Financial Aspects of Growth and Development in the Caribbean

De Lisle Worrell, Anthony Birchwood and Andrina A. Brackin[⊥]

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Introduction

The study examines the impact of savings and Investment on economic growth in the Caribbean Economies. As such a survey of the Caribbean Literature in the area is examined. It then goes on to examine empirically stylised facts related to savings and investment in the region. Areas of future research are then identified. To begin, the study identifies the constraints to investments that have been cited by Caribbean Economists. In addition, some literature related to public versus private investments is discussed.

[⊥] Ms Brackin is a summer intern at the Caribbean Centre for Money and Finance.

Constraint to Investment

Caribbean economists have long argued that investment in the Caribbean has been constrained by the inadequate savings, high cost and sovereign debt. For example, Bennett (2006) pointed out that a number of factors inhibit investment in the region including, but not limited to, low levels of domestic savings; limited access to foreign savings; and high financing costs. Nicholls (1994) observed that the national savings rate is generally lower than that of investment by approximately 10% of GDP. Studies have also cited relatively small public sector savings rate, along with persistent current account deficits, high and persistent inflation, and heavy external borrowing in response to external shocks (such as the three oil crises in 1973, 1980 and 1989), individually and collectively as hindering the level of investment activities in these economies.

The above arguments presuppose that there is some relation between savings and investments in the Caribbean economies. Here Greenidge et al (2004), by means of cointegration analysis, found that there is a long run relationship between real gross domestic investment and real gross domestic saving for all the countries analysed (excluding Uruguay) implying that although in the short run shocks to the economy may cause saving and investment to diverge from their steady state relation, in the long run they will eventually return to it. To execute their study, they employed the Johansen (1988 and 1995) maximum likelihood estimation (MLE) methodology and the Autoregressive Distributed Lag (ARDL) approach and applied it to a total of 24 countries grouped into 3 segments (OECS countries, Latin America Counties and Caribbean countries).

There has been much debate on the nexus between financial development and economic growth. This has been motivated by the fact that knowledge of such a relationship provides important clues regarding whether resources should be allocated to the financial sector in order to boost the real sector, or whether

some resources should be directed at the development of the real side of the economy, with the financial sector merely following. These relationships have been termed “supply-leading” and “demand-following” respectively.

Banks have constituted the loci of analysis with respect to financial development given its domination of the financial sector in the region. As such studies have focused on their importance in mobilising savings and allocating these funds to growth-enhancing investments, thereby acting as a medium through which Caribbean countries can finance their development needs.

There is no consensus, however, on the direction of causality between financial development and economic growth. Odedokin (1992) found that the sample of countries mattered such that “supply leading” and “demand following” relationship occurred with the same frequency among the 35 LDCs to which he applied Granger Causality tests. On the other hand, Birchwood and Nicholls (1999) showed that in the long run the relationship is “demand following” whereas in the short run the relationship appears to be both “demand following” and “supply leading”. In examining the relationship between commercial bank lending, investment and economic cycles in a selecte group of Caribbean countries, they used Vector Error Correction Model (VECM) framework, but found no causal link from bank lending to investment. They inferred that a decline in bank loans did not have any significant effect on the level of investment in the economies. Additionally, they found that the proportion of non consumer loans in the portfolio of banks tended to increase in times of economic depression and fall during times of economic growth implying that during periods of boom, there tended to be an increase in consumerism, where bank lending tended to be directed at consumer demand. Moreover, they discovered that during the boom period, banks may have been forced to “ration” loans to consumers to reduce consumerism while allowing investment in productive opportunities to lead the demand for bank credit. Wood (1993) found that time mattered to the pattern of relationship obtained so that the relationship between financial development and economic growth in Barbados was “demand following” during 1946-1968 and “supply leading” during the period 1969-1990.

With respect to the importance of financial development in aiding economic growth, Bourne (1988) found that financial deepening in Trinidad and Tobago had a strong positive influence on investment and economic growth. This was in accordance with Jung (1986) study where they conducted bivariate Granger causality tests on the relationship between financial variables and real economic growth in 56 countries and found that financial development was "supply leading" in lesser developed countries and "demand following" in developed countries.

However, it is insufficient to classify the importance of the financial sector and its contribution to economic growth as either "supply leading" or "demand following" as expounded on by Odle (1998) who ardently argues that "while statistical correlation tends to point to a supply leading relationship between finance and development in the Caribbean, it raises the question as to whether the intermediation process could be so improved in both quantity (financial widening) and quality (financial deepening) to generate growth and development.

Comparison of Public and Private Investment

The public sector has had a substantial role to play in the generation of investments in the Caribbean economies, given the underdeveloped nature of the private sector. Governments have embarked on development projects, thus substituting for private sector investments. Further, investments have been undertaken with respect to curbing market failure, with respect to the redistribution of resources in a bid to improve welfare. Thus investments in education and health are examples of these. The findings have been mixed however, with regards to the ex post role played by government expenditure and economic growth.

In an effort to distinguish between the importance of private and public domestic investment, Vital (2003) analysed the effects of both types of investment on

economic growth in 13 Caribbean countries using panel data covering the period 1988 to 2000 via a simple linear regression model based on a modified neoclassical approach. The results showed that there is no superiority of private investment over public investment and that both forms of investment had a positive influence on economic growth in the countries examined.

In contrast, Mathias and Birchwood (2004) did a panel estimation of Latin American and Caribbean countries and found that there was not clear cut evidence of government investment leading to economic growth, but the evidence suggested that it significantly enhanced certain social indicators. In other words, larger government consumption in education and health were associated with higher levels of education, and longer life expectancy.

Concerns have also been raised concerning how investment has been proportioned between tradeables and nontradable. For example, in his paper "Investment in the Caribbean" Worrell (1993) found that over 50% of the investment in each Caribbean country during the mid 1970s and 1980s were geared towards building construction and other non tradeables activities. On this note, Nicholls (1994) reasoned that "there must be something that fundamentally distorts the attracting of investment into non tradeables versus tradeables".

Roache (2006) also assessed some factors that might influence private domestic investment and how this form of investment may be encouraged in the Caribbean. They focused on the cost of capital including the cost of debt, equity, and the impact of taxes. The real cost of debt for the sample countries was measured using the lending rate on commercial banks loans adjusted by the statutory rate of corporate taxes deflated by GDP deflator whereas the real cost of equity was estimated as a US dollar benchmark long term "risk free rate" plus a local Beta adjusted global equity risk premium adjusted for US dollar inflation within a Capital Asset Pricing Model (CAPM). The empirical results showed that

the multiplier effects of public domestic investment and Foreign Direct Investment on private domestic investment are weak; and that private domestic investment is sensitive to the cost of capital. Further, they contended that public policy designed to raise private domestic investment should focus on creating conditions for a lower cost of capital by removing restrictions on real interest rates.

