3.80	6.60	10.70	8.80	5.30	3.30
Exchange rate (TT\$ per US\$)	4.25	4.25	4.25	4.25	5.81	5.93	5.99	6.23

Notes: Commercial bank prime rate is average end-of-quarter median of basic prime rate range.
Commercial bank 3 mnth DR is 3 month time deposit rate, average of end-of-quarter median rate ranges.
Treasury bill rates are weighted average of monthly discount rates for issues during period from 1987.
1980-1986 are average of monthly tender rates.
WADR = weighted average deposit rate, method of calculation changed after 1986.
WALR = weighted average loan rate, method of calculation changed after 1986.
NBFI = non-bank financial institutions - includes finance houses, merchant banks, trust & mortgage finance cos. Data reflects reporting institutions only. Closing of 4 finance houses in 1986 significantly affected weighted rates.
Weighted average rates for 1984-1986 are averages of quarterly rates.
Bank rate is rate at end of year.
.. not available.

Source: Central Bank of Trinidad and Tobago, *Quarterly Statistical Digest*, various issues.

Table 4.8.5. Trinidad and Tobago - Bankers' Acceptance (BAs) (1992-1996)

End of Year	Quarter	Total BAs (\$m)	BANKS' SHARES in BA Market (%)							Banks' Business Credit (\$m)	BAs as Pro-portion Bus. Crd. (%)
			1	2	3	4	5	6	7		
1992		773.5	3.81	43.80	13.69	2.86	0.00	30.67	5.17	3,799.4	21.16
1993		885.2	8.61	56.26	0.00	8.52	7.03	19.58	0.00	3,692.1	23.17
1994	Q1	790.0	7.89	51.43	11.57	4.61	0.00	24.50		3,498.5	22.56
	Q2	886.9	4.70	54.61	11.53	4.26	1.85	23.06		3,407.2	24.44
	Q3	1,211.7	9.33	47.30	10.63	0.97	13.84	17.93		3,352.7	36.14
	Q4	1,414.7	16.49	36.32	14.67	0.57	15.59	16.36		3,285.9	43.05
1995	Q1	1,061.9	..	..	..	..	..	..	..	3,721.6	28.53
	Q2	920.6	..	..	..	..	..	..	..	3,945.9	23.33
	Q3	795.1	..	..	..	..	..	..	..	3,818.8	20.82
	Q4	705.9	..	..	..	..	..	..	..	3,731.6	18.92
1996	Q1	726.1	..	..	..	..	..	..	..	3,681.3	19.72

Note: Guidelines for the use of BAs were imposed in April, 1995.

.. Not available

Source: Central Bank of Trinidad and Tobago: *Quarterly Statistical Digest* & unpublished data.

Table 4.8.6: Trinidad and Tobago - Credit Cards (1995-1996)

End of Year	Quarter	Credit Card Credit (\$m)	Total Consumer Credit (\$m)	Card Credit as proportion of Total Consumer Credit (%)
1995	Q1	135.1	3,024.8	4.47
	Q2	158	3,000.2	5.27
	Q3	176	3,000.3	5.87
	Q4	194.8	3,026.9	6.44
1996	Q1	197.5	3,020.2	6.54
	Q2	216.3	2,977.3	7.27
	Q3	239.1	3,005.1	7.96
	Q4	265.0	3,133.5	8.46

Source: Central Bank of Trinidad and Tobago: *Quarterly Statistical Digest* and unpublished data.

**Table 4.8.7: Trinidad & Tobago -
Deposit Insurance Scheme Operation (1987-1995)**

Insurance Operators					
	Income	Expenses	Net	Net Administrative (Loss)/Income	Insurance Fund
1987 ¹	94.6	179.3	(84.7)	(0.14)	(84.4) ²
1988	19.4	8.8	(13.6)	(0.76)	(72.0)
1989	19.5	6.4	20.0	(0.23)	(52.3)
1990	19.2	0.0	18.2	7.01	(26.1) ³
1991	20.4	4.0	16.4	(0.25)	(9.9)
1992	21.8	0.1	29.6 ⁴	4.07	23.7
1993	21.3	5.4	15.9	10.1	48.7
1994	35.4	0.1	35.6	11.6	96.9
1995	23.2	0.0	23.2	14.4	134.5

Notes: ¹ for the period September 10, 1986 to December 31, 1987.

² Total deficiency (of insurance and administrative) was \$M 84.9, with paid up capital of \$M0.5 the total deficiency was \$M 84.4

³ Net income from administrative operatives of \$M7 helped to reduce overall deficiency of fund. These resources occurred from liquidation fees and interest earned on investments.

⁴ Amount of \$M7.9 recovered.

Source: Deposit Insurance Corporation Annual Report, Various issues.

Table 4.8.8: Trinidad & Tobago - Local Project Financing Operations (1988-1995)

Start Year	Amount (\$M)	Financing Facility	Executing Agency
1988	301.8	Bond	Merchant Bank
1989	116.3	Bond	Insurance Company
1991a	179.5	Bond	Merchant Bank
1991b	339.8	Design/Finance Construct/ Equip	Insurance Company
1995a	63.6	Bond	Merchant Bank
1995b	44.4	Build/Own/ Lease/Transfer	Property Development Company
1995c	261.7	Build/Own/ Lease	Merchant Bank

Source: Ministry of Finance

**Table 4.8.9: Trinidad & Tobago - Home Mortgage Bank Operational Indicators
(1987-1996)
(\$M)**

Year	Total Assets	Mortgage/ Loans	Bond Issued	Income	Earnings per \$100 Share (\$)
1987	131.7	64.7	120.0	6.7	4.56
1988	162.0	110.9	146.3	14.5	18.67
1989	210.5	165.2	184.6	18.5	15.27
1990	282.9	186.4	253.2	23.6	16.02
1991	301.0	211.0	268.9	28.3	21.50
1992	325.1	240.0	289.9	31.0	26.50
1994	347.3	244.9	308.3	35.9	32.21
1994	397.5	288.4	355.1	37.7	31.28
1995	655.6	477.4	607.5	43.5	34.26
1996	777.3	527.0	715.4	73.4	59.78

Source: Home Mortgage Bank Annual Report, Various Issues.

Table 4.8.10: Trinidad and Tobago - Unit Trust Corporation - Selected Indicators (1982-1995)

Year	1982	1983	1984	1985	1986	1987	1988
First Unit							
Scheme Sales \$M	36.1	3.0	1.4	4.0	12.4	22.7	30.2
Second Unit							
Scheme Sales \$M	..	..	..	..	..	..	..
Total Sales \$M	36.1	3.0	1.4	4.0	12.4	22.7	30.2
First Unit							
Fund Size \$M	42	25	20	20	29	50	68
Second Unit							
Fund Size \$M	..	..	..	..	..	..	..
Fund Size \$M	..	..	..	..	..	..	..
Total Fund \$M	42	25	20	20	29	50	68
Number of							
Accounts	8,000	7,607	7,339	7,381	9,209	16,146	18,770
First Unit							
Scheme Prices \$	10.1	8.75	7.45	6.30	5.90	6.35	5.85
Stock Market							
Index	..	..	59.6	49.1	38.3	39.9	32.4

Note: .. None available

Sources: Unit Trust Corporation
Central Bank of Trinidad and Tobago

Table 4.8.10: Trinidad and Tobago - Unit Trust Corporation - Selected Indicators (1982-1995) (Concluded)

Year	1989	1990	1991	1992	1993	1994	1995
First Unit							
Scheme Sales \$M	12.9	36.5	30.9	24.5	62.8	81.5	203.8
Second Unit							
Scheme Sales \$M	48.4	303.1	415.8	185.2	333.7	385.6	811.2
Total Sales \$M	61.3	339.6	446.7	209.7	396.5	467.1	1,014.9
First Unit							
Fund Size \$M	78	137	136	127	194	258	494
Second Unit							
Fund Size \$M	42	177	247	298	432	542	781
Second Unit							
Fund Size \$M	42	177	247	298	432	542	781
Total Fund \$M	120	314	383	425	626	800	1,275
Number of							
Accounts	20,020	37,776	41,242	54,871	73,058	95,287	119,313
First Unit							
Scheme Prices \$	6.70	9.50	9.55	8.30	10.10	10.85	14.85
Stock Market							
Index	48.7	83.1	81.8	60.2	82.5	88.6	150.2

Note: .. None available

Sources: Unit Trust Corporation
Central Bank of Trinidad and Tobago

Table 4.8.11: Trinidad and Tobago - Net Assets of the Money Market Mutual Fund (1989-1995)

	1989	1990	1991	1992	1993	1994	1995
Net Assets (NA)(\$m)	42.24	177.12	247.01	297.64	431.51	541.57	781.04
M2 (\$m)	9,093.7	9,661.6	9,906.0	9,221.9	10,628.6	12,399.3	12,890.2
NA/M2 (%)	0.46	1.83	2.49	3.23	4.06	4.37	6.06

Note: In 1994 the MMF was invested in the following portfolio: Government securities (\$106.8 million), Government-guaranteed securities (\$53.6 million), corporate securities (\$21.4 million) and cash and short-term investments (\$359.8 million). The effective annual rate of interest in 1994 was 10%. In 1995 the average yield on these funds was 11.35%.

Sources: Trinidad and Tobago Unit Trust Corporation, IMF International Financial Statistical Yearbook.

Chapter 5

OFFSHORE FINANCE

*A*s with domestic finance, this section begins by describing some of the common institutions and instruments used in the offshore sector. It then considers the forces influencing innovation in Caribbean offshore sectors, describes the innovations common to the Caribbean as a whole and those for each country. Innovations in countries of the Organization of Eastern Caribbean States (OECS) are grouped.

5.1. Offshore Institutions and Instruments

5.1.1. Captive Insurance

A captive insurance company is an entity formed to insure or reinsure risks of its parent company or of the group of companies that established it. It replaces the purchase of traditional insurance. This retention of risk reduces insurance costs for the parent company by avoiding the traditional insurer's administrative cost, capturing the insurance profits and investment returns usually earned by insurers. It also allows the company to invest funds from unpaid reserves until they are required for payment of losses. In addition, captives can cover a larger variety of risks than is possible in the conventional insurance market and permit companies to design programmes which address their particular requirements.

5.1.2. Depository Receipts

Depository receipts are negotiable receipts on securities that are being held elsewhere. They may be traded in place of the foreign securities in order to alleviate some of the difficulties in buying and selling foreign securities, viz, in transferring certificates abroad and converting currencies. Global depository receipts facilitate companies in raising new capital internationally, expanding their ownership base, increasing liquidity. They also encourage foreign direct investment and technology transfer to emerging market economies.

5.1.3. Foreign Sales Corporations

Foreign Sales Corporations (FSCs) are designed to allow US exporters to exempt 15% or more of the profits derived from export sales from US income taxes. To qualify, the US Internal Revenue code requires a company to incorporate in a designated foreign country or US possession and to meet certain conditions for presence in the jurisdiction. FSCs either legally acquire export property and resell it abroad (buy/sell FSCs) or receive a fee for facilitating export sales (commission FSCs). If the export product includes foreign components, these must be less than half of the foreign market value in order for the product to qualify as an export. Even if sold to a buyer located in the USA, the sale qualifies for FSC benefits if shipped outside the USA within a year of sale (*see Jackson, 1996*).

5.1.4. International Business Companies (IBCs)

IBCs are a common vehicle to facilitate international, tax-minimizing business in jurisdictions providing for offshore business activities. The IBC is a locally incorporated company which is usually exempted from exchange controls, from indirect taxes and direct taxes (or subject to low income tax rates, depending on jurisdiction). They

usually do not need to produce audited accounts unless required by their own articles of incorporation and rules with regard to shareholding are very flexible and non-restrictive. In most territories, a large variety of activities, both financial and non-financial, may be carried on by companies operating as IBCs. Some territories prohibit banking and insurance by IBCs but this is changing and has, in any case, not always been easy to police. Financial services such as financial management and investment company services are usually offered in all territories, however. Like other offshore legislation, IBC Acts tend to be modelled on those in rival destinations; thus, for example, the Bahamian Act closely follows that of the British Virgin Islands (BVI).

5.1.5. Limited Liability Companies (LLCs)

Limited liability companies have a corporate personality, providing for limited liability, but also have partnership features. US income tax rules treat them as ‘pass through’ entities, income and gains being directly attributable to members of the company. LLCs are commonly used in joint ventures, venture capital formation and real estate syndications. The offshore LLC are used on their own or with offshore trusts to reduce gift and estate taxation and provide stronger asset protection than available domestically (taken almost verbatim from **Feracho and Samuel, 1996**).

5.1.6. Limited Partnerships

A limited partnership must consist of general partners who are liable for all the debts and obligations of the firm and limited partners who are not liable beyond the amount they have contributed. Limited partners must not take any part in the active management of the firm; doing so makes them liable as general partners. It is dissolved on the unavailability of the last general partner unless, in the case of a solvent firm, the limited partners elect to appoint a general partner.

5.1.7. *The Trust*

A trust is an arrangement whereby ownership of designated assets is vested in a trustee who must manage them for the benefit of the beneficiaries. The concept rests on the distinction made in English law between legal and beneficial, or equitable, ownership (*see Goodwill, 1995*). Since the duties of trustees are enforced by law, a settlor (person creating the trust) can, by transferring legal title to the trustees to be held and administered for designated beneficiaries holding the beneficial interest in the trust, take advantage of a number of provisions created under the offshore legislation of several jurisdictions. Trustees must obey the directions in the legal document creating the trust, must act prudently in the interests of the beneficiary and must deal in the assets of the trust only for the benefit of the beneficiaries. Trusts are used for estate planning, to enable a settlor expecting to die in a common law jurisdiction to avoid the costs of probate, to avoid forced heirship in non-common-law jurisdictions, to ensure continuity of estate management, to avoid taxes and to protect assets. Trusts can be made revocable or subject to qualified revocation (so that the settlor cannot be forced by foreign courts, for example, to revoke the trust). If the trust document is appropriately drafted, settlors can also retain considerable rights over the management and investment of property transferred to trustees and can arrange to have settlor interests, as well as those of the beneficiaries taken into account by the trustees. Recent legislation in the Caribbean has stressed the creation of Asset Protection trusts designed to safeguard the assets of a settlor from legal action and Purpose Trusts whose beneficiaries are a purpose, rather than a person or charity. The rules for asset protection trusts vary between territories but common features include the stipulation that claims following establishment of the trust are not recognized unless it can be demonstrated that the settlor knew that the claim would be made, and that preexisting claims have limited periods within which they may file.

Trusts designed to avoid forced heirship (forced heirship refers to the requirement in some legal systems that property pass to the family of a deceased person in predetermined proportions) appear to have originated in the Cayman Islands. The Trusts (Foreign Element) Law, 1987, was specifically designed to validate trusts established in breach of foreign forced heirship laws (**see Maples and Calder, 1995**). This was strengthened by an Amendment in 1995 which provides that an heir will not be considered, on the basis of heirship rights, as having a pre-existing interest in property placed in a trust.

The asset protection trust may also have been initiated in the region by the Cayman Islands' Fraudulent Disposition Law of 1989 which sets a 6-year limitation for a claim to set aside a trust. Similarly, the Perpetuities Law, 1995, allowed for perpetual (defined to be 150 years) trusts which are invalid under common law.

5.2. Caribbean Offshore Innovations

5.2.1. Background

Caribbean countries are competitors for offshore business. Their common legal system implies that they are able to offer very similar legislative frameworks to offshore clients. In addition, several Caribbean jurisdictions are treated similarly in the legislation of home jurisdictions. Thus, under Canadian tax law, income earned by a resident abroad is taxable. However, dividends paid out of company income earned in an active business in a listed country are considered paid out of exempt surplus. Dividends paid out of exempt surplus are deducted in calculating the taxable income of the receiving corporation. In addition, no tax is paid on income from interest, royalties, or other charges on the active business income of a foreign affiliate of the Canadian taxpayer in the listed country. Several Caribbean territories are included among the listed countries under Regulation 5907(ii) of Canada's Income Tax Act.

Countries do differ in their tax regulations and the resulting emphasis adopted by the offshore sector. For example, some countries, such as Barbados, have stressed the advantage of location because of the maintenance of a low tax regime in the offshore sector in conjunction with tax treaties, and actively work to expand and enhance their network of tax treaties. Others like The Bahamas, which is a no-tax jurisdiction, work to offer a level of expertise and breadth of facilities. Individual countries can also be differentiated by reputation.

The competitive environment of the offshore business may be evidenced by countries' and companies' reactions to the favourable treatment received by rival jurisdictions and companies. For example, the 1986 double taxation treaty between Barbados and the USA permitted exemption from the Federal Excise Tax (FET) on insurance premiums ceded to the Barbados insurer. Such treatment encouraged the entry of captive insurance companies, leading to a protest from Bermuda with whom, as a result, the USA concluded a similar treaty. However, US-based insurers, fearful of market erosion, protested and the FET exemption was removed from the treaty. Similarly, legislation for the offshore sector, attempts to take account, to a greater or lesser degree depending on the jurisdiction, of potential perceptions that the benefits offered are excessive. Thus, the conditions for creditor set-aside of asset protection trusts, and the degree to which settlor domicile legislation applies, are greater, the more conservative is the stance of the offshore jurisdiction.

Joint membership of Caricom and cooperation in other financial areas has, however, encouraged cooperation and joint action in prudential financial regulation and crime prevention (**see Caribbean-wide innovations below**). A major example of such cooperation is the regional Inter-American Development Bank (IDB) project for the harmonization of capital markets. The project is to establish a regional clearing and settlement system, develop appropriate regional standards

for automated trading systems and self-regulation of the exchanges. The exchanges, or prospective exchanges, included in the project are those for The Bahamas, Barbados, the Dominican Republic, the Eastern Caribbean area, Jamaica and Trinidad and Tobago. NASDAQ is managing the provision of central securities depositories in each country to automate, clear, settle and guarantee trades on the exchanges. The project is also to install an electronic trading system common to all the exchanges. The offshore implications of such an exchange are, it would seem, being most actively pursued by The Bahamas.

The pace of change and adaptation in the offshore sectors of the region has increased quite sharply in the past decade. Several factors may be responsible for this. The increasing internationalization of capital markets is clearly an important exogenous influence. The economic difficulties experienced by some of the countries have also been influential in two related ways - the need to be competitive externally has been recognized, as has a comparative advantage in the skilled service sector. This recognition pushed governments to enlist the private sector in their policy-making and the involvement of the private sector has made the offshore administration and strategy more dynamic and responsive.

There is some concern about the extent to which the competition among territories may encourage laxity in regulation and supervision as the territories compete to attract entrants to the sector (*see Feracho and Samuel, 1996*). In addition, of course, potential offshore entrants may attempt to exploit this. Lax regulation will encourage disreputable entrants and discourage the reputable. Disreputable entrants are likely to create negative externalities for the financial sector, and perhaps more generally. The initiatives described below indicate that the authorities are aware of this and are attempting to put safeguards in place. The OECS appears to be in a particularly vulnerable position in this respect because of the fact that supervisory skills are concentrated

in the ECCB, which does not supervise the offshore sector. Furthermore, it may not be too far-fetched to argue that there may be contagion effects among territories.

5.3. Caribbean-wide Developments

5.3.1. Enhanced Regulation of Offshore Banks

Type:	m
Date:	1994
Motive:	To protect the region's reputation as an offshore centre
Functioning:	The Caricom Bank Supervision Harmonization Project agreed that offshore banking requires an adequate legal framework, licensing policy, effective supervision and cooperation with other supervisory agencies. These guidelines require that offshore banking legislation specify application requirements, minimum required levels of capital and reserves, supervision by the central banks and external audits. They also require that the legal framework include requirements similar to those of domestic banks in the area of directors' qualifications, prudential limits, information reporting and the licensing requirements include capital, plans, demonstrations of suitability of directors and officers.
Origin:	International recognition that banks operating in many jurisdictions may escape adequate prudential oversight.

5.3.2. Caribbean Financial Task Force

Type:	An international grouping to put in place legislation and regulations to combat money laundering and the narcotics trade.
Date:	1994
Motive:	To implement the recommendations of the G7 Financial Action Task Forces established 1989.
Functioning:	The recommendations provided for include the criminalization of money laundering, the seizure and forfeiture of illicit proceeds, reporting of suspicious transactions, assistance to members with financial investigation and the requirement of “know your customer” standards.
Origin:	Financial Action Task Force established by the G7 in 1989.

5.4. Taxonomy of Innovations by Area and Country

5.4.1. The Bahamas

Background

The Bahamas is one of the earliest Caricom offshore centres. As a result it tends to be a leader in the introduction of new vehicles. However, for some time it suffered some loss of reputation as a jurisdiction in the 1980s, which it has been working to correct. This has in part been done by close cooperation and consultation between the private and public sectors. The Bahamas has no income, corporate, capital or withholding taxes, and no estate duties. A number of possibilities exist for residential status which may, for example, allow for a change of domicile designation useful for tax purposes, depending on the tax jurisdiction concerned. For example, there are two categories of permanent residence, one of which allows for a work permit. The

International Persons Landholding Act also allows for a homeowner status and annual residence is allowed for. The Bahamas has no double taxation agreements.

One of the most important innovations will be the international stock exchange. There are currently nine publicly-traded companies (on a local over-the-counter (OTC) market with a capitalization of approximately \$400 million in early 1996 (*see Gibson, 1996(a)*) with yield-based pricing provided by Coutts Bank. There is no secondary trading, with purchase only on initial public offerings and most agents pursue a buy and hold strategy, with shareholders concentrated among the original families and senior management. Three of the nine local stocks had initial public offerings between 1994 and 1995. The Bahamian sector sees the stock exchange as completing a menu of financial services required for an offshore sector, at the same time as a means by which the spillover in terms of income, economic activity and jobs from the offshore to the domestic sector could be fostered.

Table 5.1: The Bahamas - Licensed Banks and Trust Companies (1984-1995)

YEAR	Public Banks and/or Trust Companies					Restricted, Non-Active and Nominee Banks & Trust Companies	
	Autho- rized Dealers and Agents	Euro- currency Branches of Frgn Banks	Bahamian-Incorporated Banks			Re- stricted	Non- Active
			Sub- sidiaries of Foreign Banks	Bahamian-Based			
				Resi- dent	Non- Resident		
1984	18	134	81	6	29	92	8
1986	19	135	86	6	28	94	8
1987	19	132	95	7	28	94	7
1988	19	124	103	6	28	101	10
1989	18	116	106	6	35	105	12
1990	20	112	107	6	40	101	13
1991	20	105	106	6	52	106	13
1992	19	99	102	6	62	114	12
1993	20	95	97	5	66	117	14
1994	20	89	104	5	73	112	14
1995	20	90	108	2	78	103	13

Notes: 1993 and 1995 data are at September 30th, other years at December 31st. Residence is defined for exchange control purposes.

