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Economic Review

Volume XXXVIII, Issue 2

The *Economic Review* (ER) provides a bi-annual summary of the major socio-economic issues facing Barbados, selected research conducted by Bank staff and reviews of topical literature from around the world. The *Economic Review* is prepared by the staff of the Research and Economic Analysis Department (READ) of the Central Bank of Barbados.

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Frequently Used Abbreviations

BDIC	Barbados Deposit Insurance Corporation
CARIFTA	Caribbean Free Trade Association
CET	Common External Tariff
DSGE	Dynamic Stochastic General Equilibrium
FIA	Financial Institutions Act
FSC	Financial Services Commission
GDP	Gross Domestic Product
VAT	Value Added Tax

A Review of the VAT System in Barbados

by DeLisle Worrell, Tracy Maynard, Chrystol Thomas, and Michelle Doyle-Lowe*

Abstract

This study compares the yield of the value added tax (VAT) in Barbados with that of the prededing regime of consumption taxes. It employs various performance indicators based on the yield of taxes relative to the tax base (GDP and consumption) and the tax rate which examines the collection efficiency of taxes, as well as utilises the Proportional Adjustment method by Prest (1962) to determine elasticity and buoyancy ratios. The paper finds that (a) the proportion of indirect taxes in total revenue remained unchanged after the introduction of the VAT; (b) the yield of the VAT relative to the rate of tax was no higher than for the consumption tax in the period prior to its introduction; (c) the costs of administering the VAT and customs duties were about the same, relative to their yields, before and after the introduction of the VAT; and (d) the consumption taxes that preceded the VAT were more buoyant in response to changes in income, and more elastic, than the VAT.

1 Introduction

Barbados is among many countries that have adopted the value-added tax (VAT) system in a quest for high tax yields, without sacrificing simplicity and efficiency. The VAT is levied on the market value added of a good or service at each stage of the manufacture or distribution process. It credits taxes paid by enterprises on the inputs to production against the taxes paid on sales.

In Barbados, the VAT was introduced on January 1, 1997 at a standard rate of 15%, replacing an indirect tax structure that consisted of a multi-tiered system of eleven indirect taxes: a consumption tax, an import surcharge, a hotel and restaurant sales tax, a travel ticket tax, an entertainment tax, a tax on quarriable minerals, a surcharge on overseas telephone calls, a surcharge on residential rents, a service tax on pleasure cruises, a stamp duty on imports and an airline business tax.

This study examines the performance of the VAT system in relation to the taxes it replaced, as well as the responsiveness of indirect taxes to income and consumption over the period 1980 to 2011. The analysis uses various performance indicators based on the yield of taxes relative to the tax base and the tax rate to test efficiency. These include: the productivity ratio, the gross compliance ratio, and the consumption ratio or "c-efficiency" ratio. The administrative efficiency of the major taxes, as well as the buoyancies and elasticities of tax

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responses to income changes are examined. To our knowledge, this is the first study that compares the performance of Barbados' VAT system with the previous regime of consumption taxes.

The structure of the paper is as follows. Section 2 provides a brief overview of the indirect tax structure in Barbados. Section 3 examines the aspects of productivity and efficiency and and Section 4 analyses buoyancies and elasticities. Section 5 concludes.

2 Stylised Facts - Indirect Tax Structure in Barbados

2.1 Valued Added Tax (VAT)

The VAT was introduced with a threshold of $60,000 of annual income, below which small businesses were not required to charge the VAT. The VAT rate was set initially at a 15% basic rate on goods and services, with a concessional rate of 7.5% on accommodation in hotels, guest houses and inns, and a number of zero-rated and exempted items. The seller of a good or service taxed at a zero-rate pays no tax on his/her sales, but is permitted to recover tax paid to suppliers, whereas businesses that are exempted from VAT are not allowed to reclaim the related input tax. Zero-rated items include crude oil, duty free goods, and goods used in commercial fishing while exempted commodities comprise financial services, public transportation, medical and educational services.

The VAT rates remained unchanged until December 2010, when the standard VAT rate was raised to 17.5%, the concessional rate was increased to 8.75% and the VAT threshold was revised to $80,000.

2.2 Indirect Tax: Before and After VAT

Prior to the introduction of the VAT, consumption duties accounted for about 39% of indirect tax revenues, on average. Import duties and stamp duties were the other major categories, comprising approximately 26% and 14% of indirect taxes, respectively. After 1997, VAT receipts contributed 56% of indirect tax revenue, with import duties and excises accounting for 15.8% and 1.5%, respectively (see Figures 1 and 2).

Figure 1: Indirect Taxes by Source (BDS$M)

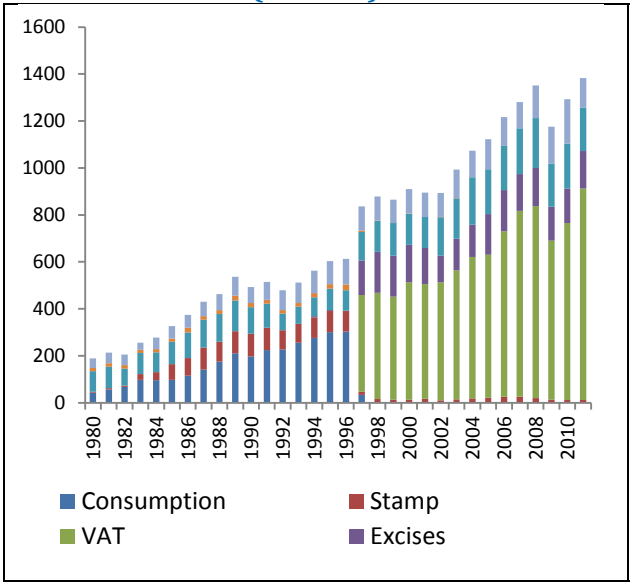
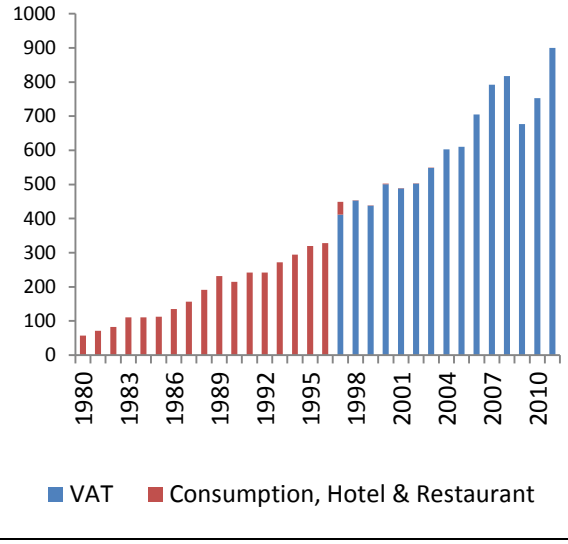


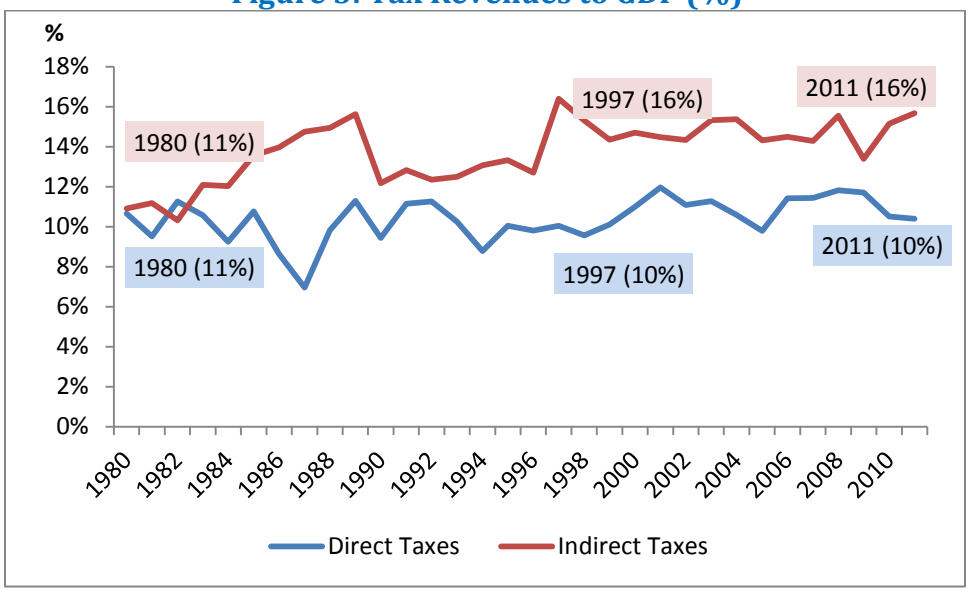
Figure 2: VAT, Consumption and Hotel and Restaurant Receipts (BDS$M)



Source: Accountant General, Ministry of Finance and Central Bank of Barbados

Over the period 1980 to 2011 tax receipts grew on average by 7%. Figures 3 and 4 show direct and indirect tax revenues as a share of GDP and total tax revenues. In the early 1980s, direct and indirect taxes contributed similar amounts to national income. From 1983, however, the share of indirect taxes expanded as a result of personal income tax reform, involving increased tax thresholds and reduced personal tax rates. With the introduction of the VAT in 1997, the ratio of indirect taxes to total GDP rose, but only temporarily. Overall, direct taxes as a percentage of GDP have remained relatively unchanged since 1980 - 10% to 11%, but indirect taxes to GDP have grown from 12.9% in the 1980s, to 13.5% and 14.6% in the 1990s and 2000s, respectively.

Figure 3: Tax Revenues to GDP (%)



Source: Accountant General, Ministry of Finance and Central Bank of Barbados

Figure 4: Indirect and Direct Taxes as a Percent of Tax Revenue (%)

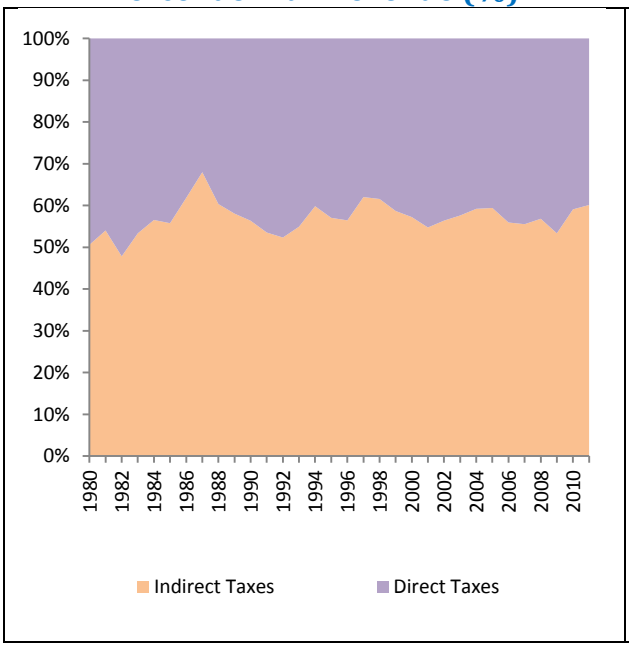
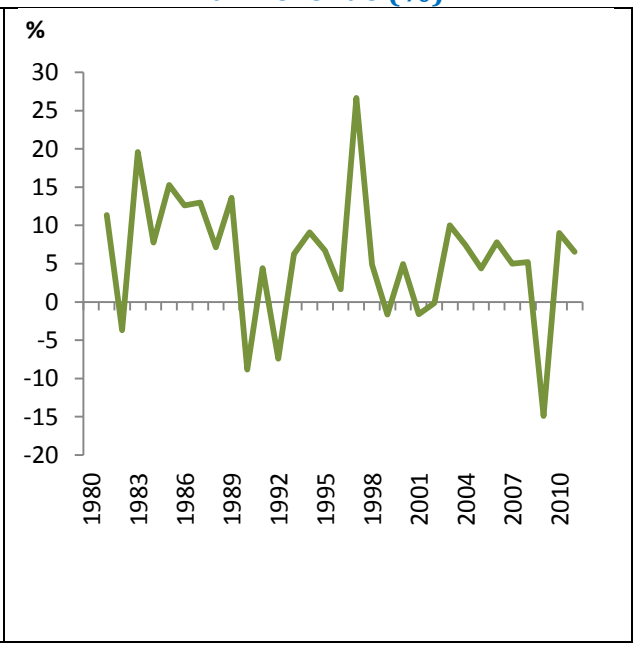


Figure 5: Percentage Change in Indirect Tax Revenue (%)

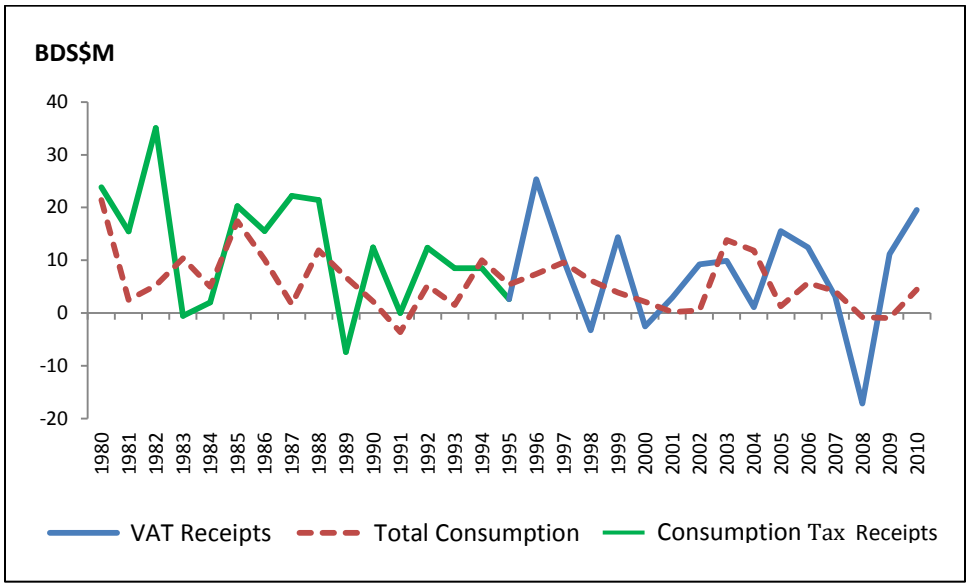


Source: Accountant General, Ministry of Finance and Central Bank of Barbados

3 Productivity and Efficiency

The revenues from the VAT relative to total consumption fluctuated between 8.5% and 11.2% for the period 1997 to 2011, and averaged approximately 9.5% (see Table A in Appendix I). Figure 6 suggests a weak relationship between the direction and magnitude of changes in total consumption and movements in VAT receipts. A correlation coefficient of 0.22 was estimated.

Figure 6: Growth in Consumption Tax and VAT Receipts versus Growth in Total Consumption



Source: VAT Division-Customs and Excise Department, Accountant General, and Central Bank of Barbados

Table A, in Appendix I, shows the yield of the VAT relative to the principal taxes it replaced, the consumption and hotel and restaurant sales taxes. The ratio of the VAT to total tax revenue was 32.5%, compared to 28% for the consumption taxes and the hotel and restaurant tax. The ratios to GDP were 8.4% for VAT, and 6.4% for the taxes it preceded.

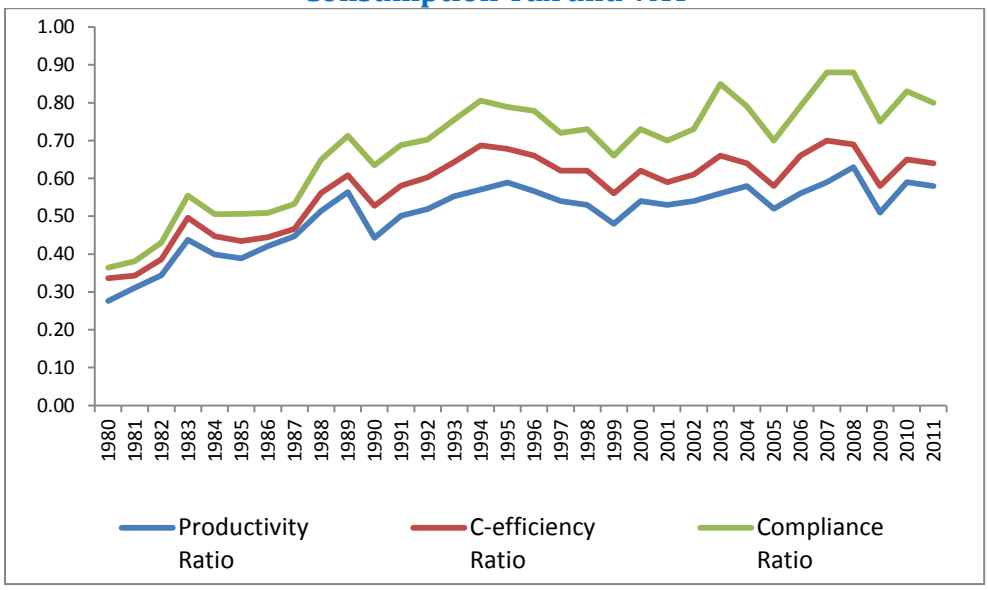
3.1 Methodology

Three revenue performance indicators are used to compare the collection efficiency of the VAT with the taxes it replaced. The indicators are calculated as the tax yield as a proportion of the tax base, divided by the tax rate, differing according to the base employed. The VAT productivity (VATPROD) measure utilises a GDP base, while the VAT gross compliance ratio (VATCR) and VAT c-efficiency (VATCE) indicators use private and total consumption, respectively. A higher ratio suggests a more efficient collection of tax revenue.

Analysis

All three measures showed an increase after the introduction of the VAT. The average productivity, C-efficiency, and compliance ratios for consumption tax, and hotel and restaurant tax between 1980 and 1996 were 0.46, 0.52, and 0.61, respectively, compared to ratios of 0.55, 0.63, and 0.77 for the VAT during the period 1997 and 2011 (see Appendix: Table A). Figure 7 reveals that the performance indicators rose slightly with the implementation of the VAT, recovering in an erratic way after 2000. For the consumption tax, all of the performance ratios displayed an increasing trend between 1980 and 1994, but fell during the period 1995 to 1997. The rise in revenues in the early 1990s is partially attributed to an increase in the basic tax rate of consumption, from 9% to 12% in 1991.

Figure 7: Revenue Performance Indicators for Consumption Tax and VAT



Source: Authors' Calculations

Table 1 shows that Barbados' VAT performance compares favourably with other Latin American and Caribbean countries such as Costa Rica and Trinidad and Tobago, but is below Jamaica. Nonetheless, Barbados' revenue performance indicators are on par with that of developed countries such as the European Union and the Americas (Ebril et al. 2002).