In addition, Roache (2007) quantified the effect of public investment on growth and real exchange rate in the Eastern Caribbean Currency Union (ECCU) using panel vector autoregressions (PVAR). The results indicated that that an increase in public investment leads to a less than proportionate increase in real output. Furthermore, changes in public investment appeared to appreciate the real exchange rate in the ECCU. They also found that public investment has a positive but short run direct impact on growth, in the sense that it boosts domestic demand with relatively weak multipliers. Overall, Roache (2007) found that over the last 30 years that public investment has had only a temporary and limited effect on economic growth. Considering that a large portion of investment is financed by borrowing, public investment seemed to have a larger impact on the debt stock than on GDP.

Role of Commercial Banks

An overview of the related literature reveals that empirical work done in the past three decades focused primarily on the role of financial development stressing on the importance of commercial banks in stimulating economic growth, without taking the stock market development into account.

Commercial Banks play a crucial role in the development of debt markets. Firstly, by extending credit, banks familiarise borrowers with the information requirements and financial discipline needed to maintain creditworthiness. Secondly, banks are often a major source of demand for debt instruments. Thirdly, banks often promote the issuance of new financial instruments by

providing underwriting services, improving investment or hedging opportunities.

Constraint to bank lending

Birchwood (2001) conducted a survey on bank credit culture in Trinidad and Tobago in an effort to see whether the Mckinnon (1973) and Shaw (1993) hypothesis that financial liberalisation would improve credit allocation was upheld in the Trinidad and Tobago. Birchwood (2007) results emphasized the importance of economic cycles in influencing bank credit culture, with banks tending to be expansionary at times of economic boom while in times of economic depression they were more cautious and selective in the granting of loans. Moreover, the method of grappling with information asymmetries were biased against start-up businesses, new business ideas and micro-enterprises. As such, they argued that credit was more likely to flow to the financing of conventional ideas rather than to new business ideas. In addition, they pointed out that the complementarity between banks and development largely depended on the choice of sectors targeted. They also showed that there was a dearth of information on sectors and the information gap limited the ability of banks to adopt a scientific basis for lending with respect to the risk/return profile.

On the supply side, Henry (1990) examined small business development in Barbados, Jamaica and Trinidad and Tobago and found that capital availability is a principal constraint to small business formation and performance. This result is in agreement with Morewague et al (1995) who sited capital inadequacy, high cost of capital and limited access to capital especially by women as constraints to micro enterprise development. On the other hand, many small businesses have failed because they relied too much on credit and not enough on equity.

Similarly, Clarke et al (1995) reported survey results which showed that in Trinidad and Tobago, commercial bank credit was especially most important for the youngest established firms. Small firms, according to them, most frequently listed project viability and unavailability of funds as the principal constraints to

business expansion. Schmidt and Zeitinger (1996) observed that the notion of large-scale subsidises propels spilling off into general economic development is now met with disillusion.

Other Financial Institutions

Apart from commercial banks, the other players in the financial sector include credit unions, insurance companies, stock market, mutual funds, development banks, micro finance institutions and building societies. Belgrave et al (2002) empirically examined the relationship between commercial banks and credit union in Barbados using quarterly panel data over the period 1994 to 2000 using a Hendry general to specific methodology in a dynamic regression framework. The results of the study showed that credit unions do not hinder the market power of commercial banks in Barbados.

Ganga (1995) in his paper "The insurance sector and financial system in Guyana" examined the nature of the financial system and the role of insurance companies in mobilizing and allocating resources for the financial sector and by extension, economic growth in Guyana. In this economy, the life insurance sector is the most significant after the commercial banking sector in terms of assets and liabilities. The results of this study showed that there is a decline in life insurance savings over the last decade. Lalta (1993) in a paper entitled "Deposit Insurance, Financial Liberalisation, and the problem of Moral Hazard" analysed the ways in which deposit insurance schemes can improve efficiency and confidence in the financial system and in particular to protect depositors in a context of widespread financial liberalisation.

Generally, development banks have been used to accelerate development of targeted sectors in the economy, since it was felt that the market system failed to adequately finance these desirable sectors and in any case the financial sector was too underdeveloped to undertake such financing. In the region, development banks functioned at two levels, at the regional level as through the

Caribbean Development Bank and at the national level. James (2007) noted that national development banks were created in the pre 1980 era and collectively they were expected to direct credit to agriculture, industry, development of human capital and finance low cost housing. These institutions were supposed to stimulate sectoral developments in a bid to complement national development plans, by offering credit at significantly lower costs compared to other forms of financial institutions. However, James (2007) noted that the fundamental challenge have been how to make these institutions financially viable while meeting existing needs. As such he noted that these institutions turned out to be a drain on the Treasury given their typically high default rates and inadequate sources of funds, and repeated losses.

Birchwood (2007) investigated whether the use of a specialist development bank in a sector such as the Agriculture Development Bank of Trinidad and Tobago is sustainable. In spite of the fact that the bank was created prior to 1970, the very sector that it was created to stimulate actually declined in the 1980s been 3.5 percent lower in 1989 than it was in 1982 and grew minimally by 11.1 and 8.7 per cent between 1989 to 1990 and 1994 to 2004 respectively. He contended that the lending activity of such development banks were susceptible to economic cycles within the sector so that the specialist bank worked best when the sector was expanding, since then there would be an increase in the demand for loans and other services from the development bank, thus allowing the bank to be better placed to achieve scale economies. Scale economies are critical to development banks given the level of overheads required to provide specialist services, such as the use of agriculture experts. Birchwood (2007) also pointed out that the sector was impacted on by shifting government priorities especially since this impacted on the development of infrastructure to complement the sector and the ability of the development bank to raise funding.