Source: Central Bank of The Bahamas, *Quarterly Statistical Digest* (CBTB, QSD)

The categories listed in **Table 5.2** are as follows (*see note to Table 2.11 in Central Bank of Trinidad & Tobago, Quarterly Statistical Digest*):

- public banks and trust companies are licensed to carry on business with the public;
- authorized dealers are banks authorized to deal in gold and foreign currencies, maintaining accounts in such currencies; they have delegated authority to approve certain applications for foreign currency within specified limits;
- authorized agents are banks or trust companies authorized to deal in Bahamian and foreign securities and to act as a custodian of such securities;
- resident entities deal only in Bahamian dollars, all foreign currency operations require exchange control authorization, resident trust companies are allowed to deal in foreign securities on behalf of nonresidents;
- nonresident institutions are allowed to operate freely in foreign currencies, exchange control approval is required to operate a Bahamian dollar account;
- restricted banks or trust companies carry on business for specified persons usually named in the licence;
- nonactive companies are in voluntary liquidation or are not conducting bank or trust business, even though they wish to keep the words in the company name;
- nominee companies hold securities and other assets in their names on behalf of clients of the parent bank or trust company.

Table 5.2: The Bahamas - Employment in the Offshore Financial Sector (1991-1995)

Year	Banking	Trust Admin.	Proportion of Local Banking Employment (%)
1991	515	359	44.1
1992	575	370	47.7
1993	621	361	49.1
1994	503	461	43.9
1995	459	444	38.9

Note: There is a category “other”, that may also reflect offshore employment, that is not reflected here.

Source: Central Bank of the Bahamas

Deferred Annuity Product

Description of

- Innovation:** An arrangement to take advantage of US tax laws
- Type:** s
- Date:** 1990s
- Initiator:** US attorney
- Motive:** To create a vehicle attractive to US clients
- Functioning:** A tax planning arrangement to facilitate which Bahamian legislation was amended. It allows for the purchase of a single premium annuity which is housed offshore and on which tax is deferred until the death of the insured person - estate tax is paid on death but no taxes are paid in the interim

International Business Companies (IBCs)

Description of

Innovation: Legislation to provide for the establishment of the companies.

Type: m

Date: 1989, 1994

Motive: Expanding offshore facilities.

Functioning: A number of company types may be incorporated as an IBC. No minimum capital is required. They must be registered by the Registrar of Companies and have a registered agent in The Bahamas; eligible agents include lawyers, accountants, banks and trust companies, approved management companies. They are not subject to taxation for 20 years from incorporation, except for dutiable transactions, and are exempted from business licence requirements. Most types of shares may be issued and these may be issued in return for a variety, or combination, of compensations: money, services, promissory notes etc. Dividends can be declared in other than money. Shelf (ready-made) companies are available. No annual return is necessary. Only one director is required. Once the company name has been obtained, only 24 hours is required for incorporation. IBCs are not permitted to conduct business with residents, own real estate, carry on banking, trust or insurance business, provide the registered office for companies. Shareholders' and directors' meetings may be held in any locality and conducted in person or by telephone. Limited duration companies were permitted under the 1994 amendment; these may be treated as a partnership for US tax

purposes, they must have two subscribers or members and their memoranda must limit duration of the company to 30 years or less, with winding-up commencing immediately at the end of that period unless two remaining members resolve to continue. Limited duration companies must keep financial records, meeting minutes and copies of resolutions, although these may be kept outside of The Bahamas; Company registers must however be maintained in the jurisdiction.

Data: Over 40,000 IBCs are registered in the Bahamas.

Money Laundering Legislation

Description of

Innovation: Legislation to combat money laundering

Type: regulatory

Date: 1995

Motive: To enhance the reputation and credibility of jurisdiction

Functioning: Money Laundering (Proceeds of Crime) Act, 1995 makes money laundering in the Bahamas difficult by making illegal transactions in property known to have been obtained as a result of criminal activity. The Act is aimed at people and institutions which are used to facilitate money laundering. A wide definition is used of facilitators who are required to keep and retain financial records in accordance with regulations. The regulations are aimed at the reporting of large cash deposits and suspicious transactions. The Act also makes it an offence to fail to disclose knowledge or suspicion of money laundering.

Mutual Funds

Description of Innovation:

These are investment funds with characteristics similar to the familiar mutual funds but established offshore.

Date:

1990s

Motive:

Mutual funds grew in The Bahamas without active marketing because of the needs of bank clients in South America - those in Argentina and Brazil who want to benefit from the high returns available in their home markets but do not wish to invest onshore.

Functioning:

Originally, the offshore offices acted as the registered office for mutual funds whereas custodial work, pricing etc. was done in the onshore offices of the international bank. Changes in tax laws now require offshore registered custodians for securities and an increasing number of Bahamians are being employed as a result, with increased integration with the domestic economy. Offshore funds are set up with local instruments for clients who want to invest in emerging South American markets such as Brazil. Where funds are invested in derivative instruments, these instruments are obtained from the New York and London markets. Mutual fund services include full valuation processes, full share registration and accounting and investment management. Many are very specialized funds which include swaps, South American paper and commercial bonds. Mutual funds are governed by the 1995 Mutual Funds Act. The Act was intended to enhance the

IBC Act - an IBC being considered a very flexible instrument for mutual fund operation but one which did not provide for fund regulation. The Act therefore established a reporting, disclosure and monitoring requirement for mutual funds. Such funds must be licensed by the Securities Board or a mutual funds administrator unless its equity interests are already listed on an exchange. Registration requirements still apply, however. Nevertheless, an 'exempt' mutual fund, where equity interests are held by less than 15 investors, does not have to comply with approval procedures. The Act also sets minimum standards for mutual funds' managers and administration (*see Kessler, 1995/96*).

Order Transport System

Description of

- Innovation:** A system to facilitate trading and banking.
- Type:** t
- Date:** 1990s
- Initiator:** International merchant banks.
- Motive:** To improve administration and management by taking advantage of available technology.
- Functioning:** Client orders are immediately input and transported through the company to their trading desk, producing audit trails and data at each step. This has facilitated regionalization of back office services such as trading, treasury management and processing, leaving the front office staff to conduct client relationships.

Stock Exchange

Description of

Innovation: The establishment of domestic and international stock exchanges.

Type: i

Date: 1995-97

Motive: To develop the capital market, improve cross-fertilization between the domestic and international markets and increase the facilities available for the offshore market.

Functioning: A series of steps are being taken to establish the market. In 1995 a regulatory body was established by the Securities Board Act. An automated system is expected to be provided through an IDB-funded project for capital market harmonization in the Caribbean. The central securities depository will provide for efficient settlement and be linked to international depositories such as CEDEL and EUROCLEAR. Such links would allow traders to buy and sell securities in The Bahamas, using CEDEL as the clearing and settlement system, so that global trading is possible. Industry would be overseen by the Securities Board created in 1995. The market would be expected to cater for a) global depository receipts (GDRs) as in Luxembourg, a product which can serve foreign companies tapping into national markets; b) closed end mutual funds which are usually required to list and fulfil general reporting requirements (Bahamian-based mutual funds must now list on other exchanges); c) listings of convenience, a market now dominated by

Luxembourg. Other instruments such as bonds, futures and options will also be permitted. There is a draft Securities Industry Bill which proposes self-regulatory organizations, strengthening of prospectus requirements to desired disclosure standards, listing of both local and non-Bahamian securities with separate regulations and rules and procedures to ensure market transparency. The domestic and international securities markets will have different players, for example, trading in domestic stock will have to be carried out through a local subsidiary that has substantial local ownership whereas traders on the international exchange can be totally foreign-owned. A company listed on an approved exchange will be able to list automatically in The Bahamas. Previously unlisted companies will have to go through a vetting and due diligence procedure but the requirements for listing are expected to be less onerous than on the major markets. It is proposed that foreign companies be permitted to list shares in The Bahamas using Bahamian GDRs which could be quoted in the domestic currency of the issuer. Such similar price quotations would facilitate valuation comparisons and avoid the costs of preparing two sets of accounts, in contrast to the listing of the American depository receipt. Bahamian GDRs would also allow the company to select another major currency of choice to facilitate placement (*see Gibson, 1996, a and b*).
Data: None available.

Description of

Innovation:	This involved a change in the conduct and focus of trust business, a fiduciary relationship involving management of assets/resources by financial specialists on behalf of customers.
Type:	i, s
Date:	Early 1990s
Motive:	Response to client demand.
Functioning:	Trusts were originally drafted by lawyers according to the needs of the clients. There are now standardized trusts available in various formats and languages, although some formats are flexible. An enhanced variety of trusts are also available. These include the directed investment trust which gives the settlor some responsibility for the direction of the trust. Bahamian law now allows for asset protection trusts, mainly aimed at protecting doctors and lawyers from the effects of litigation in the USA. These are governed by the Fraudulent Dispositions Act, 1991, which provides that the disposition of property made with the intent to defraud a creditor be “voidable” but places the burden of proving fraudulent intent on the creditor. The Act sets a limit period of two years for the challenge of a disposition. The Trusts (Choice of Governing Law) Act, 1989, makes the designation of the trust subject to Bahamian law binding. Trust management has now become more pro-active with an emphasis on marketing and personal attention to the client and her needs and auditing of service standards. A new Trustee Act (1996) will codify trust practices.

5.4.2. Barbados

Background

Barbados markets itself as a low-tax jurisdiction, developing a network of tax treaties to enhance its appeal. During the 1990s, a more responsive environment to the requirements of international business requirements has been fostered through closer cooperation between the public and private sectors and the establishment of specialized government offices. The International Financial Services Advisory Committee, with public sector and private members, was established in 1991 to advise on the development and marketing of the sector.

An offshore bank must be licensed under the Offshore Banking Act, 1979 as an eligible company under the Barbados Companies Act or as a qualified foreign bank. Offshore banks are regulated and supervised by the Bank Supervision Department of the Central Bank of Barbados. Prior to licensing, the Supervisors investigate the applicants, the net-worth of the principals and capital adequacy, as well as requiring background information on shareholders, directors and senior officer, financial statements from shareholders controlling more than 5% of voting stock (10% of non-voting), information on corporate structure and approval of the parent supervisor, *inter alia*. Banks are required to submit quarterly returns and the Basle capital adequacy criteria are applied.

Banking

Description of

Innovation: This involved amendments to the 1979 Offshore Banking Act

Date: 1996/97

Motive: To expand the range of activities in which offshore banks may engage.

Functioning: The scope of the 1979 Offshore Banking Act is being expanded, its title becoming 'Offshore Financial Services Act'. It would now allow licensees to do business with residents such as IBCs, and FSCs. This would allow American clients of licensees to benefit from US tax concession. It would also allow IBCs of Canadian origin to benefit from double taxation agreement with Canada under a 1995 revision of the Canadian tax rules (*see Cherebin, 1996*). Canadian tax law changed to exclude banks from double taxation benefits unless such banks are regulated by the monetary authority in the offshore jurisdiction. For example, there are large corporations which channel their profits to an offshore centre, where there are tax benefits, and access the funds through inter-company financing. Under the new Canadian regulation, the tax benefits would require establishment of an regulated offshore bank. Prudential standards are being tightened. The new act will increase required capital from BDS\$1 million to BDS\$4 million. From 1996 all offshore banks are required to submit returns and meet the Basle capital adequacy criteria for country and individual risk exposure.

**Table 5.3: Barbados - Offshore Banks
(1981-1995)**

Year	Applications	Approvals	Offshore Banks
1981	3	2	2
1982	0	0	2
1983	0	0	2
1984	0	0	2
1985	1	1	3
1986	1	1	4
1987	1	1	5
1988	1	1	6
1989	2	1	7
1990	6	6	13
1991	3	0	13
1992	5	3	16
1993	6	5	21
1994	12	7	28
1995	18	8	36

Note: Licenses of four banks have been revoked so, as at December 31, 1995, there were 32 offshore banks.

Source: Central Bank of Barbados.

Company Types

Description of

Innovation: Passage of legislation to allow for more flexible forms of company formation.

Date: 1995/96

Motive: To allow companies to take advantage of US tax treatment of hybrid entities - those which are incorporated locally but treated as partnerships for US tax purposes.

Functioning: Under US tax regulations, a foreign entity is treated as a partnership if it fails to satisfy two of four corporate characteristics (continuity of life, free transferability of interest, centralized management and limited liability). A company formed under the SRL Act would have the first two of these characteristics: (a) the Act provides for the automatic dissolution of an SRL on the occurrence of certain events; (b) the SRL's by-laws may restrict the transfer of quotas (shares). Exempt SRLs are those designed for use in international transactions and may not be used to transact business with Caricom residents; they must be licensed, articles filed with the Registrar of Companies and be issued with a certificate of organisation by the Registrar. SRLs benefit from improved foreign tax credit and other tax benefits for US taxpayers and may be used for tax planning purposes in the structuring of investments in some civil law jurisdictions. The law also allows for SRLs which can be used by residents (*see Arrindell, 1995*).

Foreign Sales Corporations (FSCs)

Description of

Innovation: Legislative amendment to 1984 Act.

Date: 1994

Motive: To expand the scope of possible FSC activities and simplify their operating procedures.

Functioning: The 1984 FSC Act was amended to allow sales to Caribbean countries to qualify as foreign trade transactions and to introduce a thirty year guarantee of FSC benefits and the elimination of any possible tax liability if an FSC should have its Barbados licence revoked. Increased cooperation between private and public sectors has increased FSC entry as have changes in franchise tax imposition in the US Virgin Islands (*see Jackson, 1996*).

Data: There were some 1,500 active FSCs in Barbados in 1995 with growing numbers: in the first seven months of 1995 234 new FSCs entered compared to 247 in 1994 and 177 in 1993.

International Business Companies (IBCs)

Description of

Innovation: Legislation to provide for IBCs in conjunction with the Companies Act, 1982.

Date: 1992

Motive: To broaden the flexibility of the international business sector.

Functioning: The new IBC Act allows companies to choose between operating as an IBC or under the fiscal incentives regime (which offers tax holidays for a specific period). A licensed IBC must be a resident of Barbados where residency is defined

as a company which may be incorporated or registered externally and more than 10% of whose benefits accrue to Caricom resident individuals. The licence fee is US\$100 per year. Taxes are paid at rates of between 1% and 2.5% on profits and gains (up to \$10,000 and over \$30,000, respectively). Income paid to non-resident companies or to another IBC is exempt from income tax in the hand of the recipient. IBCs do not need to file financial statements or reports with the Registrar of Companies and no auditors are required for IBCs with gross income or assets below BDS\$1.0 million.

Money Laundering Protection Against

Description of

- Innovation:** Change in guidelines against money laundering in order to strengthen them.
- Date:** 1995
- Motive:** To improve protection against loss of reputation of the offshore financial sector.
- Functioning:** The new guidelines set minimum standards for programmes against money laundering which all financial institutions are required to develop: adequate internal policies and controls, staff training, an audit of the systems. In addition, paper trails and reporting of suspicious activity are mandated.

Treaties, Investment

Description of

Innovation: Adoption of a policy to add bilateral investment treaties to the treaty network.

Date: 1990s

Motive: To increase the scope for investment opportunities.

Functioning: The first treaty, with the United Kingdom, was concluded in 1993. Treaties have also been signed with Venezuela, Germany and Switzerland and texts have been agreed with Italy and Cuba. Negotiation with the USA, Canada, China and France had started in 1995 while approaches had been made to India, South Africa, Kuwait and several countries in Latin America (*see Carter, 1995*).

Treaties, Double Taxation

Description of

Innovation: Expansion of the network of treaties to exempt investment income from taxes in the countries with whom treaties have been concluded.

Date: 1980s and 1990s

Motive: Furtherance of the low taxation jurisdiction policy

Functioning: In 1986 a double taxation treaty was concluded with the USA. International business sector companies were excluded from the tax benefits of the treaty (unless they met ownership, active trade or business tests) until 1993 when a protocol was agreed which allowed banking and insurance activities to qualify as “active conduct of a trade

or a business” even if controlled by non-residents of the USA or Barbados. The US withholding tax on interest, dividends and royalties received by beneficiary companies is 5% (*see Carter, 1995*). In 1995 there were treaties with the UK, Canada, Switzerland, Finland, Norway and Sweden - international business sector companies are excluded from the benefits under the Swedish and UK treaties.

Trusts

Description of

Innovation:

Legislation to allow for different types of trusts.

Date:

1995

Motive:

To conform to emerging legal trends in offshore trust law, increasing the range of trust possibilities.

Functioning:

The International Trust Act of 1995 applies only in the case of non-resident settlers and beneficiaries; does not cover immovable property in Barbados; requires that the trust be written and that at least one trustee be resident. It improves asset protection by requiring that a creditor (the cause of the action) exist at the date of disposition if the creditor is to be able to set aside the trust. The creditor must also show that the transferor had an intent to defraud or that the trust was at an undervalue (where undervalue exists if the creditor is prejudiced thereby). A successful claim only allows for the trust to be set aside to the extent of the claim. The Act also allows for purpose trusts which benefit a purpose rather than a person. The purpose trust can be used for tax planning,

philanthropic purposes and as a part of debt securitization structures. The purpose trust is flexible in that it allows the purpose to be substituted by a similar purpose where the original purpose is no longer possible. The Act states that a lifetime transfer of moveable property is governed by Barbados law and testamentary transfer by the law of the settlor's domicile (*see Adams, 1995*).
Origin: The trust legislation of other competing jurisdictions.

5.4.3. Belize

Background

Belize is described as an emerging offshore centre. The Offshore Banking Act is due to be passed in 1996 to complement the 1995 Banks and Financial Institutions Act governing local banks. Applications for licences are made to the Central Bank of Belize. In 1995 the Belize Offshore Practitioners Association was made a statutory corporation, to deal with offshore services related to companies, banking, insurance trusts and shipping (*see Courtenay, 1996*). The association, made up of lawyers, accountants and bankers had been in existence since 1993 working on offshore legislation. A captive insurance law is also planned and a Money Laundering (Prevention) Bill is being considered by Parliament. A Trust Act was passed in 1992.

International Business Companies (IBCs)

Description of

Innovation: Legislation to provide rules for companies conducting international business

Type: i

Date: 1990, with amendments in 1995

Motive: An act to clarify the distinction between domestic and offshore companies and amendment for effective competition among offshore jurisdictions.

Functioning: The 1990 Act specified that an IBC could not own, be owned by, lend to or borrow from a domestic resident, but residents could hold shares in a nominee capacity. The Act was not retroactive. The 1995 legislation laid down clearer guidelines for the administration of an IBC and created more flexibility for the vehicle. An IBC is prohibited from owning shares or assets in a locally-incorporated company, it cannot sell shares or borrow from a Belizean resident. IBCs are now permitted to carry on offshore banking or insurance business with the appropriate licence. Since there are no licensing requirements for trust business and investment, the IBC may operate a trust company or similar business. IBCs are also used as a vehicle for investment. IBCs can elect to register with the Registrar of IBCs (*see Barrow, 1996*). Belize competes with other Caribbean country by fixing very low fees: US\$100 with registered capital up to US\$50,000 (*see Musa and Crump, 1994*).

Trusts

Description of

Innovation:	Legislation to enhance the use of offshore trusts.
Date:	1992
Motive:	To increase the scope for trust establishment.
Functioning:	The Act provides for exempt trusts with asset protection provisions, allows for bearer shares which can assist in tax avoidance.

5.4.4. Eastern Caribbean

The Eastern Caribbean states are becoming increasingly active in the development of the legislation to encourage offshore financial services as a source of export activity. Since regulation of offshore finance is the responsibility of the individual finance ministries of states, rather than of the Eastern Caribbean Central Bank (ECCB), concern has been expressed about regulatory capacity, especially in view of the competition for offshore market share of the individual territories (*see Feracho and Samuel, 1996*).

5.4.5. Anguilla

Background

Anguilla is a zero tax jurisdiction with no income taxes and no exchange controls. The offshore sector is being developed under the oversight of the Offshore Finance Committee chaired by the Governor (Anguilla is a British dependency with internal self-rule) with representatives of both the Government and private sectors. In 1995 there was only one offshore bank providing trust services

but it is not actively seeking clientele. Both private and public companies may operate onshore and offshore and all four domestic banks offer offshore services. Although there are no exchange controls, there is a 2% tax imposed on converting between foreign currencies.

Trusts

Description of

Innovation: Standard and tailor-made trust instruments in offshore jurisdictions, introduced here.

Type:

s

Date

Initiated: 1995

Motive: To increase the attractiveness of Anguilla as an offshore financial sector, given the possibility of Bermudan independence and the expected demand for another British location as a result (*see Mitchell, 1995*), and earn the fees that would be generated as a result.

Functioning: Accomplished through Trusts Ordinance, 1994, which completely revised trust legislation. For asset protection trusts the Fraudulent Dispositions Ordinance, 1994, was also enacted. The latter specifies that actions to set aside an alleged fraudulent transfer to a trust must begin within three years of the establishment of the trust. If the settlor was solvent at the time of the establishment of the trust and remains so afterwards, the transfer of the asset cannot be set aside by the creditor who has the burden of proof (*see Dyrud, 1995*). There is also provision to prevent the Anguillan

courts from recognizing claims resulting from decisions in other jurisdictions in specified circumstances. The Trusts Ordinance allows a settlor to be a trustee, beneficiary or protector, as well. Trustee is not bound by the wishes of the settlor who may inform him of these by letter. Perpetual trusts are permitted. Provision is made for the office of protector of the trust. Trust registration is optional and, in any case, the trust register is confidential. Exempted trusts (where neither settlor nor beneficiary are residents) are protected against any future taxation in Anguilla for fifty years.

Origin: Trust legislation of other offshore financial centres.
Data: None available

Company Formation and Operation

Description of

Innovation: Formation of standard companies and entities under law.

Type: i

Date initiated: 1995

Motive: To put in place framework required to attract offshore operations.

Functioning: Company Ordinance of 1994 created a number of vehicles suitable for persons wishing to operate internationally IBCs, limited liability companies and limited partnerships (*see Romney, 1995*). In addition to simplifying the process of formation, the new legislation allows for companies limited by both guarantee and shares, removes minimum

requirements of capital and number of directors. Only one shareholder is required and neither shareholder nor directors need be Anguillan residents. Annual meetings need not be conducted in Anguilla and may be conducted by phone.

