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## Perceptions of Moral Intensity Among Undergraduate Accounting Students in Barbados

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This article examined the perceptions of moral intensity among 104 final year undergraduate accounting students in Barbados. A quantitative survey was used to measure the impact of various factors (gender, age, religious affiliation and commitment) on perceptions of moral intensity as advanced by Jones (1991). Four scenarios depicting audit-related and non-audit-related ethical issues were used to explore this construct. Findings revealed that gender, age, religious affiliation and commitment did not impact on perceived moral intensity on audit-related scenarios. However, perceptions of moral intensity varied on gender, religious affiliation and commitment with respect to the non-audit-related scenario.

**Keywords:** moral intensity, Barbados, students, auditing ethics and scenarios.

### **Introduction**

Arens, Elder and Beasley (2006: 74) asserted that 'ethics is the glue that holds a society together' and that 'ethical behaviour is necessary for a society to function in an orderly manner.' An ethical dilemma occurs when an individual is faced with the decision as to what is the appropriate behaviour to adopt in a specific situation. The individual must decide what is right

from wrong in the given situation. Jones (1991:367) defined an ethical decision as 'a decision that is both legal and morally acceptable to the larger community.'

Ethics is essential within a business setting, particularly within the arena of the professionals such as accountants and auditors. The highly publicised fraudulent accounting practices of Enron and WorldCom have placed the issue of ethics under the microscope (Venezia, 2005). The corporate mismanagement and accounting malpractice in Enron led to the fall of Arthur Andersen, which was one of the then 'Big Five' accounting firms in the United States. Arthur Andersen, Enron's auditor, was accused of overlooking Enron's questionable accounting practices of overstating revenues and underreporting liabilities, as well as the subsequent shredding of important documents to avoid prosecution by the authorities.

Accounting bodies such as the American Institute of Certified Public Accountants (AICPA) and the Institute of Internal Auditors (IIA) have always maintained codes of professional conduct to govern the accounting profession. Adherence to these codes should provide ethical guidelines to members and inspire public confidence in the profession. Given the scandals of Enron and WorldCom, there has been growing concern about ethical conduct among auditors and accountants. This concern has led to extensive research investigating ethical behaviour among practising and prospective accountants and auditors. In particular, tertiary level accounting students are the future practitioners in the field and it is therefore necessary that they are exposed to sound ethical training. The attitudes which students have now, could translate into behaviors they will have in the business world (Ludlum and Moskaloinov, 2005), and given the recent accounting scandals, those who will be hiring accounting students, will have an interest in their ethical orientation (Nouri and Shiarappa, 1996).

The purpose of this study is to apply Jones' (1991) theoretical model, which is later explained, to the moral decision making process within the field of auditing and accounting. It seeks to contribute to the existing literature on ethics within the academic curriculum and, in particular, focuses on ethics within another cultural context. It is one of the few studies that seek to measure perceptions of moral intensity on audit scenarios compared to the considerable emphasis on ethics among marketing professionals as shown by previous studies by Vitell *et al* (2003) and Silver and Valentine (2000).

This research is also one of the few studies that seek to examine the impact of religion on moral intensity. Specifically, the purpose of this study is to measure the ethical attitudes of final year undergraduate accounting and auditing students, enrolled at the Cave Hill Campus of the University of the West Indies in Barbados. Perceptions of moral intensity, in relation to four ethical issues reflected in four separate scenarios, are measured by the use of a self-administered questionnaire distributed to the students. The article is structured as follows: section one deals with the literature relevant to the topic of moral intensity, section two explains the research methodology, section three presents the findings, and the final section concludes the study.

### **Literature Review**

#### *Rest's Four Component Model*

Rest (1986) developed a four-component model of ethical reasoning. According to Rest (1986), the ethical reasoning process begins with moral awareness; that is, the recognition that a moral dilemma exists. The second component of Rest's model is moral judgment, which is the stage during which the individual determines what is morally right compared to what is morally wrong. Thirdly, the individual develops a moral intention; that is, the individual decides on a choice of action. This can be either an ethical choice of action or an unethical one. Finally, the individual engages in the behavior, either ethical or unethical, based on his or her moral intention.