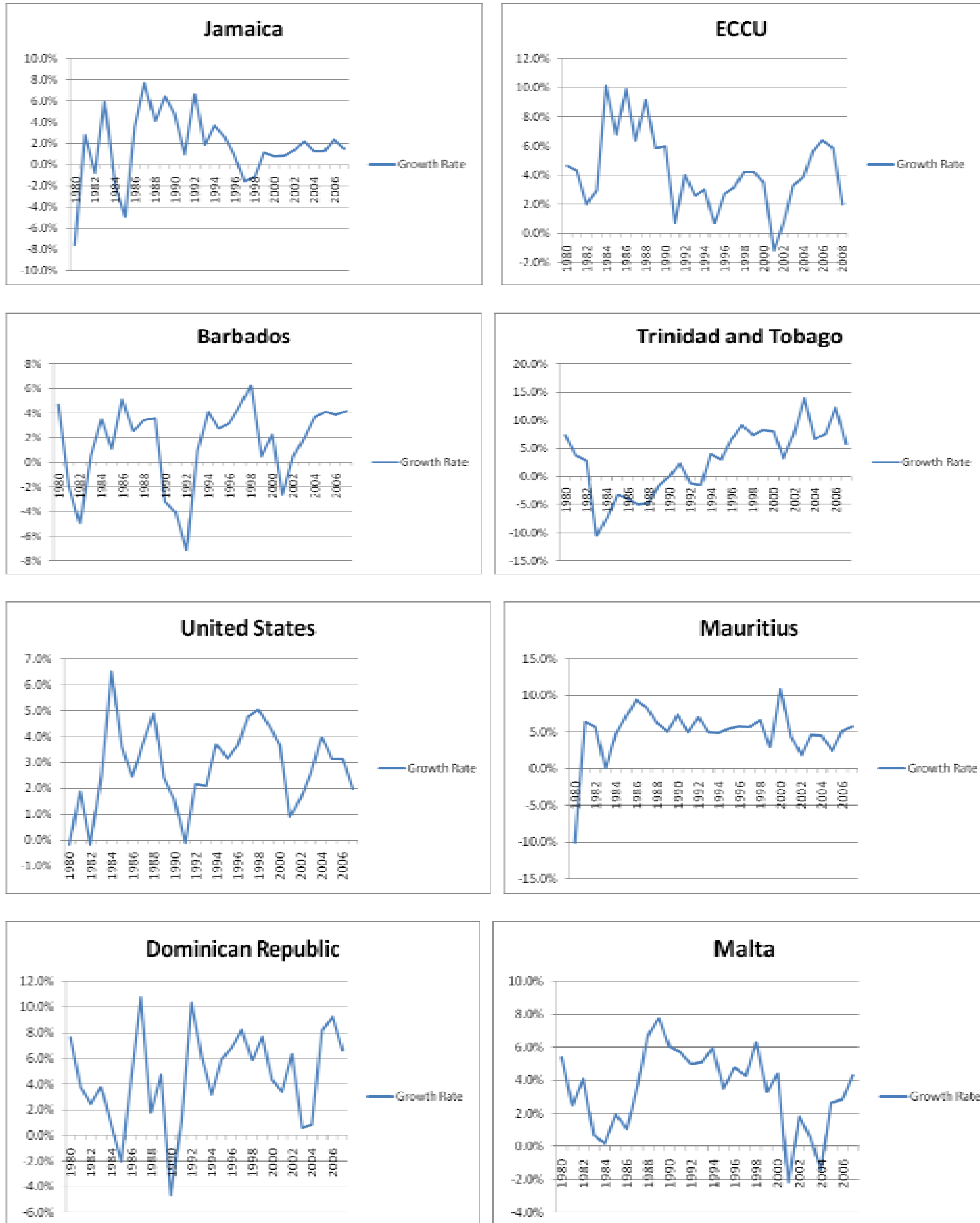
In suggesting the way forward, James (2007) asserted that development banks need that development banks need to make use of derivative products in order to help reduce their risk exposure levels. Birchwood (2007) suggested that there

must be strong government commitment to the development of the sector, thus laying down the necessary infrastructure and institutional support. Moreover, he suggested the development bank needs to continuously thrive to reinvent itself, and adopt a marketing approach.

Growth Performances of Caribbean Economies

The Caribbean economies largely recorded positive growth over the period 1980 to 2008. This was consistent with the positive growth recorded by the comparator countries during the period, see Figure 1 below. However, economic cycles did not reflect the same timing, reflecting differences in the susceptibility of the member countries to economic shocks resulting from varied production of goods and services between the economies. This argument assumes though that growth was not generated principally by internal mechanisms between savings and investment, but also by the balance of payments performance.

Figure 1: Real Economic Growth for Selected Countries, 1980-2007



2.0 A first look at Investment, Savings and Financial Development

Is investment low in the Caribbean?

With the exceptions of The Bahamas, Belize and Trinidad and Tobago where the investment ratios were less than 15 per cent, the Investment ratios of the remaining Caribbean countries in 2007 tended to be in the range of 20% to 55%. Generally, the investment ratios of most Caribbean economies were higher than many comparator countries, the United States (US), Malta, and Dominican. This suggested that most regional economies received less from a unit of investment compared to these comparator countries.

Figure 2 Investment ratios for all sample countries at 2007

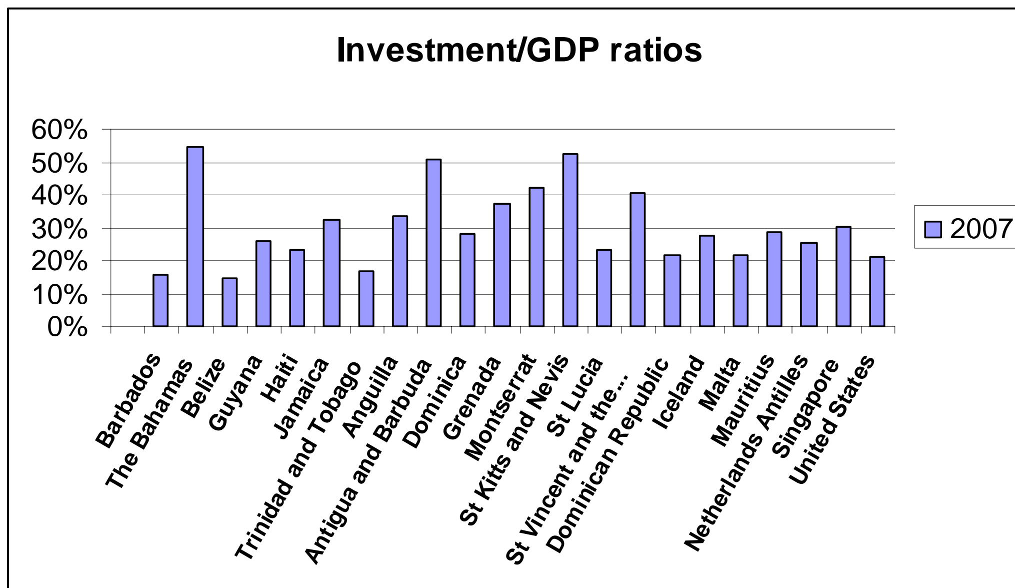
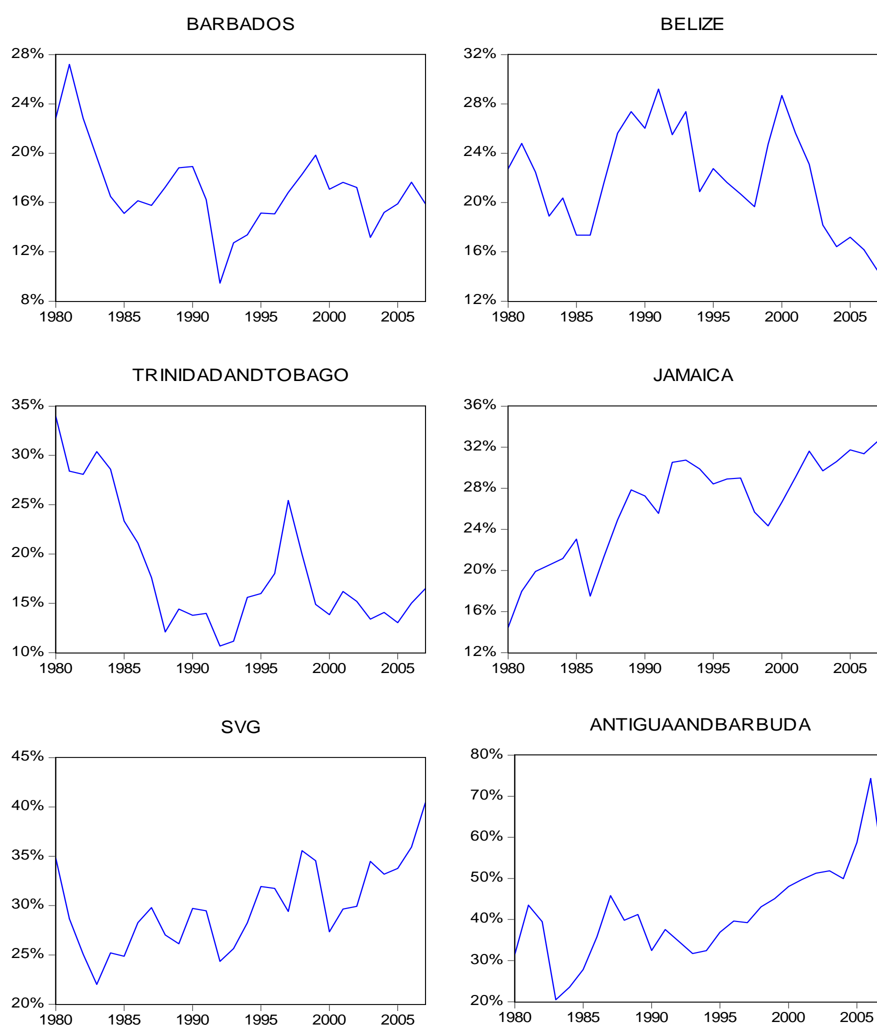