IBCs do not conduct business with Anguillan residents nor own real property in Anguilla except for leased offices. Limited liability companies, to be known as limited duration companies, limit liability of member to member's contribution and dissolution after 30 if no date is specified in its agreement. Limited partnerships allow limited partners to be liable only for the amount they have contributed to the partnership, provided they take no part in the active management of firm. Company management services must now be licensed and an Inspector of Company Managers may require that such managers carry fidelity insurance and management company accounts must be audited and filed with the Inspector (*see Mitchell, 1995*).

Origin: Based on experience of other jurisdictions.

Computerized Online Company Registration

Description of

Innovation: Introduction of technological enhancements to process of company formation.

Type: t

Date initiated: Mid-1990s

Motive: To remove constraints imposed by clients in different time zones.

Functioning: Intended to enable local registered agents and overseas sub-agents to access the Registry 24

hours a day to form companies. Agents are registered under 1994 Company Managers ordinance which requires licenses for company management with a required paid up capital of US\$28,000. Registry will also allow for electronic filing of documents required by legislation, on-line company searches, and accounting and record keeping for all agent accounts (*see Romney, 1995*).

In addition to the legislation above, Anguilla has instituted the International Companies Ordinance, 1994, the Limited Liability Companies Ordinance, 1994, and the Limited Partnership Ordinance, 1994. All of these became effective on January 01, 1995.

5.4.6. Antigua and Barbuda

Background

Development of offshore financial services is the responsibility of the International Services Advisory Board. The main vehicle for the establishment and operation of offshore companies is the International Business Companies Act, 1982, which provides for exemption from all direct taxes and stamp duties; customs duties may also be waived. Shares of no par value may be issued and bearer shares are permitted. The Act does not require audited accounts and no accounts have to be filed. The Act provides for offshore companies in general, as well as including specific sections on international insurance, banking and trust management companies (*see Ward, 1995*). The incorporation process can be completed 24 hours. The Act only requires one director and allows for telephone meetings of directors, similarly; only one shareholder and voting by proxy is allowed. A local agent is required and is responsible for the payment of government fees. Thus, unlike several other jurisdictions, banks may be legally established

under the IBC Act. Offshore companies have a 50-year holiday from taxes on profits and there are no income, capital gain or other wealth taxes on individuals.

An offshore bank is defined as a corporation licensed to carry on international banking business in currencies other than those of Caricom. Minimum paid-in capital is US\$1 million, the availability of which is demonstrated to the Supervisor of Banking and Trust Corporations. Licensing requires, *inter alia*, information on shareholding, shareholders, directors and officers, with satisfactory evidence that the latter have the necessary education and experience, and recent financial information on the applicant. Antigua's Bankers Books Evidence Act, which applies to both domestic and offshore banking, only allows customer information to be supplied to the court in cases related to criminal acts. The IBC Act also includes a confidentiality provision. Antigua has no exchange of information agreements with other countries (*see Cooper, 1995*). Offshore banks are regulated by the Supervisor of Banking and Trust Corporations and the Ministry of Finance. Quarterly returns and an annual audit must be submitted to the Inspector of Banks in the Ministry of Finance and this department also examines the banks and has the power to appoint an examiner. A number of banks and trust companies in Antigua provide bank management services to offshore banks in order to satisfy overseas tax authorities that the bank is in fact domiciled in the offshore location.

Offshore insurance services are also governed by the IBC Act which defines such services as insurance contracts related to risks outside the Caricom region, where premium and liability are paid in non-Caricom currencies. Licences are issued by the Supervisor of Insurance and require a minimum capitalization and a resident director where there is only a single director. A local management company is not required by the Act and no provisions specifically related to insurance in matters such as actuarial valuations, reserves etc. are

contained in the Act (*see Jardine, 1995*). Annual audited financial statements must be filed with the Supervisor of Insurance. In 1995, the required capitalization for insurance companies was reduced from US\$250,000 to \$100,000 in order to be competitive.

There are about 7,000 IBCs in Antigua and about 56 offshore banks. Some ten of the latter have offices and staff in Antigua and some may have domestic bank affiliates. There are six international trusts currently governed by the 1982 IBC Act which requires minimum capital of US\$500,000. An International Trust Act is envisaged (**Feracho and Samuel, *op. cit.***).

5.4.7. *Dominica*

Dominica intends to market itself as a low-profile, low-cost offshore centre. Legislation has been passed and an offshore financial services unit established. This information is from **Feracho and Samuel (*op. cit.*)** but we have been unable to obtain any details of the legislation.

5.4.8. *Grenada*

Grenada has commissioned a study on the developing offshore financial sector legislation but currently licenses offshore banks under existing company legislation (**Feracho and Samuel, *op. cit.***).

5.4.9. *Montserrat*

Feracho and Samuel (*op. cit.*) refer to the closure of over 300 offshore banks in the late 1980s. Although they do not explain the reasons for these closures, the related references to a new (1991) Offshore Banking Ordinance to provide stringent regulation and the policy decision to license only well-established banks, suggest that the closures resulted from unsavoury practices permitted by inadequate

oversight. Montserrat intends to enact a Trust Act, Company Management Act, Limited Liability Company and Limited Partnership Acts, as well as Exempt Insurance and Mutual Funds legislation.

5.4.10. Nevis

Background

Nevis began to offer offshore financial services in 1984 with legislation establishing business corporations. It required that local registered agents hold US\$185,000 in capital. The Act was amended in 1994 to allow local barristers and solicitors in St. Kitts and Nevis to be licensed as registered agents. IBCs are exempt from taxation and exchange control regulations.

The new legislation has modernised Nevis' offshore financial sector and provided for confidentiality and security. But, it appears that insufficient attention has been paid to the supervision of the sector, the onus being placed on registered agents to exercise due diligence.

Trusts

Description of

Innovation:	Legislation on trust establishments
Type:	s
Date:	1994
Functioning:	Nevis International Exempt Trust Ordinance, amended 1995.
Motive:	To update the estate planning provisions of trust legislation.
Origin:	Ordinance incorporates trust provisions of other offshore centres.
Functioning:	The Ordinance allows for asset protection trusts with the following requirements: at least one trustee

must be a licensed trust company or a corporation under the Nevis Business Corporation Ordinance (Nevis IBC); the settlor and beneficiary must be non-resident; the trust property must not include property in the Federation of St. Kitts and Nevis. It ensures that trusts selecting the laws of Nevis as the governing law are not subject to court orders from the settlor's home jurisdiction but allows the governing law to be amended at short notice. The burden of proof of fraudulent disposition is placed on the creditor. It places a one year limit on the period from settlement, establishment or disposition for creditor action provided the trust is settled, established or disposed at least two years before the creditor's cause of action. It requires a deposit of \$25,000 by a creditor attempting to attack the assets of a trust. There is no rule against perpetuity. Heirship rights are expressly prevented from overruling a trust. The settlor can also be a beneficiary of the trust. All trusts must be registered with the Nevis Registrar. The fee is US\$210 and US\$200 per annum thereafter (*see Taylor, 1996*).

Limited Liability Companies (LLCs)

Description of

Innovation: Legislation to allow for limited liability companies

Date: 1995

Motive: To enhance the establishment of trusts.

Functioning: The Nevis LLC is a company by contract and hence allows for greater flexibility than the use of corporations, partnerships or domestic LLCs. Owners of the LLC are referred to as members

and their characterization will depend on the form of management chosen. The Nevis LLC allows for only one member (compare the US LLC which requires two). Only the LLC, not its members, are responsible for its debts, votes are counted in relation to capital contributions, unless the operating agreements specify otherwise. Contributions may take any form acceptable to the members. LLCs which do no business in Nevis are subject to no taxes there. LLCs may be used as an alternative to offshore trusts, as part of an asset protection trust and for an estate plan, *inter alia*. The legislation is seen as of benefit to the US taxpayer because it allows him to structure the company so as to chose to be taxed as a partnership or as a corporation, whichever is more favourable. (*see Neufield, 1996*). LLCs are primarily marketed and administered by an agency based in the USA (**Feracho and Samuel, *op. cit.***).

5.4.11. *St. Kitts*

St. Kitts is developing offshore financial services separately from Nevis. Several pieces of enabling legislation have been enacted in the 1990s: the International Business Act, 1992, modelled on the similar legislation in the British Virgin Islands; in 1996 revision of the International Companies Act and the International Insurance Company Act to provide for captive and other insurance as well as Trust Law.

An advisory committee is also to provide technical assistance to the government on development and marketing and to advise on an appropriate niche market. Offshore banking legislation is also being considered.

5.4.12. *St. Lucia*

St. Lucia has commissioned a study on the development of an offshore financial sector (**Feracho and Samuel, *op. cit.***).

5.4.13. *St. Vincent and The Grenadines*

Background

Under St. Vincent's Trust and International Companies Act (1976), international companies, international business companies and trusts may be established. The Act provides for the registration of several financial firms which include banks, insurance companies, mutual and superannuation funds. There are capital requirements of EC\$10,000 (US\$3,800). Applications and incorporation are carried out through the St. Vincent Trust Service and Trust Authority which is based in Liechtenstein so that the on-shore professionals who provide services to the offshore sector in other countries have not been developed (**Feracho and Samuel, *op. cit.***). Companies are taxed at a rate of 0.35% of the registered capital, with a minimum charge. In 1995 legislation was being prepared to improve on IBCs and trusts.



Section 3

Chapter 6

THE IMPLICATIONS OF INNOVATION FOR MONETARY POLICY¹

The innovations documented in **Chapters 4 and 5** may imply that the parameters faced by monetary authorities and the environments in which they operate have changed significantly (in ways additional to the changes brought about by the broader process of liberalisation i.e. removal of price, quantity and exchange controls). Effective policy will require that central banks explicitly factor any changes into their operating rules. The degree and type of innovations are really quite different among the countries, although, in at least two, Jamaica and Trinidad and Tobago, the innovations have chiefly acted to widen credit and investment facilities.

This Chapter presents a preliminary look at the implications for monetary policy of these innovations. Preliminary because, while it is clear that the innovations are often a reaction to policy initiatives, the data required to examine the pattern of reaction is not readily available.

¹ A significant amount of the quantitative work for this chapter was done by Mr. Anthony Birchwood, a Research Assistant at the Caribbean Centre for Monetary Studies. We are deeply indebted to him for his efforts and fully absolve him from any remaining errors.

Further, the authorities themselves appear to react, with some lag, to tighten conditions or close loopholes, eliciting, it would appear, another innovatory response from the private sector. If the authorities are not to play a game of catch-up with private agents, so that the Lucas critique is always operative, it would seem necessary to obtain a good understanding of the reaction function.

We thus begin by trying to distinguish, in a rather summary fashion, the channels through which monetary policy is said to affect the economy. That is, the channels are taken from various models of policy in an open economy. This rather eclectic approach is probably inferior to considering a particular model of monetary policy transmission and identifying the points where, and how, innovation is likely to change the transmission mechanism assumed. However, in the absence of a preferred model of monetary policy transmission and given that there is not a preferred model common to all the Caribbean countries, we try to cover all bases, albeit relatively superficially. This approach has the disadvantage of nearly ignoring (it is in fact impossible to do so entirely) the interactions between the channels identified, although a model could do so only in a highly stylized fashion. If the hypothesis that there is a kind of innovation game being conducted between central banks and private agents is a reasonable description of reality, this approach has the particular disadvantage of ignoring the endogeneity of actions by both players.

6.1. Background: The Effects of Innovation on Transmission Mechanisms

In this analysis, we distinguish five channels through which monetary policy affects the macroeconomy: the money supply, interest rates, the exchange rate, credit and expectations. These channels are not mutually exclusive, and may well be very closely interrelated.

Money Supply

Monetary policy is usually aimed at influencing certain monetary aggregates, and hence the level of interest rates, in order to influence aggregate demand. Those monetary aggregates, M1 through M3, say, are used as indicators of the need for monetary policy adjustment. To tighten aggregate demand the central bank can engage in open market sales of securities, reducing banks' reserves (the monetary base) and hence the volume of loanable funds (deposits) they are able, or wish, to hold. Or, as has been more common to date in the Caribbean, it can directly intervene to change required reserves, or restrict credit. The success of these actions will depend on the response of banks and on the response by holders of deposits and, in part as a result, how accurate an indicator bank liabilities are of the liquidity in the economy. The importance one attaches to the volume of liquidity and transactions balances on expenditure, as opposed to the effect of that liquidity on interest rates and interest rates' effect on expenditure, in part depends on whether a monetary-type or Keynesian-type model is adopted.

Innovation in the financial sector changes the appropriateness of the money supply indicator of liquidity. For example, the narrow money supply traditionally discussed includes only currency and non-interest-bearing demand deposits, but in the Caribbean, where savings deposits have always tended to be used for transactions purposes, it would be appropriate to include the latter. Innovation in the industrialized economies has often been identified with the inclusion of new accounts, often interest-bearing, in the M1 total. As banks broaden their range of accounts and as new, or revamped old, institutions offer accounts which can be used for transactions purposes, the appropriate money supply indicator becomes difficult to define. Innovations are not confined to exotic instruments, but, more importantly for the majority of consumers, have taken the form of new means of making payments.

Of course, in macro-models the rate of interest normally referred to as the opportunity cost of holding money (currency and demand deposits) is the rate(s) of interest on securities or other financial assets, with many of the latter having different degrees of money-quality or “moneyness”. Increases in rates on securities, through a process of substitution and competition, should increase the spectrum of interest rates in the economy, inducing business and individuals to reduce their expenditure. If the demand for money or its velocity is relatively stable and predictable, monetary authorities can expect that meeting the money supply (however defined) target will produce a predictable response on expenditure.

Innovation may mean that a wide range of deposits, paying market rates of interest, which can be used for both transactions and savings purposes become available. As additional institutions enter the market offering services not dissimilar from banks, even traditionally-reluctant banks may need to become more competitive in the deposit market; money balances may take on characteristics nearer a wealth than a transactions variable. It may also become cheaper to hold money for both purposes (if balances which can be used for transaction purposes pay a rate of interest near to that on securities). In other words, money demand (depending on the variable on the left hand side) function may shift. There has been evidence of such shifts in a wide variety of countries in recent years (see the discussion in **Section 6.3 below**).

Arrau and De Gregorio (1993) and **Arrau et al (1995)** argue that omission of a proxy for innovation in estimates of demand-for-money functions in several developing countries results in failure to find a cointegrating vector and implausible parameter values. There is no similar evidence for the Caribbean, as far as we are aware. **Craigwell (1991)** estimated narrow money demand for Jamaica using data for the period 1953-86 and found a set of cointegrating variables and a specification that was robust to a panoply of specification tests,

although no innovation variable was included. On the other hand, innovation had probably not become sufficiently established in the period tested to alter the demand for money.

The effect of a change in reserves on the banks' ability to lend (and eventually on the scale of overall demand) and on the rate of interest at which they lend will depend on whether they are able to substitute other liabilities for deposits, and on the extent to which lending is confined to bank on-balance-sheet lending. To the extent that banks have access to a wholesale market for funds, or are willing to arrange loans for fees, provide guarantees for third-party loans or access foreign funds, their balance sheet deposits will prove a poor guide to the volume of activity they are able to fund. Furthermore, with innovation in traditionally commercial-bank-dependent markets, bank credit quantities may be a poor indicator of the ability (willingness) of resident agents to access funding.

Interest Rates

Interest rates are the major channel through which monetary policy is usually taken to operate and interest rate levels are generally indicative of the degree of tightness of monetary policy. An increase in the central bank's discount rate makes it more expensive to access funds when banks lack liquidity and in responsive markets can raise the overall level of rates. However, as has tended to be the case in the Caribbean, when the banking sector is liquid, the discount rate has little effect on the cost or availability of funds. The increase in the Treasury Bill or other security rate through which the monetary authority induces banks to purchase securities sets a benchmark for other rates. Increases in interest rates will increase the cost of both investment and current expenditure for firms and will similarly encourage consumers to reduce consumption expenditure. Reductions in consumer expenditure may also reduce the demand firms face and hence their own planned expenditure. Interest rates also operate indirectly via their wealth effects.

Increases in interest rates reduce the net worth of the assets which firms may use as collateral, reducing the access of bank-dependent small borrowers to bank loans (the distinct credit view is treated below). Similarly, increases in rates of interest reduce the value of private assets such as houses and property (higher rates of interest increase mortgage costs, and hence the demand for housing and the price of houses). If private expenditure is a positive function of wealth, the decline in asset value will be another means by which monetary policy is able to affect expenditure. In responsive markets, once again, there are additional ways for this to work - an increase in any central-bank-determined rate is sufficient to lower stock market values, as buyers and sellers react to an expected increase in business costs, which provides another means by which perceived wealth, and hence expenditure, is decreased. As the opportunities for individual investment expand, which is a feature of innovation, these wealth effects may become more important, adding a further link to the web between monetary policy and expenditure. To the extent that individuals begin to invest in bonds or equity, for example, interest rate increases will impact on another element of private wealth. There may be long lags between a change in monetary policy and the effect on wealth and hence expenditure, however, in markets where many holders of the “new” forms of wealth do not fully appreciate the implications of interest rate change.

The overall efficacy of monetary policy will therefore depend on the sensitivity of expenditures to interest rates and on the extent to which the capital account is open and capital is mobile. Of course, with a fixed exchange rate, perfect asset substitutability and perfect capital mobility, monetary policy can have no effect on the rate of interest or the money stock itself. An incipient increase in interest rates brought about by a decrease in the money supply will induce the substitution of domestic for foreign securities and an incipient appreciation of the exchange rate which the monetary authorities must forestall by buying foreign reserves. The resulting increase in base money increases the money supply to maintain the domestic interest

rate at international levels. But even perfect asset substitutability between domestic and foreign assets does not imply perfect capital mobility. Transactions costs, informational differences and capital controls all act to restrict capital mobility and maintain differential yields between assets in different countries. **Dornbusch and Giovannini (1990)** cite studies which suggest that capital controls even by European Union members with internationally-traded currencies act to segment their markets. Deregulation of the capital markets and financial innovation can bring about a considerable change in this scenario, if it allows agents less costly access to foreign funds.

It has usually been assumed that an increasing range of options available to the depositor will increase the interest elasticity of money demand. This is expected to reduce the effectiveness of monetary policy since increased elasticity implies a smaller increase in interest rates, and hence fall in expenditure, for a given change in the money supply. On the other hand, the increased elasticity would express itself in depositors' willingness to remove funds from banks when alternatives are available, forcing banks to reduce their loans, or raise their interest rates.

Innovation has created a number of devices to allow corporations to hedge risks - derivatives being the oft-infamous example. Interest rate swaps allow firms to access a wider variety of markets without increasing interest rate risk. Options such as interest-rate caps, collars and floors act like insurance. For example, an interest-rate cap (or ceiling) allows a borrower at a floating rate of interest to insure against a rise in the rate over a specified level. This can be seen as follows: an option is a financial contract with a fixed expiration date that offers a positive payoff or nothing at maturity. At expiration, a call option gives the purchaser the right, but not the obligation, to buy a fixed number of units of the underlying asset if that asset's price exceeds a level specified in the option contract. A call with a strike level (exercise price) of 8% (on an annual basis) on some notional amount of principal is a cap on

the floating-rate loan payment which coincides with the expiration of the option. A cap can then be viewed as a series of interest-rate call options, designed to hedge a series of interest payments. If the interest rate at the exercise date exceeds 8%, the call pays off the difference between the actual rate and the strike level times the notional principal times the fraction of the year since the purchase of the option. (The above description quotes, almost verbatim, from **Abken, 1993**). The availability of such insurance may, it has been argued, reduce firms' reactions to interest rate changes. Note that the insurance can be costly: if interest rates remain at or below the strike level, the premium paid by the buyer for this insurance is a sunk cost. And on the other side of the contract, while the seller of the cap provides insurance for the premium, large losses can be made if a large movement in rates takes place, unless the portfolio of the seller has other offsetting assets - hence the infamy of derivatives. Correct pricing of the option is also crucial to the control of risk.

Exchange Rate

With a free capital account, an increase in real interest rates relative to foreign interest rates (it is assumed that risk aversion on the part of investors will maintain a wedge between domestic and foreign rates - domestic and local assets are not perfect substitutes, especially since denominated in different currencies), following a tightening of monetary policy, will lead to an appreciation of the exchange rate, lowering the domestic cost of imports, and lowering domestic prices if the decreased price of imports are passed on. At the same time, exports become less competitive and this affects the current account and overall income (Unsterilized central bank intervention will also affect the exchange rate but this is not a policy tool the Caribbean has been able to employ).

Increased capital mobility makes the exchange rate channel more important. A major feature of official innovations has been the opening

of the capital account, removal of exchange controls, and the relaxation of the fixed exchange rate. Essentially, the transactions costs of moving capital may be decreased at the same time as the degree of asset substitutability is increased. Innovations such as currency and interest swaps, forward agreements on currencies and, perhaps more importantly, a more active secondary market in all instruments, may greatly increase actual capital mobility. In turn, the increased volumes from such flows encourage the development of new opportunities. Mobile capital constrains the change in interest rates which the authorities can achieve.

Credit Channel

In the more recent and hotly-disputed credit view of monetary policy, financial assets are imperfect substitutes to the firm (the Modigliani-Miller theorem on the irrelevance of capital structure does not hold because information is imperfect) so that the cost of external funds (from traded equity and debt) is greater than the cost of internal funds. This gives banks, who specialize in monitoring (*see Diamond, 1984*) and information gathering, a special advantage in providing loans to firms who would otherwise have difficulty in obtaining external funding. A decline in the monetary base affects not only bank liabilities (the money supply) but reduces bank loan assets and hence the financing available to (usually taken to be small) firms who cannot obtain alternative financing, the reduction in bank loan supply raising the bank loan rate relative to other loan rates from other sources of credit. The existence of this credit channel has been disputed and subjected to empirical tests using US data. **Ramey (1993)** found that M2 leads both bank loans and output following a change in monetary policy, a result which **Bernanke (1993)** pointed out could reflect the fact that banks are able to reduce security holdings more rapidly than loans because of the transactions cost of calling in or selling loans. The credit channel depends on the inability of some firms to obtain financing outside the banking sector, and on banks' inability to obtain alternative

financing for bank loans when their deposit liabilities decline. It has been widely accepted that small firms cannot obtain non-bank financing because they do not have access to anonymous markets. To the extent that banks can obtain non-deposit funding, on the wholesale market, for example, without an increase in the cost of their funds relative to the Treasury Bill rate, the bank-dependent firms need not be squeezed out of the market. **Kashyap and Stein (1995)**, assuming that small banks will have poorer access to non-deposit sources of funds, test this link and find that the lending volume of small banks is more sensitive to monetary policy than the lending volume of large banks, though results are not as clear-cut for security holdings. **Watson (1996)**, in a VAR analysis to evaluate the impact of monetary shock with the treasury bill rate (TBR) as the monetary policy instrument, finds some superficial evidence that the monetary transmission mechanism in Trinidad and Tobago works through credit: an initial increase in the TBR leads to an increase in the loan rate which is followed by a decrease in loan demand and bank deposits and declining GDP.