There have been several empirical studies that focused on the ethical reasoning process and these studies have put forward different ethical reasoning models to explain individuals' ethical reasoning process (Ferrell and Gresham, 1985; Hunt and Vitell, 1986; Trevino, 1986). However, it can be argued that Rest's (1986) model is the least complicated of these models and it is this model that Jones (1991) used in developing his theory of moral intensity.

*Jones' Moral Intensity Model*

Whereas Rest emphasised that the moral development of the individual affects his or her ethical reasoning, Jones (1991) stressed the importance of the characteristics of the issue concerning ethical decision-making. Jones argued that the existing theoretical models of individual ethical decision-making ignored the importance of the situational factors that determine ethical decision-making. Silver and Valentine (2000:309) also argued that 'contextual factors create perceptions about the characteristics of the decision making task.'

Jones asserted that the perceived moral intensity of an ethical issue influences all components of the decision-making process which involves recognising a moral issue, making a moral judgment, establishing behavioural intent and engaging in moral behaviour. Moral intensity as defined by Jones (1991:372) is 'a construct that captures the extent of issue-related moral imperative in a situation.' Jones (1991) identified six attributes that influence an individual's perception of moral intensity:

1. *Magnitude of the consequences* is defined as 'the sum of harms (or benefits) done to victims (or beneficiaries) of the moral act in question' (p.374).
  2. *Social consensus* is defined as 'the degree of social agreement that a proposed act is evil (or good)' (p.375).
  3. *Probability of effect* is the 'joint function of the probability that the act in question will actually cause harm (or benefit)' (p.375).
  4. *Temporal immediacy* is the 'length of time between the present and the onset of consequences of the moral act in question' (p.376).
  5. *Proximity* is the 'feeling of nearness (social, cultural, psychological, or physical) that the moral agent has for victims (or beneficiaries) of the evil (beneficial) act in question' (p.376).
  6. *Concentration of effect* is defined as 'an inverse function of the number of people affected by an act of given magnitude' (p.377).
- Jones (1991) has argued that issues of high moral intensity will be recognised as ethical issues more often than those of low moral intensity.

The present study acknowledges the importance of the above theories (moral development and moral intensity) regarding ethical decision-making and

behaviour. However, this study specifically seeks to examine perceived moral intensity among a sample of undergraduate accounting students. This is important given the premise, advanced by Jones, that the 'characteristics of the issue' may be more important than the individual's level of moral reasoning in influencing ethical (or unethical) decisions and behaviour. Jones has argued that the moral intensity is the sum of the six above-mentioned components, and hence this study combines these components to form the moral intensity construct. The following section addresses prior empirical research on moral intensity.

#### *Empirical Studies on Moral Intensity*

Studies on moral intensity have investigated the construct itself (for example, McMahon and Harvey, 2006), while others have explored perceptions of moral intensity (for example, Vitell *et al*, 2003). Moral intensity has been studied, using Jones' six components, among a wide range of subjects including accountants, marketers, physicians and students (Vitell *et al*, 2003; Silver and Valentine, 2000; Wright *et al*, 1997; Barnett, *et al* 1994). In particular, Singer and Singer (1997) found that magnitude of consequences and social consensus had significant effects on ethical perceptions. A recent study by McMahon and Harvey (2006) found that moral intensity consisted of three characteristics (that is, magnitude of consequences, proximity and social consensus) rather than the six proposed by Jones. However, a widely cited study on moral intensity (Singhapakdi *et al* 1996) found that all six components of moral intensity were significantly related to ethical perceptions and behavioural intentions of marketers.

Singhapakdi *et al* (1996) have argued that perceptions of moral intensity influence ethical judgments, intentions and behaviour. Vitell *et al* (2003, p.166) in a study examining the perceptions of moral intensity among marketing professionals, found that '...the moral intensity of a situation appears to be a very significant factor in determining both ethical judgments and behavioral intentions.' Carlson *et al* (2002) added that the orientation of the ethical scenario (to self, others or organisation) has an influence on ethical decision-making.