Figure 3 Investment Ratios for Selected Caribbean countries, 1980-2007



Less countries in the region reflected ICOR of lower than 10. This suggested that these economies required lower investments to generate the same increase in capital as the other regional economies.

Table 1 Percentage of Incremental investment capital ratio

Percentage range	Countries
<10	>10
Barbados, Guyana, Trinidad and	The Bahamas, Belize, Jamaica, Anguilla,

Tobago, St. Lucia, St. Vincent, Dominican Republic, Malta, Mauritius, Singapore	Antigua, Dominica, Montserrat, St. Kitts/Nevis, Iceland, Netherlands, USA

Do fast growth economies have higher foreign savings ratios?

Foreign savings as a percentage of GDP in most Caribbean countries was higher than Malta, USA and the Netherlands. The bulk of Caribbean countries reflected ratios l within the range of 15-30% with exceptions been Antigua and Barbuda, the Bahamas, Barbados, Belize which reflected ratios between 5-10 per cent and Guyana, Anguilla, Grenada, Montserrat and Dominica which reflected ratios of over 50 per cent. At the same time the ratios of the ratios for Malta, Netherlands and the USA was within the 5-10 percent range. Over the last two decades Jamaica and Montserrat recorded increased usage of foreign savings, see Figure 4.

Figure 4 Use of Foreign savings in 2007

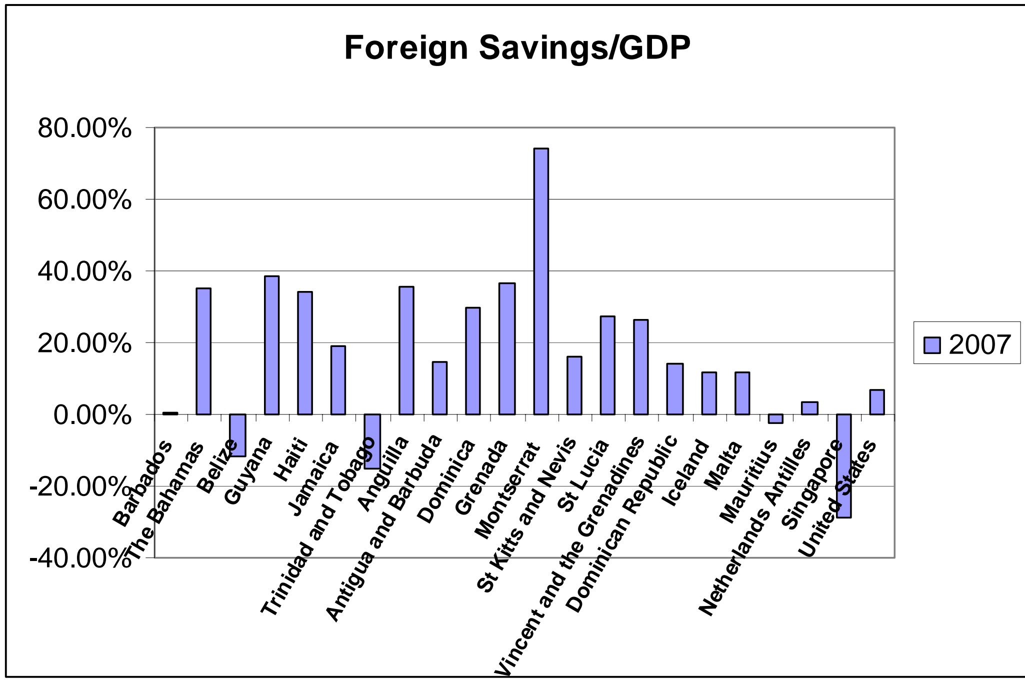
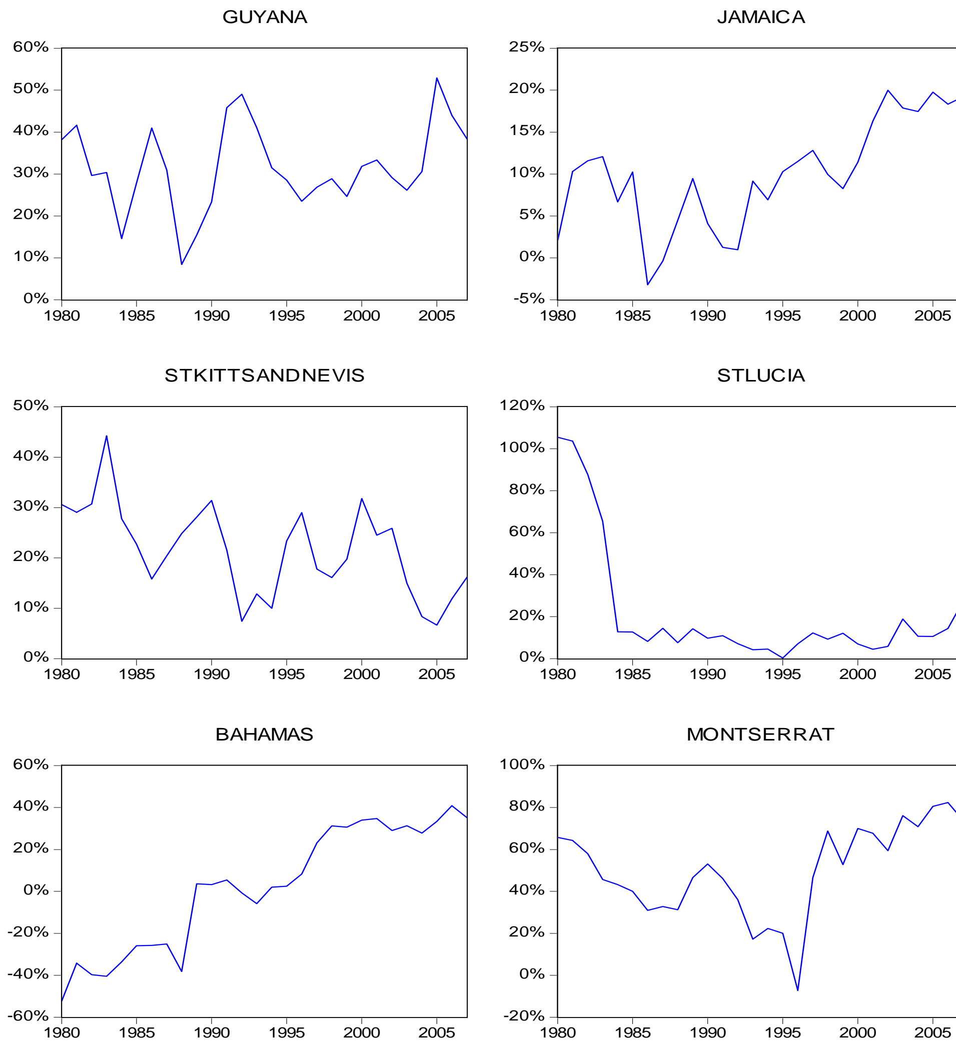