Expectations

The operation of the interest rate and exchange rate channels depends importantly on expectations. For example, to the extent that there are inflationary expectations, an increase in interest rates which reduces the asset value of a house may not dissuade house investment if it is seen as an inflation hedge. With inflationary expectations consumers may have an incentive to bring forward consumption despite an increase in interest rates. An opposing tendency would arise if high interest rates create expectations of unemployment and a continuing uncertain environment, either of which could be expected to increase saving and reduce expenditure. Furthermore, with mobile international capital and a flexible (or fixed) exchange rate, the reaction of capital flows depends on expectations of exchange rate changes. The **Dornbusch (1976)** assumption that financial markets adjust very rapidly while the real market is sluggish implies that expectations can produce

rapid changes in the spot exchange rate, which overshoots its long-run value while the real economy adjusts. If agents' expectations of exchange rate movements are not well-organised, an unstable exchange rate can result. In general, Dornbusch-type models which take explicit account of dynamic behaviour and expectations (that are not necessarily either perfect foresight-type or rational, in the sense of being based on the correct model) seem far more applicable in markets where innovation is opening the capital market and eroding the dominance of conservative commercial banks. Furthermore, in the initial stages of innovation, one can presume that the economy's agents go through a learning stage where they are both unsure of their best reactions and have difficulty in forming consistent expectations.

6.2. Monetary Policy in the Caribbean

As noted in the various sections of **Chapter 4**, describing the national context within which innovations blossomed over the past ten years, monetary policy in the Caribbean has generally taken the forms of overall credit limits, selective credit controls, bank reserve requirements, changes in the monetary base, interest rate controls and exchange controls. Innovations on the part of the authorities themselves have increasingly limited resort to the more direct controls. In matching Caribbean outcomes following innovation to those suggested by theory (or empirical work in other countries) we will take as a basis the transmission mechanisms suggested in three discussions of monetary policy in the Caribbean: those by **De Silva and Hilaire (1996)**, **Peart (1995)** and **Worrell (1996)**. These three examples are used because written accounts were available.

De Silva and Hilaire (op. cit.) highlight four features of the environment in which monetary policy has operated in **Trinidad and Tobago**: the stimulative effect of the domestic budget deficit, insulation of the domestic interest rates from international rates prior to April 1993 when capital controls were removed and a continuing absence

of significant capital flows, the dominance of commercial banks as a source of credit, the income sensitivity and interest rate insensitivity of the demand for money and the influence of expectations on investment expenditure. Monetary policy is aimed at controlling inflation with nine indicators used to monitor the economy and determine policy responses: the rate of inflation, money supply, including one measure which takes account of non-bank deposits, the domestic fiscal balance, exchange rates, domestic and foreign interest rates, credit to the private sector, commercial banks' liquid assets, capital flows and market sentiment (the latter I interpret to be equivalent to what I have termed expectations). The authors note that the demand for transactions balances is shifting as financial institutions provide alternative forms of making payments. The Central Bank of Trinidad and Tobago used a mix of reserve requirements, the Central Bank discount rate (reinforced most recently by discouragement of borrowing at the discount window), selective credit controls, interest rate controls, exchange controls and moral suasion to effect monetary policy, with most reliance placed on reserve requirements. Open market operations in Government's short- and medium-term securities are being introduced.

Chapter 4 notes the new instruments introduced in the Trinidad and Tobago financial sector since 1985. They include commercial paper, bankers acceptances, zero coupon bonds, insurance contracts with an investment component, short-term investment pools operated by commercial banks, commercial bank organization of project financing for government, repurchase agreements, swaps and securitized loans. The new institutions - the Home Mortgage Bank and Unit Trust are examples - have mainly been Government-initiated in an effort to deepen the market. Instruments such as commercial paper, bankers acceptances and the investment pools appear to have been largely a response to reserve requirements, sometimes initiated by potential investors rather than the banks. The Central Bank of Trinidad and Tobago has begun to take account of these off-balance sheet items and bankers' acceptances are included in the Basle capital requirements ratios with

a risk-weighting of 20% (*see Sergeant, 1995*).

The range of monetary policy instruments employed by the Bank of Jamaica (BOJ) included reserve requirements, interest rate controls, selective credit controls and central bank discount facilities. Until 1986 the reserve requirements consisted of cash and a secondary requirement of government securities. Treasury bills were instead sold by a Bank of Jamaica auction and the BOJ conducted open market operations through the issue of its own securities, Certificates of Deposit, from 1985; these were phased out in 1995. In 1990, the Bank ceased to set a minimum savings rate. In 1991, exchange controls were lifted. In 1994, formal open market operations in Government securities started, conducted through primary dealers, using primarily reverse repurchase agreements to reduce liquidity.

Jamaica is the Caribbean country with the greatest range of financial innovations. As discussed in **Chapter 4**, much of the institutional innovation has arisen as a means of circumventing the liquidity constraints the Bank of Jamaica has imposed. Commercial banks, for example, have formed subsidiaries to conduct operations free from reserve requirements and a number of financial conglomerates have emerged (several of these have manufacturing or tourism affiliates). In addition, high interest rates have probably sharpened interest rate elasticity, enabling entrants to erode the market share of long-established institutions. **Chapter 4** also discusses the new instruments introduced; these have been fostered both by the costs imposed by monetary policy and the need to hedge risk. The most remarkable is commercial paper but there have also been securitized loans, forward agreements, interest and currency swaps, warrants, increased bond activity, and exchange rate options. Foreign remittances have also grown in importance with both financial institutions and manufacturing companies competing abroad for them.

The Bank of Jamaica has recognized two ways in which commercial paper has changed the transmission mechanism of monetary policy (*see Bank of Jamaica, 1995*): commercial paper rates appear to respond more rapidly to changes in the government security rate determined in open market operations and commercial paper acts as a possible constraint on liquidity management. The latter is clearly true: if we refer to the earlier discussion of the transmission mechanism, commercial paper would appear to be reducing the efficacy of monetary policy in two dimensions - not only are companies able to bypass the banking system (and hence monetary policy attempts to control expenditure) to obtain credit but issues of commercial paper by financial institutions provides them with non-deposit loanable funds. To the extent, however, that the rates on commercial paper are more responsive to security rates, the interest channel is reinforced. The Bank of Jamaica has also recognized the regulatory implications of financial institution issue of commercial paper - it entails a likely increase in the portfolio risk that does not appear to be recognized in capital requirement ratios. The proliferation of institutions also acts to weaken the Bank of Jamaica's monetary policy initiatives.

Barbados has traditionally employed monetary policy instruments very similar to those employed by the other two countries (selective credit controls, interest rate ceilings and floors, reserve requirements, moral suasion) but continues to maintain a fixed exchange rate, capital controls and a deposit rate floor. Monetary policy has been concerned in recent years with increasing private non-bank funding of government in order to avoid increases in the Central Bank's net domestic assets for this purpose. The interest rate channel is seen as relatively weak because banks are reluctant to pass on increased rates to their loyal customers; consumption is interest-inelastic. Despite exchange controls, capital flows are seen as relatively responsive to changes in domestic interest rates or declining bank liquidity. Most innovations, and they have been relatively few compared to the other countries, have been official creation of institutions, as well as some expansion of non-bank

financial institutions into areas formerly confined to banks, encouraged by attempts to avoid credit controls. Some institutions have tried or are trying new instruments, such as convertible bonds, aimed at specific purposes.

All three countries appear to utilize the IMF's financial programming approach, whereby target or benchmark levels are set for net international reserves, net domestic assets of the central bank (the sum of these two being identically equal to the monetary base) and fiscal balances, supplemented by their own understanding of the economic relationships. In its most basic form, assuming fixed exchange rates, the transmission mechanism underlying the IMF's programming approach suggests that an increase in domestic credit increases monetary liabilities, reducing interest rates and hence encouraging expenditure and increased nominal income, the latter stimulating imports and a loss of international reserves which offsets the initial increase in domestic credit. Lower interest rates also induce a net capital outflow, depending on the degree of capital mobility. Under flexible exchange rates, the loss of reserves leads to a depreciation in the exchange rate and an increase in the price level. Monetary policy in this framework was principally seen as limiting expansion of domestic credit through control of the monetary base via central bank credit and control of the banking system's reserves. Increasingly, however, the Fund and the countries, are moving towards open market operations aimed both at control of monetary liabilities and influence of the interest rate level.

6.3. The Empirical Testing of Innovation and Monetary Policy: The Literature and Present Approach

The goal of this Chapter is a first attempt to understand how the innovations in Caribbean financial sectors are likely to affect monetary policy. This task is made more difficult by the fact that, simultaneous with, or following extensive, private innovation, the authorities are themselves undertaking policy innovations. Unlike the experience of

the industrialized countries these policy changes are exogenous, rather than endogenous: in the industrialized countries in the past two decades, policy innovation has tended to occur following perceived breakdowns in the existing policy instruments. In the Caribbean, the recent innovations in the policy have largely taken place in response to pressure from the international finance institutions for more market-based systems. However, there is a degree to which the reduced effectiveness of traditional policy instruments has encouraged a search for more robust tools: the reduced effectiveness can be attributed to a process of learning and innovation on the part of market participants to circumvent the existing policy measures. By providing price incentives for desired expenditure change, rather than attempting to prohibit access, the appeal to market-based systems recognizes the changes in the market.

We wish to learn whether innovation has been sufficiently widespread and profound to change the parameters of financial behaviour and require adaptations in monetary policy. In a sense, we already have evidence of this: the innovations themselves, as reactions to monetary policy strictures, have forced changes in monetary policy in an attempt to achieve the ends frustrated by the innovations. But it would be desirable to test our notions of how behaviour and innovation will affect monetary policy by confronting a model with data. However, as already noted there is no accepted model of monetary policy in the Caribbean (which is not exceptional in this regard) and it goes well beyond the scope of this study to develop such a theory. In any case, with the profound changes in policy behaviour, the past will be a poor guide to the future.

A number of approaches have been used to consider empirically how monetary policy may be affected by deregulation and innovation. For example, **Blundell-Wignall, Browne and Manasse (1990)** examine a number of relations related to the transmission mechanisms of monetary policy. **Baghestani (1990)** reformulates the reduced form St. Louis equation, which explains nominal GDP growth by money

and government expenditure, to argue that US M1 is now more akin to a savings, rather than transactions, asset as a result of interest paid on NOW accounts and is therefore less closely related to GNP and a less reliable policy guide. However, most examinations of the effects of innovation on monetary policy have focused on the effects of innovation on money demand. This approach has been motivated by the observation that innovations in the industrialized countries have destabilized money demand equations that authorities used as forecasting tools - the famous examples of missing money (where over-prediction) or too much money (where under-prediction) as well as parameter instability. Of course, as recognized by several authors (*see for example Hendry and Ericsson, 1991*), the simple failure of the demand forecast does not indicate demand shifts: there could also be mis-specification.

Among the well-known cases of deregulation and innovation affecting money demand are the UK functions in the mid-1970s when standard money demand equations over-predicted (missing money) and the early 1980s when there was under-prediction (too much money). The poor outcome of UK monetary targetting has been attributed to this instability (*see Biefang-Frisancho Mariscal et al, 1995*).

Several authors have shown that taking explicit account of the effects and variables stemming from innovation, together with use of dynamic modelling techniques which model long-run relationships, gives stable demand equations, arguing that financial innovation may thus explain the failure of money demand equations. **Biefang-Frisancho Mariscal et al. (op. cit.)** compare long run money demand estimates for the UK and West Germany citing the significant inclusion of an own rate of interest and a risk term in the UK equation, in contrast to the German case. Writing before the widespread introduction of cointegration techniques, **Hafer and Hein (1984)** found that M1's interest elasticity did not increase as they expected following the

innovation of money substitutes but even declined slightly in the later years of the seventies. Similarly, **Swamy and Tavlas (1989)** found that errors in forecast money demand were reduced when the price expectations variable proxied for the opportunity costs of holding money in periods when regulated nominal rates did not reflect opportunity costs, and argued that random coefficient estimation would provide a more reliable estimate. They also found that innovation lowered the interest elasticity of money demand. Of course, as noted, the decline is also consistent with the payment of near-market rates on money components, itself an innovation. **Viren (1990)** includes variables such as the volume of credit card transactions and expected exchange rate depreciation to find that his results in terms of estimates and diagnostic tests are an improvement over traditional estimates.

This approach has also been extended to LDCs. **Arrau and De Gregorio (1993)** find that traditional long-run money demands for Chile and Mexico are not cointegrated, and exhibit unrealistically high price and income elasticities, even with the introduction of dummies to capture structural change. Modelling financial innovation as a transactions technology which gives a stochastic intercept term following a random walk, they get mixed results but conclude that the high elasticities found in traditional equations are due to the omitted innovation variable. **Arrau, De Gregorio Reinhart and Wickham (1995)** reach similar conclusions for ten LDCs. **Cesarano (1990)**, on the other hand, disputes the effect of innovation on interest elasticity and monetary policy, using Italian data to argue that the government-sponsored development of the treasury bill market neither changed the interest elasticity nor the stability of the money demand function, suggesting that the money demand changes found elsewhere may arise from learning lags that arise in the case of private innovation. **Hoque and Al-Mutairi (1996)** find a long-run stable demand for nominal money in Australia, using cointegration, with some evidence of a lower interest elasticity, despite the innovation in the first half of the 1980s.

Hendry and Ericsson (1991) estimate M1 equations for the UK and US using previously-developed error correction models. In the case of the UK they find predictive failure for the earlier 1980s which they attribute to the fact that the earlier opportunity cost variable is no longer representative of the true opportunity cost. Including a learning adjusted rate on retail sight-deposit, i.e. own rate, corrects the prediction and is satisfactory in other respects. Similarly, the US equation includes a learning adjusted rate on competitive assets which corrects for predictive failure, although they argue that the over-prediction was due to “misspecified dynamics and omitted interest-rate volatility”, rather than innovation.

This empirical work has recently begun to receive theoretical backing in the form of models specifically concerned with explaining the empirical results, viz, that standard money demand specifications no longer exhibit stability when estimated using data from years following innovation. This work has the advantage of providing an explanation of some of the apparently conflicting results of the empirical work. **Ireland (1995)** introduces into the representative household maximization problem investment in financial capital (which represents financial innovation) where the investment depends on technological (telecommunications, computing) improvements which make innovation less costly over time and high interest rates which raise the cost of holding non-interest-bearing money. High interest rates encourage innovation and reduce money held, thus increasing velocity. Econometric estimates that take no account of innovation would therefore tend to indicate a variable income elasticity of money demand because the measured elasticity would reflect the increases in velocity when income rises in the presence of innovation. **Glennon and Lane (1996)** allow for more realistic money in a model where monied assets are held for their **Gorman-Lancastrian** characteristics - liquidity and profitability. Innovation involves the introduction of new assets with a different mix of these characteristics. They find that velocity depends on the extent to which new assets improve on profitability relative to

liquidity - where liquidity is not greatly impaired and profitability is substantially increased, a new money asset reduce velocity more. Innovation may result in either an increase or decrease in the interest elasticity of money demand; where the interest on money is better correlated with the market rate, elasticity decreases and if new assets included in money have characteristics similar to those that are not considered money, the elasticity should increase.

A strong theme in this work is clearly that innovation affects monetary demand through the alternatives to money holding it affords and the resulting shifts in the intercept and slope of the function to reflect the returns available both on money-type assets and the alternatives. There is some evidence that specifications that explicitly recognize new market features give results, that are able to encompass other approaches (*see Hendry and Ericsson, op cit.*). Explicit incorporation of these alternatives, if one had a good understanding of them (and the requisite data), is therefore attractive. Innovation appears to operate by changing the relative prices faced by the holder of money and explicit incorporation of those prices would reflect the influence of the innovations. Unfortunately, we generally lack the information to include the required variables and are forced to use proxies.

The approach taken here is to examine whether the financial innovations in the Caribbean have, similar to those in industrialized and industrializing countries, made standard money demand equations poor predictors of money demand. As our earlier discussion indicates, Trinidad analysts believe that the transactions demand for money is being affected and in Jamaica, if deposits are being diverted into commercial paper this is likely to affect the demand for broad money. We would also expect transactions demand to become more sensitive to rates on commercial paper because CPs would become an investment alternative to the holding of money. Unfortunately, the range of money demand equations tested in the Caribbean is limited and we have not found a series of money demand equations which can be

compared over a period or periods. We therefore begin by examining whether the model that does use the more recent dynamic estimation techniques - that of **Craigwell (1991)** - continues to be satisfactory when extended past his estimation period of 1953-1986. A similar model (using annual data) is estimated for Jamaica (the money demand estimated by Craigwell). Since we find Craigwell's non-inclusion of savings deposits as a component of transactions demand unattractive, we include the savings component in our definition of narrow money. Our preferred approach in testing the possible impact of financial innovations on money policy effectiveness is to estimate the long run relationship between money, income and interest rates using cointegration analysis to determine if innovations have disrupted or weakened this traditional relationship (money demand function) on which much of our monetary policy is based. The rough short-run dynamics of the relationship is modelled using error correction models which we also test for structural breaks at the major times of innovation. If structural breaks occurred around the times that innovations emerged, it will suggest that innovations have in fact affected the money demand function and we may have to restructure our money demand functions if we want to use them as tools in our monetary policy strategy. In the spirit of **Hendry and Ericsson (1991)**, we also include, where available, rates that better represent the opportunity costs introduced by innovation. Unfortunately, only too clearly innovatory opportunity cost variables are available - the rate on CDs in Jamaica and the rate of return on the Unit Trust's First Unit Scheme in Trinidad and Tobago. If the inclusion of these variables generated better money demand functions then it would also suggest that the effect of innovations need to be incorporated if we are to effectively forecast money demand for monetary policy purposes. As an alternative, in the other countries we include the treasury bill rate (TBR), on the argument that, as individuals' ability to hold assets paying the market rate become available as an alternative to money, their demand for money would become increasingly sensitive to the market rate and the TBR is our best proxy for market rates in economies where the government is the major issuer

of securities. Similarly, foreign interest rates and the exchange rate should become important indicators of opportunity cost with the removal of exchange controls. The problem here is that failure to find satisfactory results does not allow us to accept (not reject) the hypothesis of change because it could simply indicate the extent to which the proxy variables are poor indicators of the real opportunity costs. However, this would suggest at least one lesson for the monetary authorities - the need to maintain a data collection system that moves at the same pace as the innovations in the market so that they are able to track and better understand the environment in which they operate. Another problem with this approach is that influences other than innovations could be impacted on the relationship between money, income and interest rates, policy shifts for example. Of course other approaches could have been used to analyse the possible impact of financial innovations in money demand and therefore on monetary policy effectiveness. For example, popular approaches used have been the construction of financial innovation variables to be included in money demand functions (**Viren, 1990; Ebril, 1989; and Hendry and Ericsson, 1991**) and the use of random coefficients models (**Sharma and Tavlas, 1989**) to better capture the dynamics of the change wrought by innovations. The problems with these approaches, however, are the unavailability of data to construct financial innovation proxy variables in the first case and, in both cases the fact that these approaches focused on estimating better money demand functions while we needed to determine how financial innovations impacted on monetary policy effectiveness.

Quarterly models are fitted for Barbados, Jamaica and Trinidad and Tobago. Our priors on the importance of innovation in these three territories would suggest that the equation is likely to be a poor representation of the data generation process in Jamaica and Trinidad and Tobago where many alternatives to money (defined as currency, demand and savings deposits at commercial banks) have become available in the last ten years. However, it is more likely to be remain a

good representation in the case of Barbados where the major alternative to bank deposits has been deposits and shares at credit unions.

6.4. Data and Estimation

Orthodox money demand functions postulate that the demand for nominal money balances is a function of the price level, a scale variable (usually income) and a vector of opportunity cost variables (usually the rate of return on alternative assets). If money demand is homogenous of degree one in prices, then the real specification (that is $M/p = f(y, i)$) is more appropriate. The use of real **money** as the dependent variable has two supporting factors - in the absence of money illusion, theory suggests that the public will decide on holdings of real, not nominal, money; and its use avoids identification problems where the price level is flexible because monetary policy controls nominal, not real, quantities. **Craigwell (1991)**, cites **McClean's (1982)** argument that the linear homogeneity assumption is not appropriate and should be tested for. If the elasticity of prices is not unity, however, this implies some degree of money illusion on the part of the public. This is inconsistent with theoretical priors in long-run money demand function but may be explained in the short-run by some lag in response. We would prefer to consider the function misspecified than to accept unquestioningly evidence of money illusion.

The conventional way of estimating the short run version of this equation would be to run a regression of these variables, including a lagged value of the dependent variable. This specification is typically referred to as a **Goldfeld (1973)** type equation which appeals to the concept of portfolio adjustment costs in the short-run.

Our concern is, however, not to estimate the most appropriate money demand functions but to determine if innovations have had any effect on the traditional relationship between money, income and interest

rates. This will in turn have implication for the effectiveness of monetary policy, especially via the setting of intermediate targets for monetary aggregates, in an environment in which innovations are occurring.

Methodology

The approach used is to estimate the demand for both narrow and broad money, using cointegration techniques, to see whether there is a stable long-run relationship between money demand, income and prices. Such a relationship would have to exist if there is any logic to effecting monetary policy through the control of various monetary aggregates. Moreover, short run error correction models (ECM's) would also be formulated to generate a better understanding of the short run dynamics of the relationship between the above-mentioned variables and the implications for monetary policy.

Firstly, cointegration tests on nominal specifications would be conducted to check whether money demand is homogenous of degree one in prices and therefore whether the real specification of money demand is more appropriate. If this is found to be so, money demand equations such as $M/P = f(y, i)$ would be tested for cointegration. If cointegration is found, then the long-run movements of these variables are closely related. In such cases, any temporary shock to the system which disrupts this relationship, will lead to adjustments in real money balances which causes these variables to once again track each other closely. Once those variables are cointegrated, therefore, it means that the economy will always return to some stable relationship between money demand, income and interest rates.