Table 1: Comparative Analysis of VAT Performances (Averages)

		Performance Indicators		
COUNTRY	**VAT RATE**	**VATPROD**	**VATCE**	**VAT/GDP (%)**
Barbados	15% (1997), 17.5% (2011)	0.55	0.63	8.4
Jamaica	10% (1991), 15% (1996); 16.5% (2005)	0.61	0.93	9.2
Trinidad & Tobago	15% (1990)	0.28	0.52	6.0
Costa Rica	10% (1975)	0.35	0.53	4.6
Canada	7% (1991)	0.38	0.67	2.7

Notes:

1. Year of tax rate change in parenthesis.

2. Indicators for Trinidad & Tobago were taken from Cotton (2006).

3. Indicators for Jamaica, Costa Rica and Canada are taken from Edmiston and Bird (2004).

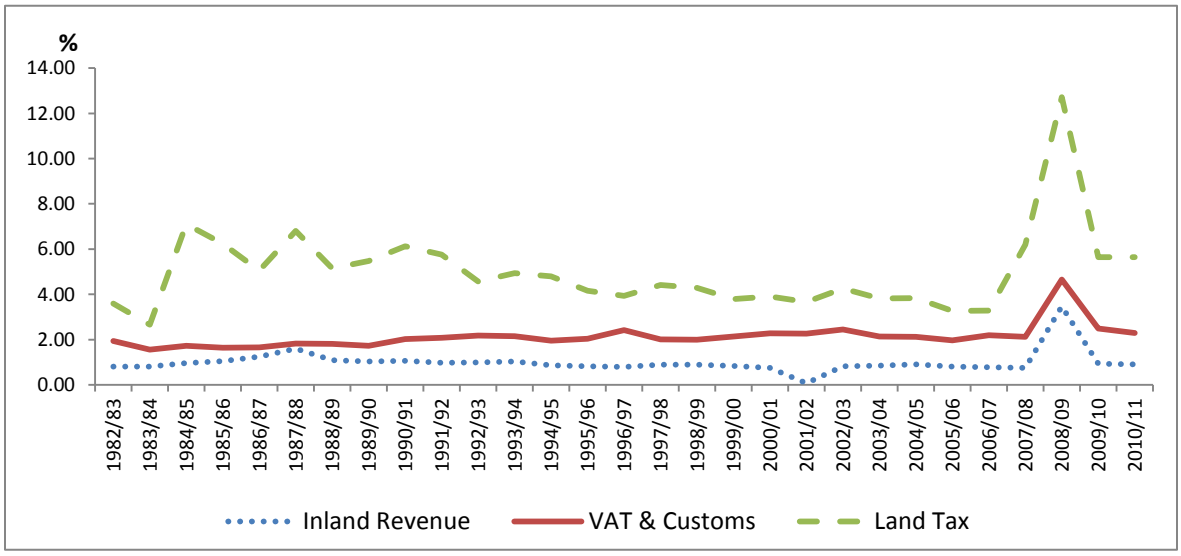
3.2 The Efficiency of Tax Administration

In this section, the cost of collection ratio - the annual cost of administration incurred by a revenue body as a percentage of the total revenue over the course of a fiscal year - is used to assess the efficiency of the major revenue collecting agencies in Barbados during the two periods FY1982/83 to FY1996/97 and FY1997/98 to FY2010/11. The three main revenue collecting entities in Barbados are the Customs and Excise Department, Inland Revenue Department and the Land Tax Department. The Customs and Excise Department which previously gathered consumption duties, now primarily compiles VAT receipts, import duties and excise taxes, while the Inland Revenue Department collects taxes on incomes, and the Land Tax Department is responsible for property taxes.

The administrative cost of the Customs and Excise Department averaged 1.9 percent of collections during the period FY1982/83 to FY1996/97, and grew to approximately 2.4 percent over the period FY1997/98 to FY2010/11, following the establishment of the VAT Division. The collection costs incurred by the Inland Revenue Department have remained relatively unchanged at 1 percent and that by the Land Tax Department averaged 5 percent (see Figure 8). [1]

[1] The substantial rise in the cost of collection ratio in FY2008/09 of all departments was related to a one-off retroactive payment of wages and salaries of civil servants.

Figure 8: Administrative Cost to Revenue Yield Ratio of Departments



Source: Authors' Calculation

4 Buoyancies and Elasticities

In this section the responsiveness of the VAT to changes in income is analysed, using buoyancies and elasticities. Buoyancy is defined as the reaction of tax revenue to changes in national income or expenditure, without removing the effects of changes in tax rates, the tax base or other movements in the structure of the tax. On the other hand, the elasticity measure removes the influences of tax measures and alterations in the tax structure to give an indicator of the responsiveness of the tax in the absence of such changes (Sahota, 1961). These changes in the tax structure, which includes adjustments to the tax laws, the tax rates or bases are also referred to as discretionary tax changes. Elasticities and buoyancies are calculated from $R = bY^c$, where R is annual tax revenue, Y is annual nominal GDP at factor cost and c is the elasticity or buoyancy coefficient.[2]

4.1 Methodology for Removing Discretionary Changes in the Revenue Series

The discretionary changes are collected from the Annual Budgetary Proposals, (Skeete et al. 2003) and the authors' own calculations. The Proportional Adjustment method by (Prest 1962) is used to deduct the discretionary tax movements (see Appendices II and III). First, a preliminary series of adjusted tax yields is prepared by subtracting from the actual yield for each year the estimated amount attributed to discretionary tax changes in that year. This adjusted series is then further refined by applying the Prest formula to form a "final series" that excludes the continuing impact of each discretionary movement on future years.

[2] If discretionary tax changes are removed from the tax revenue series then (c) is the elasticity coefficient, otherwise it is the buoyancy coefficient.

Prest's procedure adjusts the tax yield of any year to the hypothetical yield for that year if a base-year tax structure had prevailed. This is done by multiplying by a sequence of multiplicative factors, each reflecting the proportion of the total yield for that year that would have accrued automatically in the absence of any discretionary changes. The factor for each year is found by dividing the actual tax yield (net of discretionary effects for that year) by the total tax yield.

4.2 Results

Table 2 shows that the buoyancy of the VAT was lower than that of consumption tax. The buoyancy of consumption taxes during the period 1980 to 1996 was approximately 1.50 percent, while the buoyancy of the VAT was 1.19 percent in the post-VAT era of 1997 to 2011. The elasticity of the VAT was also lesser, at 1.26% compared to the pre-VAT figure of 1.67%. The elasticities and buoyancies of all indirect taxes have been lower since the introduction of the VAT, which is likely to be reflective of the need for greater compliance. Williams (2001), Skeete et al (2003) and Howard (1992, 2001) also found the elasticity of indirect taxes to be relatively low.

Table 2: Buoyancy and Elasticity for Consumption Tax, VAT, and Total Indirect Taxes

	1980-1996		1997-2011		1980-2011
	Consumption	**Total Indirect Taxes**	**VAT**	**Total Indirect Taxes**	**Total Indirect Taxes**
Buoyancy	1.50	1.13	1.19	0.89	1.14
Elasticity	1.67	1.19	1.26	0.83	1.21

Source: Authors' Calculation

5 Conclusion

The introduction of the VAT did not materially alter Barbados' tax structure, given that the proportions of direct and indirect taxes to total revenue remained unchanged on average, over the period 1980-2011. Within the category of indirect taxes the three largest items (consumption tax, VAT, and import duties) accounted for over 80 percent of collections, for both the pre and post VAT period. The burden of indirect tax increased with the imposition of the VAT, from an average of 6.4% of GDP to an average of 8.4%. There was some gain in the revenue yield, relative to the tax rate, with the establishment of the VAT, indicated by the three revenue performance measures used. Notably, the administrative costs of collecting the VAT were higher relative to the revenue received, than for the taxes replaced. The indirect tax system has also been less elastic and less buoyant in response to changes in income, since the VAT was created, compared with estimates for the pre-VAT period. The difference between the revenue collection indicators as well as the buoyancies and elasticities prior to the introduction of VAT is indicative of the need for greater compliance. Furthermore, the VAT division would benefit from the employment of additional staff.

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Appendix I

Table A: Consumption and Hotel & Restaurant Taxes, and VAT Performance Indicators in Barbados

	Year	Tax Receipts	% TTR	% GDP	% TCONS	Productivity Ratio	C-efficiency Ratio	Compliance Ratio
Consumption and Hotel and Restaurant Tax	1980	57.4	15.4	3.3	4.0	0.28	0.34	0.36
	1981	71.1	18.0	3.7	4.1	0.31	0.34	0.38
	1982	82.1	19.1	4.1	4.6	0.34	0.39	0.43
	1983	110.9	23.2	5.2	6.0	0.44	0.50	0.55
	1984	110.3	22.5	4.8	5.4	0.40	0.45	0.51
	1985	112.5	19.2	4.7	5.2	0.39	0.43	0.51
	1986	135.3	22.4	5.1	5.3	0.42	0.44	0.51
	1987	156.3	24.7	5.4	5.6	0.45	0.47	0.53
	1988	191.0	24.9	6.2	6.7	0.51	0.56	0.65
	1989	231.9	25.1	6.8	7.3	0.56	0.61	0.71
	1990	214.8	24.6	5.3	6.3	0.44	0.53	0.64
	1991	241.5	25.1	6.0	7.0	0.50	0.58	0.69
	1992	241.6	26.4	6.2	7.2	0.52	0.60	0.70
	1993	271.5	29.2	6.6	7.7	0.55	0.64	0.75
	1994	294.6	31.3	6.8	8.2	0.57	0.69	0.81
	1995	319.7	30.2	7.1	8.1	0.59	0.68	0.79
	1996	328.0	30.2	6.8	7.9	0.57	0.66	0.78
VAT	1997	411.2	30.5	8.1	9.2	0.54	0.62	0.72
	1998	452.8	31.7	7.9	9.3	0.53	0.62	0.73
	1999	438.0	29.7	7.3	8.5	0.48	0.56	0.66
	2000	501.0	31.5	8.1	9.3	0.54	0.62	0.73
	2001	488.4	29.9	7.9	8.9	0.53	0.59	0.70
	2002	502.5	31.7	8.1	9.1	0.54	0.61	0.73
	2003	548.8	31.8	8.5	9.9	0.56	0.66	0.85
	2004	603.2	33.3	8.6	9.6	0.58	0.64	0.79
	2005	609.9	32.3	7.8	8.7	0.52	0.58	0.70
	2006	704.6	32.4	8.4	9.9	0.56	0.66	0.79
	2007	792.5	34.4	8.8	10.5	0.59	0.70	0.88
	2008	817.5	34.4	9.4	10.4	0.63	0.69	0.88
	2009	677.3	30.7	7.7	8.7	0.51	0.58	0.75
	2010	753.0	34.4	8.8	9.7	0.59	0.65	0.83
	2011	900.3	39.1	10.2	11.2	0.58	0.64	0.80

Notes: A basic rate of 12% was used in calculating the revenue performance ratios for the Consumption and Hotel & Restaurant taxes. VAT rates of 15% and 17.5% were used in calculating the revenue performance indicators for periods 1997 to 2010 and 2011, respectively. Estimates based on authors' calculations.

Appendix II

The Proportional Adjustment Method- (Prest 1962)

The formula is developed as follows:

where

T_i: the actual revenue for the ith year

D_i: net discretionary change for the ith year

T_{ij}: tax revenue in the jth year adjusted to the tax structure that existed in year i.

If $i = 1$ is the reference year, the series $T_{11,}\ T_{12,}\ T_{13,}\ldots T_{1n}$ represents what the tax receipts would have been if the tax structure had remained as in year 1 with all discretionary changes removed from the years following year 1. This series is used to obtain the elasticity calculations. The mathematical derivation of the series is as follows:

$$T_{11} = T_1$$

$$T_{12} = T_2 - D_2$$

$$T_{13} = T_{23} * \frac{T_{12}}{T_2}$$

$$T_{14} = T_{34} * \frac{T_{13}}{T_3}$$

$$T_{1j} = T_{j-1.j} * \frac{T_{1.j-1}}{T_{j-1}}$$

Appendix III

Table B: VAT Adjustments (1997-2011)

Year	Effective Date	Tax Adjustment	Gain[(e)] (BDS$M)	Cost[(e)] (BDS$M)
1997	January 1	VAT introduced at a rate of 15% with a special rate of 7.5% for hotel accommodation.	50	
	October 1	A zero rated VAT on a basket of food items, and educational or scientific literature recorded on either electronic or printed medium. VAT exemption on construction services for residential houses.		45
2004	April 1	VAT exemptions on computers, peripherals and computer accessories.		1.5
2008		VAT refund on building materials used in the provision of low-income houses with a value of up to $150,000 for first time home owners who reside in their homes.		7.2
2009		The threshold in respect of the refund of VAT on building materials for first time home owners increased from BDS$150,000 to BDS$200,000.		2.4
2010	December 1	VAT rate increased from 15% to 17.5%. VAT registration increased from BDS$60,000 to BDS$80,000	124	
2011		An amendment to the VAT Act to allow hotels offering time share properties to claim a refund of input tax in respect of goods purchased locally.		1.5

Source: Various Financial Statement and Budgetary Proposals of the Government of Barbados

Note: [(e)]: Estimate

Table C: Other Significant Indirect Tax Adjustments (2000-2011)

Year	Effective Date	Tax Adjustment	Gain[e] (BDS$M)	Loss[e] (BDS$M)
2000	November 1	Excise tax on gasoline and diesel reduced by 12 cents and 7 cents per litre, respectively. The retail prices of gasoline and diesel rose to $1.66 and $1.29 per litre, respectively.		2
		Stamp duty reduced for qualifying companies involved in international financing of high value equipment such as aircraft, ships and trains.		1.5
2001	August 13	The retail prices for gasoline and diesel reduced to $1.45 (from $1.66) and $1.18 (from $1.29) per litre , respectively.	1.5	
	October 1	Tax on lotteries increased from 11.5% to 12.5% to facilitate partial funding of a Sports and Arts Endowment Development Fund.	1.5	
2006		The 3% cess tax on extra regional imports, introduced in September 2005, was increased to 6% but removed from food items zero rated under the VAT Act as well as baby napkins, specialty foods for diabetics and specialty healthcare articles from the elderly. The cess remained in effect for 18 months.		3.1
	April 1	The 60% surcharge will no longer apply to imported garment items for which there is no local production.		1
	April 1	A flat rate of excise tax of 20% as opposed to 46.9% on hybrid vehicles and those powered by solar energy, LPG, and compressed.		1
	April 1	Separate excise tax rate for diesel vehicles		1
		Reduction in road tax from $1200 to $600		2
2007	July 1	Environmental levy to increase from 1% to 2%.	10	
		The Customs duty is to be amended to allow import duty and excise tax concessions in respect of vehicles, parts & safety equipment for motor sports competitions		6
	May 1	The rate of excise tax payable on public transport type vehicles falling under Tariff Head 87.02 was 40% regardless of the vehicle's chargeable value. (Previously the excise tax rate was 62% on vehicles with a chargeable value of $45,000 or less and 80% for those with a value of over $45,000)		3
2008	August 1	The environmental levy exempted from a specified basket of goods.		3
		Import duties exempted from renewable energy equipment.		1
	July 7	The excise tax payable on alcoholic beverages and manufactured tobacco increased by 50% and 100%, respectively.	1.5	
		The existing levy on used cars and new cars has been equalized to have a common rate. The existing rate of $4000 for used cars and $300 for new cars has been adjusted and the new rate is $1,500 for new and used cars.	1.5	

Year	Effective Date	Tax Adjustment	Gain[e] (BDS$M)	Loss[e] (BDS$M)
		The ad valorem rates of the environmental levy were raised from 1.5% and 2% to 2% and 3%, respectively on all local products and imports. However, manufacturers are entitled to a rebate of the levy on all exported goods.	3.5	
		Annual license fees for insurance companies increased from $5,000 to $20,000.	4.8	
	August 1	An increase in various highways fees.	46	
		Motor Cycles fee increased from $120 to $180 and $150 to $225 for without sidecar and with sidecar, respectively.	0.6	
	September 1	Increase in wholesale and retail liquor license fees.	1	
		Increased Town and country planning fees.	0.5	
2009	January 1	Financial fees for financial institutions increased.	4.9	
	July 1	Rebate payable to dealers on new vehicles increased from 15% to 20% based on tariff heading of vehicle.		3
		Gun licenses increased from $75 to $500 for 1st time registration and $200 for annual renewal.	0.5	
2010	December 1	Increase in excise tax by 50% to $0.5358 per litre.	22.7	
	December 1	Abolition of the environmental levy on imports.		42
	November 1	Retail liquor licence fees for small shopkeepers reduced from $1000 to $500.		0.9
2011	April 1	Fees for mini-buses and route taxis are to be reduced from $7,250 and $4,500 to $3,625 and $2,250, respectively. Driver's license for PSV drivers will reduce from $230 per annum to $80 per annum, in line with Transport Board drivers.		1.4

Source: Various Financial Statement and Budgetary Proposals of the Government of Barbados

Notes: 1. See Skeete et al. (2003) for adjustments in indirect taxes for the period 1977/1978 to 1999/2000

2. [e]: Estimate

Is the Magnitude of Household Debt in Barbados a Concern?

By Justin Carter, Winston Moore[1] and Mahalia Jackman[*]

Abstract

This paper provides an assessment of the size and composition of household debt in Barbados over the period 1990 to 2010. First, the study estimates the size of household indebtedness, with particular emphasis on recent trends in household debt and the main providers of credit. Second, it attempts to show how household debt varies with key macroeconomic indicators. Finally, a cursory look at the concerns resulting from rising household debt is taken. Unlike previous studies on household debt in Barbados (Craigwell & Kaidou-Jeffery, 2010; Moore & Williams, 2008), this paper does not constrain the analysis to household debt extended by commercial banks. This more holistic approach allows the authors to capture any emerging institutional trends that might be of interest to policymakers.

1 Introduction

Barbados is a small open economy with a relatively high level of economic development. In 2009, the total nominal value of goods and services produced was $5.2 billion (US$), while Gross Domestic Product (GDP) per capita (on a purchasing power parity basis, PPP) was $19,423. Indeed, GDP per capita in Barbados was almost 40 per cent higher than the average for a group of comparator countries.[2] Within the Caribbean, only Antigua and Barbuda ($20,954), The Bahamas ($31,746) and Trinidad and Tobago ($25,739) had a higher level of GDP per capita.

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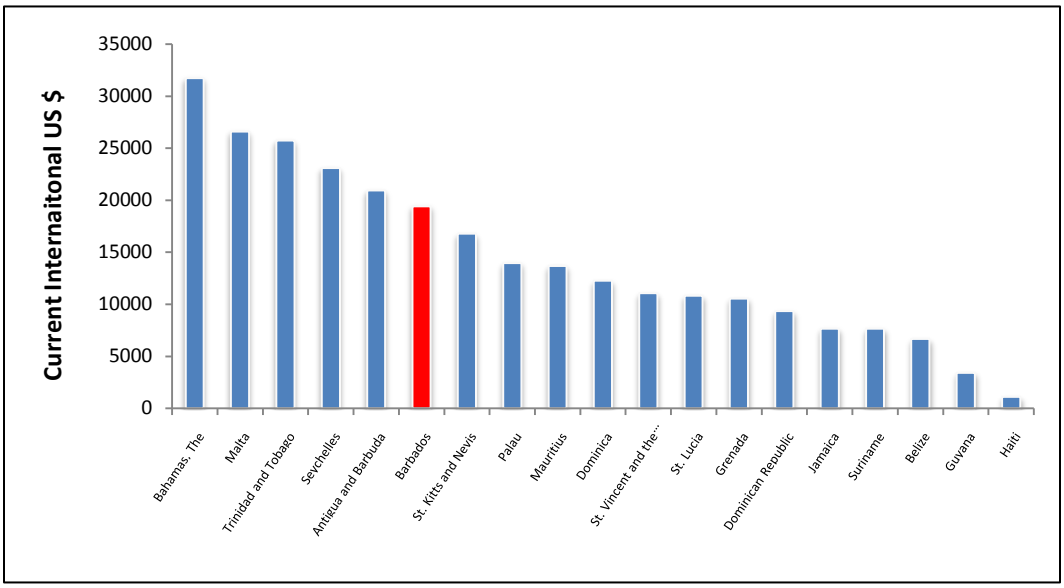
[2] By default, the first group of benchmark countries will be the 15 beneficiary countries of Compete Caribbean (one of them will be, of course, the country of interest in the report): Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominican Republic, Dominica, Grenada, Guyana, Haiti, Jamaica, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago. In addition, the paper can take into account other benchmark nations based on two characteristics: GDP per capita (current PPP US$) in the latest year of available data and population size. A benchmark country will be one such that the difference in GDP per capita (current PPP US$) and population size does not differ by more than 25% from the economy of interest on both dimensions. Using this threshold, the study also included Palau, Mauritius, Seychelles and Malta, as comparator countries.

Figure 1: GDP per Capita, 2010



Source: World Bank World Development Indicators

Like most other Caribbean countries, the global financial crisis has had a significant effect on the Barbados economy. The IMF (2010a) estimates that from 2007 to 2010, output in Barbados contracted by a cumulative 6 percent, with widespread weaknesses in all major spheres of economic activity. The reduction in economic output has also negatively affected unemployment. At the end of 2011, the unemployment rate was estimated at 12 percent - almost 5 percentage points higher than at the end of 2007. The rising rate of unemployment, coupled with relatively weak growth in wages, has placed significant stress on the ability of households to repay outstanding debts.