Figure 4: Foreign Savings ratios for all sample countries at 2007

Figure 5 Foreign Savings Ratios for selected Caribbean countries, 1980-2007



Do fast growth economies have higher domestic savings ratios than Caribbean economies?

Domestic Savings ratios of Caribbean countries tended to be lower than USA and Malta and Singapore. For, example; for 2007 some Caribbean economies reflected lower savings ratios – Anguilla, Grenada, Montserrat, Guyana, Jamaica, Dominica and St. Lucia, see Figure 6. Moreover, the first three countries in the list reflected negative savings ratios, which suggested that all of their capital formation (Investment) and some of their consumption were financed from abroad. It must be noted also that Domestic savings ratios were quite volatile for the Several Caribbean countries, see Figure 7.

Figure 6 Domestic Savings Ratios for all countries at 2007

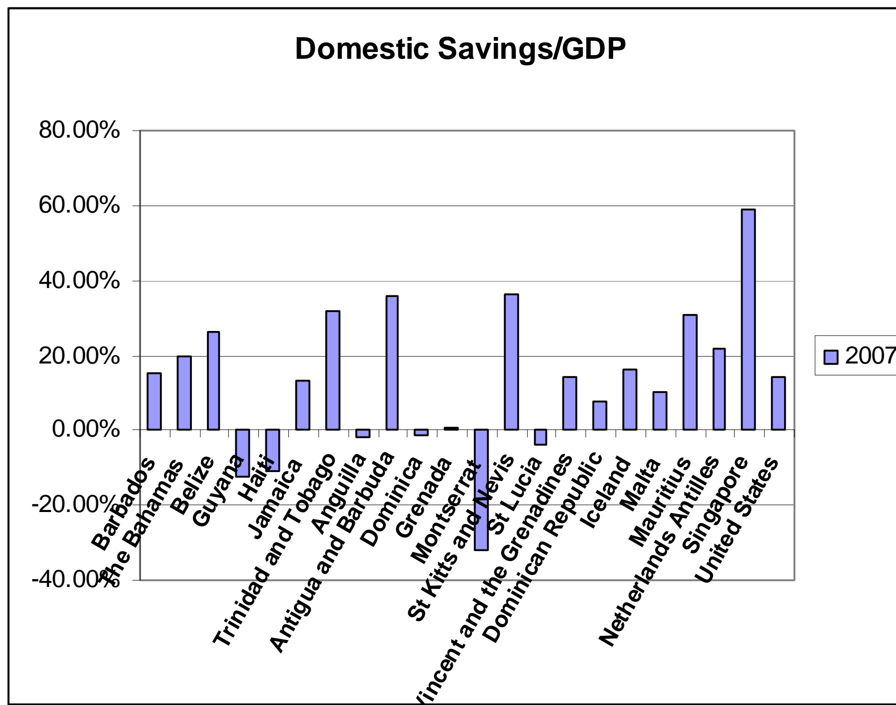
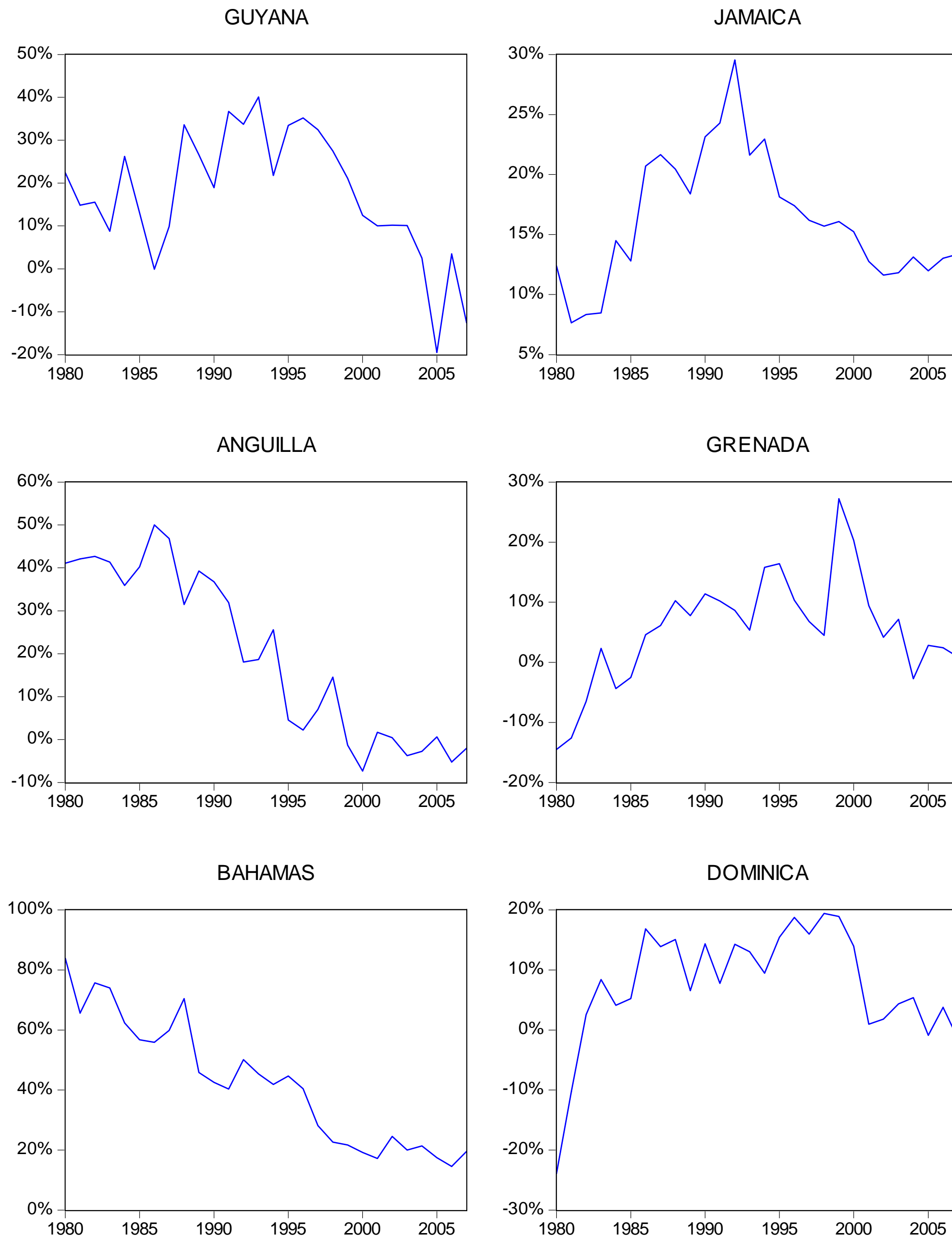