The **Johansen (1988)** Maximum likelihood procedure is the main technique used to estimate the long run nominal and real demand for narrow and broad money demand in Barbados, Jamaica and Trinidad and Tobago. The Johansen procedure is superior to the alternative **Engle-Granger (1987)** two-step procedure in the sense that

significance tests can be done on the long run model which cannot be done using the Engle-Granger (E-G) procedure, since the distribution of the regression in the first stage of the procedure is non-normal. The problem of lag length selection associated with the Johansen procedure does, however, create problems when the test results from the Johansen procedure are lag sensitive. Moreover, although the Johansen procedure is superior in many respects, it still does not offer a sufficient battery of tests that we would like to conduct on the short run models. For these reasons, we prefer to use the Johansen results for the cointegration test and for the short run ECM's, but the Engle-Granger test results are also reported for comparison as in **Ericsson and Sharma (1996)**. The various models are estimated using Eviews.

The short run error correction models are estimated primarily to establish the speed of adjustment of money balances in the short run to temporary disequilibrium (which has implications for the effectiveness of monetary policy) but also to conduct various tests on the short run money demand equation. These tests could provide evidence of any subtle changes to the relationship between money, income and prices that may have taken place over time which did not disrupt the long run relationship but which have implications for the effectiveness of monetary policy. This is, however, ancillary to the main thrust of this section so in all cases exhaustive general to specific modelling techniques were not used to develop the best representation of short run money demand models. Instead, some simple experimental runs were performed on certain models thought to be most appropriate. The result of these short run error correction models must therefore be interpreted with caution.

The approach used here is to let economic theory define the long run relationship while determining short run dynamics from the data. The theoretical basis of the various long run money demand specifications used are outlined below.

For Barbados, the real demand for narrow money (RM1) is thought to be determined by real income (RY) and, the 12 month time deposit rate (12TR) and the foreign rate² (FR) are used as opportunity cost variables. The income variable is expected to have a positive sign while the two opportunity cost variables are expected to have negative signs. The real demand for broad money (RM2) in Barbados is determined by real income and the foreign rate, as well as, by the treasury bill rate (TBR) and by the expected rate of inflation (PE) (proxied by the current rate of inflation). The last variable is used to proxy the rate of return on real assets because real assets could plausibly be seen as an alternative to holding broad money in a jurisdiction where there are few alternatives to broad money to be found in the money and capital markets. The fact that capital controls further limit domestic agents' ability to hold foreign securities (which would normally be the substitute for broad money in the Caribbean) increases the propensity of local agents to hold real assets as the only real alternative to M2.

In Jamaica, the real demand for narrow money is thought to be determined by real income, the 12 month time deposit rate, the foreign rate and the exchange rate (ER). The last variable is only included in the Jamaican model because although the exchange rate should be important in all territories as agents hedge against foreign exchange risk by holding less domestic money balances when the rate depreciates, the variable is likely to be significant in Jamaica only because of that country's consistent and frequent changes in the exchange rate over the period (1975-1995)³ under review. The importance of the exchange

² Proxied by the US Treasury Bill Rate in all specifications of money demand.

³ Although Trinidad and Tobago has registered changes in its exchange rate over the period 1975 to 1995 and especially since the flotation of the Trinidad and Tobago dollar in 1993, this variable is not likely to be significant when considered over the entire period.

rate on money demand should also have been further enhanced by the elimination of exchange controls in 1991. Jamaica's real demand for broad money is thought to be determined by real income, the foreign rate, the exchange rate and the treasury bill rate (as a proxy for the opportunity costs /interest rate on substitutes for broad money).

In the case of Trinidad and Tobago, the real demand for narrow money are thought to be determined by real income, the foreign rate and the 12 month time deposits. We expect the broad demand for money to be determined by real income, the foreign rate and the treasury bill rate.

Our preferred models for each country are specified below.

Barbados:

$$RM1=f(RY, 12R, FR)$$

$$RM2=f(RY, PE, TBR, FR)$$

Jamaica:

$$RM1=f(RY, 12R, FR, ER)$$

$$RM2=f(RY, TBR, FR, ER)$$

Trinidad and Tobago:

$$RM1=f(RY, 12R, FR)$$

$$RM2=f(RY, TBR, FR)$$

The symbols used to identify variables in this section are used consistently throughout this section.

Data

The various money demand models for Barbados, Jamaica and Trinidad and Tobago were estimated using quarterly data for the period 1975:1 to 1995:4. Narrow money (M1) is defined as currency in

circulation plus demand and savings deposits. We use this variant of narrow money because we believe that savings deposits are used more as transaction balances and less as savings balances in the Caribbean. Broad money (M2) is defined as M1 plus time deposits. Real M1 and M2 were obtained by dividing M1 and M2 by the consumer price index which has as its base year 1985.

The opportunity cost variables used include the 12 month time deposit, the expected rate of inflation (for Barbados only), the treasury bill rate, the US treasury bill rate (a proxy for the foreign rate) and the exchange rate (for Jamaica only).

Since sufficiently long GDP series (for our purposes) do not as yet exist for the three countries being studied, the quarterly GDP series (the proxy for income used in this study) were generated by decomposing annual GDP into a quarterly GDP series by using a rough seasonality index for GDP. The problem confronting this approach is that the distribution of quarterly GDP is not known. Since these economies are driven by the external sector, however, it was decided that the sum of imports and exports (which were available quarterly) would be used to proxy the seasonality of the quarterly GDP series.⁴ This approach seemed appropriate not only because income and growth are driven by the external sector but also because the sum of imports and exports is highly correlated with GDP on an annual basis.

Essentially, however, the critical assumption underlying this approach is that a quarterly series of imports and exports would exhibit the same seasonal patterns as a quarterly GDP series because income and growth in these economies are driven by the external sector.

⁴ The sum of imports and exports of each quarter was computed as a percentage of the annual sum of imports and exports and this percentage distribution was used as a rough seasonality index of quarterly GDP.

The data is described in greater detail in **Annex 6.1** which lists the symbols of variables, defines the data, outlines their unit of measurement and lists their sources. In the section that follows all the data are entered into the various models in log form except the Unit Trust rate for the Trinidad and Tobago M2 model.

Integration and Cointegration

The first step in cointegration analysis is usually to establish the order of integration of the variables under consideration. The **Augmented Dicky-Fuller (1981)** statistics for the variables used in the study are presented as **Table 6.1**. Most of the variables appear to be integrated of order one $I(1)$, except the 12 month time deposit rate and the Unit Trust rate for Trinidad and Tobago and, the expected inflation rate for Barbados, which were $I(0)$. Moreover, in the case of the time deposit rate for Barbados, the statistical evidence is less conclusive, in that, the series could not be unambiguously determined as either $I(1)$ or $I(0)$ on the basis of statistical results.

Cointegration

Barbados

The nominal specification of the preferred narrow money demand equation for Barbados indicated that the price variable was close to unity, the real specification therefore seems more appropriate.⁵

Using the model of the real narrow demand for money specified for Barbados, a stable long-run relationship was established as the

⁵ In any case it would be very difficult to justify a nominal specification of money demand, especially in the long run, since one would have to argue that agents have money illusion in the long run.

model was found to be cointegrated at the 1% level of significance using the likelihood ratio test. Furthermore, the estimated coefficients were all significant at the 5% level of significance and most had the correct signs. The one exception was the 12 month time deposit rate which had a positive sign (*see Table 6.2*).

For comparative reasons, the Engle-Granger procedure was also used to test for cointegration. This test indicated that the model was cointegrated at the 10% level of significance. Coefficients also had similar signs to the Johansen results (*see Annex 6.3*).

As indicated earlier, various short run error correction models were experimented with. Since comprehensive general to specific modelling techniques were not used, however, the fit of the short run models from the Johansen procedure was generally not particularly good. For example, the ECM for the narrow money demand in Barbados experimented with, achieved a fit, as measured by R², of 47%. This fit was achieved only after seasonal dummies for the first and fourth quarters were utilised. These were included to capture the effect in the first quarter of tourism receipts and in the fourth quarter for the seasonal Christmas demand. The error correction term from the long run model indicated that the adjustments to short run disequilibria were slow. There is obviously much scope for better ECMs to be developed. However, this was not the main thrust of this Section and we did not devote much time to developing the best ECM representation (*see Annex 6.2*).

For comparison, the ECM was also estimated with the long run coefficient from the Engle-Granger procedure. These results also indicated that the fit of the short run models was not particularly good. A battery of tests were performed on this short run model. These included a test for parameter stability (**Chow 1960** breakpoint and forecast tests), non-normality (**Jarque-Bera**), serial correlation of order two or higher (**Breusch-Godfrey**) and for heteroskedasticity (**Arch**

and White tests). The Chow breakpoint test indicated there were statistically significant structural breaks at 1988:1 and 1991:1. Test runs of the chosen models using different time period (periods when innovations were not prevalent and time periods when they were) revealed that the results seemed sensitive to the length of the data series used rather than to the prevalence or not of innovations, we therefore do not attach much significance to the size of coefficients and the signs when different estimations periods (shorter/longer) are used. We prefer to test for shifting parameters using the Chow test. The other tests revealed that this specification had desirable statistical properties, that is, the residuals were normal, there was no serial correlation of order two and that residuals were homoskedastic (*see Annex 6.3*).

In terms of the demand for real broad money in Barbados, the model was found to cointegrated at the 5% level of significance and all the coefficients had the expected signs except the Barbados treasury bill rate which had a positive sign. All coefficients except the inflation rate were also significant at the 5% level of significance (*see Table 6.2*). Comparison of the test results from the long run Engle-Granger model with those from the Johansen procedure indicated a great degree of similarity, in that, both the long run model of broad money demand using both procedures were found to be cointegrated at the 5% significance level and the coefficients of both long run models had similar signs.

The estimated short run error correction model indicated that the coefficient of the long run model was not significant. The coefficient of variables in the ECM generally had the correct signs but were often insignificant and the fit was poor ($R^2 = 0.37$). The short run error correction model developed using the coefficient of the E-G long run model had a slightly better fit ($R^2 = 0.41$) than that obtained with the results from the Johansen procedure. The coefficient of the long-run model was significant at the 5% level and small, which indicates the adjustment to disequilibrium in the short run is very slow.

More importantly, the standard test performed revealed that the residuals were non-normal and heteroskedastic. One must, therefore, be very cautious attesting any significance to the results produced. These statistics and the short run models using the Engle Granger procedure are outlined in **Annex 6.3**.

The long run models for Barbados do indicate that a stable relationship exist between money, income and interest rates and the relationship seem to be relatively tight. There was evidence of structural breaks around 1988 and 1991, which may have weakened the relationship but these do not appear to have been strong enough to disrupt the long run relationship.

Jamaica

The Johansen cointegration test on the nominal specification of the preferred money demand equation indicated that the coefficient of the price variable was not far from unity and the real specification therefore seems more appropriate.

The real narrow money demand function for Jamaica was found to be cointegrated at the 1% level of significance. Two cointegrating vectors were, however, found and the results must therefore be interpreted with caution. The results are also very poor, in that, all the estimated long run coefficients are not statistically significant, indicating that although the variables specified in the model move together over time, the relationship is very loose. Other specifications of the Jamaican narrow money demand also encountered these problem of more than one cointegrating vectors and statistical insignificance of the coefficients of the long run model, which reinforces the point that the long run relationship is at best loose (*see Table 6.3*).

For comparative purposes, the Engle-Granger procedure was also used to test for cointegration. Much better results are generated

using the E-G approach, as the model was found to be cointegrated at the 1% level of significance and all coefficients, except the coefficient of the exchange rate variable, had the right signs (*see Annex 6.3*).

Attempts at developing a short run error correction model from the Johansen test produced poor results as many of the coefficients had the wrong signs or were insignificant. The short-run error correction models generated using the E-G tests had similarly poor results, in that the R² was only 46% and most coefficients were statistically insignificant. The Chow breakpoint test revealed that there was a parameter shift in 1986:1 and that the residuals of the equation were non-normal. There were, however, no second order serial correlation and the residuals were homoskedastic. The error correction term in the short-run model was statistically significant and its magnitude indicated again slow adjustments to temporary disequilibrium. These statistics are reported in **Annex 6.3**.

The cointegration results from the real broad money demand function in Jamaica were much better. Preferred broad money demand model in Jamaica was found to be cointegrated at 5% level of significance. All the coefficients except that of the Jamaica treasury bill rate had the right sign and most were significant at the 5% level of significance while the foreign rate was significant at the 10% level of significance. An alternative specification using the CD rate was also cointegrated but the coefficients of the foreign rate and the exchange rate were insignificant (*see Table 6.3*). The results of the cointegration test using the Engle-Granger procedure generated similar results to the Johansen procedure, in that, the model was found to be cointegrated at the 1% level of significance and the coefficients all had the same signs as the Johansen results (*see Annex 6.3*).

The results of the short-run error correction model generated using the Johansen results were not particularly good. The fit was poor (R²=0.34) and many of the coefficients either had the wrong

sign or were statistically insignificant. The short-run error correction model generated using the Engle-Granger long run results did achieve a slightly better fit ($R^2=0.42$). The coefficients of the Jamaican treasury bill rate and the foreign rate also had the wrong signs. The battery of statistical tests on this short run model indicated that the residuals were non-normal but that there was no second order serial correlation and the residuals appear to be homoskedastic⁶ (*see Annexes 6.2 and 6.3*).

As discussed before, we also re-estimate **Craigwell (1991)** model for Jamaica, using a longer period 1953 - 1995 instead of the period 1953-1986 to see whether different results are obtained since the updated series includes a period in which many innovations were introduced. The results generated with this extended period was broadly similar to that of the earlier study. The result of the short run ECM generated using the extended period is broadly similar with the same signs and broadly similar test results. The differences are that the nominal specification does not appear to be appropriate since the real specification was cointegrated, the Chow breakpoint test also indicates that at the point 1986 there was a statistically significant shift in money demand. From the results, however, it does not appear that this shift has disrupted the long run relationship.

The cointegration test results of the narrow and broad money demand models indicate that the broad money relationship with income and interest rates is much more stable and tight or tighter than the narrow money specification. This possibly indicates that if one is using intermediate targets of monetary aggregates to effect monetary policy in Jamaica, the broad money aggregate may be the more useful aggregate to target.

⁶ The model failed the white heteroskedasticity test but this is most likely due to model mis-specification.

Trinidad and Tobago

The Johansen test on the nominal specification of the preferred narrow money demand equation indicated that the coefficient of the price variable was not far from unity. Even if it could be argued that the coefficient of the price variable is not equivalent to one it is very difficult to justify the nominal specification of money demand on theoretical grounds since one would have to assume agents have money illusion in the long run. The real specification therefore seems more appropriate.

The Johansen cointegration test indicated that the narrow real money demand equation specified was cointegrated at the 5% level of significance. The signs of the coefficients of real income and the foreign rate were, however, incorrect. The coefficient of the foreign rate was also statistically insignificant (*see Table 6.4*). Alternative long-run models were experimented with but this type of results persisted, particularly the negative sign on the real income variable and its statistical significance.

In terms of the alternative Engle-Granger procedure, the model was found to be cointegrated at the 1% level of significance and the results were similar to those generated by the Johansen procedure, except that the 12 month time deposit rate now had a positive long run coefficient (*see Annex 6.3*).

The short run error correction model tried also generated poor results as the fit was poor and in many instances coefficients had the wrong sign (*see Annex 6.2*). This may be due to the mis-specifications of the ECM as comprehensive general to specific type modeling was not used to generate the best ECM.

The short run error correction model generated using the Engle-

Granger long run coefficient did not generate a particularly good fit, as the R^2 was only 41% and then only after the model was corrected for serial correlation and a seasonal dummy for the first quarter was added. The 12 month time deposit rate was also statistically insignificant even at the 10% level of significance. The battery of statistical tests also revealed that the residuals of the ECM were non-normal and the Chow forecast test indicated that over the period 1989:1 to 1995:1 there was a significant break in the stability of parameters. There was, however, no evidence of serial correlation and the error term was homoskedastic (*see Table 6.3*).

The preferred real broad money demand equation for Trinidad and Tobago was found to be cointegrated at the 5% level of significance using the Johansen procedure. The coefficients of the determinants were, however, all statistically insignificant (*see Table 6.4*). The alternative Engle-Granger procedure revealed that the model was found to be cointegrated at the 1% level of significance but again the coefficients of the income and foreign rate variables had the wrong signs.

The short-run error correction model generated using the Johansen results was poor. The short-run ECM developed using the E-G results did not have a good fit ($R^2=0.30$). The real income and foreign rate coefficients were also statistically insignificant. The battery of tests revealed that there was no second order serial correlations and the error term was homoskedastic. However, the residuals were non-normal. The Chow breakpoint test indicated that there was a break in the stability of the parameters at the points 1986:1 (*see Annex 6.3*).

The cointegration results from the narrow and broad money demand specifications all tend to indicate that although there is a long run relationship between money, income and interest rates, the relationship is tenuous. The fact that there were indications of a structural break in the short run models lends credence to the view that

since 1986 significant policy changes and innovations may have severely loosened the relationship between money, income and interest rate and, that setting intermediate targets for either narrow or broad money aggregates may no longer be an efficient way to conduct monetary policy.

6.5. Conclusion

In summary, when taken together, the results seem to indicate that policy changes and innovations have put pressure on the long run relationship between money, income and prices. This relationship has been weakened by these changes but it still appears to hold, albeit loosely in Jamaica and Trinidad and Tobago.

For Barbados, the long run relationship seems to have fared best, in spite of some evidence of parameter instability, most likely caused by difficult economic conditions and the effects of structural adjustment policies. In Jamaica, the narrow specification of money demand seemed to have a tenuous long run relationship as cointegration was achieved but the fit and significance of the variables were poor. The broad money demand specification for Jamaica does, however, exhibit a tighter relationship with income and interest rates. Of the three, Trinidad and Tobago seemed to have the weakest long run relationship between both narrow and broad versions of money and income and interest rates.

In terms of the short run models, the results were not particularly good, but those that were reasonable indicated that the speed of adjustment of money balances to temporary disequilibria was very slow. This result is not surprising given the underdeveloped nature of the money and capital markets in these jurisdictions. There was also evidence of structural breaks in all jurisdictions, especially around the late 1980s and the beginning of the 1990s which coincide the point in time when significant policy changes were effected and innovations emerged.

The lessons that can be gleaned from these results is that many factors have conspired to loosen the long term relationship between money, income and interest rates, with its attendant negative consequences for the effectiveness of monetary policy, especially via intermediate targets. These factors have not totally destroyed the long term relationship but it is being made weaker by continuing policy changes and innovations. The traditional relationship seem to be relatively intact in Barbados which means that intermediate monetary targets may still be a feasible option there. In Jamaica, the narrow money demand is very loose but the broad money relationship is still relatively tight. In Trinidad and Tobago, however, the relationship is loose for both versions of money. The monetary authorities therefore have good cause to continue seeking new mechanisms through which they can exert influence on aggregate demand, especially in Jamaica and Trinidad and Tobago.

Table 6.1: Augmented Dickey Fuller Statistic for Quarterly Data Series

Variable	Level	First Difference
Barbados		
RM1	-0.46(3)	-9.81(2)**
RM2		-5.36(4)**
RY	-2.03(3)	-10.99(2)**
I2R	-3.36(3)*	-7.72(1)**
PE	-4.52(2)**	
Jamaica		
RM1	1.01(4)	-6.45(1)**
RM2	-1.50(1)	-7.35(1)**
RY	-0.70(3)	-5.319(3)**
I2R	-1.89(1)	-7.52(1)**
ER	0.33(1)	-6.60(1)**
TBR	-1.24(2)	-7.35(1)**
CDR	-2.30(2)	-3.91(2)**
Trinidad & Tobago		
RM1	1.74(2)	-3.28(4)*
RM2	-1.20(1)	-2.85(4)+
RY	-1.31(2)	-11.27(1)**
I2R	-2.62(2)+	
UTR	-4.75(1)**	
TBR	-0.17(1)	-8.55(1)**
FR	-1.41(1)	-8.30(1)**

Notes: Lag lengths in brackets chosen on the basis of R². Choosing models based on R² may not be appropriate because it does not adjust for degrees of freedom especially in small data sets. In such circumstances the Akaike or Schwarz criterion may be more appropriate.

** , * , + denote significance at the 1%, 5% and 10% levels of significance respectively.

Table 6.2: Barbados - Johansen Cointegration Test Results for 1975:1-1995:4

Coefficients and Tests	M1	RM1	RM2
RY	0.25(-1.86)	0.26(-4.53)	0.28(-6.03)
CPI	1.16(-4.21)		
PE			48.85(-2.31)
12R	1.98(-1.49)	1.76(2.59)	
TBR			0.38(-3.78)
FR	-0.81(1.87)	-0.71(3.74)	-0.45(4.67)
C	-1.83	-0.99	0.81
Lag	3	2	3
Likelihood Ratio	74.36*	76.09**	73.16*
CI Vectors	1	1	1

Note: ** and * denote the rejection of no cointegration at the 1% and 5% levels of significance.

The figures in parenthesis are t-statistics.

**Table 6.3: Jamaica - Johansen Cointegration Test Results for
1975:1-1995:4**

Coefficients and Tests	M1	RM1	RM2	RM2
RY	1.28(-2.28)	0.00	0.84(-6.77)	0.59(-11.26)
CPI	0.99(-2.31)			
ER	0.58(1.25)	5.02(-0.49)	-0.28(5.24)	-0.01(0.26)
CDR				-0.24(7.92)
12R	2.05(-1.69)	-16.72(0.42)		
TBR			0.54(-5.06)	
FR	0.08(-0.29)	-0.09(0.05)	-0.10(1.91)	-0.02(0.39)
C	-5.39	-39.78	0.04	2.65
Lag	1	1	2	1
Likelihood Ratio	102.30*	89.19*	75.16*	105.20**
CI Vectors	1	2	1	1

Note: ** and * denote the rejection of no cointegration at the 1% and 5% levels of significance.
The figures in parenthesis are t-statistics.

Table 6. 4: Trinidad & Tobago - Johansen Cointegration Test Results for 1975:1-1995:4

Coefficients and Tests	M1	RM1	RM2	RM2
RY	2.08 (-3.79)	-2.08 (4.37)	12.92 (-0.24)	-0.65 (0.63)
CPI	1.41 (-5.55)			
UTR			-1.48 (1.44)	
12R	-2.29 (2.68)	3.68 (-4.19)		
TBR		5.04 (-0.21)		
FR	-0.18 (1.61)	0.24 (-1.0)	-1.45 (0.21)	0.06 (-0.33)
C	-0.95	7.49	-49.28	6.55
Lag	1	1	1	2
Likelihood Ratio	86.28**	53.93*	53.51*	61.87**
CI Vectors	1	1	1	1

Note: ** and * denote the rejection of no cointegration at the 1% and 5% level of significance. The figures in parenthesis are t-statistics.