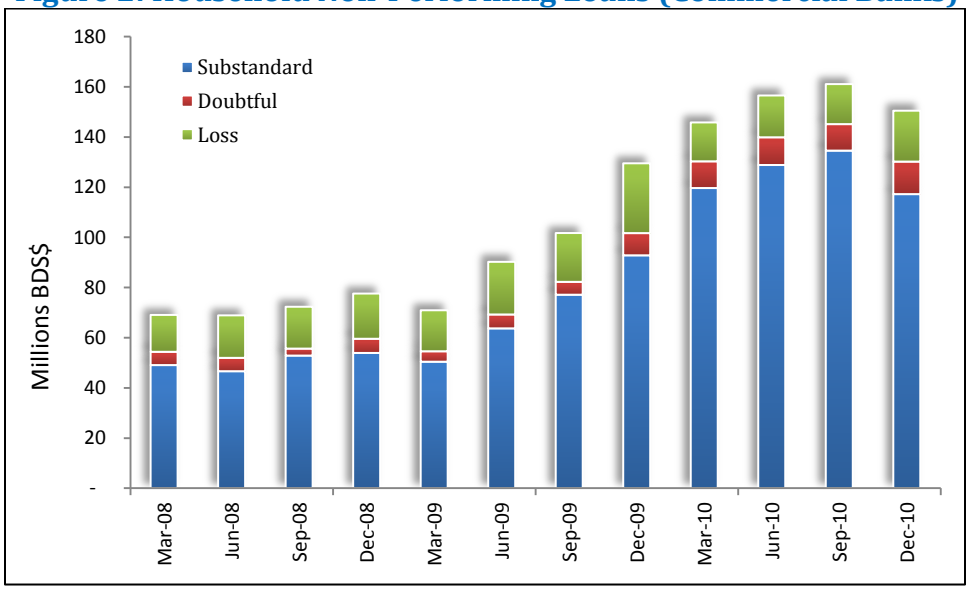
Consumers in Barbados have long used lending institutions as a tool to help smooth their consumption; the main sources of consumer credit are commercial banks, credit unions as well as trust and finance companies.[3] Mortgage debt, the largest category of household debt, occurs when households borrow to purchase a property or use their current property as collateral for a loan. These loans are usually repaid over 30 years with comparatively lower rates of interest than more short-term loans. Consumer debt, composed of instalment and non-instalment loans, includes credit card loans, revolving charge accounts, travel and single-payment personal loans. These are the second main source of household debt.

During the credit boom (2005 to 2008), household debt in Barbados rose by an average rate of 15 percent per annum. However, in the face of the global slowdown, growth in household debt dwindled to a mere 1.6 percent and 3.7 percent in 2009 and 2010, respectively. The crisis also significantly affected the ability of households to manage outstanding debt obligations. As shown in Figure 2 below, household non-performing

[3] Some insurance companies also permit borrowing against life insurance policies, but this tends to be relatively small.

loans[4] have expanded substantially since the onset of the crisis[5], moving from $69 million or (2.8 percent of personal sector loans) to reach a high of $161.1 million (the equivalent of 5.9 percent of household loans) in September 2010.

Figure 2: Household Non-Performing Loans (Commercial Banks)



Source: Central Bank of Barbados

Since the collapse of the sub-prime market in late 2007, several academics and policy makers postulate that high levels of household debt can have important implications for the health of the financial sector, and by extension, macroeconomic stability. It is against this backdrop that this paper provides an assessment of the size and composition of household debt over the period 1990 to 2010. First, the study estimates the size of household indebtedness, with particular emphasis on recent trends in household debt and the main providers of credit. Second, it attempts to show how household debt varies with key macroeconomic indicators. Finally, a cursory look is taken at the concerns that results from rising household debt. Unlike previous studies on household debt in Barbados (Craigwell & Kaidou-Jeffery, 2010; Moore & Williams, 2008), this paper does not constrain the analysis to household debt provided by commercial banks. This more holistic approach allows the authors to capture any emerging institutional trends that might be of interest to policymakers.

The remainder of the paper is structured as follows. Section 2 provides a brief overview of the financial industry in Barbados. Section 3 summarises the previous literature in the area. Section 4 identifies key trends in relation to household debt in Barbados. Section 5

[4] These are categorised by substandard (loans that are overdue by at least 3 months); doubtful (loans that are at least 6 months overdue) and finally, losses (loans that are at least 12 months).
[5] The data on defaults is only disaggregated from 2008 and did not allow for a better analysis of how defaults change over the 20-year period in question.

discusses whether Barbados should be concerned with the rising levels of household debt and finally Section 6 concludes.

2 Background

2.1 Financial Institutions

Banking in Barbados has developed quite rapidly since independence. In the early 1950s, there were seven commercial banks, as well as a number of life and general insurance companies Haynes (1995). Three of these banks were branches/subsidiaries of foreign entities, one was a government-owned savings bank and two were agricultural banks. During this era, access to the formal financial system was severely limited. As a result, many small friendly societies emerged to provide intermediation services to those individuals that could not access commercial banking services. The liabilities of commercial banks and the government-owned savings bank dwarfed those of all other financial institutions (Table 1). The level of financial intermediation was also relatively high, estimated at 50 per cent of GDP, which Haynes (1995) attributed to the strong savings ethic of Barbadians at the time. While savings during this early period were relatively high, given the restrictions that existed, most commercial banks directed the majority funds to overseas investments rather than to domestic lending. While data limitations prohibit an analysis of the direction and type of assets held, it is reasonable to assume that most of these funds were held in either UK government paper or interest-bearing accounts abroad.

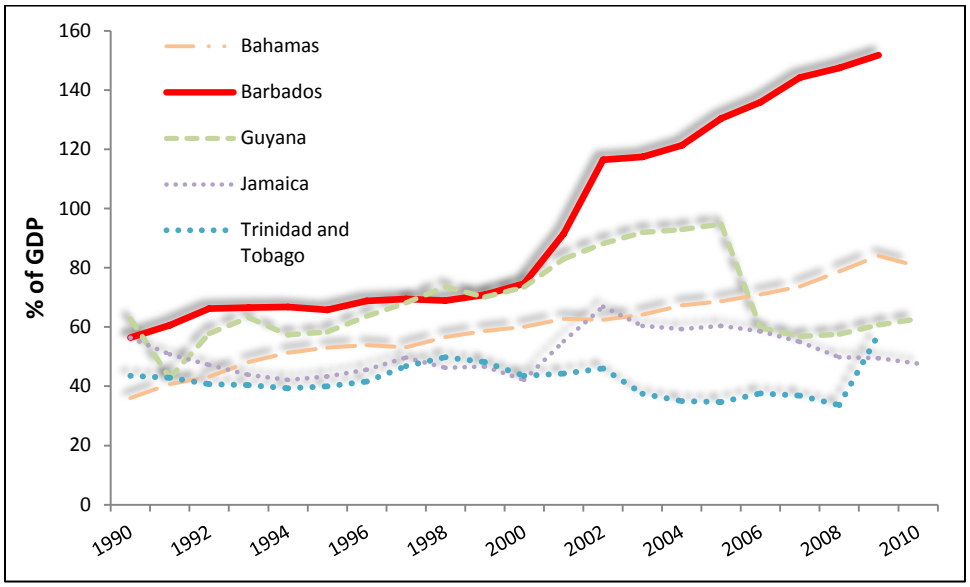
Table 1: Monetary Liabilities, 1950-2010 (US$ Million)

	Commercial Banks	Friendly Societies/Credit Unions	Savings Bank	Trust & Mortgage Finance Companies	Finance Companies
1950	11.3	0.1	5.2	0.0	0.0
1960	20.5	0.1	9.8	0.0	0.0
1970	90.2	0.3	8.9	1.0	0.0
1980	369.1	2.4	0.0	34.6	6.3
1990	869.3	71.5	0.0	160.2	20.3
2000	2257.0	212.9	0.0	216.6	106.9
2010	5492.3	674.3	0.0	360.2	338.4

Source: Central Bank of Barbados and Haynes (1995)

The level of financial development on the island accelerated significantly in the immediate post-independence era and has not slowed since. Figure 3 plots the ratio of money and quasi-money (M2) to GDP for Barbados and other selected Caribbean countries between 1990 and 2010. While the ratio was quite close for the majority for most of the 1990s, since the early 2000s, it has accelerated quite significantly for Barbados and is now almost double that for Guyana, Jamaica and Trinidad and Tobago.

Figure 3: Money and Quasi-Money (M2) as a Ratio of GDP for Selected Caribbean Countries



Source: World Development Indicators

The increase in financial development largely reflects the expansion of both the bank and non-bank segments of financial intermediation. Table 1 indicates that commercial banks' liabilities more than quadrupled in the 1970s and 1980s, and have more than doubled every decade since. This tremendous growth in commercial banks liabilities has allowed these entities to remain the largest segment of the financial system.

There are currently seven licensed commercial banks most of which are branches or subsidiaries of Canadian banks (Table 2). Three banks accounted for almost 64 percent of total assets of the banking system at the end of 2010. The concentration of assets in these banks has fallen over the last five years, as other banks have actively sought to increase their share of the domestic loan market. Most of the banks are centred on retail and corporate banking; investment banking is a very small portion of the portfolio of most banks in Barbados.

Table 2: Commercial Banking in Barbados

Bank	Majority Shareholder	Number of Branches in Barbados	Country of Origin	Legal Status
Bank of Nova Scotia	Bank of Nova Scotia	7	Canada	Branch
Barbados National Bank Inc.	Republic Bank	9	Trinidad and Tobago	Subsidiary
Butterfield Bank (Barbados) Limited	Bank of Butterfield[6]	6	Trinidad and Tobago	Subsidiary
First Caribbean International Bank	CIBC	8	Canada	Subsidiary
RBC Royal Bank of Canada	Royal Bank of Canada	11	Canada	Subsidiary
Citi Corp	Citigroup Inc.	1	United States	Subsidiary

Source: Central Bank of Barbados

Relative to household credit, each bank has a specific criterion to determine an individual's eligibility for a loan and the amount. Financing is given mainly on an individual's source of income, which includes salary, pensions, and any other income that can be proven. Background also plays a major role, as banks look at an individual's job security and how well they have paid off previous debt. The amount that one is allotted is based on the debt service ratio. The debt service ratio can be defined as the percentage of gross annual income required to cover payments associated with housing and all other debts and obligations, such as car loans, credit cards, among others.

The non-bank financial sector includes 35 credit unions. The members are the depositors and also the recipients of all loans. Credit unions offer essentially the same services as commercial banks. As noted by Griffith et al (2009), these services include share or savings accounts, credit cards, share term certificates and online banking. The authors also highlighted that only members of a credit union can deposit or be issued loans, and that these institutions provide a broader range of loans and savings products at a cheaper cost than most financial institutions. In terms of market share, as of September 2011, the assets of the credit unions were BDS$3 billion, which is about 16 percent of the estimated assets of the financial sector. This shows that these entities have a significant amount of assets in relation to the size of the Barbadian financial sector.

The 13 trust and finance companies in Barbados specialise in providing funds to consumers for mortgages and vehicles. These institutions are usually privately owned, with commercial banks owning five (38%) of these entities. The commercial banks' interest in trust and finance companies increased as a result of the Central Bank of Barbados' credit controls, which saw the size of their loanable funds being regulated. The transfer of

[6] *Butterfield Bank is now First Citizens Bank (Barbados)Limited.*

lending to separate entities allowed the commercial banks to avoid credit limit Haynes (1997).

The criterion these non-banks use to lend money is similar to the commercial banks. What may vary, however, is that the characteristics of the loan may include a different repayment schedule, change in interest rate and the size of the loan. Non-banks specialize in issuing loans to consumers rather than businesses and therefore this is the area in which they compete with the commercial banks.

Insurance companies represent another element of the financial sector; these however, are not big in terms of consumer lending. Two insurance firms give personal loans based on the cash value of individuals' life insurance policies and one insurance corporation has a trust and mortgage finance subsidiary. Therefore, insurance companies facilitate only a small portion of consumer lending in Barbados.

2.2 Regulation of the Financial System

The financial system in Barbados is regulated by three main entities: The Central Bank of Barbados (CBB), the Financial Services Commission and the Barbados Deposit Insurance Corporation. Together, these agencies have the authority to regulate the magnitude, type and patterns of the loan portfolios of financial institutions, either directly or indirectly through their ability to issue, suspend or even revoke the licence of a financial institution.

The CBB is responsible for maintaining a sound financial structure. Under the Financial Institutions Act (FIA) (1996) banks, trust companies, finance companies and merchant banks are licensed, with regulatory oversight provided by the CBB's Bank Supervision Department. In addition, the CBB has also used a variety of monetary policy tools to influence commercial bank behaviour – particularly their lending patterns. These included stipulated interest rates (both ceilings and floors) and various credit controls. Of particular interest, were the specific policies targeted at household borrowing. Among these were controls which governed the amount banks lend to households, and regulations on the mortgage rates. These policies often fluctuated, suggesting that the CBB greatly influenced household behaviour. However, between 1992 and 1993, the financial sector underwent substantial reforms, and the Rate of Interest Order was revoked in June 1992, the residential mortgage rate was deregulated by September and all ceilings on credit and credit controls were discontinued by May 1993 (Boamah et al, 2011a). Currently, the main monetary policy tool used to impact credit is the minimum deposit rate. Therefore, the CBB still has the ability to influence a bank's lending power, which by extension can have an effect on the consumer.

Both the CBB and the FSC work in tandem to tackle the financial stability of the Barbadian economy. Together, they are responsible for identifying any areas that may cause instability and implement policies to ensure that the financial system is strong enough to withstand the possibility of any detrimental events.

Another institution of note is the Barbados Deposit Insurance Corporation (BDIC). In 2007 the Barbados financial system saw the addition of this entity. The BDIC under the Deposit Insurance Act (2006) manages the Deposit Insurance Fund that insures depositor accounts up to $25,000. This ceiling on deposits seems fair as the 2011 Central Bank of Barbados Financial Stability Report stated that 90% of all deposits were under this amount and therefore most individuals were covered. The BDIC's operational framework states that this corporation aims to manage the Deposit Insurance Fund, levy premiums on participating entities, acts as liquidator or manager of member institutions and, facilitates the re-organisation or takeover of a participating organisation. The entity does not however, have the power to take over its members operations and needs voluntary compliance to perform any of these instruments.

3 Brief Review of Literature

3.1 Why Do Households Borrow?

Household debt is intimately associated with consumption. Fisher (1930), for example, shows that a rational consumer faced with an inter-temporal budget constraint – which captures the choice between present consumption and saving for the future – chooses his consumption for the present and future with hopes of maximising utility over his or her lifetime. If in any period, current income is not sufficient to support the individual's inter-temporal consumption plans, he or she would borrow, defined as transferring future consumption to the present.

Building on the work of Fisher (1930), Ando and Modigliani (1963) also argue that household debt provides a means of smoothing consumption over an individual's expected lifetime. Unlike Fisher (1930), however, the authors contend that in the early stages of life, consumption has the tendency to be greater than income. Ando and Modigliani (1963) attributed this to households' expectations that their income would rise over time; relative to income, debt would, therefore, tend to be high when an individual is young and gradually decline over time (Modigliani & Brumberg, 1954; Attanasio & Browning, 1995). In a more recent article, Andreou (2011) noted that this high level of debt in early periods of the lifecycle was due to households' tendency to buy durable items such as houses, cars, appliances, among other things instead of renting or leasing such items. Given their budget constraint, credit is the only way to purchase such durable items and benefit from their services without having to forfeit too much of their present consumption.

Individuals' incomes tend to fluctuate from one period to the next. To account for this characteristic, Friedman (1957) introduced the concept of permanent income, arguing that income was made up of two components: permanent income (the amount individuals expect to receive over every period) and transitory income (windfall gains). Freidman opines that agents consume based on their permanent income, rather than total income. In testing this theory, Park and Rodrigues (2000) noted that the permanent income hypothesis implies that consumer borrowing should be an increasing function of the gap between permanent and current income. Using US data from 1959 to 1994, the authors

found that consumer borrowing does increase with permanent income and decreases with current income.

Much of the theoretical models above speak to the concept of consumption smoothing. In this vein, fluctuations in the business cycle can have significant effects on consumption. Campbell and Mankiw (1991), for instance, report that private consumption growth was especially sensitive to disposable income growth, which may also have spill-over effects on household debt. Similarly, Zeldes (1989) noted that if individuals with constant risk aversion experienced any difference in transitory income they would alter their rate of savings. He further highlighted that during periods of growth, the consumer was liable to consume more, implying an increase in household borrowing and, relative to an economic downturn, would save, implying a decrease in household borrowing.

3.2 Recent Evidence on the Determinants of Household Debt

The previous section provides an explanation of why consumers might want to borrow. But, the underlying demand for household debt may also be influenced by institutional factors, policy shocks and commercial banks' policies. Liquidity constraints can have a significant impact on the structure of the lending market Greenidge and Miller (2008). For consumers, liquidity constraints can decrease the eligibility of borrowers in financial markets. In the case of financial markets in developing countries, liquidity constraints may occur due to the limitations in the sources of finance or increased demand for funds by government or businesses. In contrast, if financial markets are very liquid this could result in an expansion in the availability of credit, which is normally associated with above trend private consumption expenditure growth. This above trend consumption can often be due to inflationary pressures and may also affect financial stability (Lewis-Bynoe, et al., 2008).

In an attempt to lift these liquidity constraints, many developed and developing countries have engaged in various aspects of financial liberalization. Indeed, deregulation and financial innovation have greatly increased the household sector's access to credit and created more equity among borrowers in most developed countries (Davies, 2006). Deregulation, in particular, played a critical role in non-bank financial institutions raising their lending to households over the last two decades (Bank of England, 2004). As a result, households in more advanced economies have experienced an improved access to credit and a lower cost of borrowing than had been generally available from non-bank sources prior to deregulation.

But the link between deregulation and increased household lending does not necessarily hold for some developing countries. Focusing on the case of Barbados, the growth of the non-banks actually started before the liberalisation period. Haynes (1997) identified regulations on the banking sector as the initial reason for the increase in consumer loans issued by non-banks. Haynes continued by stating that the advancement in this sector (non-banks) was due to the inability of the commercial banks to penetrate the market based on the restrictions under the Interest Rates Act 1970 -47. Even though the rise in the Barbadian non-banking sector has been significant, the industry is still not yet large enough

to present any meaningful competition to the commercial banks (Lewis-Bynoe, et al., 2008).

Another aspect of liberalisation came in the form of deregulation of interest rates. The cost of credit has historically been a key determinant of household debt (Debelle, 2004). The change in the cost of credit is usually attributed to alterations in the interest rate. Many countries have deregulated interest rates to allow the rate of return on funds to vary based on market conditions. With no intervention (monetary policy), the interest rate fluctuates with the demand and supply of credit (Balke & Zeng, 2011). The supply of credit is directly related to deposits, and hence an increase in savings could cause a lowered interest rate. On the other hand, an expansion in the demand for loans, with stagnant deposits, could result in a rise in the interest rate.

But, in many developing countries, the level of deregulation of interest rates still has not reached that of the advanced world. Interest rates rarely fluctuate according to market conditions, but rather by intervention policies, which are directly aimed at controlling the cost of borrowing and by extension, the amount of loanable funds. More specifically in Barbados, changes in monetary policy have been highlighted as a key determinant in household debt, even though studies have shown that the response is lagged and oft times small Moore and Williams, (2008). The authors estimate that in Barbados a tightening in monetary policy takes between 5 to 10 quarters to have an effect on consumer lending from commercial banks. This lag is believed to be due to imperfections in the market. Specifically, consumers are unable to find an alternative source of finance and therefore are forced to continue to rely on commercial banks, even in the face of higher credit costs. Worrell (1996) also notes that the effect of interest rates on consumer borrowing may depend on its magnitude and whether it is thought to be temporary or permanent. If the increase in the interest rate is expected to be temporary, the private sector may postpone expenditure.