Figure 7 Domestic Savings Ratios for Selected Caribbean Countries, 1980-2007



Do stock markets play a more important part in fast growing countries?

The stock markets in the Caribbean are small and underdeveloped by international standards, thus it is not surprising that relatively low levels of capital are raised on these markets by private investors. The Eastern Caribbean Stock Exchange (ECSE) had low levels of new equity issues as evidenced by the fact that new equity listings as a ratio of GDP remained less than 2% of GDP since the inception of the ECSE. Likewise, the stock market in Trinidad and Tobago did not result in any substantial mobilisation of investment funds; In the case of Trinidad and Tobago, new equity issues was under 4.5 per cent of GDP between 1981-2007.

Figure 8a

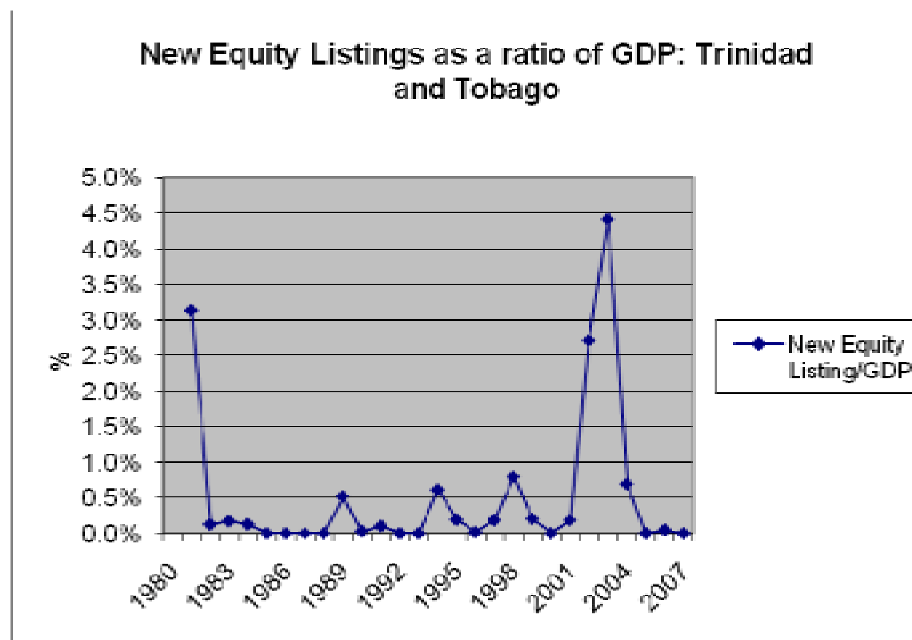
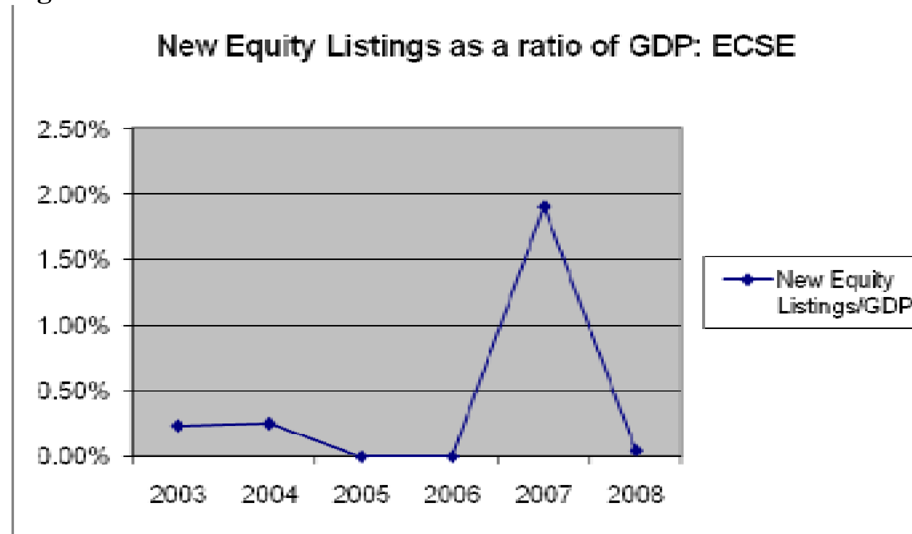


Figure 8b



Another way of looking at the contribution (importance) of stock markets is to compare the stock market capitalisation ratios across countries. The following graph compares these ratios for selected countries. In 2007, Singapore had a market capitalisation ratio of 319% compared to 185% for Barbados and 82% for Mauritius, two economies of similar size.

Ratios of Financial Assets/GDP

Preliminary observations of the data on the Caribbean economies generally pointed to an increasing level of deepening in bank activity, (as measured by commercial banks assets as a ratio of GDP) from the period 1980 to 2007. All of the sample countries recorded increases in their respective Commercial Banks Assets to GDP ratios even though some ratios were increasing at a faster rate than others. Jamaica and Trinidad and Tobago had commercial bank commercial bank assets of less than 100% at 2007, see Figure 9 below. See appendix for a list of institutions in the financial sector for selected countries.