Annex 6.1: Data Symbols, Definitions and Sources

- M1 = Narrow demand for money which is defined as currency in circulation plus demand and savings deposits at the end of period. The data were sourced from the Bank of Jamaica Statistical digest, Central Bank of Barbados Annual Statistical Digest and the Central Bank of Trinidad and Tobago, Quarterly Economic Bulletin.
- M2 = Broad demand for money which is defined as M_1 plus time deposits at the end of period. The data were collected from the same sources as M1.
- RM1 = M1 divided by the CPI (1985=100)
- RM2 = M2 divided by the CPI (1985=100)
- 12R = 12 month time deposit rate paid by commercial banks and this series was collected from the same sources as M1.
- TBR = Treasury Bill rate and this series was collected from the same source as M1.
- FR = The United States Treasury Bill rate. This series was collected from the IMF's International Financial Statistics.
- CPI = The consumer price index (base year =1995) collected from the same sources as M_1

- PE = The expected rate of inflation defined as the current rate of inflation which is taken as the rate of change of CPI (1985=100). This series is sourced from the Central Bank of Barbados Annual Statistical Digest.
- Y = Gross Domestic Product. Generated by creating a rough seasonal index from the sum of imports plus exports and then imposing the seasonality inherent in this index on annual GDP to derive the quarterly GDP series. The imports and exports series were derived from the Trinidad and Tobago Central Statistical Office's Monthly Overseas Trade Bulletin, the Central Bank of Barbados's Annual Statistical Digest and the Bank of Jamaica's Statistical Digest.
- RY = Y divided by the CPI(1985=100)
- ER = The exchange rate is defined as the end of period selling rate for the US dollar vis-a-vis the Jamaican dollar. This series is sourced from the Bank of Jamaica's Statistical Digest.

Annex 6.2: Johansen ECMs

Barbados

$$\begin{aligned}
 \text{DRM1} = & -0.004 + 0.01 \text{ DRY} (-1) - 0.001 \text{ DRY} (-2) - 0.08 \text{ DFR} (-1) \\
 & (-0.49) \quad (3.27) \quad (-0.16) \quad (-2.02) \\
 & -0.04 \text{ DFR} (-2) - 0.04 \text{ D12R} (-1) + 0.03 \text{ P12R} (-2) \\
 & (-1.10) \quad (-1.02) \quad (0.91) \\
 & -0.08 \text{ DRM1} (-1) - 0.29 \text{ DRM1} (-2) + 0.04 \text{ ECM}^1 + 0.05 \text{ S}^2 (1) \\
 & (-0.72) \quad (-2.41) \quad (3.04) \quad (3.66) \\
 & +0.03 \text{ S} (4) \\
 & (2.11)
 \end{aligned}$$

**R2 = 0.47, SER = 0.035, Akaike AC + -6.57,
Schwartz = -6.20**

$$\begin{aligned}
 \text{DRM2} = & -0.002 + 0.04 \text{ DRY} (-1) + 0.006 \text{ DRY} (-2) - 1.31 \text{ DEP} (-1) \\
 & (-0.21) \quad (1.09) \quad (0.68) \quad (-7.75) \\
 & - 0.23 \text{ DEP} (-2) - 0.04 \text{ DFR} (-1) - 0.04 \text{ DFR} (-2) \\
 & (-0.31) \quad (-0.69) \quad (0.80) \\
 & -0.02 \text{ DTBR} (-1) + 0.01 \text{ DTBR} (-2) - 0.46 \text{ DRM2} (-1) \\
 & (-0.45) \quad (0.19) \quad (-3.30) \\
 & -0.26 \text{ DRM2} (-2) + 0.05 \text{ ECM} + 0.05 \text{ S} (1) + 0.01 \text{ S} (2) \\
 & (-1.89) \quad (0.68) \quad (3.01) \quad (0.76)
 \end{aligned}$$

**R2 = 0.37, SER = 0.04, Akaike = -6.07,
Schwartz = -5.63**

Jamaica

$$\text{DRM1} = 0.01 - 0.04\text{DRY} (-1) - 0.07 \text{DFR} (-1) - 0.10 \text{D12 R} (-1) -$$

(1.8) (-0.76) (-1.48) (-2.42)

$$0.01\text{DER} (-1)$$

(-0.12)

$$+0.29 \text{DRMI} (-1) + 0.09 \text{ECM} + 0.06 \text{S} (4)$$

(2.87) (1.77) (5.2)

**R2 = 0.52, SER = 0.04, Akaike = -6.14,
Schwartz = -5.86**

$$\text{DRM2} = -0.003 - 0.07\text{DRY} (-1) - 0.04 \text{DRY} (-2) - 0.05 \text{DFR} (-1)$$

(-0.35) (-0.88) (-0.56) (-0.96)

$$-0.07\text{DFR}(-2) - 0.04\text{DTBR} (-1) + 0.01 \text{DTBR} (-2)$$

(-1.19) (-0.91) (0.18)

$$-0.14 \text{DER} (-1) - 0.01 \text{DER} (-2) + 0.34\text{DRM2}(-1)$$

(-2.07) (-D-13) (2.67)

$$- 0.14\text{DRM2} (-2) - 0.05\text{ECM} + 0.05 \text{S}(4)$$

(-1.07) (-0.71) (3.04)

**R2 = 0.34, SER = 0.06, Akaike = -5.62,
Schwartz = -5.22**

Trinidad and Tobago

$$\text{DRM1} = 0.007 + 0.010 \text{DRY} (-1) - 0.011 \text{DFR}(-1) - 0.042\text{D12R} (-1)$$

(1.35) (0.54) (-0.36) (-0.87)

$$+0.45 \text{DRM1} (-1) + 0.005 \text{ECM} + 0.08\text{S} (1)$$

(3.67) (-0.45) (2.04)

**R2 = 0.23, SER = 0.03, Akaike = -6.9,
Schwartz = -6.67**

$$\begin{aligned} \text{DRM2} = & -0.002 - 0.024\text{DRY} (-1) + 0.049 \text{DFR} (-1) - 0.065\text{DTBR} (-1) \\ & (0.37) \quad (-1.15) \quad (1.36) \quad (-0.88) \\ & - 0.014\text{DRM2} (-1) - 0.004\text{ECM} \\ & \quad (-0.01) \quad (-1.92) \end{aligned}$$

**R2 = 0.09, SER = 0.04, Akaike = -6.38,
Schwartz = -6.20**

- Notes:**
- ¹ A positive sign on the coefficient of the ECM does not necessarily signal an explosive system because the ordering of the variables in the ECM impacts on the sign of the ECM co-efficient.
 - ² Seasonal dummy

Annex 6.3¹: Engle-Granger Cointegration Results and ECMs

Barbados

Long Run Models

$$RM1 = 1.73 + 0.15RY - 0.29FR + 0.06 (12R)$$

$$R2 = 0.55, SER = 0.16, F = 29.8 (P:0.00), ADF = -1.74$$

$$RM2 = 2.08 + 0.11RY - 1.02EP - 0.23FR + 0.12TBR$$

$$R2 = 0.64, SER = 0.11, F = 30.91 (P:0.00), ADF = -2.47$$

Error Correction Models (ECMs)

$$DRM1 = 0.007 + 0.004 DRY - 3.69DEP + 0.032 DFR - 0.02D12R$$

(1.46) (1.14) (-7.69) (1.27) (-0.69)

$$-0.06ECM + 0.04 S(1) + 0.03 S(4)$$

(-2.31) (5.05) (3.43)

R2 = 0.66, SER = 0.02

Chow bp (1988:1):F = 1.88 (P:0.08)

Chow bp (1991:1) F = 2.33 (P:0.03)

Chow Fc(1991:1 - 1994:4) F = 1.63 (0.09)

Jarque-Bera (x²) = 0.398 (P: 0.82)

Breusch - Godfrey (F) = 0.80 (P: 0.45)

Arch(F) = 0.014 (P: 0.91)

White (F) = 1.31 (P:0.24)

$$\begin{aligned} \text{DRM2} = & 0.003 + 0.01\text{DRY} - 2.43\text{DEP} + 0.002 \text{DFR} - 0.024\text{DTBR} \\ & (0.37) \quad (1.77) \quad (-3.28) \quad (0.05) \quad (0.59) \\ & -0.22\text{DRM2} - 0.12\text{ECM} + 0.02 \text{S}(4) \\ & (-2.24) \quad (-2.22) \quad (1.61) \end{aligned}$$

R2 = 0.41, SER = 0.04

Jarque-Bera (x^2) = 18.06 (P:0.00)

Breusch - Godfrey (F) = 1.61 (P:0.21)

Arch (F) = 21.34 (P:0.00)

White (F) = 2.41 (P:0.01)

Jamaica

Long Run Models

$$\text{RM1} = 0.77 + 0.91\text{RY} - 0.22\text{FR} - 0.34(12\text{R}) + 0.76\text{ER}$$

R2 = 0.96, SER = 0.19, F = 390.25 (P:0.00), ADF = -3.85

$$\text{RM2} = 1.69 + 0.61 \text{RY} - 0.13 \text{FR} + 0.14 \text{TBR} - 0.09 \text{ER}$$

R2 = 0.65, SER = 0.11, F = 32.88 (P:0.00), ADF = -4.04

Error Correction Models (ECMs)

$$\begin{aligned} \text{DRMI} = & 0.01 - 0.003 \text{DRY}(-1) - 0.082 \text{DFR}(-1) - 0.054 \text{D12R}(-1) \\ & (1.41) \quad (-0.076) \quad (-1.91) \quad (-1.30) \end{aligned}$$

$$\begin{aligned} & -0.041 \text{DER}(-1) + 0.40 \text{DRMI}(-1) - 0.073\text{ECM} \\ & (4.18) \quad (-2.30) \quad (5.13) \end{aligned}$$

$$\begin{aligned} & + 0.066 \text{S}(4) \\ & (-0.81) \end{aligned}$$

R2 = 0.46, SER = 0.05
Chow bp (1986:1): F = 2.02 (P:0.06)
Jarque-Bera (x2) = 10.26 (P:0.01)
Breusch-Godfrey (F) = 1.08 (P:0.35)
Arch (F) = 0.83 (P:0.36)
White (F) = 1.17 (P:0.33)

DRM2 = -0.01 + 0.13 DRY + 0.094 DFR + 0.044 DTBR
 (-1.12) (2.75) (2,04) (1.14)

- 0.133 DER (-1) + 0.354 DRM2 (-1) - 0.229 ECM (-1)
 (-2.54) (3.44) (-3.70)

+ 0.066 S(4)
 (4.15)

R2 = 0.42, SER = 0.05
Jarque-Bera (x2) = 38.80 (P:0.00)
Breusch-Godfrey (F) = 1.0 (P:0.38)
Arch (F) = 0.82 (P:0.37)
White (F) = 2.78 (P:0.00)

Craigwell's Model

Long Run Results

M1= -2.50+0.94Y-0.21TBR+0.06FR+1.15CPI+1.58INF

R2=0.98, SER=0.11, DW=1.60, ADF=-5.22

Error Correction Model (ECM)

DM1=0.05+0.63DY-0.20DTBR-0.12DFR+1.28DCPI-
 0.35ECM(-1)-0.36DM1(-1)

R2=0.69, SER=0.09, DW=1.97
Chow fc(1988-1995):F=2.18(P:0.06)

Jarque-Bera(X²)=3.42(P:0.18)
Breusch-Godfrey(F)=0.60(P:0.56)
Arch(F)=0.10(P:0.75)
White(F)=0.87(P:0.58)

Trinidad and Tobago

Long Run Models

RMI = 7.96 - 0.52 RY - 0.37 FR + 1.19(12R)

R² = 0.60, SER = 0.25, F = 31.54 (P:0.00); ADF = -2.99

RM2 = 4.51 - 0.01 RY + 0.15 FR - 0.36TBR

R² = 0.80, SER = 0.10, F = 96.91 (P:0.00), ADF = -2.96

Error Correction Models

DRMI = -0.037 + 0.027 DRY (-1) - 0.023 DFR (-1) + 0.017D12

R(1)
 (-0.79) (1.77) (-0.99) (0.76)

+ 0.754DRMI(-1) - 0.019ECM(-1) - 0.577AR(1)
 (9.44) (-1.85) (-5.07)

+ 0.026 S(1)
 (3.20)

R² = 0.41, SER = 0.04

Chow fc (1989:1 - 1991:1): F = 1.81 (P:0.05)

Jarque-Bera (x²) = 60.70 (P:0.00)

Breusch-Godfrey (F) = 0.23 (P:0.80)

Arch (F) = 0.07 (P:0.79)

White (F) = 0.38 (P:0.96)

$$\begin{aligned} \text{DRM2} = & 0.02 - 0.003 \text{ DRY} - 0.01 \text{ DFR} - 0.139 \text{ DTBR} \\ & (0.49) \quad (-0.26) \quad (-0.32) \quad (-2.39) \\ & - 0.197 \text{ ECM} (-1) - 0.019 \text{ TDUM} \\ & \quad (-4.67) \quad (-1.31) \end{aligned}$$

R² = 0.30, SER = 0.04

Chow bp(1986:1): F = 2.01 (P:0.08)

Jarque-Bera (x²) = 75.05 (P:0.00)

Breusch-Godfrey (F) = 0.13 (P:0.88)

Arch (F) = 0.03 (P:0.85)

White (F) = 0.40 (P:0.93)

Notes: ¹ See the Eviews manual for a description of the Statistical tests performed.

² TDUM denotes a dummy variable

Chapter 7

IMPLICATIONS FOR REGULATORY POLICY

*C*aribbean systems for the supervision and regulation of financial systems are relatively well-established. Liberalization and innovation over the last ten years have, however, been changing the face of the financial system through the creation of new institutions, the changing role of traditional institutions, including banks, the creation of new instruments, and even the creation of new markets. Authorities and financial institutions have tended to play a game, the institutions reacting to (largely monetary) policy initiatives by shifting towards a new instrument or institution. Rather than reacting with a lag to such arbitrage, it is suggested here that regulation should aim to anticipate and avert problems, using a mechanism that provides market players with the incentive to assume only manageable risks, while maintaining a monitoring system that allows verification of institutional reporting and commitments and early intervention by the authorities when necessary. This is not an original idea. In fact the trend of supervision, especially since the Basle 1988 rules, has been towards controlling or monitoring the risk borne by banks and requiring banks to hold adequate capital against those risks.

7.1. Why (Enhanced) Regulation?

Several reasons for the regulation of financial institutions, especially banks, are widely accepted. Systemic risk stemming from externalities is usually stressed. Banks transform short-term liabilities into long-term assets, incurring illiquidity risk that may

disrupt investment (*see Diamond and Dybvig, 1983*). Bank disturbances may be contagious, especially if there is illiquidity in the payments system or the market makes inferences about financial system stability from their knowledge of banks experiencing problems. **Mayer and Neven (1991)** argue that, although systemic risk is less prevalent among non-bank financial institutions, the fact that investors cannot easily establish the quality of firms offering financial services exposes the market to the problems of adverse selection (the average quality of firms will be poor) and moral hazard (the services may be of lower quality than clients would have chosen if informed). Financial services are experience or credence goods whose quality can only be evaluated even after use, or whose quality cannot even be evaluated after use (poor financial performance may follow from bad advice or from bad luck and the relative contributions are difficult to disentangle). Generally, as **Dewatripont and Tirole (1993)** stress in the case of banks, creditors are small and dispersed so that their monitoring is subject to free-rider problems; further, customers, for example, depositors, lack the information and knowledge required to correctly assess their financial service institutions before, and even after, use.

The Caribbean has to be increasingly concerned with the regulation and monitoring of non-bank and multi-function institutions as mutual funds, investment firms and holding companies proliferate. Since the new financial firms are often affiliates of banks, of other non-bank financial institutions or of non-financial firms, linkages imply a higher degree of potential systemic risk. At the same time, the changes have in general come in the context of a less stable environment following the removal of external capital controls, floating of exchange rates and technological links with the global economy so that the financial sectors are exposed to greater risk and behaviour is changing to adapt to the new circumstances. The possibilities of diversification within small economies are also limited so links with

the global economy, although entailing different, and unfamiliar, exposures, are unavoidable.

The regulation of non-bank services varies between countries. In the UK comprehensive regulation of non-banks was only introduced with the Financial Services Act of 1986 which requires screening of potential managers of investment business and their adherence to rules regarding “their conduct of business, the holding of clients’ funds and their financial reserves” (*see Mayer and Neven op. cit.*). The system combines statutory- and self-regulation. The Act established the Securities and Investment Board which sets the rules for the operation of investment business. But the SIB delegates regulation to five Self-Regulating Organizations (SROs) which can sanction and expel members. The enforcement power of the SROs derives from the fact that membership of an SRO or direct certification from the SIB is required to conduct investment business, although SRO rules are not statutory. In the European Union (EU) the 1993 Capital Adequacy Directive (CAD) provides the regulatory framework for investment firms and the securities activities of banks - these rules are to be applied on a functional, rather than institutional, basis to cover risks taken on by both banks and investment firms. Capital of both banks and investment firms is to be defined in accordance with the banking definition although national authorities may allow an alternative definition for the trading book (*see Dale, 1996*). In the USA, the Securities and Exchange Commission oversees the protection of investors in non-banks, mainly through the monitoring of firms and the punishment of fraud, rather than the screening of entrants. Brokers and dealers must hold capital but, **Mayer and Neven** (*op. cit.*) argue, the focus remains detection and correction of fraud rather than prevention of incompetence.

In the Caribbean, oversight of investment business and securities or security derivatives is still being developed. Even where Security Commissions have been established (The Bahamas, Jamaica

and Trinidad and Tobago) their role vis-à-vis market instruments may not be well-defined. Where licensed institutions are issuing marketable securities and such institutions are normally regulated by the central bank, for example, the relative roles of securities commission and bank supervisors still have to be decided. Where banks are issuing managed funds to replace deposits, it may be unclear whether bank supervision or the Securities Commission should be the regulating body. The latter would involve treating the intermediaries as brokers or dealers. In any case, it is important to ensure that the customer does not believe that such funds have the repayment characteristics of a deposit. Public education may have an important role to play.¹ Mature markets have an array of information available to the public whereas markets in the Caribbean are adopting instruments with complexity similar to those in mature markets before the information business (magazines, rating agencies) has had the opportunity to develop. In Jamaica, the Supervisor of Insurance is responsible for the oversight of unit trusts. In the Bahamas, mutual funds have to be registered under the Mutual Funds Act, 1995 and are to be regulated by the Securities Board. In Trinidad and Tobago the 1993 Financial Institutions Act allows commercial banks to operate mutual funds while other financial institutions may do so with the approval of the Central Bank. However, mutual funds will come under the jurisdiction of the Securities and Exchange Commission once the latter is fully established in 1997. The Act also gave the Central Bank the power to issue a cease and desist order before an institution becomes insolvent (*see Brown, 1995*).

¹ To the extent that the customer in these cases is a large corporation or another financial institution, authorities may be less concerned, except that, in the latter case, there is a risk of contagion.

The discussion above assumes markets with traded securities. The Caribbean also has less sophisticated markets, in Guyana and Suriname, for example, which have regulatory issues of a different kind. For example, Ponzi-type schemes (pyramid schemes) where the investment business promises extraordinarily high returns by paying earlier investors from the inflows of the later investor have been common in emerging markets. These may arise because the investing public is becoming aware of the possibilities of financial investment without sufficient information to realize that yields greatly exceeding other market returns are riskier or, in the extreme of the Ponzi, fraudulent. Caribbean regulators have to be vigilant to these possibilities.

In general, the problems that liberalization and innovation pose for regulation can be summarized as follows:

- greater integration of institutions increases the possibilities for contagion;
- removal of exchange controls provides greater scope for the transmission of shocks;
- deregulation and the availability of a wider range of alternatives change behaviour, creating a less stable and well-understood environment;
- deregulation permits competition which leads to more aggressive and risky action on the part of institutions;
- greater interest rate and asset price volatility increase the need for diversification, which may be difficult in the Caribbean (note that even in the USA, branching legislation may have the same effect). While innovations themselves help hedge against volatility they imply that financial institutions are more exposed

to market risks because of foreign exchange contracts and derivatives instruments.

- Financial firms face, in addition to the traditional credit risk, increased risks of the following types:
 - market risk which consists of interest rate risk, foreign exchange risk, position risk in traded equities and position risk in traded debt securities, where changes in interest rates or exchange rates may change the market value of an instrument;
 - liquidity risk, where the new instrument cannot be easily sold for its market value;
 - credit risk, that the counterparty may default, is now often off-balance sheet with guarantees which could also involve liquidity risk (although credit risk may be less with options because it is held for only a short period and is for less than the face value of the transaction); and
 - country risk.

- The regional expansion of institutions may permit shocks to an institution in one territory to be transmitted to another territory.

- The new instruments are complex, require greater knowledge from supervisors and increase the vulnerability of investors;

- Accounting conventions become important -both in defining the monitoring gauges and in valuing assets. For example, the reserves included in the Basle

Tier 2 capital are intended to refer to general loan-loss provisions (not those earmarked to deal with identified bad loans). But distinguishing between these two on a balance sheet may not be easy.

In reaction, it would appear, to the larger and more complex array of activities in which banks now operate, regulatory authorities everywhere have begun to take a broader and more technical approach to bank regulation. The original focus was on-site examination and off-site analysis to verify the value of assets, liabilities and capital, assess financial condition and infer management efficiency. The emphasis has now moved towards giving banks the incentives to manage risks, thus allowing both a forward-looking approach to supervision and an emphasis on bank, rather than supervisory, decision-making. In the USA, the Comptroller of the Currency, which supervises federally-chartered banks, has “organized a systematic approach to risk management and seek(s) to foster its application in the banks... supervised” (*see Hartzell, 1994*). The Basle amended capital accord of 1996 sets capital requirements against interest rate, equity position, foreign exchange and commodities risks as well as suggesting approaches for the treatment of options. Questions remain about allowing firms to use their own risk evaluation models,² rather than the scheme put forward by the

² Kupiec and O’Brien (1995) comment that two conditions permit correct use of a bank’s internal risk-measurement model to set the capital requirement for market risk. The model should provide an accurate measure of exposure over the regulatory horizon and the authority should be able to verify the accuracy of the measure. They have shown that neither of these conditions is likely to hold. Instead they develop an alternative approach which would provide a bank with incentives to hold the correct amount of capital by pre-committing to an amount of capital which would cover maximum anticipated trading losses over a regulatory period. Portfolio losses exceeding its commitment would be penalized.