Fiscal policy can also impact on household debt. First, it can affect household debt indirectly, by boosting income. The International Monetary Fund (IMF) World Economic Outlook (2010b) notes that fiscal transfers specifically targeted at households through some type of social safety net can have a positive effect on incomes and improve their ability to service debt. The article also highlighted that fiscal policy such as a stimulus aimed at offsetting rising defaults can soften the blow of macroeconomic shocks on individuals. These stimuli however have some degree of limitation as nominal interest rates can only be cut to zero and the scope for fiscal transfers may be constrained by high government debt. Alternatively, a government can use incentives to encourage the increase of a certain type of loan. For example, in the case of Barbados Haynes (1995) notes that fiscal policy changes to allow a 100% deduction on all the mortgage interest paid by borrowers in1995 had a significant impact on the demand for mortgages and the emergence of mortgage lending institutions, including insurance companies.

Macroeconomic conditions can also significantly influence household debt. Looking first at the demand for household debt, Davies (2006) noted that periods in which there was a strong economic performance, households felt more comfortable in obtaining debt.

Specifically, when macroeconomic conditions were favourable (highlighting indicators such as strong growth and low unemployment,) households maintained confidence in the financial system and increased their borrowing. It follows that high rates of unemployment and low growth bring about uncertainty about household's ability to repay or service its debt, and so acts as deterrents of demand.

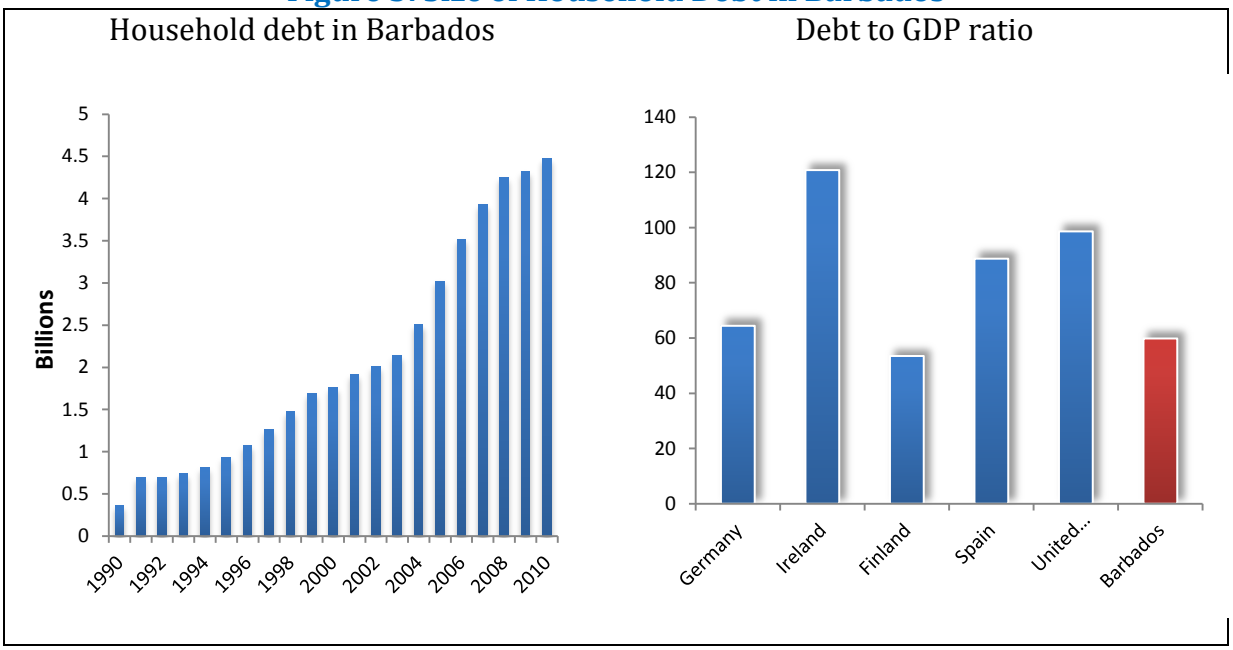
On the supply side, recessionary conditions are often associated with a reduction in willingness to lend. Often, banks reduce lending to certain categories of borrowers by rationing credit (Craigwell and Kaidou-Jeffery 2010, Financial Service Authority 2009). Credit rationing can be defined as an alteration in the allocation of loans to creditworthy borrowers by impure market means. This is usually a result of a favourable interest rate that in turn causes an excess of demand for loans. This, even though more applicable to small businesses and other deemed risky investments, still may have an effect on households.

4 Trends in Household Debt

4.1 Assessing the Size of Household Debt in Barbados

Consumer debt in Barbados has increased at a rapid pace during the last two decades (Figure 3). At the end of 1990, household debt was below $500 million. By end of 2001 this figure had jumped to just under $2 billion, and a further $0.5 billion up to 2004.With the start of the credit boom in late 2004, household debt climbed substantially: household debt rose from $2.5 billion at the end of 2004 to$4.3 billion at the end of 2008. The expansion of household debt, however, slowed significantly after 2008, as the Great Recession unfolded: between 2008 and 2010, household debt grew by a mere $0.2 billion, and by the end of 2010 was estimated at $4.5 billion.

Figure 3: Size of Household Debt in Barbados



Source: Central Bank of Barbados *Source: IMF*

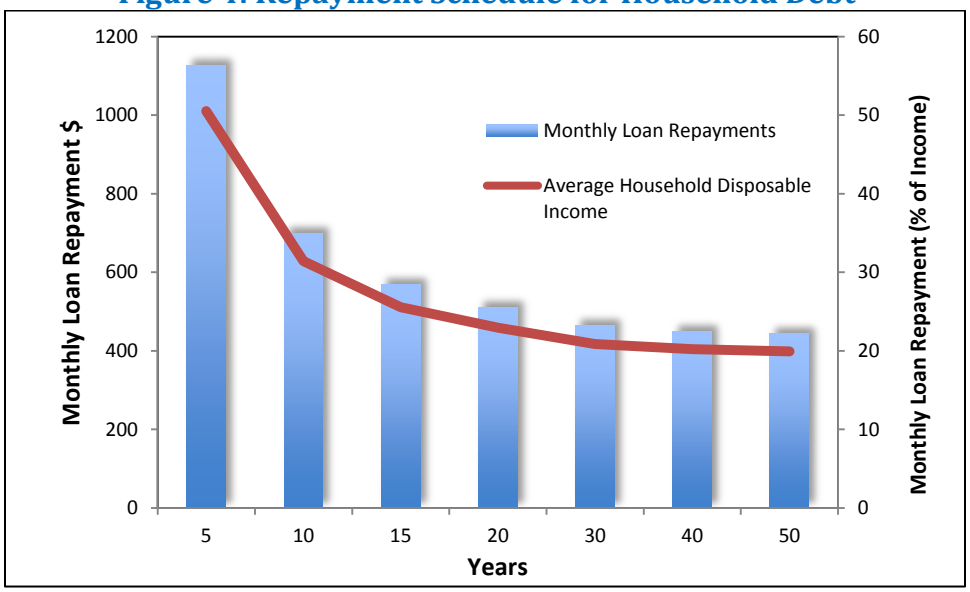
An assessment of the magnitude of household debt in Barbados can be obtained by comparing Barbados to other countries. Ideally, Barbados should be evaluated with other countries in the same income category or countries at similar levels of development. However, data on household debt for other developing countries is relatively scarce. Instead, the size of household debt is examined by comparing the household debt to GDP ratio in Barbados relative to selected advanced economies. At the end of 2009, household debt as a percentage of GDP in Barbados was just under 60%. This figure was above that for Finland(54%) and just slightly below that for Germany (64%). In contrast, countries such as Spain (89%), Ireland (121%) and the United States (99%) had considerably higher consumer debt to GDP ratios. Indeed, some authors have attributed the property boom (bubbles) as one of the main contributing factors behind the Great Recession (Mian & Sufi, 2010).

Based on the above estimates of household debt, the average Barbadian household owed about $53,000 in debt in 2010. Given an interest rate of 10 per cent[7], Figure 4 shows that it would take more than 10 years for the typical household to repay this debt, and assuming a reasonable monthly repayment schedule almost 30 years[8].

[7] The weighted average rate on total loans at the end of 2010 was 9.39 percent.

[8] It must be noted that in some instances individuals in Barbados may be able to better service their debt due to remittances. These remittances were not included in the study as such the debt service ratio which was estimated serves only to depict the spread of household over the estimated number of households with little consideration of the source of funding for servicing the debt.

Figure 4: Repayment Schedule for Household Debt



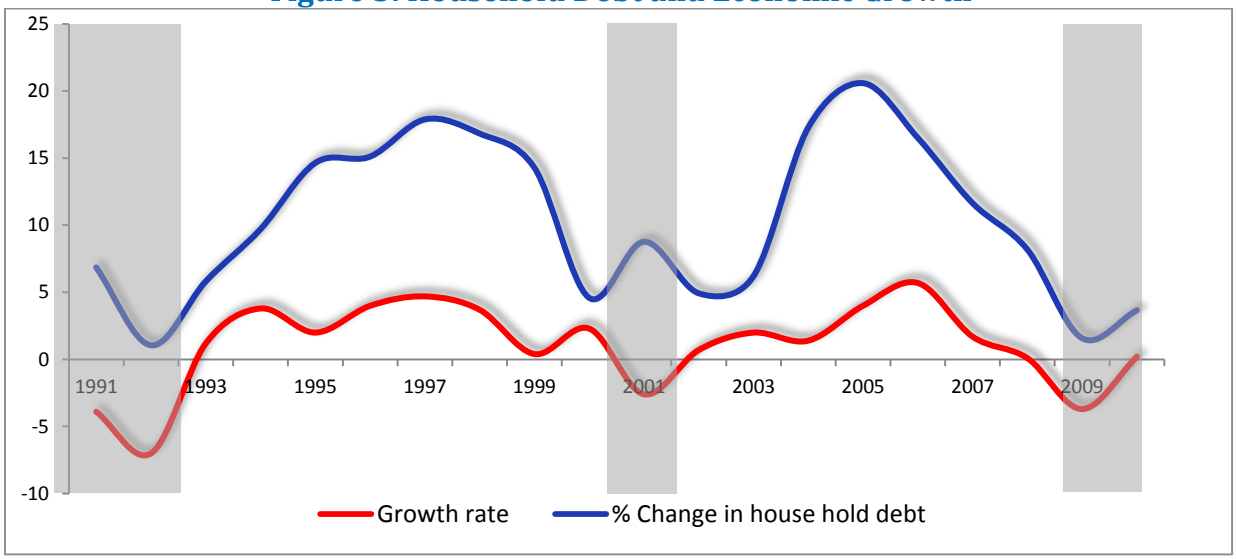
Source: Authors' calculations

4.2 Factors Influencing the Magnitude of Household Debt in Barbados

Given the magnitude of household debt, understanding the factors driving indebtedness is imperative. From the review of the literature, household debt and national income should be positively correlated. Rising incomes allow households to meet the criteria for borrowing and also encourage current consumption, if the household believes that income will continue to rise over the medium- to long-run. Figure 5 plots the changes in household debt and economic growth over the period 1991 to 2011. In general, there is a fairly apparent positive relationship between the two variables: for every 1 percent increase in growth, household debt rises by 2.5percent[9]. This relationship is even evident during economic downturns (the shaded regions).

[9] Estimate obtained from a simple bivariate regression.

Figure 5: Household Debt and Economic Growth



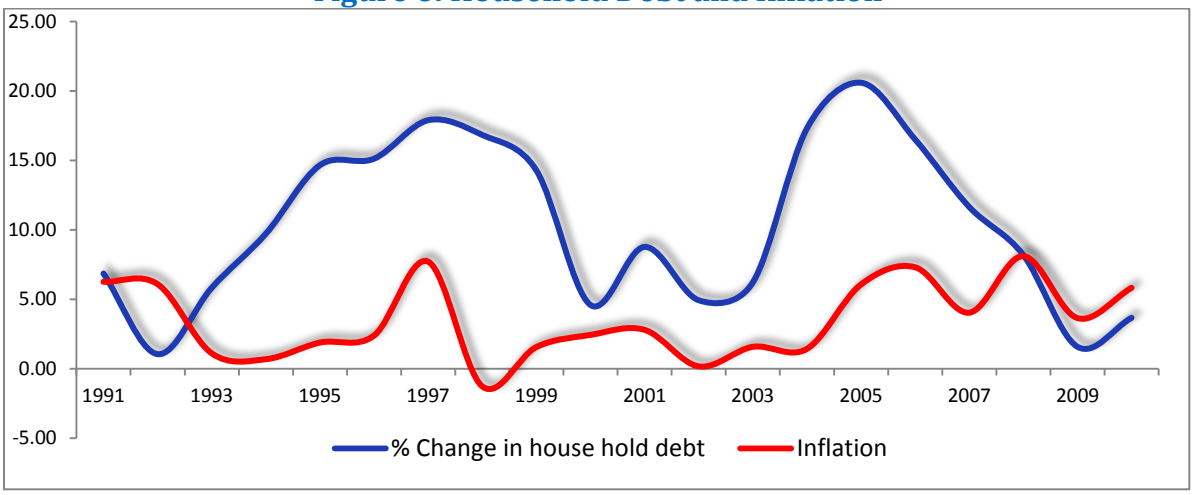
Source: Central Bank of Barbados

The above chart suggests that, in line with *a priori* expectations, household debt tends to fall during economic downturns. While it is difficult to guess as to whether this is a demand- or supply-side adjustment, it is likely that both factors play a role. On the demand-side, uncertainty surrounding a downturn in the economy could result in households reducing their demand for debt as well as the early repayment of existing loans. On the supply-side, financial institutions might tighten their lending criteria during downturns in the business cycle, given the expectation of rising defaults.

The only years that bucked the trend in terms of the relationship between growth and household debt were 2001 and 2002. In these two years, the Barbadian economy contracted by about 2% per annum. Even though the growth in consumer credit was modest, the increase relative to the downturn was greater than it was in similar economic conditions. In particular, a double-digit rise in mortgage lending was reported. It should be noted that this period was characterised by expansionary monetary and fiscal policies, which may have cushioned the income blow. During the period, the Bank reduced the minimum deposit rate by 150 basis points, lowered the cash reserve requirement, and cut the discount rate by 300 basis points.

Rising inflation increases the prices of goods and services and should lead to an expansion in the value of loans demanded from financial institutions. During periods of rising prices, borrowers usually benefit, as the real value of loan repayments would be falling. Figure 6 plots the growth in household debt and inflation over the period 1991 to 2011. In general, there appears to be a positive association between inflation and household debt. Further empirical investigations show that the correlation coefficient between the change in inflation and the change in household debt stands at 0.205, which further confirms the positive relationship shown in Figure 7. Since 2008, however, the rate of growth in household debt has fallen below the rate of inflation for the first time since 1992, the period of the last significant downturn in the Barbados economy.

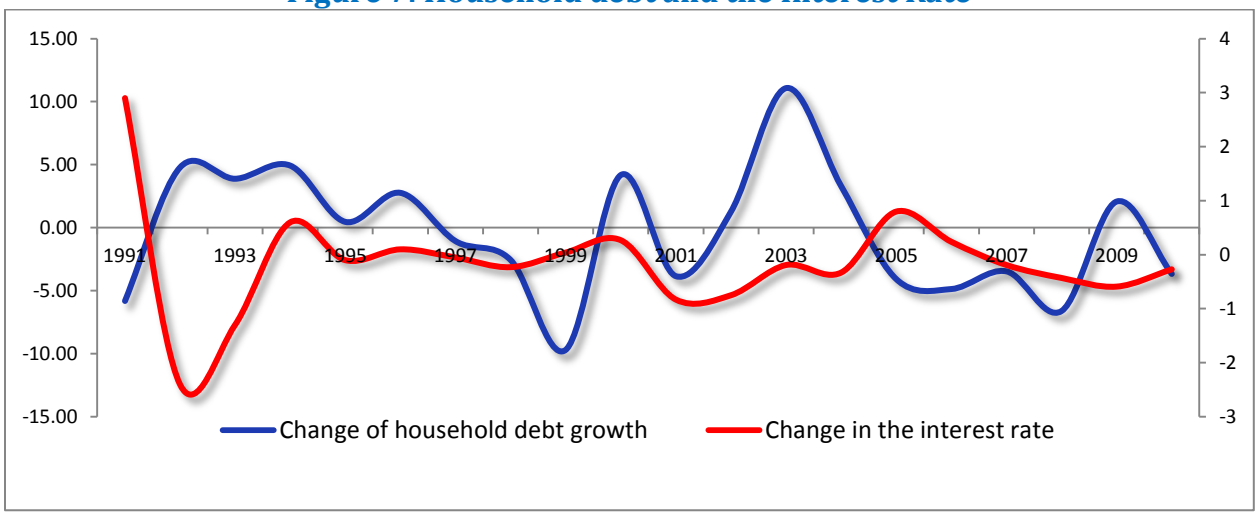
Figure 6: Household Debt and Inflation



Source: Central Bank of Barbados

As the cost of credit has been highlighted in the literature as a determinant of household debt, one would expect that interest rates and the change in the growth rate would be negatively correlated. The graph along with the correlation coefficient (-0.334) shows this negative relationship, however there is an apparent lagged response in some periods. This indicates that the cost of credit does have the ability to slow household credit growth in the Barbados consumer loan market.

Figure 7: Household debt and the Interest Rate

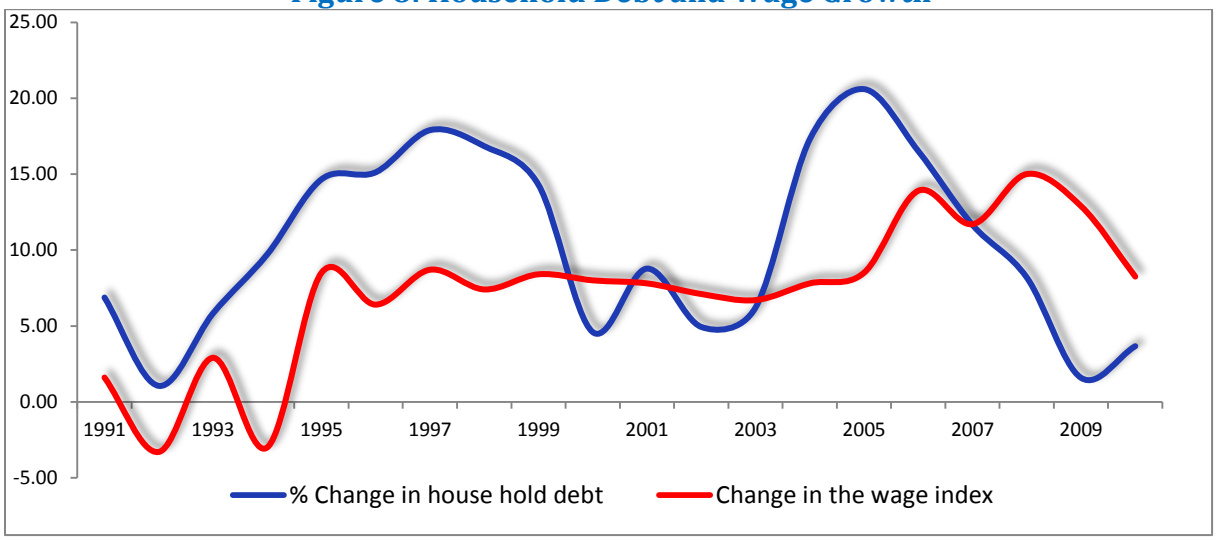


Source: Central Bank of Barbados

To capture the effects of income on household debt, the change in the total wage index and the change in household credit were plotted over a given period to investigate the relationship between the two variables. The wage index can be defined as the average wage in which a typical Barbadian may receive and is calculated by taking an average of the

wages paid to the different sectors of the labour market. Studies have concluded that current income does affect consumption and by extension consumer debt (Bloemen & Stancanelli, 2005). The correlation coefficient, which was calculated at 0.278, was positive however, a look at Figure 9 seems to suggest that household debt tends to fall before the decline in wages. This relationship indicates that households, by making forecasts of wages, incorporate this information into their borrowing decisions.