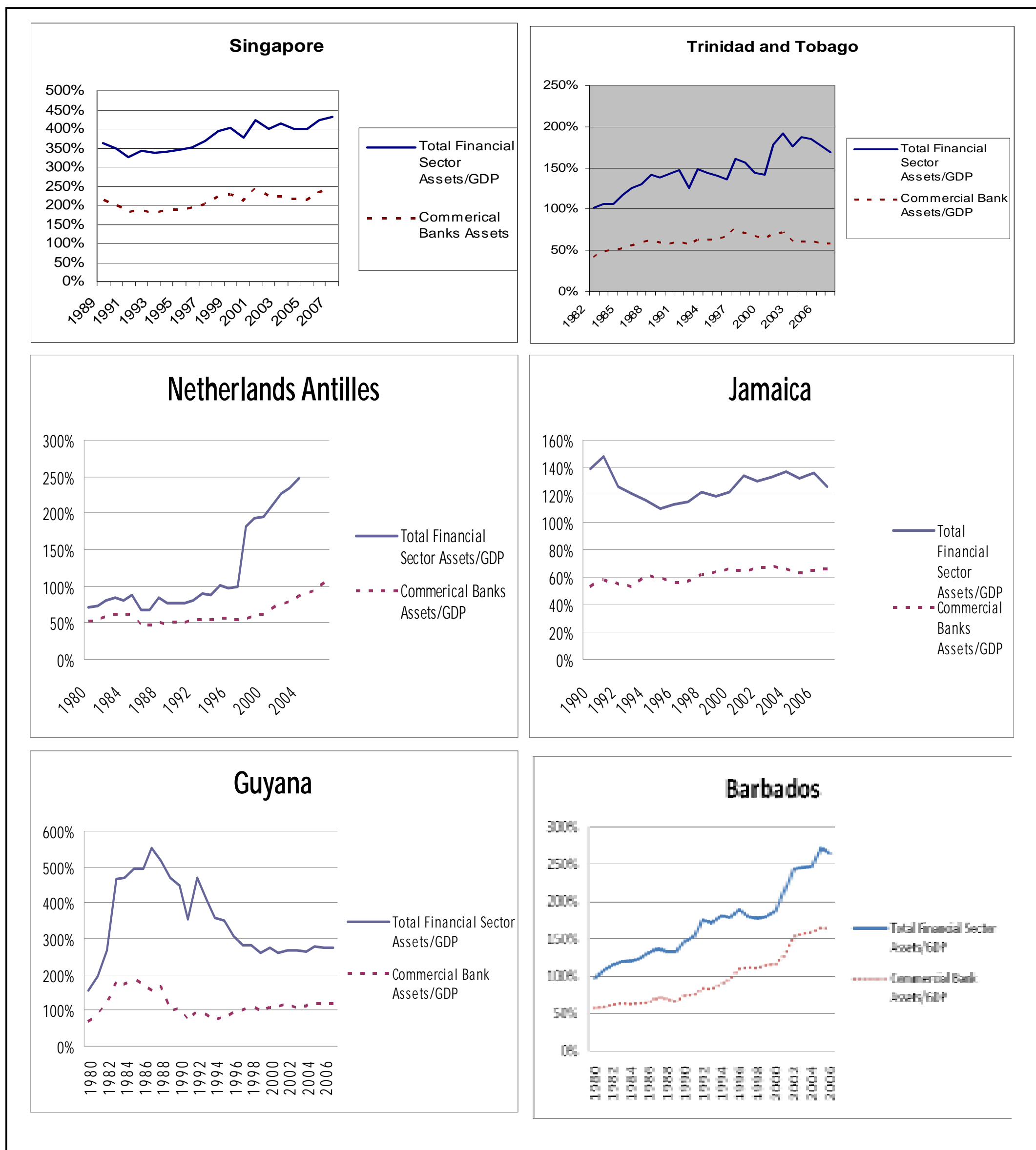


Figure 9: Comparison of Total Financial Sector Assets and Commercial Banks Assets for Selected Countries 1980-2007.

Financial Savings (Are banks more successful in raising deposits?)

Financial Savings is calculated as Deposits less household loans all as a ratio of GDP. Financial Savings were within the range of 2% and 17% for most of the countries in the sample with the exception of Trinidad and Tobago which had financial savings of approximately 4% at 2007, up from 1.28% at 1981. The low levels of financial savings coincide with the growth in mutual funds.

4.0 Areas for future research

The study highlights a number of areas which needs attention and therefore a research agenda is immediately suggested for the Caribbean. Some of these areas are listed below.

- Need for sectoral studies to be untaken concerning the relevance of bank financing to the development of the dominant sectors of GDP
- Studies critically analysing the role and importance of Non Bank Financial Institutions.
- Further work on Development Banking.
- Need for sectoral studies to be untaken concerning the relevance of bank financing to the development of the dominant sectors of GDP
- Studies critically analysing the role and importance of Non Bank Financial Institutions.

6.0 Concluding Remarks

The study suggests that Caribbean economies are characterised by high investment ratios. At the same time, the region exhibits a high dependence on foreign savings ratios. In keeping, domestic savings tend to be low for most member countries. Commercial banks are the dominant players in the financial sector, but lending tends to be skewed in favour of a few sectors. Moreover, these institutions are not major financers of the largest contributors to foreign exchange of GDP.

Works Cited

Belgrave, Anton. Roland Craigwell and Winston Moore. (2002). "An Empirical Examination of the relationship between Commercial Banks and Credit Unions in a Small Open Economy". Central Bank of Barbados Working Paper, 2002-6.

Bennett, Karl. (2006). "Rethinking the Role of the Financial Sector in Economic Growth in CARICOM". *Journal of Business, Finance and Economics in Emerging Economies.* Vol. 1. No. 1. pp 74-91.

Birchwood, Anthony. (1997). "Pooled Funding for Collective Borrowing: Suggestions for Adaptation in the Formal Financial Sector". Paper Presented at the XXIX Annual Conference of Monetary Studies, Hilton International, Barbados, October 27-31.

Birchwood, Anthony. (2001). Survey on the Credit Culture of Commercial Banks in a Small Open Petroleum Economy: The Case of Trinidad and Tobago. Savings and Development, Quarterly Review – XXV(3). pp 333-350.

Mathias, Rudolph C. and Birchwood, Anthony. (2004). Government Spending and Economic Growth in Latin America and the Caribbean. in Fiscal Experience in the Caribbean: Emerging Issues and Problems, edited by Ramesh Ramsaran, Trinidad and Tobago: Caribbean Centre for Monetary Studies. pp 407-449.

Birchwood, Anthony. (2007). The Dynamics of Specialist Development Banking: The Case of the Agriculture Development Bank of Trinidad and Tobago, CEPAL, Serie Financiamento del desarrollo No. 192.

Birchwood Anthony and Shelton Nicholls (1999). "Credit, Investment and Economic Cycles in the Caribbean". *Social and Economic Studies.* Vol. 48. Nos. 1& 2. pp 91-125.

Bourne, Compton (1998). "Structure and Performance of Commercial Banking in Trinidad and Tobago 1965 to 1982." In *Money and Finance in Trinidad and Tobago*, edited by Compton Bourne and Ramesh Ramsaran. pp 37-74.

Clarke, Christopher Martin, Dominic Stoddard, and Vernie Shield. (1995). "Corporate Financing Revisited". In *Insights into an emerging Financial Structure: The Experience of Trinidad and Tobago".* Edited by Ramesh Ramsaran, pp 53-101, St Augustine, Trinidad and Tobago: Caribbean Centre for Monetary Studies.

Ganga Gobind (1995). "The Insurance Sector and Financial System in Guyana". Paper presented at the XXXVII Annual Conference of Monetary Studies, Jack Tar Village, Frigate Bay, St Kitts, November 8-11, 1995.

Greenidge Kevin, Chris Milner and Geoff Reed (2004). "Financial Developments and the Saving-Investment-Growth Nexus: Evidence from the Caribbean and Latin America" Paper Presented at the XXXVIth Annual Monetary Studies Conference, Central Bank of Trinidad and Tobago Conference Facilities, 16th Floor, November 1-4, 2004.