Commission (*see Dale, 1996, and Hartzell, 1994*). **Edwards and Mishkin (1995)** also discuss the advantages of combining adequate capital requirements for banks with early corrective action to limit capital loss.

The most commonly used risk evaluation models are “value-at-risk” or VAR models which measure the price risk of a portfolio by estimating the maximum loss to which the portfolio is subject over a given time period with a given probability. The probabilities usually take the form of 95% or 99% confidence levels. These models allow statements of the type “there is only a 5% (or 1%) probability that the value of this portfolio of securities will fall by more than \$ x over the y days under the usual market conditions”. Two important determinants of the VAR model are the time period and the confidence level (*see Hendricks, 1996*). The models assume that the portfolio composition does not change over the holding period, which argues for the use of a short time period, and a one-day holding period is often used. However, for investment firms with a different planning horizon, longer periods would be more appropriate. Chosen confidence levels should rise with the cost of a loss and with the risk aversion of the firm, both of which imply that more capital should be held to cover possible losses. Widespread acceptance of the models is indicated by the fact that EU regulators allow VAR models to be used to calculate capital requirements for their Capital Adequacy Directive (CAD) as an alternative to the CAD’s own method, with capital held determined by the higher amount indicated. However, an awareness of the VAR models’ shortcomings remains important. Using several approaches to calculating the VAR, although none that allowed for portfolios with options, and assuming normality of portfolio returns, **Hendricks (*op. cit.*)** compared history with the risk estimates generated by VAR models. He found that they usually cover the portfolio outcomes they are intended to capture, but outcomes that are not covered tend to be extreme outcomes which

are larger than predicted, and that changes in risk over time are difficult to track.

7.2. The Capital Requirements Approach

The Basle agreement established common measures of bank capital and set minimum standards for capital relative to bank credit exposure. While the 1988 Basle capital standards are well-known, it may be worth repeating them here. Two types of capital are defined. Core or Tier 1 capital, which must be at least half of capital, consists of common stock, non-cumulative preference shares (which provides senior ranking for dividend purposes), and disclosed reserves (retained earnings). Supplementary or Tier 2 capital consists of other types of reserves and debt instruments. The bank's exposure to credit risk is measured by risk-weighted assets, the agreement specifying the weights according to perceived risk of the asset. Government securities thus carry a weight of zero, being considered safe assets. Capital adequacy is measured by the ratio of capital to aggregate risk-weighted credit. Minimum capital was set at 8% (note that this 8% has been criticized as an arbitrary criterion) to be met by all banks by 1992. The 1988 Accord dealt only with credit, not market risk such as interest rate or foreign exchange risk. This was corrected by the 1996 amendment to the Accord which requires that by the end of 1997, banks measure and apply capital charges in respect of their market risks where market risk is defined as the risk of loss in on- and off-balance sheet positions from changes in market prices. Such risk arises from interest rate related instruments, equity, foreign exchange and commodities. In measuring market risk banks may either apply standardized measurements or may use measures from their own risk management models. The revision also allows for an additional capital definition - Tier 3 capital which is short-term subordinated debt satisfying specified conditions and only to be used to meet part of the capital requirement for market risk.

Berger, Herring and Szego (1995) examine the role of capital in terms of both the market capital which a bank would hold to maximize its value irrespective of regulatory requirements and regulatory capital. They note that the regulatory environment itself reduces market capital because arrangements provided by government (the safety net) such as deposit insurance and the central bank discount window insulate banks from market discipline. They also address the question of defining the instrument which should qualify as regulatory capital if the authority wishes to avoid the external diseconomies of bank failure such as systemic risk. Such claims should be junior to those of a deposit insurance agency so that they absorb losses before the government;³ they should not be redeemable without assured refunding during the period required to evaluate a shock; they should reduce the bank's moral hazard incentives to exploit the protection of the safety net. This last could be a major advantage of fixing capital requirements rather than attempting to directly control a bank's assumption of risk. Since capital is costly, when required capital increases with perceived risk, the requirement to hold it will, it is hoped, provide banks with the correct incentive to control or manage risk (and hence avoid holding more costly capital). However, **Berger *et al*** note, regulatory capital has drawbacks: capital is difficult to define, measure and monitor. Neither equity nor subordinated debt meet the three requirements perfectly - while there is empirical evidence that higher equity is associated with lower bank risk, the theoretical arguments are inconclusive. For example, the cost of higher equity may induce bank owners to choose higher risk in order to raise their expected return to compensate for the cost of equity. Suggestions such as

³ In the event of bankruptcy, junior or subordinate debt is paid only after senior debt so that the insurer would be paid first.

that of **Kupiec and O'Brien** (*op. cit.*, see Footnote 1) may address this incentive problem.

7.3. Some Innovations

Regulation and the authorities in the Caribbean appear to be making an uneasy transition from the old system of commercial banks, insurance companies, a few insignificant other intermediaries and, perhaps, a stock market with limited activity, to a system of banks, or other institutions, operating across a range of activities, with instruments created in a more or less *ad hoc* fashion by these institutions (it should perhaps be remarked that *ad hocery* is probably a problem only for regulators' ability to forecast, not for the instruments or the system). As a result, in many instances, the scope of the regulator is not well-defined. The new financial arrangements have to be reconciled with the old system of regulation or oversight. To do this properly requires a thorough understanding of the existing legislative and regulatory rules relating to securities and the financial sector (and this will include indirectly-related legislation such as Companies Acts, exchange control rules, tax legislation) in order to evaluate the extent to which existing rules will prove adequate. For example, securities legislation which gives the rights and obligations of issuer and investor will in most cases provide the basis for regulation of instruments derived from those securities and for new arrangements. Since such a review is not feasible here, we examine existing or suggested regulations to deal with three innovations and try to learn what lessons may be drawn for Caribbean conditions: commercial paper, financial conglomerates and swaps.

7.3.1. Commercial Paper (CP)

The BIS defines commercial paper as fixed-maturity unsecured short-term negotiable debt usually issued in bearer form primarily

by non-banks (*see Alworth and Borio, 1993*). The instrument originated in the USA but has been adopted in several other markets, although the form it takes varies by market and is, to some extent, determined by the rules governing issue.

Regulation of these instruments is primarily aimed at trying to ensure that potential investors are large and well-informed and/or that issuers are of verifiable quality, although countries take a variety of approaches (*see Alworth and Borio, 1993*). Where CP is governed by specific rules, they fix a minimum denomination in order to exclude retail investors. Some jurisdictions also fix a maximum tenor and others restrict the currency of issue. Japan requires that issuers be listed or meet SE disclosure requirements, credit rating is mandatory and only firms receiving the two highest ratings are allowed to issue. Backup liquidity is also required. In some cases the authorities mandate regular preparation (quarterly and annually with more information in the latter case) of financial information (France). Other jurisdictions also set criteria based on balance sheet ratios and backup liquidity. In the UK, issuers must meet a minimum net asset requirement and listing on the London Exchange is required because it ensures that disclosures have been made; listing on an overseas exchange is also permitted, if additional information has been furnished to the London Exchange.

In some cases the denomination size is determined by disclosure requirements that become operative above a given denomination size. In the USA, CPs are issued under a section of the 1933 Securities Act which exempts short-term securities from registration (and therefore disclosure) requirements if they have certain characteristics - maturity must be less than 270 days, the type must not be of a type ordinarily purchased by the general public and the proceeds must be used to finance current transactions. In practice the last two characteristics are interpreted as a minimum

denomination size and as requiring that a company's total outstanding CP not exceed the volume of their current transactions (in practice it could, for example, mean that CP could be used as interim financing for construction). Note, in any case, that the fungibility of money implies simply that there is a limit on the volume of CP a company can issue determined by the size of their current transactions (*see Alworth and Borio, 1993; and Dale, 1996*). Exemption is also possible for issues by bank-related companies or where the issue is guaranteed by a bank. Most countries discourage banks from issuing commercial paper (the UK and USA are exceptions) but the distinction between commercial paper and other short-term securities is often not clear.

The concern in the Caribbean is often that a bank guarantee for CP increases bank risk because it serves to create a contingent liability for the bank providing the guarantee. However, this (higher risk) will not generally be true if the bank treats the CP guarantee like other guarantees with respect to the holding of reserves as, indeed, one of the largest banks in Jamaica affirm that they do. In Jamaica, some licensed financial institutions purchase commercial paper for own account and are required to report them (*see Anderson, 1995*). CP is statutorily defined as deposits in Jamaica but the 1993 Securities Act covers issue of commercial paper. Their issue will therefore be regulated by the Securities Commission when it has achieved the organizational strength to do so. It is proposed that backup lines of credit be required. In Trinidad and Tobago, it remains under the regulatory control of the central bank but will presumably pass to the Securities and Exchange Commission when that body is fully established. In Barbados, CP is a recent innovation. Like bankers' acceptances, commercial paper in the Caribbean has generally developed in response to high reserve requirements.⁴ However, commercial paper allows large creditworthy firms to access credit on cheaper terms than bank loans and, one can argue,

by providing an alternative source of credit for those to whom it is easiest for banks to lend, could encourage banks to lend to smaller business whose exclusion from investment funding is often remarked on in the Caribbean. CP is therefore not merely a rule-evading measure to be suppressed or re-directed but a possibly useful instrument which nevertheless requires regulation to protect the small, poorly-informed investor and prevent fraud.

7.3.2. Conglomeration

Central Bank of Barbados (1994) discusses the conglomeration activity we have documented in the country sections, noting that supervisory concern is mainly with the identity and motivation of owners of conglomerates. Insurance companies are identified as major members of the new ownership group, as a result of finance for investment outside of the insurance company provisions. The paper notes the need to minimize potential conflicts of interest, for transparency, for arms-length transactions, and to avoid credit concentration. The latter implies provisions for exposure to a group, criteria for group exposure and regulation of cross-selling of services. Such cross-selling could permit one subsidiary to pressure a customer to purchase from another subsidiary and would be difficult to police.

A distinction is usually drawn between conglomerates confined to financial sector firms and those which include commercial firms, the usual assumption being that ownership linkages between banks and commerce will increase the risk of

⁴ Bankers acceptances and commercial paper are also competing forms of finance in the USA and BAs' exemption from reserve requirements was also an important factor in the development of the market in the USA in the seventies and eighties when interest rates were high (*see LaRoche, 1993*).

the bank's portfolio. It is usually assumed that links between banks and commercial firms are likely to be of more concern to regulators because of the incentives they give the holding company to use bank funds to help other subsidiaries or the possibility that the bank's assets are used to meet the liabilities of a non-banking subsidiary (*see Black, Miller and Posner, 1978*, who noted, in the US context, that banking statutes already limit transactions between a bank and affiliates in order to limit loan concentration and conflicts of interest). In addition, inter-company flows within the affiliates may render their operations and risk exposure opaque, even where the regulators are authorized to supervise all the affiliates. In Jamaica, for example, the Blaise group's (Blaise was taken over by government in December 1994) operations and cash were so intertwined that examiners had difficulty separating them and, furthermore, the supervisors found that excessive amounts of credit were being extended to the majority shareholder who had a car dealership (see report in the Barbados Weekend Nation of May 19, 1995, page 16). **Anderson (1991)** also comments on the need for consolidated supervision, noting that several commercial enterprises in Jamaica applied for banking licences following large increases in interest rates which affected their debt servicing. **John, John and Saunders (1994)** examine the costs and benefits of removing the separation of banking and commerce, concluding that whether or not risk is increased depends on whether the company or the bank makes investment decisions. Where the firm chooses investment, as a debtor it prefers riskier projects than it would if its financing is obtained through equity (in the event of project failure the creditor loses, rather the indebted investor). Thus a substitution of bank equity for bank debt decreases the riskiness of the bank's portfolio because the substitution induces the company to choose less risky activity. On the other hand, when the bank is able to veto the investment decision, it will chose riskier projects when it is a shareholder than when it is a creditor because, as shareholder, it will

benefit from the higher return of the riskier project in contrast to the case when it is creditor. Note that in both of these cases, the bank is the owner, rather than the owned.

There is also the possibility that the holding company could prove to be a source of support for subsidiary banks. Thus, the US Financial Institutions Reform, Recovery and Enforcement Act, 1989, requires that multi-bank holding companies use the capital of all the banks to cover the loss of any single subsidiary (*see Gilbert, 1991*).

Saunders (1994) examines in some detail the arguments for and against allowing commercial firms to own banks through a holding company structure. He discusses the benefits of economies of scale and scope in both costs and revenue, potential benefits of diversification across product and geographic markets, the potential of new capital for banks and the possibility of bank providing credible monitoring of the commercial subsidiary if the bank's interest is not totally aligned with those of the commercial firm. Some of the potential costs he describes may be ameliorated by a competitive market environment and good information - large conglomerates which are able to exert monopoly power, conflicts of interest in the allocation of credit and the dissemination of information. For example, a bank excluding an affiliate's competitor from credit will do little harm to a competitor which has alternative source of credit. But markets in the Caribbean are perforce small and oligopolistic - this suggests that they are less likely to reap potential benefits which depend on size and diversification (although regional banks will benefit from geographic dispersion) and more likely to incur the costs. Saunders suggests that more empirical evidence is required to inform a judgement about allowing bank-commerce integration.

Since this integration is already a given in several Caribbean markets, it is important to consider the regulatory measures required to address potential threats. **Borio and Filosa (1994)** indicate that "Chinese walls" which restrict information flows within an organization

(limiting the extent to which a bank could convey insider information from its banking business to a commercial affiliate) and “firewalls” (limiting the flow of financial capital) do not necessarily act to insulate separate units of a conglomerate because of market perceptions - as a result failure of a non-bank affiliate, for example, could harm the bank in a group. Supervisors therefore need to have information about all units of the group, while discouraging the notion that the non-bank affiliates are supervised. Compartmentalised supervisors (of banks, insurance and non-banks, security markets, for example) need to exchange information. In order to maximize the information available to supervisors, opaque organisational structures could be discouraged - as proposed in Europe, supervisors could withhold a licence from a group with such a structure. Consolidated supervision which assesses risk on a group basis would take considerable work to achieve because of the methodological differences between supervisors. Applying capital standards to the consolidated account is another possibility. The advantage of harmonised standards is the limit they place on regulatory arbitrage - the process by which companies attempt to circumvent regulations by changing their organisational structure. Since such regulatory arbitrage has played an important role in the growth of the Jamaican financial sector. Harmonisation of standards across institutions as well as greater cooperation among different supervising bodies is worth considering in the Caribbean.

7.3.3. *Swaps*

Swaps are derivatives and in the past few years there has been considerable debate about the risk-increasing features of derivatives. Concern about risk should be greater in the Caribbean because the derivatives are over-the-counter (OTC) instruments (not traded on an exchange) and therefore do not benefit from the self-regulatory features of the exchanges. As a result, one would

expect Caribbean derivatives to have low liquidity and high transactions costs because they are unstandardized instruments.

Several examinations by regulatory authorities have concluded that the risks to which derivatives are subject, namely market risk, credit risk and liquidity risk are no different from the risks that financial institutions usually incur. **Dale (1996)** notes that the derivative problem lies in the complexity of the instrument and the speed at which its risk can be transformed. The complexity means that end-users may have difficulty in understanding the risks they are incurring. Thus the well-known case of Procter and Gamble and Bankers' Trust in the USA concerned a single interest rate swap. Complexity also means that OTC markets deal only with large well-known counterparties who have established risk management systems but this results in a concentration of risk that makes the participants vulnerable to losses if any large dealer fails. Derivative contract trading also creates linkages that allow cross-market transmission of shocks.

Dale describes how regulators have dealt with counterparty risk by including derivative transactions in the limits placed on large exposures, by enforcing bilateral netting agreements,⁵ and by encouraging such agreements. The 1988 Basle accord, for example, was amended to reduce the capital required against derivative exposures subject to bilateral netting if it can be shown to be legally enforceable. It is evident from infamous recent cases (Barings, for example) that complexity has also meant that financial firms, unless carefully managed, are vulnerable to rapid and dangerous

⁵ Netting agreements allow for the settlement only of the net obligations of multiple transactions and require that obligations be netted out if a counterparty defaults. As a result liquidators cannot choose to default on contracts with negative values.

accumulation of risk exposure from the actions of even one dealer. Risk management systems by derivative trading firms are therefore being stressed - in the US the Comptroller of the Currency has ruled that a bank's failure to provide adequate risk management when dealing in derivatives is an "unsafe and unsound" practice, allowing supervisory intervention (*see Dale, op. cit.*).

Swaps are subject to two kinds of risk - price risk, because the market rate of interest or exchange rate change and thus change swap value. Exposure to price risk can be controlled by entering an offsetting swap so that inflows match outflows and the intermediary is fully hedged against price risk (*see BIS, 1986*). When banks or other financial institutions are the fixed rate payer on an interest rate swap, they can hedge by purchasing government securities with the same maturity as the swap, financing the purchase through repo borrowing. The government security provides for the capital loss if long-run interest rates change and provides fixed rate income to match the fixed rate payments by the bank. The floating rate income from the swap covers the floating rate on the repurchase agreement. Note that this hedge does not insure against a change in the security rate, only against a change in the level of market rates.

Swaps are also subject to credit risk because the counterparty may default. Credit risk is managed by placing limits on exposure to the counterparty, by monitoring such exposure and by imposition of a collateral requirement or other credit enhancement.

It would be prudent for Caribbean regulatory authorities to follow derivative trading supervisory developments in more mature markets. Accounting treatment of swaps also has to be determined - should they be marked to market, difficult where market value are not determined, or valued at cost? In any case, should swaps be noted in financial statements? The official decision to adhere to Basle capital standards will help ensure that Caribbean regulators

are following evolving practice. The revised Accord calls for capital requirements against the positions in underlying securities represented by derivatives. However, the imperative would seem to be the need to obtain a better idea of the volume of transactions in this area - swaps and other derivatives. If they are relatively sparse instruments transacted by the largest banks, the specific development of measures to deal with them may use regulatory resources better employed elsewhere. Such information could be collected both through reporting requirements of the type imposed for loans, for example, and through surveys of market participants which would allow the supervisors to understand if and how the market is developing.

7.4. Conclusions

Conglomeration, the creation and the expansion of institutions appear to be the most significant of the recent innovations in the Caribbean. There is in general insufficient information to assess the significance of new instruments. Changing organizations require good management skills, lack of which has already been a source of financial failure in the Caribbean. Trinidad and Tobago (*see CBTT, 1994*) attributes the failure of its financial institutions in the second half of the 1980s - (five NBFIs were closed in 1986 and a government-owned bank restructured in 1989) to the fallout from competition for market share in the oil boom years when credit was extended for, for example, real estate whose value was not maintained in the recession. Incomes in sectors where institutions' assets were concentrated was also eroded. However, the main factor was seen as inadequate management, which was the underlying cause of concentrated credit risk and poor asset quality. Poor internal information flows were also a problem. Inexperienced management of credit unions has been commented on, as has the inexperience of the Cooperative Departments which oversee them (*see ECCB, 1994*). In addition, of course, poor management is likely to handle

new instruments inefficiently. Regulators aiming to protect small depositors and investors must ensure that they themselves have the appropriate skills to assess management's abilities and must have sufficient autonomy to request and enforce necessary measures (such as reserving, removal of management) early.

Conglomeration and the holding company structure used in the Caribbean to harness varying financial and non-financial institutions together is the other issue requiring close regulatory attention. The recent collapse of the Eagle group in Jamaica indicates the danger of conglomeration discussed above. While recent legislation allows the regulators to examine all subsidiaries of the group, accounting for intra-company transactions may require specification in order raise transparency.

Chapter 8

CONCLUSION

The country descriptions suggest that a competitive financial system, stimulated by a highly uncertain environment and by aggressive monetary policy, has been a major source of financial innovation in the Caribbean. Jamaica, Trinidad and Tobago, Suriname and Guyana are instances. Competitive behaviour, in the absence of stabilization policies and structural adjustment, alone is an important source of innovation when financial firms want to gain market share, as is the case in The Bahamas and Eastern Caribbean.

In general, however, it is often very difficult to assess the extent and importance of innovation. Data is only collected when the value represented by the instrument has grown to significant proportions. Important related information, such as rates of return and maturities, does not appear to be collected. For several innovations, swaps and forward agreements, for example, no quantitative information is available. Twice-yearly questionnaires to all financial institutions could produce this information and it is information that should in any case be available to the regulatory authorities. It may well be that the number of arrangements and their value are insignificant but even this cannot be assessed at the moment. In some sense, therefore, the innovations described in this monograph are indicative of work to be done.

The attempt to measure the impact of financial innovations on monetary policy effectiveness also suggests that innovations may have disrupted the traditional relationship between money, income and interest rates in a couple of the most developed markets in the region. Since many of the monetary authorities in the region base their monetary policy strategy on this relationship some remodelling of this strategy to incorporate the possible impact of innovations seems to be in order.

Another point that seems to emerge is that the authorities need to take account of the fact that financial institutions will react to their actions (policies and regulations) in such a way as to diminish the effect of such policies. Even where financial companies themselves do not take counteraction such as the formation of new companies falling outside the ambit of a particular measure, their large customers, realizing that their financial services can be made cheaper, can and do propose off-balance sheet arrangements from which both creditor and debtor benefit. Those benefits are significant in that many innovations, although launched in reaction to policy, did improve customers' ability to cope with uncertainty.

New financial institutions and instruments should therefore not be viewed as threats to be suppressed. However, their risks must be carefully assessed and improved regulation put in place to deal with them. The offices of non-central-bank regulators need to be strengthened in terms of training, technological capacity and personnel and close, active cooperation between the various regulatory bodies would help to reduce risks arising from conglomeration in the financial sectors.

One issue not addressed here in any great detail is how indigenous financial institutions in the Caribbean should evolve data and management systems to assess market risk. This is especially

important in territories where the exchange rate is floating and exchange controls have been removed. It is also important because several such institutions are government-owned and may therefore depend (implicitly) on eventual government funding to meet the costs of any losses. This of course assumes that international banks have systems in place as a result of their links with head offices. Bank regulators themselves will require training to assess the efficacy of such systems.