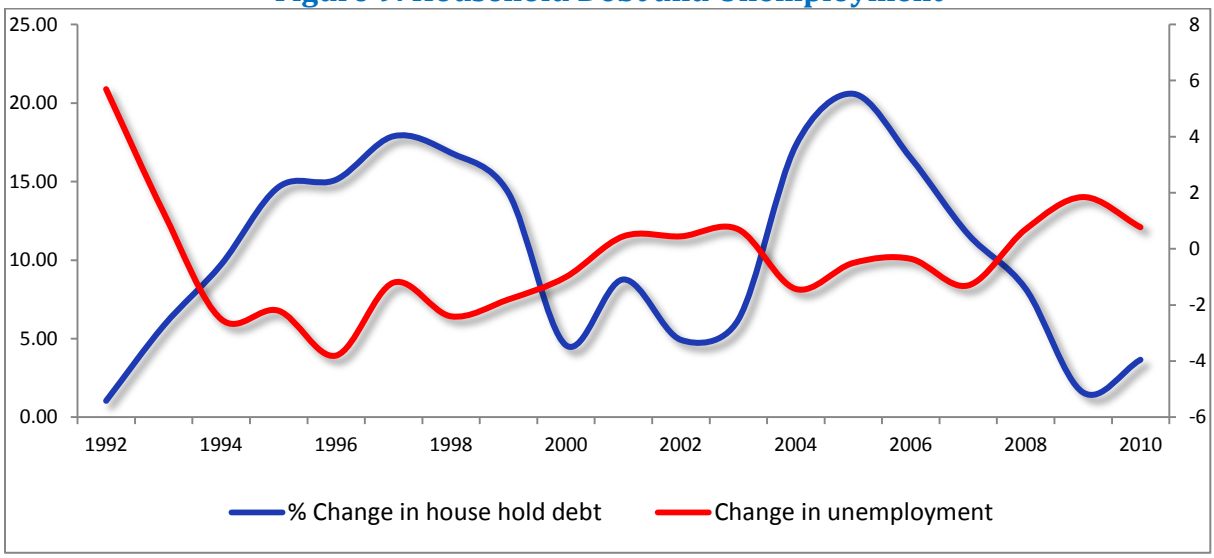
Figure 8: Household Debt and Wage Growth



Source: Central Bank of Barbados

Unemployment can result in some uncertainty in the job market. This uncertainty is likely to cause both individuals and lending institutions to become more risk averse and hence more reluctant to borrow and lend, respectively (Dromel, et al., 2009). This implies that credit growth should either fall or stagnate during periods where unemployment has increased. Figure 9 shows that the change in consumer lending does indeed follow this general pattern. In periods where movements in unemployment are small or even negative (improvement in the unemployment rate) credit generally expands. The reverse is also true, i.e.in periods where there is a rise in the unemployment rate there is also a decrease in the change of consumer credit.

Figure 9: Household Debt and Unemployment



Source: Central Bank of Barbados

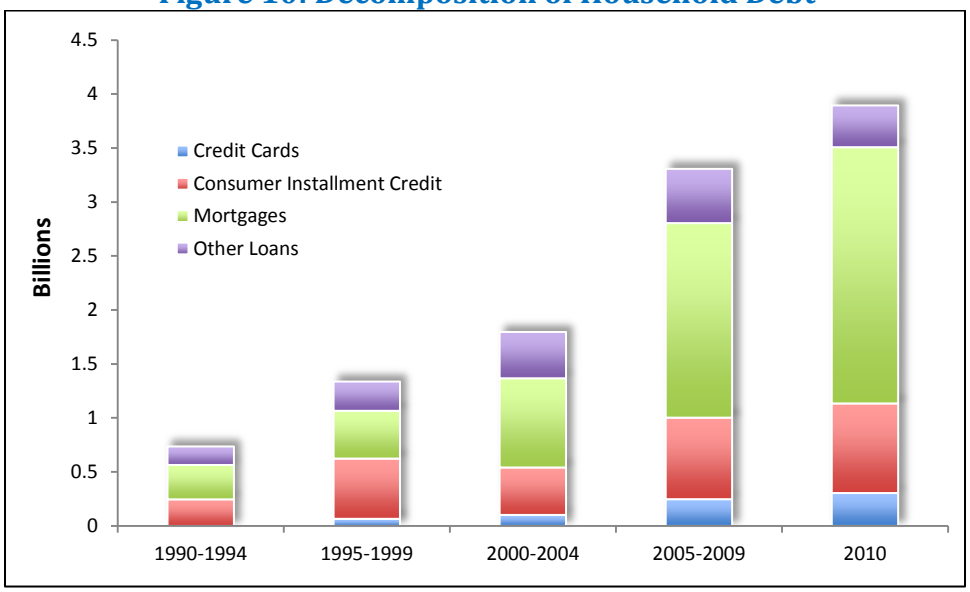
In periods where the change in unemployment was below 5% (1993-2000, 2004-2007) household debt significantly increased, and in periods where the change exceeded 5% (2001-2003) there was a significant decrease in the change of credit. The correlation coefficient was also calculated and estimated at -0.691. This analysis, even though only over 2 decades, does show that credit does fluctuate with employment, confirming that the common view that consumer credit has a positive relationship with unemployment, do hold relative to the Barbadian financial sector.

5 Sources and Uses of Household Debt

Household debt is usually reported in one of four main categories: mortgages, consumer instalment credit, credit card debt and other loans. Other loans include overdrafts, debt consolidation and any other type of personal loan that cannot be placed in any of the four major groups stated above.

Over the last twenty years, mortgages and consumer instalment credit have been the fastest growing segments of household debt (see Figure 10). At the end of 2010, outstanding mortgages were estimated at 2 billion, or $1.5billion above the figure in 1999 and more than thrice the value of 1990. This tremendous acceleration in property loans can be attributed to, among other factors, the increasing cost of housing, financial liberalisation – which resulted in an expansion in the supply of loanable funds, the evolution of the financial market and the emergence of institutions like credit unions and mortgage and trust companies that specialise in mortgages and other property loans. Similarly total outstanding consumer instalment credit was $180 million in 1990, peaked in 1998 at $670 million but subsequently fell to $490 million in 2010.

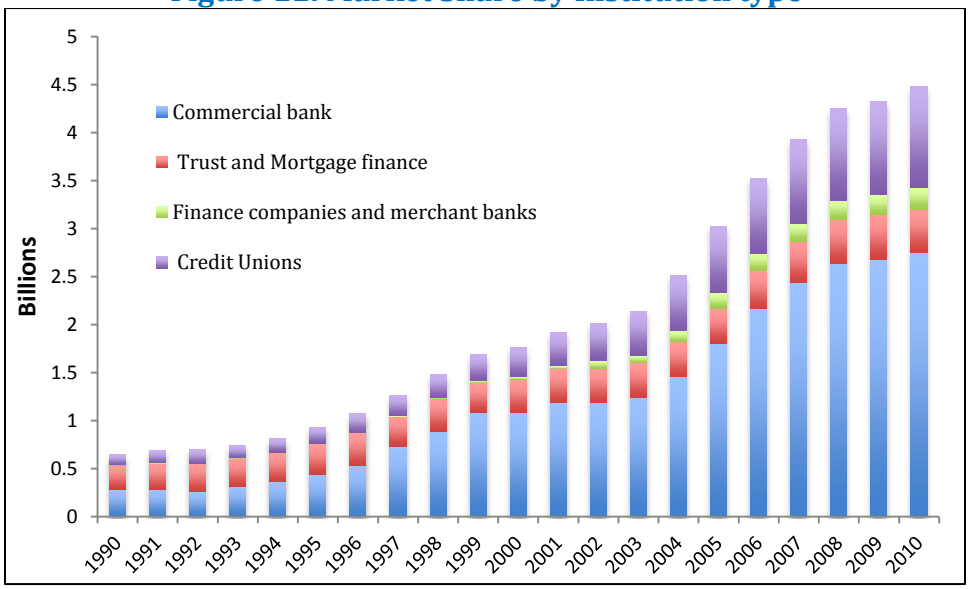
Figure 10: Decomposition of Household Debt



Source: Central Bank of Barbados

Commercial banks have traditionally dominated consumer lending. At the end of 2010, commercial banks held almost two-thirds of all consumer debt in Barbados (Figure 11). Despite this dominance, the non-bank financial industry has been making some significant inroads. Credit unions, in particular, have seen their share of total household debt rise from 15% to 27% over the 20 year period under review. This expansion can partly be attributed to a significant increase in credit union membership, which more than quadrupled over the period under review.

Figure 11: Market Share by Institution type



Source: Central Bank of Barbados

Trust and Mortgage Finance companies' share of the consumer lending market significantly decreased moving from 69% in 1990 to only 10% in 2010. The financial liberalisation that progressively occurred during this time released commercial banks from credit controls and hence most commercial banks shifted the loans of these financial institutions back onto their books. As finance companies and merchant banks only account for a small part of the financial sectors as such it was expected that their share of the loans market would be minimal.

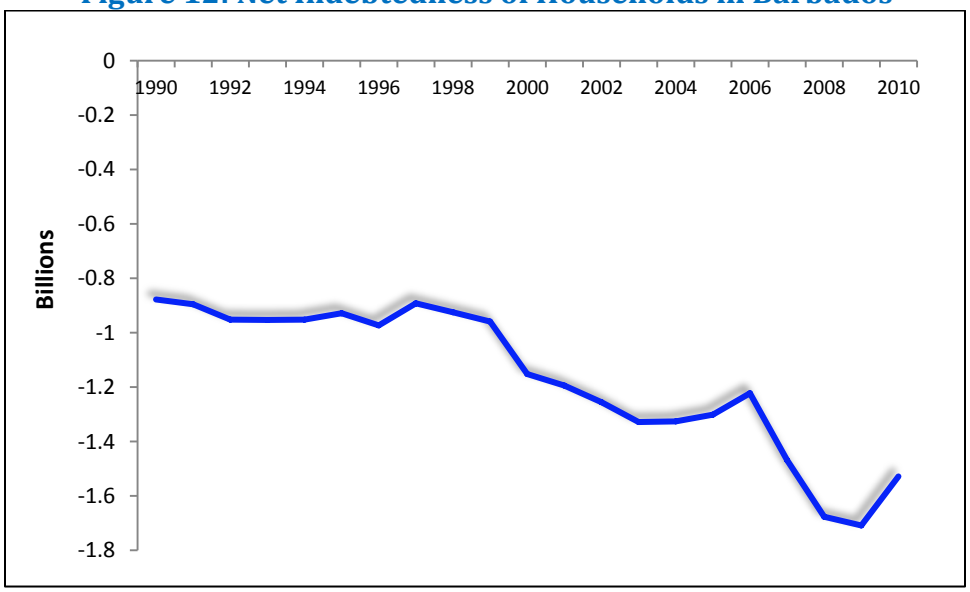
6 Is the Magnitude of Household Debt in Barbados a Concern?

The analysis thus far has highlighted the significant growth in household debt in Barbados over the last two decades. Prior to the crisis, many advanced economies held the optimistic view that the increasing trend of household debt was good for households, reflecting a sounder economic and financial environment (see Filardo, 2008). However, the recent crisis has led to a less optimistic view. Rising debt trends may, instead, be an indicator of increased vulnerability, particularly when households leverage against high and expanding asset prices. If asset prices prove to be largely unsustainable (as was the case of housing prices in the US), households can become saddled with debt overhangs and heavy debt servicing costs.

Traditionally, it has been assumed that there is a link between credit growth and non-performing loans (NPLs). As such, the trend of rising household debt raises some concerns about financial stability. Particularly, the literature suggests that during a credit boom, additional risks are realized as credit is extended to "lower quality debtors" and consequently, when the contractionary phase of the business cycle sets in, NPLs increase (Louzis et al., 2012). Against this backdrop, recent developments since the crisis (i.e. the expansion in the defaults of household as shown in Figure 3) are not surprising. It is clear that a high level of household debt can have significant implications for the health of the financial sector, and by extension, macroeconomic stability. In fact, a recent study (IMF, 2012) showed that that housing busts and recessions preceded by larger run-ups in household debt tend to be more severe and protracted. While the level of household debt may not currently pose a threat to the health of the system, (growth in the bad debts of household seems to have abated) if the experience from the developed countries is any indication, close monitoring of this variable is necessary in the pursuit of financial and macroeconomic stability.

But, a recent strand of the literature suggests that focusing on the gross level of debt can be misleading since what matters for countries is net wealth and not gross debt (Fatás, 2012). As such, Figure 12 plots net indebtedness of households. The average savings of households has been consistently higher than their borrowing for the period under review, with the gap significantly widening as household borrowing increased. This may indicate that household debt may not currently be problematic.

Figure 12: Net Indebtedness of Households in Barbados

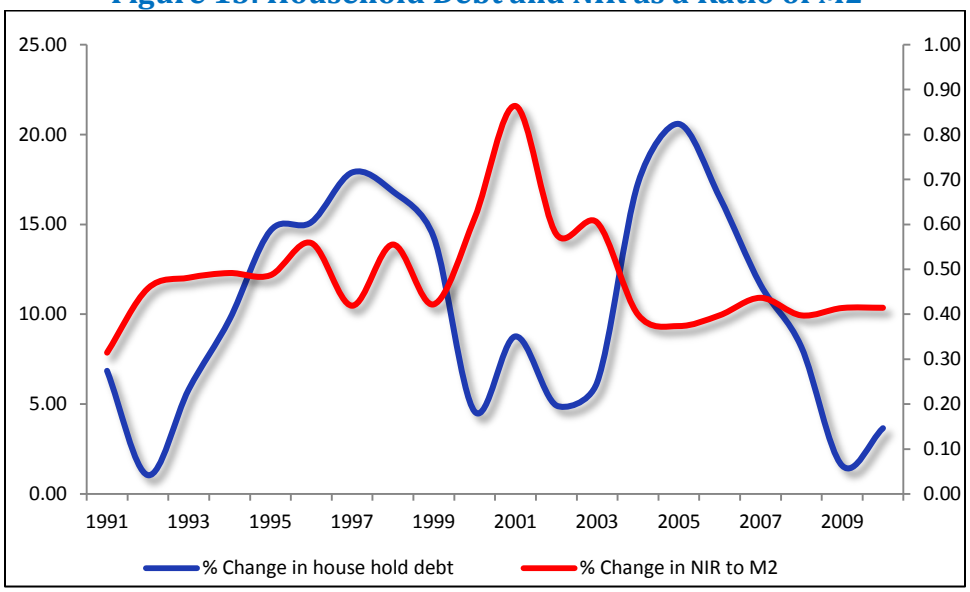


Source: Central Bank of Barbados

Another area of concern for Barbadian policy makers would be the relationship between the growth in household debt and net international reserves (NIR). The relation stems from the monetary approach to balance of payments, which posits that a deficit in the balance of payments can persist only if accompanied by domestic credit creation, to the extent that excess credit creation will ultimately leak out abroad (see for instance, Boamah et al 2011b).

Generally, a portion of household debt in Barbados is used for importation of goods, and by extension, reserve losses. Based on Figure 13, this indeed seems to be the case: there is an inverse relationship between household debt and NIR as a ratio of M2 (total money supply). However, the true nature of the relationship between credit and growth is difficult to decipher, as the Barbadian government often borrows to replenish its NIR.

Figure 13: Household Debt and NIR as a Ratio of M2



Source: Central Bank of Barbados

Taken at face value, policy makers should closely monitor household debt, as excess growth can impact the country's ability to maintain its peg. It should be noted that in periods of excessive reserve losses, the Central Bank of Barbados has historically sought to reduce private importation of goods, through curbing personal credit growth. For instance, the early 1990s saw the Central Bank implement credit controls to preserve its NIR position in the midst of balance of payments difficulties. This saw a sharp reduction in the growth of credit to households, and the NIR recovered from its lowest level in recent history. Of particular note was the period 1994 to 1998, which marked emergence of the reconditioned car market, which allowed individuals to import cars at a significantly reduced price when compared to new cars (Moore and Walkes, 2009). The substantial rise in the demand for imported cars, coupled with the significant losses in reserves, prompted the Central Bank to tighten its monetary stance to curb credit demand.

7 Conclusions

This paper provides an assessment of the size and composition of household debt over the period 1990-2011. First, the study estimates and analyses the size of household indebtedness in Barbados. Based on the estimations, consumer debt in Barbados has increased at a rapid pace during the last two decades. At the end of 1990, household debt was below $500 million. By end of 2010, this figure was estimated at $4.5 billion.

Against this backdrop, the authors sought to determine the factors influencing the growth of household indebtedness in Barbados. In addition, the study found that household debt is positively associated with economic growth, inflation, wages, but inversely related to interest and unemployment rates.

While household debt has grown significantly, there does not seem to be any indication that it has yet become a risk to financial and overall macroeconomic stability. Particularly, net indebtedness continues to be largely negative and bad debts to the household sector seem to have stabilised. However, it is recommended that authorities closely monitor this indicator, as it has been a leading predictor of financial difficulties in other countries.

But should household debt become problematic, what can policy makers do? Financial deregulation has resulted in the Central Bank having limited control over banks and the amount in which they lend. However, unsustainable household debt may mean a reintroduction of credit controls, a raise in deposit requirements and increasing the regulations on the interest rate. These would surely have adverse effects on the availability and cost of credit, which the literature suggests are the drivers behind rapid increases of household debt.

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Import Substitution: How Practical is it in Barbados?

By Alvon Moore, Carlon Walkes and Julian Jones*

Abstract

This paper explores the potential for import substitution of goods in the small Caribbean economy of Barbados. A comparison of the domestic production of selected goods to the import quantities is undertaken in an effort to gauge the capacity needed to fully satisfy domestic demand. Interviews with key players in manufacturing, agriculture and renewable energy were conducted to gain an understanding of the opportunities and challenges facing the respective industries. The findings reveal that besides the substitution of imported fossil-fuel energy for renewable energy, there are not many import items that can be replaced by locally-produced products due to issues of market size and price competitiveness. Nonetheless, the paper argues that although the opportunities to reduce imports through import substitution are few, efforts should still be made to develop local industries in order to save foreign exchange and raise employment levels.

1 Introduction

Barbados is a highly import dependent economy. The export of goods has always been significantly smaller than that of imports, with the import of goods accounting for approximately 37% of GDP during the past decade. This high import dependence places a significant drain on international reserves. For decades policy makers in Barbados have been trying to restrict the outflow of reserves by way of curbing import demand through monetary and fiscal policies (see Moore and Walkes, 2009 and Francis et al., 2005). Nonetheless, the problem remains pervasive because Barbadians do not produce much of what they consume. To be precise, the import of non-capital goods and services averaged 61% of Barbadians' personal consumption over the past 10 years. However, it is the deficit on the merchandise trade account that causes overall trade and the current account to be in a state of imbalance. The key factors that keep Barbados' merchandise trade balance in deficit are: (1) limited natural commodities; (2) a manufacturing sector whose contribution to economic output is diminishing and (3) the high import content in domestic production.