Henry, Michael. (1990). "Capital Availability, Small Business Formation and Performance in Barbados, Jamaica and Trinidad and Tobago: An Empirical Foray". *Social and Economic Studies.* Vol. 39. No. 4. pp 1-43.

Iyare, Sunday. Brian Francis, and Troy Lorde. (2004). "Capital Market Development, and Saving-Investment Correlation in the Caribbean" Paper Presented at the XXXVIth Annual Monetary Studies Conference, Central Bank of Trinidad and Tobago Conference Facilities, 16th Floor, November 1-4, 2004.

James, Vanus. (2007). New Directions for Development Banking in the Caribbean: Financing to take advantage of unlimited supplies of labour skills and entrepreneurship. CEPAL, Serie Financiamento del desarrollo No. 192.

Jung, Woo. (1986). "Financial Development and Economic Growth: International Evidence". *Economic and Development and Cultural Change.* Vol. 34. No. 2. pp 333-346.

Kasuga, Hidefumi. (2004). "Saving-Investment Correlations in Developing Countries". *Economics Letters.* 83: pp 371-376.

Khan, Mohsin. and Abdelhak Senhadji. (2000). "Financial Development and Economic Growth: An Overview". IMF Working Paper WP/00/209.

Lalta, Stanley. (1993). "Deposit Insurance, Financial Liberalisation and the problem of Moral Hazard". Institute of Social and Economic Research, University of the West Indies, Mona, Jamaica.

Levine, Ross and Sara Zervos. (1998). "Stock Markets, Banks and Economic Growth". *American Economic Review.* Vol. 88. pp 537-558.

Morewague, Boitumelo, Monica Seemule, and Henry Rampel. (1995). "Access to Credit for Non-formal Microenterprises in Botswana. *The Journal of Development Studies.* Vol. 31. No. 3. pp 481-504.

Nicholls , Neville. (1994). "Orienting Caribbean Investment Policy to the Capital Needs for the turn of the Century". In *The Savings/Investment Environment in the Caribbean Emerging Imperatives.* Edited by Ramesh Ramsaran.

Odedokun, Matthew (1992). "Supply Leading and Demand Following Relationship between Economic Activities and Development Banking in Developing Countries: An Empirical Analysis". *Singapore Economic Review.* pp 46-58.

Odle, Maurice. (1998). "Banking, Finance and Caribbean Development". Paper Presented at the XXX Annual Monetary Studies Conference, Paradise Island, The Bahamas, October 26-30, 1998.

Roache, Shaun (2006). "Domestic Investment and the Cost of Capital in the Caribbean" IMF Working Paper WP 06/152.

Roache, Shaun. (2007). "Public Investment and Growth in the Eastern Caribbean". IMF Working Paper, WP/07/142.

Schmidt, Reinhard. and Claus Zeitinger. (1996). "The Efficiency of Credit Granting NGOs in Latin America" *Savings and Development.* Vol. 20. No.3. pp 353-381.

Tennant, David. (2006). "Investigating the Performance of Caribbean Commercial Banks in their Mobilization and Use of Savings". Department of Economics, University of the West Indies, Mona.

Vital Kent (2003). "Public Investment and Economic Growth in Anglophone Caribbean Countries". Paper Presented at the XXXV Annual Conference of Monetary Studies, Sir Cecil Jacobs Auditorium, Eastern Caribbean Central Bank, Basseterre, St Kitts.

Wood Anthony. (1993). “Financial Development and Economic Growth in Barbados: Causal Evidence”. *Savings and Investment.* Vol. XVII. No. 4. pp 379-390.

Worrell, Delisle. (1993). “Investment in the Caribbean” *Social and Economic Studies.* Vol. 42. No. 2 & 3.

APPENDIX

Total Financial Sector Assets

Total financial sector assets represent the sum of all bank and non bank financial institutions' assets of the countries used in this paper. The following paragraphs provide a list of institutions present in the financial sector of selected Caribbean countries and comparator countries.

Guyana: Building Societies, Trust Companies, Finance Companies, Pension Schemes, Life and Non Life Insurance Companies constitute the list of non bank financial intermediaries. Insurance companies have the highest asset to GDP ratios.

Barbados: Trust and Mortgage Companies, Finance Companies, National Insurance Fund, Credit Unions, Insurance Companies are the non bank financial intermediaries. The National Insurance Fund is the largest non bank financial intermediary in Barbados with Total Asset/GDP ratio of over 40% at 2007.

Trinidad and Tobago: Deposit taking institutions comprise of Commercial Banks, Finance Companies and Merchant Banks, Trust and Mortgage Finance Companies. Other financial institutions include Central Bank of Trinidad and Tobago, Commercial Banks, Thrift Institutions, Development Finance Institutions, Deposit Insurance Corporation, Home Mortgage Bank, Life Insurance Companies, Home Mortgage Bank, Life Insurance Companies, National Insurance Board and Unit Trust Corporation.

Singapore: Monetary Authorities of Singapore, Domestic Banking Units, Finance Companies, Merchant Banks and Insurance Companies are the major financial institutions in Singapore.

Netherlands Antilles: Central Bank of the Netherlands, Commercial Banks, Pension Schemes, Domestic insurance companies and international life insurance companies make up the financial sector in Netherlands Antilles.

Jamaica: Bank of Jamaica, Commercial Banks, Finance Houses, Merchant Banks, Capital Development Fund, Building Societies and Credit Unions.

Sources of data

The data was collected from the following published documents: Various issues of the Statistical Digest (Monthly, Quarterly, and annual) of the various Central Banks; Annual economic Survey (various issues) published by the Trinidad and Tobago Central Bank; Quarterly Review (various issues) published by the Central Bank of the Bahamas; Economic Review (various issues) published by the Central Bank of Barbados; Statistical Bulleting (various issues) published by the Bank of Guyana; National Accounts Statistics (various years) published by the Eastern Caribbean Central Bank (ECCB); Economic and Financial Review (various years) published by the ECCB; Economic and Financial Statistics (various years) published by the ECCB.

International Financial Statistics, United Nations Statistical Division and the United Nations Economic Commission for Latin America and the Caribbean websites were also used to obtain data.

Countries

The countries in the study are as follows: Barbados, The Bahamas, Belize, Guyana, Haiti, Jamaica, Montserrat, Trinidad and Tobago, Anguilla, Antigua and Barbuda, Dominica, Eastern Caribbean Currency Union (ECCU) as a block, Grenada, St Kitts & Nevis, St Lucia and St. Vincent & the Grenadines. In addition, Dominican Republic, Iceland, Malta, Mauritius, Netherlands Antilles, Singapore were used as comparable countries. United States (US) was also used as a benchmark.

Data

The following variables were used in this study: Private Investment (Gross Fixed Capital Formation is used as a proxy); Foreign Savings (Imports less Exports); Domestic Savings (Difference between Gross Fixed Capital Formation and Foreign Savings); Real Gross Domestic Product (RGDP); Commercial Banks and Non bank financial intermediaries' assets, financial sector assets; and Commercial Banks Loans.