Bibliography

- Abken, P.A. (1993). "Beyond Plain Vanilla: A Taxonomy of Swaps," in Federal Reserve Bank of Atlanta, 51-69.
- _____. (1993). "Interest Rate Caps, Collars and Floors" in Federal Reserve Bank of Atlanta, 86-103.
- Adams, G.B. (1995). "Barbados: A New Trust Statute," in Ernst and Young, *The Barbados International Business Report*, 8, Fall, 3-4.
- Adrien, P. (1996). "The Financial Services Industry - Emerging Trends in the Credit Union Sector," mimeo, paper presented at the XXVIII Annual Conference of Monetary Studies, Trinidad & Tobago.
- Allen, F. and D. Gale. (1994). *Financial Innovation and Risk Sharing*, Cambridge, Mass.: The MIT Press.
- Alworth, J.S. and C.E.V. Borio. (1993). "Commercial Paper Markets: A Survey," Basle: Bank for International Settlements, Economic Papers No. 37, April
- Anderson, A. (1991). "Liberalization of the Financial System," mimeo, Bank of Jamaica, presented at the IX Annual Conference of Caribbean Banking Supervisors.
- Arrau, P. and J. De Gregorio. (1993). "Financial Innovation and Money Demand: Application to Chile and Mexico," *The Review of Economics and Statistics*, 55, 524-530.
- Arrau, P., J. De Gregorio, C.M. Reinhart, P. Wickham. (1995). "The Demand for Money in Developing Countries: Assessing the Role

of Financial Innovation,” *Journal of Development Economics*, 46, 317-340

Arrindell, B.L. (1995). “Societies with Restricted Liability (SRLs)” in Ernst and Young, *The Barbados International Business Report*, 8, Fall, 5-6.

Arrow, K.J. (1964). “The Role of Securities in the Optimal Allocation of Risk-Bearing,” *Review of Economic Studies*, 31, 91-96.

Baghestani, H. (1990). “Financial Innovation, Deposit Deregulation, and the US M1-GNP link,” *Applied Economics*, 22, 1525-1535

Bank for International Settlements. (1986). *Recent Innovations in International Banking*, Basle.

Bank of Jamaica. (1995). “The Emerging Commercial Paper Market in Jamaica: Monetary and Regulatory Policy Implications,” mimeo prepared by the Financial Sector Unit, Research Services Dept.

Banks, V.F. (1995). “Anguilla - The Future is Offshore,” *Offshore Investment*, 54, 63-64.

Barrow, L.Y. (1996). “Offshore Practice and the Law,” *Offshore Investment*, 65, 20-22.

Bennett, K.M. (1997). “The Impact of US Dollar Deposits on CARICOM Economies” Paper presented at the XXIX Monetary Studies Conference held in Barbados between October 27th-31st, 1997.

- Berger, A.N., R.J. Herring and G.P. Szego. (1995). "The Role of Capital in Financial Institutions," *Journal of Banking and Finance*, 19, 393-430.
- Berlin, M. (1992). "Securitisation," in J. Eatwell, M. Milgate and P. Newman (eds.) *The New Palgrave Dictionary of Money and Finance*, New York: The Stockton Press.
- Bernanke, B.S. and A.S. Blinder. (1988). "Credit, Money and Aggregate Demand," *American Economic Review, Papers and Proceedings*, 78, 435-439.
- Bernanke, B.S. (1993). "How Important is the Credit Channel in the Transmission of Monetary Policy? A comment," *Carnegie-Rochester Conference Series on Public Policy*, 39, 47-52.
- Biefang-Frisancho Mariscal, I., H.-M. Trautwein, P. Howells, P. Arestis and H. Hagemann. (1995). "Financial Innovation and the Long-Run Demand for Money in the United Kingdom and in West Germany," *Review of World Economics (Weltwirtschaftliches Archiv)*, 131, 302-325.
- Black, F., M. H. Miller and R. A. Posner. (1978). "An Approach to the Regulation of Bank Holding Companies," *Journal of Business*, 51, 379-412.
- Blundell-Wignall, A., F. Browne and P. Manasse. (1990). "Monetary Policy in Liberalised Financial Markets," *OECD Economic Studies*, 15, 145-178.
- Boot, A.W. and A.V. Thakor. "Security Design," *The Journal of Finance*, 48(4) 1349-1378.

Borio, C.E.V. and R. Filosa. (1994). "The Changing Borders of Banking: Trends and Implications," Basle: Bank for International Settlements, Working Paper No. 23.

Brennan, M.J. and A. Kraus. (1987). "Efficient Financing Under Asymmetric Information," *The Journal of Finance*, 42(5), 1225-1243.

Brown, D. R. (1989). *History of Money and Banking in Trinidad and Tobago from 1789 to 1989*, Port of Spain: Paria Publishing Co. Ltd.

Brown, M. (1995). "The Regulation and Supervision of Mutual Funds and Deposit Substitutes," mimeo, Bank of Jamaica, presented at XIII Annual Conference of Caribbean Bank Supervisors.

Caribbean Association of Indigenous Banks. (1996). "Caribbean Association of Indigenous Banks (CAIB) and Organization of Eastern Caribbean States (OECS) Banks CAMEL Ratings and Relative Rankings for Years 1994 and 1995," November, mimeo.

Carter, C. (1995). "Update on Double Tax and Bilateral Investment Treaties," in Ernst and Young, *The Barbados International Investment Report*, 8, Fall, 9-10.

Cass, D. and A. Citanna. (1993). "Pareto Improving Financial Innovation in Incomplete Markets," CARESS WP #93-27, University of Pennsylvania, Center for Economic Research in Economics and the Social Sciences.

Central Bank of Barbados. (1994). "Changing Patterns in Ownership of Financial Institutions and the Impact on the

Region's Financial System," mimeo, presented at the XII Annual Conference of Caribbean Bank Supervisors.

Central Bank of Trinidad and Tobago. (1984-1996). *Quarterly Statistical Digest*, Various Issues.

_____. (1990). *Monetary and Financial Policy in Trinidad and Tobago: Selected Central Bank Essays*, bound mimeos.

_____. (1994a). *Monetary Management in Trinidad and Tobago: A Chronology, 1964-1994*, Port of Spain.

_____. (1994b). "Causes and Consequences of Intervention by Regulatory Institutions in Troubled Financial Institutions, mimeo, presented at XII Annual Conference of Caribbean Bank Supervisors.

Cesarano, F. (1990). "Financial innovation and demand for money: some empirical evidence," *Applied Economics*, 22, 1437-1442

Cherebin, D. (1996). "Offshore Banking in Barbados," in Ernst and Young, *The Barbados International Investment Report*, 8, Fall, 11-12.

Cocheo, S. (1992). "Commercial Paper: Friend or Foe," *ABA Banking Journal*, December, 57-58.

Cook, T.Q. and R. K. LaRoche (eds.). (1993). *Instruments of the Money Market*, Richmond, Virginia: Federal Reserve Bank of Richmond.

Cook, T.Q. and J.G. Duffield. (1993). "Money Market Mutual Funds and Other Short-term Investment Pools," Chapter 12 in T. Q. Cook and R. K. LaRoche (eds.).

- Cooper, I. (1986). "Innovations: New Market Instruments," *Oxford Review of Economic Policy*, 2(4), 1-17
- Cooper, W. (1995). "Growth of Offshore Banking in Antigua," *Offshore Investment*, 58, 19-20.
- Courtenay, E. (1996). "Strengthening the Supervisory and Regulatory Regime in the Financial Sector," *Offshore Investment*, 65, 18-19.
- Craigwell, R. (1991). "The Demand for Money in Jamaica: a Cointegration Approach," *Money Affairs*, 6, 19-39.
- Crown Agents Financial Advisory Service. (1987). "Financial Markets in the Eastern Caribbean Central Bank Area: a Policy for Commercial Interest Rates," mimeo.
- Dale, R. (1996). *Risk and Regulation in Global Securities Markets*, Chichester: John Wiley & Sons.
- De Silva, C. and A.D.L. Hilaire. (1996). "Monetary Policy Under Flexible Exchange Rates and Capital Mobility: Trinidad and Tobago Since 1993," mimeo, Central Bank of Trinidad and Tobago.
- Diamond, D. (1984). "Financial Intermediation and Delegated Monitoring," *Review of Economic Studies*, 51, 393-414.
- Dornbusch, R. (1976). "Expectations and Exchange Rate Dynamics," *Journal of Political Economy*, 84, 1161-1176.
- Dornbusch, R. and A. Giovannini.(1990). "Monetary Policy in the Open Economy," Chapter 23 in B.M. Friedman and F. H.

Hahn (eds.) *Handbook of Monetary Economics*, Amsterdam: Elsevier Science Publishers.

Drakes, C.A. W. and C. Maynard. (1996). "Entrepreneurship and Venture Capital," page 66 in *Caribbean Week*, 8(1), October 12-25, 1996.

Dyrud, J. (1995). "New Trust Legislation Makes a Clean Sweep," *Offshore Investment*, 54, 65-67.

Eastern Caribbean Central Bank. (1994). "A Case for Enhanced Regulation of Credit Unions and Building Societies," mimeo, presented at XII Annual Conference of Caribbean Bank Supervisors.

Edwards, F.R. and F.S. Mishkin.(1995). "The Decline of Traditional Banking: Implications for Financial Stability and Regulatory Policy," *Federal Reserve Bank of New York Economic Policy Review*, July.

Federal Reserve Bank of Atlanta. (1993). *Financial Derivatives: New Instruments and their Uses*, Atlanta: Public Affairs Department, FRB Atlanta.

Feracho-Williams, J. and W.A. Samuel. (1996). "Regulation and Financial Services Development in the ECCB Area," mimeo, Eastern Caribbean Central Bank, presented at XXVIII Annual Conference on Regional Monetary Studies.

Flood, M.D. (1992). "Two Faces of Innovation," *Federal Reserve Bank of St. Louis Review*, 74(4), 3-17.

- Freedman, C. (1983). "Financial Innovation in Canada: Causes and Consequences," *American Economic Review, Papers and Proceedings*, 73, 101-106.
- Geanakoplos, J. (1990). "An Introduction to General Equilibrium with Incomplete Asset Markets," *Journal of Mathematical Economics*, 19, 1-38.
- Geanakoplos, J. and H. Polemarchakis. (1986) "Existence, Regularity and Constrained sub-optimality of Competitive Allocations when Markets are Incomplete," in W. Heller, R. Starr and D. Starrett (eds.) *Essays in Honor of Kenneth Arrow*, Vol. 3, Cambridge: Cambridge University Press.
- Gibson, L. R. (1996a). "Bahamas Securities Exchange, What and When?" presented at the Ernst & Young Fifth Annual Bahamas Business Outlook, January, 1996, Nassau, mimeo
- _____. (1996b). "Securities markets developments," April, 1996, mimeo.
- Gilbert, R. A. (1991). "Do Bank Holding Companies Act as 'Sources of Strength' for their Bank Subsidiaries," *Federal Reserve Bank of St. Louis Review*, 73, 3-18.
- Glennon, D. and J. Lane. (1996). "Financial Innovation, New Assets and the Behavior of Money Demand," *Journal of Banking and Finance*, 20, 207-225.
- Goodhart, C. (1989). "The Conduct of Monetary Policy," *The Economic Journal*, 99, 293-346.
- Goodwill, J. (1995). *Offshore Trusts*, leaflet Issued by Coutts & Co. Group.

- Gorton, G. and G. Pennacchi. (1990). "Financial Intermediaries and Liquidity Creation," *The Journal of Finance*, 45(1), 49-71.
- Grossman, S.J. and O.D. Hart. (1988). "One Share-One Vote and the Market for Corporate Control," *Journal of Financial Economics*, 175-202.
- Hafer, R.W. and S.E. Hein. (1984). "Financial Innovations and the Interest Elasticity of Money Demand: Some Historical Evidence," *Journal of Money, Credit and Banking*, 16, 247-252.
- Hahn, F. (1989). "General Equilibrium in an Imperfect World: Incomplete Markets," Athens: Economic Research Centre, Athens School of Economics and Business, Proceedings of the 9th World Congress of the International Economic Association, Volume I.
- Hahn, T.K. (1993). "Commercial paper," Chapter 9 in T. Q. Cook and R. K. LaRoche (eds.) (*op. cit.*)
- Hartzell, J.K. (1994). "Risk Management from a Bank Supervisory Perspective," mimeo, Office of the Comptroller of the Currency, USA, presented at the XII Annual Conference of Caribbean Bank Supervisors.
- Hendricks, D. (1996). "Evaluation of Value-at-Risk Models Using Historical Data," *Federal Reserve Bank of New York Economic Policy Review*, April, 39-69.
- Hendry, D.F. and N.R. Ericsson. (1991). "Modelling the Demand for Narrow Money in the United Kingdom and the United States," *European Economic Review*, 35, 833-886.

Hilaire, A.D.L. (1995). "Commercial Policy in Trinidad and Tobago," in R. Ramsaran (ed.).

_____. (1995). "Monetary Policy and Open Market Operations in Trinidad and Tobago," mimeo, Central Bank of Trinidad and Tobago.

Harris, M. and A. Raviv. (1988). "Corporate Governance: Voting Rights and Majority Rules," *Journal of Financial Economics*, 20, 203-235.

_____. (1989). "The Design of Securities," *Journal of Financial Economics*, 24, 255-287

_____. (1992). "Financial Contracting Theory," Chapter 2 in J.-J. Laffont (ed.) *Advances in Economic Theory, Sixth World Congress*, Vol. II.

Ireland, P.N. (1995). "Endogenous Financial Innovation and the Demand for Money," *Journal of Money, Credit and Banking*, 27, 105-123.

Jackson, R. (1996). "Foreign Sales Corporations," in Ernst and Young, *The Barbados International Investment Report*, 8, Fall, 6-7.

James-Samuel, J. (1990). "The Growth and Development of the Credit Union Movement in Barbados," *Caribbean Finance and Management*, 6 (1&2), 36-54.

John, K., T. A. John and A. Saunders. (1994). "Universal Banking and Firm Risk-taking," *Journal of Banking and Finance*, 18, 307-323.

- Kane, E.J. (1983). "Policy Implications of Structural Changes in Financial Markets," *American Economic Review, Papers and Proceedings*, 73, 96-100.
- Kashyap, A.K. and J.C. Stein. (1995). "The Impact of Monetary Policy on Bank Balance Sheets," *Carnegie-Rochester Conference Series on Public Policy*, 42, 151-195.
- Kessler, T. R. (1995/96). "The Bahamas: New Legislation Benefits Financial Services Sector," in *The OFC Report*.
- Kupiec, P.H. and J. M. O'Brien. (1995). "A Pre-commitment Approach to Capital Requirements for Market Risk," mimeo, Division of Research and Statistics, Board of Governors of the Federal Reserve System.
- Laffont, J.J. (1989). "A Brief Overview of the Economics of Incomplete Markets," *Economic Record*, 65, 54-65.
- LaRoche, R.K. (1993). "Bankers' Acceptances," Chapter 10 in T. Q. Cook and R. K. LaRoche (eds.) (*op. cit.*).
- Liburd, E. and J. Ferracho. (1985). "The profitability of commercial banks in the ECCB Area," mimeo, Research Department, Eastern Caribbean Central Bank
- Lumpkin, S.A. (1993). "Repurchase and Reverse Repurchase Agreements," Chapter 6 in T. Q. Cook and R. K. LaRoche (eds.) (*op. cit.*).
- Maples and Calder. (1995). "Trust Law - The New Attraction," *Offshore Investment*, 60, 40-41.

- Mayer, C. (1986). "The Assessment - Financial Innovation: Curse or Blessing?" *Oxford Review of Economic Policy*, 2(4), i-xix.
- Mayer, C. and D. Neven. (1991). "European Financial Regulation: a Framework for Policy Analysis," Chapter 5 in A. Giovannini and C. Mayer (eds.). *European Financial Integration*, Cambridge: Cambridge University Press.
- Merton, R. C. (1992). *Continuous-Time Finance*, Cambridge, MA: Blackwell Publishers.
- Miller, M. H. (1991). *Financial Innovations and Market Volatility*, Oxford: Basil Blackwell Ltd.
- Mitchell, D. (1995). "Poised for Takeoff - Legislation and Legal Developments," *Offshore Investment*, 68-69.
- Musa, M. and S. Crump. (1994). "Belize: An Attractive Location for Setting up an Offshore Company," *Offshore Investment*, 47, 9-10.
- Neufeld, D. S. (1996). "Nevis LLCs - Unique Opportunities for Estate and Asset Protection Planning," *Offshore Investment*, 63, 30-33.
- Peart, K. (1995). "Financial Reform and Financial Sector Development in Jamaica," *Social and Economic Studies*, 44, Special Issue, 1-22.
- Podolski, T. M. (1986). *Financial Innovation and the Money Supply*, Oxford: Basil Blackwell Ltd.

- Post, M. A. (1992). "The Evolution of the U.S. Commercial Paper Market Since 1980," *Federal Reserve Bulletin*, December, 879-891.
- Rahi, R. (1994). "Adverse Selection and Security Design," mimeo, Universitat Pompeu Fabra, Economics Working Paper 64.
- Ramey, V. (1993). "How Important is the Credit Channel in the Transmission of Monetary Policy," *Carnegie-Rochester Conference Series on Public Policy*, 39, 1-45.
- Ramsaran, R. (ed.) (1996). *Insights into an Emerging Financial Structure: The Experience of Trinidad and Tobago*, St. Augustine, Trinidad: Caribbean Centre for Monetary Studies, UWI.
- Roberts, C.K. (1995). "New and Exciting Developments in the Offshore Sector in Antigua and Barbuda," *Offshore Investment*, 58, 16-17.
- Romney, C.V.V. (1995). "Sophisticated and Flexible: Company Law in Anguilla," *Offshore Investment*, 54, 71-72.
- Ross, S.A. (1989). "Institutional Markets, Financial Marketing and Financial Innovation," *The Journal of Finance*, 44(3), 541-556.
- Saunders, A. (1994). "Banking and Commerce: An Overview of the Public Policy Issues," *Journal of Banking and Finance*, 18, 231-254.
- Sergeant, K. (1995). "New Instruments in the Financial Sector of Trinidad and Tobago." mimeo, Central Bank of Trinidad and Tobago, presented at XXVII Annual Conference of Monetary Studies, St. Kitts.

- Silber, W.L. (1983). "The Process of Financial Innovation," *American Economic Review, Papers and Proceedings*, 73, 89-95.
- Swamy, P.A.V.B. and G.S. Tavlas. (1989). "Financial Deregulation, the Demand for Money and Monetary Policy in Australia," *International Monetary Fund Staff Papers*, 36, 63-101
- Taylor, R. W. (1996). "The Nevis International Exempt Trust Ordinance 1994 as amended 28th April 1995," *Offshore Investment*, 63, 27-28.
- Van Horne, J.C. (1985). "Of Financial Innovations and Excesses," *The Journal of Finance*, 40, 621-631.
- Viren, M. (1990). "Currency Substitution, Financial Innovations and Money Demand: A Note," *Applied Economics*, 22, 1591-1596.
- Wall, L. D. and J. J. Pringle. (1993). "Interest Rate Swaps: A Review of the Issues," in Federal Reserve Bank of Atlanta, 70-85.
- Ward, D. (1993). "International Business Corporations," *Offshore Investment*, 41, 20.
- Williams, M.V. (1996). *Monetary and Prudential Regulation and its Impact on Commercial Bank Performance: The Caribbean Case*, London: Avebury Press.
- Worrell, R.D. (1996). "Monetary Policy in Small Open Economies." mimeo, Central Bank of Barbados.

CARIBBEAN CENTRE FOR MONETARY STUDIES

(Previously Regional Programme for Monetary Studies)

PUBLICATIONS IN THE MONOGRAPH SERIES (SPECIAL STUDIES)

1. **THOMAS, Clive Y.**
Central Banking in the Caribbean, 1972
2. **ODLE, Maurice.**
Non-Bank Financial Intermediaries in the Caribbean, 1972
3. **ODLE, Maurice.**
Pension Funds in Labour Surplus Economies, 1974
4. **McLEAN, Wendell A.**
*Money and Banking in the Eastern Caribbean
Currency Area, 1975*
5. **LEWARS, Gladstone.**
Small Farm Financing in Guyana, 1977
6. **BOURNE, Compton (ed).**
Inflation in the Caribbean, 1977
7. **BENNETT, Karl.**
Trade and Payments in the Caribbean Markets, 1982
8. **JOEFIELD-NAPIER, Wallace.**
*The Demand for Imports:
The Case of Barbados: 1954-1970, 1982*
9. **RAMSARAN, Ramesh.**
*The Monetary and Financial Systems of The Bahamas:
Growth, Structure, Operation, 1984*
10. **JONES-HENDRICKSON, Simon.**
*Public Finance and Monetary Policy in Open Economies:
A Caribbean Perspective, 1985*

11. **BOURNE, Compton & RAMSARAN, Ramesh (eds).**
Money and Finance, Essays on Trinidad and Tobago, 1988
12. **PAYNE, Aldeen & STEWART, June.**
A Bibliography of Published and Unpublished Work of the Regional Programme of Monetary Studies: 1968-1987, 1988
13. **WORRELL, Delisle & BOURNE, Compton (eds).**
Economic Adjustment Policies of Small Nations, Praeger, 1989
14. **FARRELL, Terrence W.**
Central Banking in a Developing Economy, 1990
15. **PREMDAS, Ralph & St. CYR, Eric (eds).** *Sir Arthur Lewis: An Economic and Political Portrait, 1991*
16. **WORRELL, Delisle; BOURNE, Compton; & DODHIA, Dinesh (eds).**
Financing Development in the Commonwealth Caribbean, London Macmillan, 1991
17. **WORRELL, Delisle.**
Economic Policies in Small Open Economies: Prospect for the Commonwealth Caribbean, Commonwealth Secretariat, 1992
18. **RAMSARAN, Ramesh (ed).**
The Challenge of Structural Adjustment in the Commonwealth Caribbean, Praeger, 1992
19. **THEODORE, Karl (ed).**
Tax Reform in the Caribbean, 1992
20. **RAMSARAN, Ramesh (ed).**
The Experience of Central Banking with Special Reference to the Caribbean, 1995
21. **RAMSARAN, Ramesh (ed).**
Savings/Investment Environment in the Caribbean: Emerging Imperatives, 1995

22. **RAMSARAN, Ramesh (ed).**
*Insights to an Emerging Financial Structure:
The Experience of Trinidad and Tobago, 1996*
23. **CLARKE, Laurence and ZEPHIRIN, M.G. (eds).**
*Essays in Honour of William G. Demas:
Towards a Caribbean Economy
in the Twenty-First Century, 1997*
24. **CLARKE, Laurence and DANNS, Donna (eds).**
*The Financial Evolution of the
Caribbean Community (1970-1996), 1997*
25. **ZEPHIRIN, M.G. & SEERATTAN, Dave.**
Financial Innovations in the Caribbean, 1997