Although not all countries endowed with natural commodities have gained from international trade, the lack of resources such as oil and minerals has the potential to increase import demand and limit the export potential of a country. For example, as a result of not being an oil-rich country, the Barbadian economy relied almost entirely on imported fuel to meet its energy demands. Over the past six years, Barbados produced and exported an average of 306,814 barrels of crude oil annually, while importing

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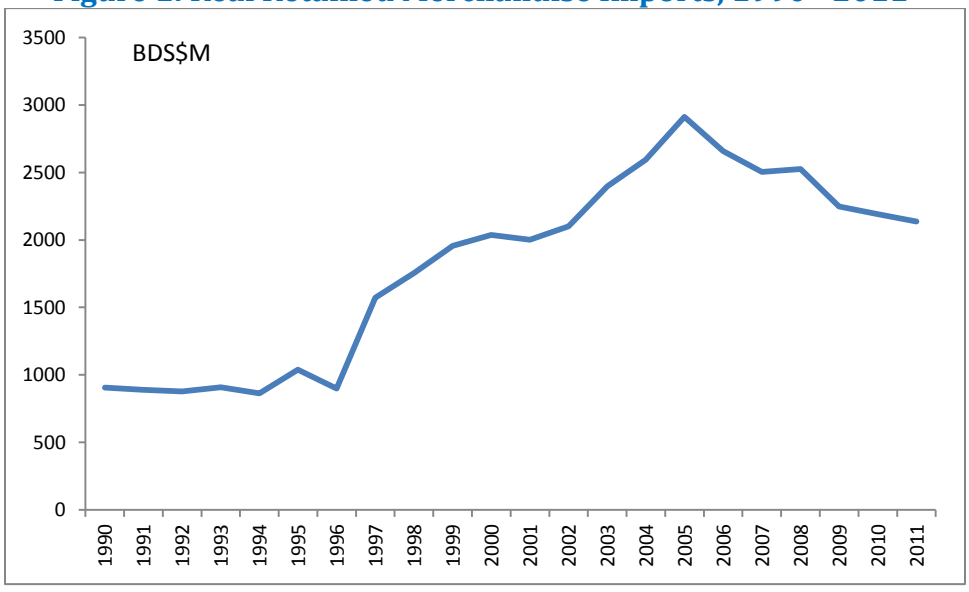
approximately 4,000,000 barrels of the refined product each year during the same period. In the case of minerals, the island is not endowed with resources such as bauxite, gold or diamonds, and is therefore unable to benefit from the export of mineral-based commodities.

According to LaCorbiniere and Belgrave (2011), the manufacturing sector in Barbados accounted for about 12% of nominal GDP in the 1980s and by the 2000s, manufacturing fell to less than 6% of total output. The decline in the share of manufacturing output in total output can be linked to trade liberalization efforts and the high production costs faced by local manufacturers. The island started its process of trade liberalization by gradually reducing the Common External Tariff (CET) on all goods imported from non-CARICOM countries from a high of 35% in 1993 to 20% in 1999 (Encyclopedia of the Nations). As part of the import liberalization process, there was also a phased reduction of the 100% surtax on extra-regional imports that started in 1994. This resulted in the tax being totally phased out by April 2000 (The Free Library). Consequent to these import liberalization measures, imported goods became much cheaper than domestically-produced goods. Overall, the lower price of imports led to an increased demand for imported goods (see Figure 1).

Figure 1: Real Retained Merchandise Imports, 1990 - 2011[1]



Source: Central Bank of Barbados

Production costs in Barbados are quite high. Such an environment impedes growth in the local manufacturing sector because consumers will opt to source their manufactured goods from markets where prices are more competitive. The high cost of living and manufacturing in Barbados is a result of the country being an upper-middle-income

[1] The series was derived by deflating nominal retained merchandise imports by the Jones and Moore (2008) import unit price index.

economy largely driven by tourism and the international business and financial services sector. Economic statistics show that price levels tend to be higher in tourism-oriented economies than economies that are driven by agriculture and industrial production. This is generally the case because tourists compete with locals for consumption goods and services. In effect, the increased aggregate demand caused by tourism activity, places upward pressure on domestic prices. Coppin (1993) provides empirical evidence which identifies growth in real tourism output as a small but positive determinant of inflation in the Barbadian economy.

Another critical challenge to attaining a surplus or a balanced position on the merchandise trade account is the high import content of locally-produced goods. Most manufacturing inputs have to be imported because they are either not sufficient in supply or simply not available on the island due partly to issues of limited natural resources and high production costs.

Having laid out the challenges facing Barbados with respect to international trade of goods, this paper seeks to highlight any potential for import substitution in the small Caribbean economy. Import substitution (or import substitution industrialization as is commonly referred to in the literature) occurs when a nation attempts to replace its imports with domestically-produced alternatives. Import substitution was widely practiced in Latin America and other developing countries during the post-World War II era and its initial aim was to protect infant industries from external competition through the use of tariffs, import quotas and other protectionist policies (Bruton, 1998). The adoption of import substitution policies is usually motivated by a country's desire to increase self-sufficiency and reduce foreign dependency. This should ultimately lead to foreign exchange savings and more job opportunities for residents of the import substituting country.

Import substitution in its purest sense goes against the principles of free markets and comparative advantage. However, this study does not advocate the adoption of protectionist policies. Neither does it try to suggest that Barbados can engage in a full import substitution programme. Instead, the paper explores the possibility of substituting selected imported goods with the locally-manufactured equivalent by adopting good marketing strategies and improved production processes. Interviews with key players in the manufacturing, agriculture and renewable energy industries were conducted to gain more insight on levels of production, current capacity and plans for expansion.

The rest of the paper is as follows: Section 2 discusses the difficulties associated with pursuing import substitution as a response to Barbados' balance of payments woes as well as identifies possible avenues through which government and the private sector together can promote the growth of local industries. Section 3 will look at imported goods that can possibly be substituted with domestically-produced goods. Section 4 summarises the main results of the paper.

2 Difficulties in Implementation

Worrell (2009) in examining the usefulness of countercyclical government spending in small open economies like Barbados, suggest that increased spending by government to stimulate the economy is of limited use and may have negative repercussions. He further explains that countercyclical policy in Barbados benefited mostly foreigners to a far greater extent than Barbadians, for the simple fact that Barbados has a high propensity to import. He states that nothing can be done to reduce Barbados' import dependence. Worrell argues:

> "Almost everything that supports the quality of Barbadian lifestyles and our high standard of living is imported, or has a high import content. Import substitution activities such as chicken production and the Pine Hill Dairy [a Barbadian company that produces juices and dairy products] substitute imports of raw materials for imports of finished goods, because all their feedstock are imported. Import substitution in Barbados is largely substitution between categories of imports, and it therefore does little to reduce the demand for foreign exchange. A high propensity to import is what economists call a structural feature of small open economies which enjoy a good standard of living, a feature which Barbados shares with similar economies worldwide."

The World Trade Organisation (WTO) agreements which are a set of rules governing trade in goods, services, relevant aspects of intellectual property, dispute settlement, and trade policy reviews among its members also limit the extent to which a country can practice import substitution. Through these agreements, WTO members operate a non-discriminatory trading system that spells out their rights and obligations. Each country receives guarantees that its exports will be treated fairly and consistently in other countries' markets and each promises to do the same for imports into its own market.

There is however some flexibility for developing countries in implementing their commitments. Exceptions to binding tariffs and applying them equally to all trading partners can arise as it relates to protecting local industries and promoting fair trade. Countries can bring disputes to the WTO if they think their rights under the agreements are being infringed. As it relates to the trade of goods, three areas have been highlighted in which member countries can submit disputes to the WTO. These areas are: (1) dumping, (2) the use of subsidies and (3) protection of domestic industries from imports.

Dumping

If a company exports a product at a price lower than the price it normally charges on its own home market, it is said to be "dumping" the product. Opinions differ as to whether this is unfair competition, but many governments have taken action against dumping in order to defend their domestic industries. The WTO Anti-Dumping Agreement under GATT (Article 6) focuses on how governments can or cannot react to dumping. It allows governments to act against dumping where there is genuine ("material") injury to the competing domestic industry. In order to do that the government has to be able to show that dumping is taking place, calculate the extent of dumping (how much lower the export

price is compared to the exporter's home market price), and show that the dumping is causing injury to domestic manufacturers or threatening to do so.

Under the Anti-Dumping Agreement, countries are allowed to act in a way that would normally break the GATT principles of binding a tariff and not discriminating between trading partners — typically anti-dumping action means charging extra import duty on the particular product from the particular exporting country in order to bring its price closer to the "normal value" or to remove the injury to domestic industry in the importing country.

There are many different ways of calculating[2] whether a particular product is being dumped heavily or only lightly. However, calculating the extent of dumping on a product is not enough. Anti-dumping measures can only be applied if the dumping is hurting the industry in the importing country. Therefore, a detailed investigation[3] has to be conducted according to specified rules first. The investigation must evaluate all relevant economic factors that have a bearing on the state of the industry in question. If the investigation shows dumping is taking place and domestic industry is being hurt, the exporting company can undertake to raise its price to an agreed level in order to avoid the anti-dumping import duty.

The Use of Subsidies

The 'Subsidies and Countervailing Measures Agreement' disciplines the use of subsidies, and regulates the actions countries can take to counter the effects of subsidies. A country can utilise the WTO's dispute settlement procedure to seek the withdrawal of the subsidy or the removal of its adverse effects. The country can also launch its own investigation and ultimately charge extra duty (known as "countervailing duty") on subsidized imports that are found to be hurting domestic producers.

The agreement defines two categories of subsidies:[4] prohibited and actionable. Prohibited subsidies are subsidies that require recipients to meet certain export targets, or to use domestic goods instead of imported goods. They are prohibited because they are specifically designed to distort international trade, and are therefore likely to hurt other countries' trade. They can be challenged in the WTO dispute settlement procedure where they are handled under an accelerated timetable. If the dispute settlement procedure confirms that the subsidy is prohibited, it must be withdrawn immediately. Otherwise, the

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[2] The agreement narrows down the range of possible options. It provides three methods to calculate a product's "normal value". The main one is based on the price in the exporter's domestic market. When this cannot be used, two alternatives are available — the price charged by the exporter in another country, or a calculation based on the combination of the exporter's production costs, other expenses and normal profit margins. And the agreement also specifies how a fair comparison can be made between the export price and what would be a normal price.

[3] Anti-dumping investigations are to end immediately in cases where the authorities determine that the margin of dumping is insignificantly small (defined as less than 2% of the export price of the product). Other conditions are also set. For example, the investigations also have to end if the volume of dumped imports is negligible (i.e. if the volume from one country is less than 3% of total imports of that product — although investigations can proceed if several countries, each supplying less than 3% of the imports, together account for 7% or more of total imports).

[4] It originally contained a third category: non-actionable subsidies. This category existed for five years, ending on 31 December 1999, and was not extended. The agreement applies to agricultural goods as well as industrial products.

complaining country can take counter measures. If domestic producers are adversely affected by imports of subsidized products, a countervailing duty[5] can be imposed.

As for actionable subsidies, the complaining country has to show that the subsidy has an adverse effect on its interests. Otherwise the subsidy is permitted.

Restriction of Imports

A WTO member may restrict imports of a product temporarily (take "safeguard" actions) if its domestic industry is injured or threatened with serious injury caused by a surge in imports. The 'Safeguard Measures Agreement' says members must not seek, take or maintain any voluntary[6] export restraints, orderly marketing arrangements or any other similar measures on the export or the import side. Industries or companies may request safeguard action by their government. The WTO agreement sets out requirements for safeguard investigations by national authorities. The emphasis is on transparency and on following established rules and practices — avoiding arbitrary methods. The authorities conducting investigations have to be announced publicly when hearings are to take place and provide other appropriate means for interested parties to present evidence. The evidence must include arguments on whether a measure is in the public interest.

In principle, safeguard measures cannot simply target imports from a particular country. However, the agreement does describe how quotas can be allocated among supplying countries, including the exceptional circumstance where imports from certain countries have increased disproportionately quickly. A safeguard measure should not last more than four years, although this can be extended up to eight years, subject to a determination by competent national authorities that the measure is needed and that there is evidence that the industry is adjusting. Measures imposed for more than a year must be progressively liberalized.

When a country restricts imports in order to safeguard its domestic producers, in principle it must give something in return. The agreement says the exporting country (or exporting countries) can seek compensation through consultations. If no agreement is reached the exporting country can retaliate by taking equivalent action — for instance, it can raise tariffs on exports from the country that is enforcing the safeguard measure. In some

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[5] Countervailing duty (the parallel of anti-dumping duty) can only be charged after the importing country has conducted a detailed investigation similar to that required for anti-dumping action. There are detailed rules for deciding whether a product is being subsidized (not always an easy calculation), criteria for determining whether imports of subsidized products are hurting ("causing injury to") domestic industry, procedures for initiating and conducting investigations, and rules on the implementation and duration (normally five years) of countervailing measures. The subsidized exporter can also agree to raise its export prices as an alternative to its exports being charged countervailing duty.

[6] Safeguard measures were always available under GATT (Article 19). However, they were infrequently used, some governments preferring to protect their domestic industries through "grey area" measures — using bilateral negotiations outside GATT's auspices, they persuaded exporting countries to restrain exports "voluntarily" or to agree to other means of sharing markets. Agreements of this kind were reached for a wide range of products: automobiles, steel, and semiconductors, for example. The WTO agreement broke new ground. It prohibits "grey-area" measures, and it sets time limits (a "sunset clause") on all safeguard actions. The bilateral measures that were not modified to conform with the agreement were phased out at the end of 1998. Countries were allowed to keep one of these measures an extra year (until the end of 1999), but only the European Union — for restrictions on imports of cars from Japan — made use of this provision.

circumstances, the exporting country has to wait for three years after the safeguard measure was introduced before it can retaliate in this way — i.e. if the measure conforms with the provisions of the agreement and if it is taken as a result of an increase in the quantity of imports from the exporting country.

To some extent developing countries' exports are shielded from safeguard actions. An importing country can only apply a safeguard measure to a product from a developing country if the developing country is supplying more than 3% of the imports of that product, or if developing country members with less than 3% import share collectively account for more than 9% of total imports of the product concerned.

The three agreements discussed illustrate that all is not lost for domestic companies competing against "unfair" competition. Instead of yielding to the forces of imports and foreign competing exports, domestic producers in conjunction with the relevant government authorities can make a case where these practices exist for the protection of local industries.

Such an opportunity exists for the rum producing territories of the Caribbean, which are continually being bombarded by unfair trade and marketing advantages for global beverage corporations operating in US territories. Reports indicate that US rum subsidies are threatening to drive some beloved top-shelf Caribbean labels out of business, or force them to sell out. (Jamaica Observer, 2012).

Under the Caribbean Community (CARICOM)'s Single Market and Economy, the Common External Tariff was introduced - a rate of duty applied by all Members of CARICOM to products imported from a non-CARICOM countries. Over the 1990s, CARICOM countries gradually lowered external tariffs imposed on imports from non-member countries, while maintaining duty-free access on most of the intra-regional trade. Lower external tariffs resulted in less protection for domestic products, partially reversing the existing incentives for regional imports.

Sadikov (2008) investigated the impact of the reduction in the Common External Tariff on the commodity-level imports from both non-member and member countries. His study covered the four largest members of the community: Barbados, Guyana, Jamaica, and Trinidad and Tobago. In all countries except Trinidad and Tobago, the ratio of non-member imports to member imports increased mainly due to the higher imports from non-member countries as imports from CARICOM countries were not affected by the reduction of the tariff. Only in Trinidad and Tobago was the increase in extra-regional imports accompanied with a decline in CARICOM imports. He attributed the latter to the relative competitiveness of exporters in Trinidad and Tobago compared to the other CARICOM countries. If Trinidadian exporters were resilient to the increased competition from non-member imports, they would be able to maintain their exports to the other CARICOM countries. This, combined with the high share of Trinidadian products in intra-CARICOM trade, would explain why member imports of Barbados, Guyana, and Jamaica were not affected by the external liberalization. He also inferred that the narrow production base of CARICOM countries, limits opportunities for consumption to shift to regionally produced goods even when preferential tariffs provide price advantages. If the tariff preferences did

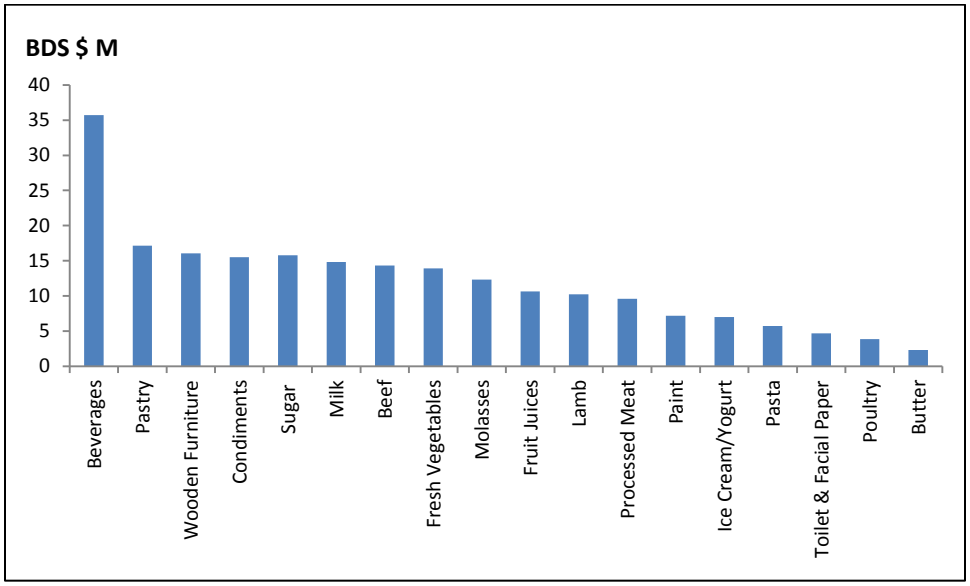
not lead to higher intra-regional imports in the first place, the lowering of the external tariff would not increase non-member imports at the expense of member imports. Rather, lower external tariffs would increase non-member imports by crowding out domestic production, which would be consistent with the experience of a typical non-discriminatory tariff liberalization.

Lastly, a reduction in imports through the promotion of larger domestic output can only be successful with the establishment of products which are comparable to those from regional as well as extra-regional markets. This is necessary if the consumption patterns of those already exposed to the "of better quality" imported good is to change.

3 Selected Imports Which Can Possibly be Substituted with Domestically-Produced Goods

Figure 2 identifies several categories of imports which may be reduced through the expansion of the manufacturing and agricultural sectors. These categories are selected because they are goods which are imported in large quantities in spite of substantial domestic production. As such, the garment industry was not selected due to its very small production base. Despite the presence of over 200 local companies producing similar products (see table 1), imports of these commodities are high, averaging $218 million over the last seven years.

Figure 2: The Average Import Value of Selected Goods, 2005 - 2011



Source: Barbados Statistical Service

Table 1: Number of Local Manufacturers of Selected Goods at end-2010

Industry	Number
Manufacture paper products	1
Manufacture of Wooden Furniture	22
Manufacture of Sugar Products	2
Non-Alcoholic Beverages and Fruit Juices	2
Bakery	66
Dairy Products	3
Condiments	2
Pasta	1
Manufacture of paints, varnishes and similar coatings	5
Agriculture, Farming, Agro and Meat Processing	91

Source: Barbados Statistical Service

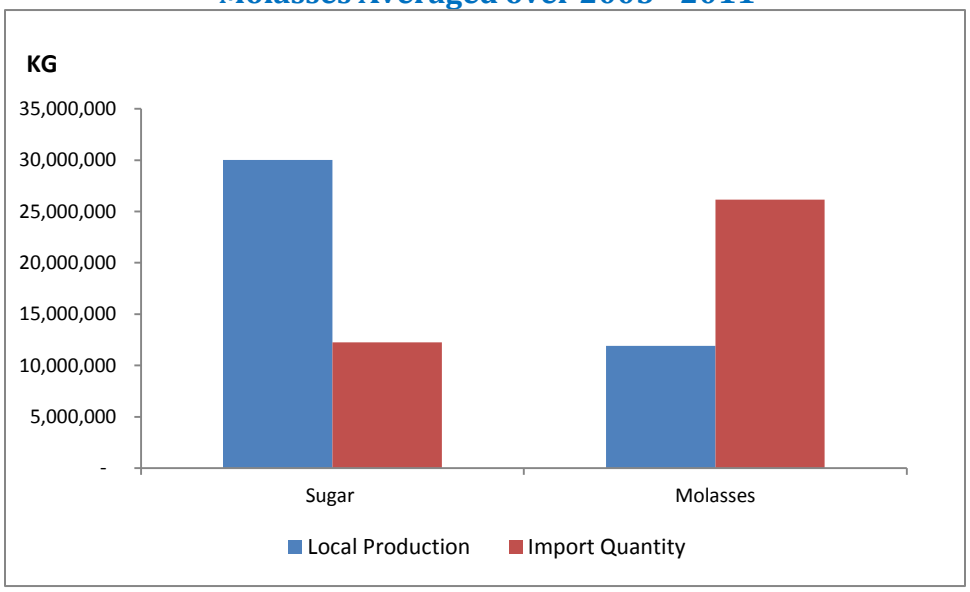
Manufactured Goods

Of the selected categories, beverages represent the majority of the imports, averaging BDS $36 million annually from 2005 to 2011. Imports of pastry (BDS $17 million) and wooden furniture (BDS $16 million) are also significant despite the number of local companies in operation. Given the predominance of foreign owned brands in the beverage market it is unlikely that there could be any gains in import substitution of beverages. In addition to foreign competition in the local market, the local beverage industry is also impacted by the 1973 Caribbean Free Trade Association (CARIFTA) agreement where industrial development is promoted in the less developed countries by means of an imposition of import duties on competing products from the more developed countries, thus making beverage exports from Barbados into the less developed countries more expensive. Conversely, exports from the less developed countries are allowed duty free access into Barbados. To overcome the challenge of a small domestic market and the CARIFTA agreement, efforts have been made to expand the local beverage industry through plant expansion and aggressive marketing strategies to penetrate non-traditional foreign markets.

Agricultural Goods

The import of sugar can however be reduced and substituted for local sugar. The manufacture of sugar is currently at less than full capacity, producing 25 million kilograms (kg) of sugar rather the 40 million kg as there is less land available for sugar cane crops. Of the $29 million in sugar products imported, molasses for the production of local rum accounts for $12.5 million. Currently, 8.3 million kg of molasses is being produced instead of the production capacity of 13.3 kg (see Figure 3). The establishment of a new multi-purpose sugarcane processing facility as proposed by Barbados Cane Industry Corporation (2008) will lead to a shift in the industry from the sole production of sugar to exploration of alternative uses of cane such as electricity generation. With the ending of the preferential prices for locally-produced sugar from the European Union, better marketing strategies are needed to compete with other sugar producing economies.

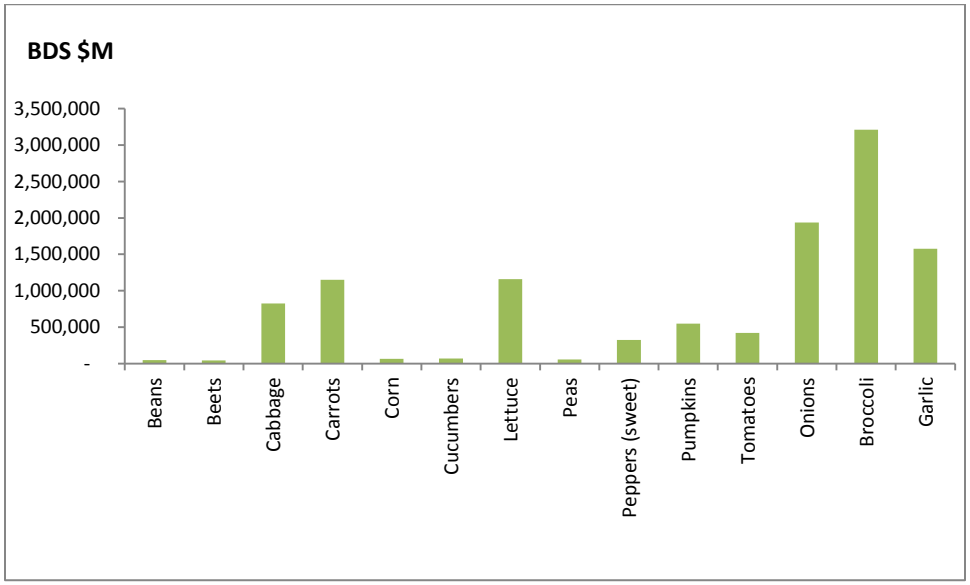
Figure 3: Local Production and Import Quantities of Sugar and Molasses Averaged over 2005 - 2011



Source: Barbados Statistical Service

Other than sugar, there may be opportunities to reduce the food import bill by promoting increased production of meat and vegetables for local consumption as these require fewer imports of inputs when compared to manufacturing. Figure 4 shows the average annual level of savings that can be realized if Barbados were to produce all the selected food crops consumed. Savings would be in the range of BDS$11 million a year. Figure 5 indicates that there is little to no local production of onions, broccoli and garlic. The import of these three commodities alone account for nearly BDS$7 million annually.

Figure 4: The Average Import Value of Selected Food Crops, 2005 - 2011



Source: Barbados Statistical Service

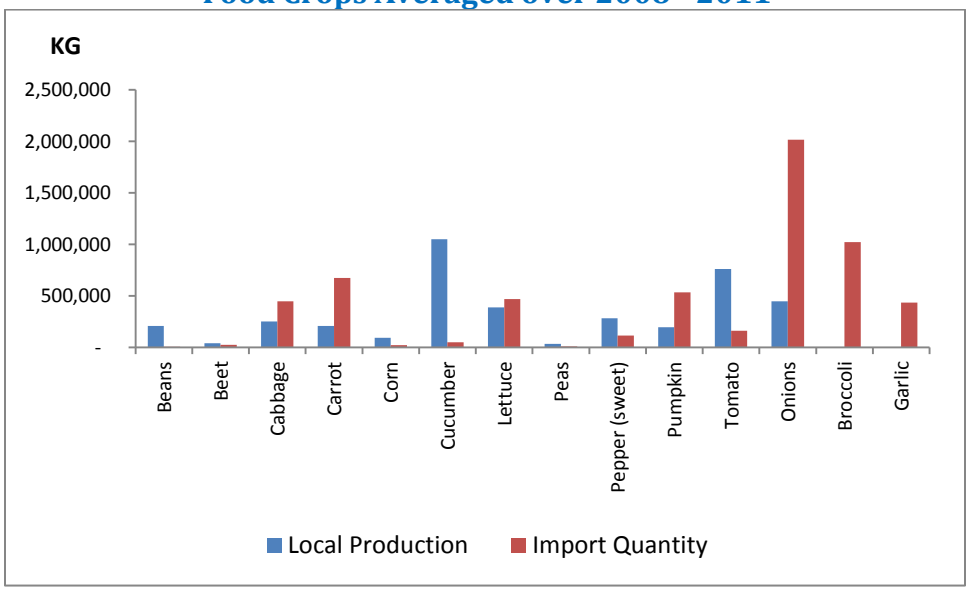
The climatic conditions in Barbados are not suitable for the cultivation of garlic, however personnel from the Barbados Agricultural Society (BAS) believes that broccoli and onions can be produced in much greater quantities. Onion imports are almost 5 times greater than local production. Imports usually occur to meet a shortfall in the rainy season as there are no proper storage and drying facilities for onions. Producing onions without any means of drying or storing them can mean a financial loss for local farmers since the matured crop is exposed to the vagaries of the weather, normally resulting in rotting and weight loss. Investments in storage and drying facilities should eliminate the risk of profit loss to farmers, reduce the need to import during the rainy season and potentially save the country BDS$2 million in foreign reserves annually.

The demand for broccoli is the largest of the food crops, and accounts for BDS$3.2 million in imports annually. Local production is virtually non-existent and is linked to the large amount of insecticide needed to grow the product.

The import of carrots and lettuce are greater than their domestic production because Barbadians tend to prefer a particular variety of carrots and lettuce which are not produced locally. Imported carrots are longer and more slender than locally-harvested carrots and imported lettuce is usually of the romaine variety which is not in large supply since weather conditions on the island are ideal for the mass cultivation of the crop.

In support of local farmers, the BAS has put an arrangement in place where a major supermarket chain has committed itself to buying local produce. Food crops are first sourced locally but if the local supply is insufficient, it is supplemented with imported produce.

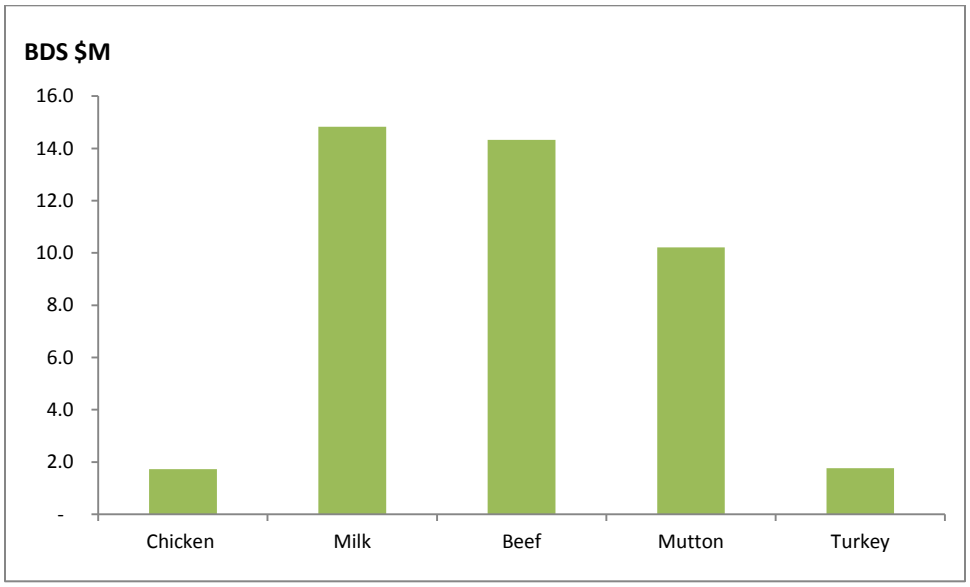
Figure 5: Local Production and Import Quantities of Selected Food Crops Averaged over 2008 - 2011



Source: Barbados Statistical Service

The imports of milk, beef, mutton, turkey and chicken account for about BDS$43 million in foreign reserves annually (Figure 6). Despite the presence of a dai ry industry, imports of milk products are high when compared to the other commodities, averaging BDS$15 million annually. This is due to the inability to compete with regional and extra-regional producers who benefit from subsidized milk. The import of powdered milk which is much cheaper than that supplied by local farmers also adds to the import bill.

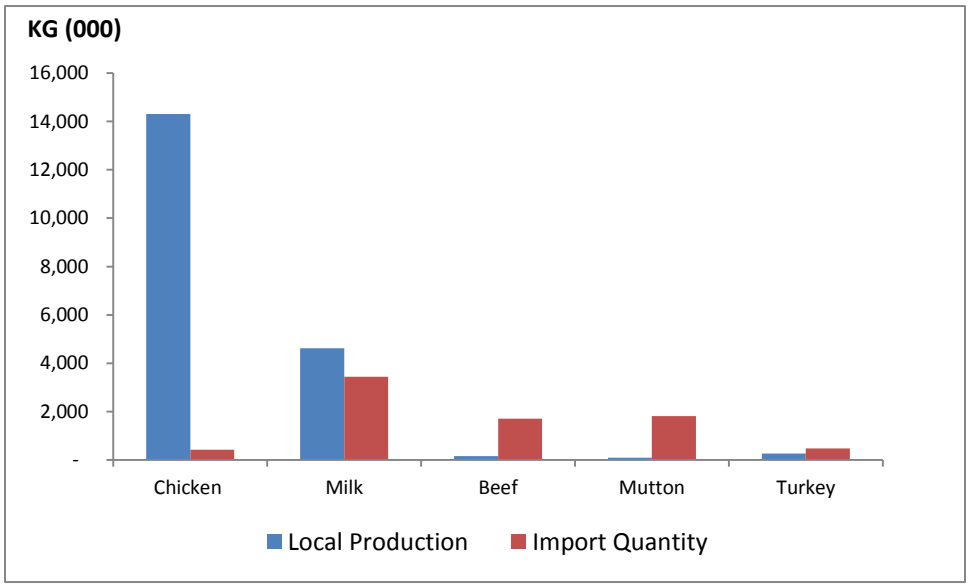
Figure 6: The Average Import Value of Selected Animal Products, 2005 - 2011



Source: Barbados Statistical Service

Figure 7 shows that Barbados is quite self-sufficient with chicken. Imported chicken represents an average of only BDS$1.7 million each year for the past seven years. Similar to milk products, subsidized meat supplied by foreign markets make the efforts to substitute imported beef and mutton with local production rather unlikely.

Figure 7: Average Local Production and Import Quantities of Selected Animal Products 2005 - 2011



Source: Barbados Statistical Service

Rankine et al. (2006) examine the supply and competitiveness of the CARICOM sheep and goat industry. They reason that while CARICOM countries have ready access to relatively cheap supplies of frozen mutton and goat meat from extra-regional sources, most consumers in the region have a strong preference for fresh mutton and goat meat from local flocks. The preference is reflected by the much higher prices consumers are willing to pay for the latter. They infer that the distinction and preference provides the basis for the observed segmentation of the domestic market between locally produced fresh meats and frozen imports. They claim that there exist a trigger price at which imports begin to substitute for fresh meats and that the level of the trigger price depends on the individual's income as well as cultural background.

According to Rankine et al., Australia and New Zealand account for 70% of the global exports of sheep meat valued at USD $1.96 billion. Overall, sheep and goat meat consumption in the CARICOM is highly dependent on imports, which represents approximately 54% of consumption. In the case of Barbados, the situation is more exaggerated as local production accounts for about 5% of total consumption.

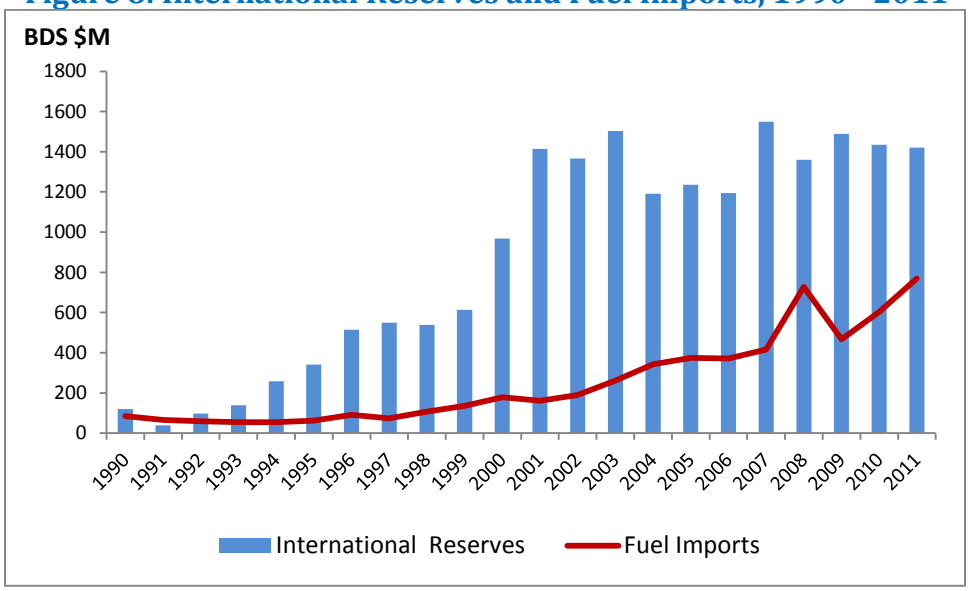
The study describes the sheep and lamb meat industry in New Zealand as one of the world's most efficient and suggests that countries attempting to develop a sheep industry solely for meat production would find it difficult to compete on the basis of price. It concludes that quality factors must therefore constitute the basis for developing a mutton industry.

Energy

Energy is one of the areas that the Barbadian economy can save on foreign reserves. The import of fuel rose from BDS$85.4 million or 7% of total retained merchandise imports in 1990 to BDS$769.4 million in 2011 representing 24% of the merchandise import bill of

that year. Almost all of the electricity generated in Barbados is derived from imported fossil fuels. According to the draft of the National Energy Policy for Barbados, electricity generation represents the main use of fuel (50%), followed by transportation (33%) and the manufacturing sector is a distant third at about 5% of total consumption. Figure 8 shows how fuel imports have grown over the past two decades in relation to foreign reserves.

Figure 8: International Reserves and Fuel Imports, 1990 - 2011



Source: Central Bank of Barbados

Electricity generation in 2011 was estimated at 9.5 million kilowatt hours (KWh), representing around BDS$385 million in imported fuel. Headley (2002) noted that each square meter of Barbados' surface receives 7kw of solar energy (3 billion KWh) on a sunny day, which is equivalent to 1.9 million barrels of oil. This is almost half the amount of fuel imported during a normal year. However, despite support from Government by way of duty-free imports of infrastructure for renewable energy technologies (Fiscal Incentive Act 1974) which led to the wide-spread use of solar water heaters in the island, the use of alternative energy still have a long way to go in Barbados.

The Government of Barbados has committed to facilitate the large scale penetration and distribution of solar photovoltaic panels and wind generating technology on the island to match the current levels of solar water heater penetration in domestic households. Based on a five-year target of installing at least 35 megawatts of renewable energy in the form of at least 35,000 one kilowatt solar PV or wind turbines, renewable energy comprising approximately 20% of the island's peak demand generating capacity would be produced.

Indeed, renewable energy can be a means for households and commercial enterprises to save substantial amounts of money on electricity in the long-term. However, the high upfront cost of purchasing and installing the required infrastructure is the main reason

why the adoption of such technologies (besides solar water heaters) has been so slow in the island.

To address the high initial cost of retrofitting homes or businesses with solar energy systems, the Barbados Government with the assistance of the Inter-American Development Bank (IADB) has set up the Smart Energy Fund to assist small and medium size enterprises (SMEs) and entrepreneurs with financing at a subsidized interest rate of 3.75% for renewable energy generating and energy-conservation projects. Also, a local solar energy company entered an arrangement with a commercial bank to offer householders affordable means of retrofitting their homes with solar panels. Another initiative aimed at making the adoption of renewable energy more financially attractive, is the Renewable Energy Rider. The Renewable Energy Rider pilot programme that lasted two years (ended June 30, 2012) allowed customers of Barbados' lone electric power company with renewable resource generation facilities utilizing wind, solar or hybrid (wind/solar) power sources to sell their excess electricity to the national grid. At the time this paper was being written the programme was under review by the Barbados Fair Trading Commission.

In addition to the economic benefits, there are also environmental benefits to be gained from renewable energy. It is estimated that the wide-spread use of solar water heating systems in Barbados spared the environment about 21,400 tonnes of carbon dioxide (CO_2) emissions in 2009, see Husbands (2010).

Renewable energy initiatives in the pipeline for the years 2012 to 2017 are:

- Biomass cogeneration (75 MW)
- Solar photovoltaic (PV) panels (42 MW)
- Waste – to – energy systems (41 MW)
- Wind farms (33 MW or more)

These initiatives are estimated to produce at least 70% of current electricity generation capacity of Barbados Light & Power Ltd and can save as much as BDS$269.5 million in foreign exchange annually.

Individual and household decisions have a significant impact on a country's energy consumption. The decision to conserve, either by simple practices such as turning the light switch off when you leave a room, substituting typical household durables with the energy-efficient equivalent or a combination of both, can put a dent in Barbados' fuel import bill.

4 Conclusion

The scope for growing production in Barbados to substitute for imports appears to be quite limited. Nonetheless, there is the potential for the island to save as much as BDS$50 million in foreign exchange annually, which is highly contingent on the alternative energy projects in the pipeline coming to fruition. In order to boost the export and earnings of

sugar more aggressive marketing strategies need to be adopted to promote local sugar since Barbados no longer enjoys preferential export prices from the European Union (EU).

Although the opportunities to reduce imports through import substitution are few, efforts should still be made to develop local industries, particularly food crops, meat and alternative energy production, to reduce the import bill and raise employment levels. Given the small size of the domestic market, the local beverage industry has been making strides to expand production and penetrate non-traditional foreign markets through aggressive marketing strategies. However, for the industry to make gains within CARICOM a review of the provisions for special and differential treatment in the CARICOM treaty should be reviewed. The greater use of alternative energy and incentives for household and commercial adoption must be continually encouraged in order for Barbados to become more energy independent.

Exceptions to binding tariffs and applying them equally to all trading partners can arise as it relates to protecting local industries and promoting fair trade within the WTO framework. Private sector enterprises faced with unfair competition through the granting of subsidies should lobby government to use WTO's dispute settlement procedure to seek the withdrawal of such subsidies or the removal of their adverse effects.

Based on the findings of the study, Barbados' strategy for accumulating foreign reserves through international trade in goods should be geared towards merchandise exports in areas such as beverages and packaged sugar more so than import substitution. Foreign investment in the manufacturing and agriculture sectors can expose domestically-produced products to a wider global market.

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The Little Book of Economics: How the Economy Works in the Real World

by Greg Ip (2010)

A Review by Olivia Husbands*

The work of Greg Ip in "The Little Book of Economics" has been praised and applauded by many since its 2010 publication. USA Today deemed it *"...a must read in economic literacy*" whereas magazines such as The Economist noted it as "*A guide to understanding the dismal science*". Ip, an award winning journalist, skillfully avoids the academic jargon, complex equations and charts that usually find themselves in the economics literature. Instead, he presents fifteen chapters of anecdotes and analogies, thereby providing a clear understanding of how economic theories relate to real-world events. Although it is primarily focused on the United States (US), "The Little Book of Economics" gives meaningful explanations on the basic operations of an economy.

In the opening chapter, Ip reveals "The Secret of Success", that is, what drives economic growth and productivity. He explains that economic growth depends on the productive potential of the economy, which in turn relies on three main elements: population, capital, and ideas. Every economy needs workers in order to expand, and the productivity of workers is based on capital but more importantly, ideas. Ip believes that the reason for the success in the US is that it is "idea rich", and within the long run, investing in ideas is what ensures the economic well-being of a country.

Ip then proceeds to discuss growth cycles (Chapter 2), the difficulty in forecasting brought about by cyclicality (Chapter 3), and how fluctuations in growth can lead to volatility in the labour market (Chapter 4). He contends that in the long-run, the economy grows, but in the short-run, it is characterized by alternating periods of expansions and recessions brought about by disparities between future expectations and reality. With alternating periods of booms and busts, forecasting the economy becomes difficult. Cyclicality also leads to labour pains, since in the short-run jobs fluctuate with the economic cycle.

In "Fire and Ice", Ip speaks to the issues of high inflation and deflation in detail. In a nutshell, he opines that "*high inflation is destabilizing and corrosive; deflation can be destructive. The best inflation is not too high or too low; from 1 percent to 3 percent seems about right*" (p.83). Given the consequences of inflation and deflation, the next logical question becomes, what causes either? Generally, there are two competing schools of thought on inflation: Monetarism, which blames price increases on too much money chasing too few goods; and output gaps (that is, disequilibrium between the demand and supply of goods and services). An interesting point made by Ip (p.82) is that *"gold and*

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commodity prices are much better measures of the fear of inflation than predictors of inflation", partly because so many other things affect them. Of course, these dictums may be more applicable to the US, rather than the Caribbean, particularly when consideration is given to the high marginal propensity to import to the latter region, which means that the largest component of inflation is imported, rather than domestically driven.

Chapters 6 and 7 concentrate on globalization – which is defined by Ip as the increased flow of goods, services, people, ideas and capital across borders. Economies are becoming more interdependent, evident from the drastic rise in global trade since the 1950s. The ability to buy from and sell to the entire world has enabled most countries to achieve exceptional levels of wealth. Though there have been falling trade barriers, free trade is still politically unpopular, and every economy routinely engages in protectionist measures. There has also been a tremendous expansion in the movement of capital across borders. Ip notes that "*unlike imports and exports markets, several financial and capital markets are not severely governed by shared rules of the road…capital markets rapidly transmits one country's problems to another*" (p 105)

The focus of chapters 8 to 12 is on intervention, specifically, the role of the central bank and government in the economy. The central bank has two powerful roles. First, it is the lender of last resort. This implies that if a bank runs out of money to repay its creditors, it can borrow from the central bank. The second is carrying out monetary policy, which usually involves manipulating interest rates, reserve requirements or the money supply. The government, on the other hand, "*giveth and taketh away"* (p 175) It spends to offer services the private sector can't or won't provide at an acceptable price. It also supplies money to the unlucky elderly and sick people of the society. However, its expenditures are largely funded from the taxes it collects. Contrary to popular belief, neither politicians nor the central bank controls the economy, but this is not due to a lack of trying. Policy makers have a myriad of tools (such changes in taxes, government expenditure, interest rates etc) for shifting the behavior of the economy, however, they can never keep the country at their preferred pace for extensive periods of time.

Chapter 13 looks at debt traps and calamities, and how government borrowing can save or destroy the economy. In several cases, the expenditures of a government exceed its revenues, and so the government has to borrow to fund its deficit. Ip contends that debt is not bad. For instance, there is nothing wrong with a government borrowing to finance investment, which pays off in the future. But, one must bear in mind that debt does its damages gradually, slowly suffocating private investment and nibbling away at the country's foundations. The breaking point comes, when debt is so high, that investors suspect that the government will default and they in turn suddenly stop investing in Government activities. This leads to a debt crisis.

Following on from chapter 13, Ip zeroes in on the "love-hate relationship" individuals have with financiers. A popular view, according to Ip, is that financiers "*don't make anything, they just get rich rearranging the fruits of others' labor*" (p 212). But, the financial system is important to growth as it is the main conduit through which savers are matched with those who need capital.

In the final chapter, "A species of Neuralgia" Ip gets down to the heart of the matter: why do financial and economic crisis transpire? He explains that each and every crisis is unique but they all share similar characteristics such as when or how the crisis will occur.

Economics is often thought of as dry, boring and difficult to comprehend. But, Ip shows that it can be applied to the conventional business, which many would find interesting and useful. Ip clear and concise writing, coupled with his ability to engage the reader, makes the Little Book of Economics an excellent read for the inquisitive "laymen", who wants a general understanding of how the economy works, while avoiding all the jargon usually associated with economic texts. It naturally follows that experienced economists, or even those who have studied economics at an undergraduate level, would not be inspired by this text. Also, the book is written largely in the context of the US, and so, it is not fully applicable to microstates, such as those of the Caribbean. Notwithstanding this, it is an excellent read for non-economists.

Zombie Economics

By John Quiggin(2010)

A Review by Denisa Applewhaite*

John Quiggin introduces his book "Zombie Economics" by reference to a famous passage by J.M. Keynes that notes that the ideas of economists and political philosophers whether right or wrong are more powerful than is commonly understood. He argued that even hypotheses which have proved themselves wrong and dangerous are very hard to kill and will keep coming back to haunt us; hence the title of the book "Zombie Economics." The author identified five ideas central to the recent global financial and economic crisis of 2007. These are: the great moderation, the efficient market hypothesis, dynamic stochastic general equilibrium models, trickle-down economics and privatisation. Together these paradigms form a package which Quiggin terms market liberalism. Each chapter of the book which deals specifically with one of the five themes identified above is structured around a description related to the emergence of the idea, its rise to popularity, and then its "death" under the financial crisis. After this the author looks at the reanimation of the paradigm and then considers alternatives to market liberalism.

Chapter 1 examines the hypothesis of the great moderation which deals with the transformation of the economy from a condition of high to low volatility in both employment and economic growth during the 1990s. Many economists believed that the deregulation of financial markets in the 1980s had a dampening effect on the business cycle and significantly contributed to the great moderation. Before the recent financial crisis some economists generally did not accept that the great moderation was largely the result of random chance because the global economy overtime has been shaken and stirred by periodic booms and busts. They also did not realise that the conditions generated by market liberalism would lead to the end of the great moderation itself. Quiggin noted that the great moderation supported the belief that risk should be shifted back to workers and households and away from corporations and governments. However, while workers faced increased risks, chief executive officers (CEOs) with multimillion dollar pay-packages faced less effective risk.

In chapter 2 the author looks at the efficient market hypothesis whose central implication is that financial markets are the best possible guide to the value of economic assets and therefore to decisions about investment and production. The hypothesis further asserts that private investment decisions are the product of an information system that is automatically self-correcting. The proposition implies that bubbles would not exist in the prices of assets such as stocks or houses because these prices should self-correct. An additional implication is that government can never out perform well informed financial markets and should therefore confine their activities to the correction of market failures.

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Even at the height of the efficient market hypothesis's popularity, it was not well supported by empirical evidence except in its weak form[1]. The crisis in 2008 was solely the failure of financial markets unlike the great depression for which multiple causes were identified. In Quiggin's view this should have led to the demise of the efficient market hypothesis. Quiggin highlights the development of "behavioural economics" as a possible replacement for the efficient market hypothesis and advocated that banks should focus on a set of simple businesses and not engage in complex financial products.

The author notes in the next chapter that during the 1960s Keynesians economics was widely accepted as being able to provide prescriptions for economic problems. However, during the course of the 1970s Milton Friedman and his supporters, centred on the University of Chicago, won a series of intellectual and political battles over the Keynesians. The descendants of Friedman's proposed an alternative approach which argued that macro-economic policy could not be beneficial and that booms and slumps reflected changes in technology and consumer tastes. Hence, both active fiscal and monetary policies were unjustified. In the late 1970s Friedman's ideas regarding the ineffectiveness of monetary policy were further developed by Robert Lucas who contended that government policies would be totally ineffective due to rational expectations among workers and businesses. Lucas lamented that macroeconomic policies needed to be built up from scratch based on the foundation of rational choice and market equilibrium.

The merger of the revised Keynesian approach and the real business cycle literature proposed by Lucas provided the foundations for dynamic stochastic general equilibrium (DSGE) modeling. The DSGE framework starts from a general equilibrium structure in which individuals and firms maximize expected utility and value, respectively while the market clears. It also undertakes a numerical simulation to see how the model performs. However some critics have argued that the DSGE approach tends to exclude a lot of interesting issues such as the possibility of the breakdown of classical equilibrium.

In addition, Quiggin points out that the foundations of DGSE set up have some key flaws. For example, economic agents are incapable of considering and evaluating every single possible future event. The economic agent is not a realistic assumption neither is the unique equilibrium usually defined by such models. Quiggin concluded that the DSGE approach did not provide the basis for predicting, understanding or responding to economic phenomena and hence should be considered a total failure.

In chapter 4, Quiggin examines the issue of "trickle-down economics". The author noted that intellectual defenders of inequality re-emerged in the 1980s coinciding with an increase in actual inequality. These advocates of lower taxes for the rich argued that these changes would eventually benefit everyone. However, with the adoption of these policies throughout the English-speaking world inequality grew sharply. Quiggin dismisses most of the intellectual foundations of supply side economics. By historical experience the growth

[1] The weak form asserts that prices of assets follow a random walk and hence are not predictable in financial markets.

of countries using tax cuts to spur growth was no faster than those that did not utilise tax cuts. In addition, tax cuts did not pay for themselves as they yielded greater deficits. Quiggin argues that policy makers erred in focusing on economic efficiency rather than economic equality quoting a range of statistics from income growth, access to and educational outcomes, social mobility and even health to reveal the failure of the "trickle-down" approach.

The next chapter focuses on privatisation. The author noted that post-1945, the social democrats saw the state's role as providing a civilising counter weight to pure capitalism. Markets and business enterprises were seen as playing a central role but one that was subordinate to the needs of society. Intellectually, the growth of government intervention had been supported by new developments in micro-economics with A.C Pigou's 1920s work of externalities providing much of the foundation of this literature. Furthermore, the almost impossible set of conditions necessary to fulfil a competitive general equilibrium gave support for government intervention.

With the trend of increased government intervention reversed the market economy in the 1980s. However, Quiggin argues that privatisation is a "policy in search of a rationale" as there is no evidence, which showed that when all major decisions on production, investment, and employment are left to private firms that the economy will outperform a mixed economy. The wave of re-nationalisation in telecommunications, the rail network and airlines also reflected the widespread dissatisfaction of the public with privatised services in the UK, Australia and New Zealand. In addition, the high cost of equity capital - which is generally above that of government bonds - makes a strong case for public investment in long-term projects and corporations given that publicly owned firms can achieve levels of operating efficiency comparable to the private sector. Broadly speaking, public provision may be most appropriate in capital intensive industries with natural monopolies and in healthcare and education services.

The final chapter makes an appeal for a new economic approach for analysing the 21st century. Quiggin acknowledged that the approach to economics which has been dominant for more than three decades will not go away simply because its predictions are inconsistent with the facts. Professors have tenure, lots of graduate students in the pipeline and techniques that they know and are comfortable with. Yet, the crucial role of the state in risk management must be asserted if individuals are to have security in employment, income and wealth. Despite this role, Quiggin argues that government must balance their budgets over the economic cycle in order to be able to provide a useful role in times of crisis. In order to be similarly useful, economics should focus more on realism and less on rigor; more on equity and less on efficiency; and finally, more on humility and less on hubris.

The book covers a wide range of economic concepts, however it is a bit challenging for individuals who do not have a good grasp of existing economic concepts. The reader may have to consult other sources to supplement the concepts outlined in the book. A Key aspect also highlighted in Zombie Economics is that many economists should take full account of the complexities of societies in proposing economic solutions.

An Organisation Worthy of its Employees' Talents

Review of Hamel, Gary, What Matters Now, Jossey-Bass, (2012)

A Review by DeLisle Worrell*

Gary Hamel contends that hierarchical companies, and the belief that managers should initiate and direct operations, are at the root of the current series of catastrophic failures of major companies and markets in the industrial world. Hamel believes that the world is on the cusp of a revolution of management theory and practice, driven by the fact that the management practices and organisation structures that we now take for granted are unsuited to the requirements of the modern marketplace, and are a source of demotivation for knowledge workers. The companies that have become most successful in the 21st century are those where managers view themselves as leaders, not generals, and where companies are organised so as to promote the talents of their staff, and to give each person room to grow and take initiatives.

The legacy model of economic production which has driven the modern economy over the last 100 years is on its last legs, Hamel argues; we long for a kinder, gentler capitalism. Our organisations talk Theory Y, but practice Theory X. "[D]eeply embedded control structures that strip employees of their discretion" (page 187) stand in the way of empowering workers, and deny them room to grow. Centralising strategy and resource allocation at management levels seriously undermines the resilience which companies require in order to cope with a rapidly changing world.

The Towers Perrin *Global Workforce Survey 2007-08* of 90,000 workers in 18 countries, found that only 21% of workers were truly engaged, and as many as 38% were mostly or entirely disengaged. Surprisingly, 86% liked their job; in spite of that, they were disengaged because they didn't have opportunities to grow, their companies didn't have a mission they (the employees) were passionate about, and the values and behaviours of the organisation's leaders were unappealing. Only 38% thought that senior management cared about their interests and advancement. No more than four out of ten thought that senior management communicated honestly; 44% said that senior management was accessible; and less than half said that senior management decisions were consistent with their values. Hamel concludes that 80% of employees "show up for work each day, but leave most of their humanity at home." (Page 186.)

Hamel sees this approach as a major contributor to the failure of major corporations in recent years, and to the ongoing series of crises in financial markets. The traditional structures cannot cope with a world characterised by an accelerating pace of change, the emergence of new competitors, the commoditisation of knowledge, increasing consumer power, and an ever growing list of social demands. Hierarchical organisations will be outflanked by those whose flexibility allows them to make use of web-based collaborative

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tools and online networks. Companies that are geared up to meet the new expectations of "Generation Facebook" will displace those with conventional structures.

Hamel believes that the beacons for the future are companies like Whole Foods, whose founder, John Mackey, determined to build a company based on love, not fear. W. L. Gore and Associates, makers of Gore-Tex products is a second firm that should be emulated. Its management believes that people should know they have the authority to make decisions and that they will be responsible for the outcomes. The company's CEO says that "[t]he leader's job is to make sure the culture is healthy … Our leaders have to be comfortable with not being the centre of all the action, with not trying to drive every decision." Whole Foods is only a decade old, but Gore and Associates was founded in 1958. Hamel believes that it is especially important to effect the needed changes in well established companies, in order to preserve the accumulated energies and ideas that have built venerable institutions such as Cambridge University, Microsoft, Toyota and Amazon. These institutions must change and adapt in ways that make them evergreen.

One element of the necessary change in how companies run themselves is the replacement of managers by leaders. The leader is a steward of careers, capabilities, resources, the environment, and organisational values. He or she views the talents placed at their command as a trust; is willing to put others' interests ahead of their own; looks to safeguard the future while taking advantage of current opportunity; accepts responsibility for systemic outcomes; and works to achieve equity in the distribution of rewards.

The successful company of the future will have developed a capacity for innovation. The key to innovation is paying attention to the little unnoticed things *that are already changing*, things that may have been surprising, perplexing, or disconcerting. The innovator asks himself which of these anomalies have some momentum behind them, and tries to "run that movie forward" (Page 67). Hamel suggests that companies may seek niches for new services in the inconveniences that customers have come to take for granted. That is the best way to uncover unspoken needs; there is no point in asking people what they want, because the inconvenience is accepted. Skills that help in this process include reading the emotional state of the customer; asking people about things that made them go "wow"; and amplifying weak signals, unrecognised desires that may become necessities, like cell phones.

The world is changing fast, and companies must accept change as a way of life. The challenge is to effect continuous change with no trauma. Among the suggestions Hamel offers:

- Think of ways to reduce industry costs by a very substantial amount: 30, 50 or even 90%;
- Generate and test hundreds of new strategic options, recognising that only a very small percentage will be viable;
- Master the art of rapid prototyping: learn early, cheaply and fast;
- Create small units within the company, so as to increase intellectual diversity;
- Invest in "what could be" (Page 126);

- Avoid irreversible commitments: Hamel cites the example of the Four Seasons hotel chain, which offered 4th and 5th nights free instead of lowering rates in soft markets;
- Give people something worth changing for; and
- Encourage variety, decentralisation, serendipity, and allocational flexibility.

Hamel warns that the process of turning inspiration into value takes time, and is realised via interactive cycles of experimentation, learning, selection and codification.

For Hamel, the empowerment of the individual worker is paramount. Companies must support and promote employees beyond expertise, encouraging them to take initiatives. The firm needs people who spring to action when they see an opportunity, and are not bound by their job description. But employees must be motivated to go beyond initiative and to become creative, challenging conventional wisdom, and looking for great ideas to import into the company. Furthermore, everyone should become passionate, coming to appreciate their work as a calling, an opportunity to make a difference in the world.

The questions leaders should ask themselves are: How can we build organisations that deserve the extraordinary talents that employees could bring to their work? How can we inspire exceptional performance, how may we create the work environment that "merits the outpouring of passion, imagination and initiative"? (Page 142.) In answering, Hamel reminds us that people flourish when they are free to follow their interests, choose their alliances, and make their own commitments. He recognizes that in our minds this raises a spectre of indiscipline, and he offers examples of successful companies – those previously mentioned, as well as Apple, Morning Star and HCLT – which have become exceptional performers by empowering staff in this way.

Hamel concludes his book with a catalogue of what he calls "moonshots", ways to spark innovation. They include:

- Infusing work with soul-stirring ideals, such as honour, truth, justice, love and beauty;
- Replacing traditional management systems that reflect a "deep mistrust of employee commitment and competence" (Page 247.);
- Assuming that creativity is widely distributed and must be systematically nurtured within the company;
- Allowing individuals to find a higher calling in their work lives;
- Equipping every worker with the data and knowledge to act in the organisation's best interests; and
- Contributing to efforts of scholars and practitioners to rethink management's philosophical foundations.

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