Based on the primary focus of this study regarding the issue of moral intensity perceptions, we now present the first research question:

***What are the overall perceptions of moral intensity among undergraduate accounting students?***

To date, several subject variables have been found to be significantly related to moral intensity and ethical decision making. These variables include gender, age, religious affiliation and religious commitment.

*Gender*

Researchers have found that females tend to be more ethical than males in various situations (Silver and Valentine, 2000; Barnett *et al*, 1994; Buckley *et al*, 1998). For example, Silver and Valentine (2000) found that female students had higher moral intensity perceptions than their male counterparts. Ruegger and King (1992) explained that females, compared with males, are more supportive and ethically sensitive based on their socialisation. Gilligan (1977) also asserted that females are more care-oriented, whereas males are more justice-minded.

Other empirical studies have revealed mixed results regarding the impact of gender on perceptions of moral intensity and ethical decision-making. Notably, Kini *et al* (2003) found that males had a higher moral intensity score than females, whereas Sankaran and Bui (2003) found that gender had no impact on ethical decision-making.

At this point, the second research question is presented:

***Are there significant differences in perceptions of moral intensity between male and female undergraduate accounting students?***

*Age*

With regard to age, older persons have been found to be more ethical than younger persons (Ruegger and King, 1992; Silver and Valentine, 2000). For example, Silver and Valentine (2000) found that older students perceived greater moral intensity than younger students, suggesting that age is positively related to ethical sensitivity.

In contrast, other empirical studies found that age was not significantly related to ethical judgments of college students (Barnett *et al*,

1994; Knotts *et al*, 2000). Nevertheless, Knotts *et al* (2000: 158) claimed that age is still worthy of future research by stating that ‘the old assumption that age brings wisdom has led several researchers to consider how age might influence one’s ethical judgments’. Given this assumption and the mixed results regarding age, the third research question is presented:

***Are there significant age differences in perceptions of moral intensity among undergraduate accounting students?***

#### *Religious Affiliation and Religious Commitment*

According to Knotts *et al* (2000), previous research investigating the link between ethics and religiosity has made a distinction between religious affiliation and religious commitment. Wimalasiri (2001: 622) explained that ‘affiliation involves belonging to a religious group while commitment focuses on the religious behaviour.’ Wimalasiri (2001: 621) has also contended that ‘historically, philosophers and theologians have attempted to link moral principles to religion or to the existence of God.’ Brown and Annis (1978) provided empirical support regarding the relationship between religious affiliation and ethical beliefs. Moreover, Kennedy and Lawton (1998) revealed that persons who were religiously committed were more ethically minded and that persons in particular religious groups (for example, evangelical groups) were more likely to engage in ethical behaviour. In their study, Knotts *et al* (2000) indicated that religious commitment positively influenced the ethical judgments of college students. Furthermore, researchers have established a link between moral reasoning, religious affiliation and commitment (Good and Cartwright, 1998; Wahrman, 1981; Wimalasiri, 2001). However, a dearth of research linking moral intensity to religious affiliation and commitment still exists, thus requiring empirical investigation.

The two final research questions are now presented:

1. ***Does religious affiliation impact on perceptions of moral intensity among undergraduate accounting students?***
2. ***Does religious commitment impact on perceptions of moral intensity among undergraduate accounting students?***

## Methodology

### *Sample*

This study targeted a sample of final year undergraduate accounting and auditing students in the Department of Management Studies at the Cave Hill Campus of the University of the West Indies in Barbados. These students are required to complete at least two auditing courses as well as several courses that deal with ethics including *Business, Government and Society, International Business, Management Information Systems, and Business Strategy and Policy*. Each of these courses comprised at least one module relating to ethics.

Questionnaires were administered to a convenient sample of 177 auditing and accounting undergraduate students at the end of the academic semester. However, responses were received from 104 students, resulting in a 58.7% response rate. This relatively high response rate compares favourably to other studies on moral intensity (e.g. Silver and Valentine, 2000; Singhapakdi *et al* 1996).

Table 1 shows the breakdown of the characteristics of the respondents. Sixty-nine percent of the respondents were female and 31 percent were male. The respondents were relatively young, with 82.7% of the sample being between the ages of 16 to 25. A significant percentage of students (82.7%) were Christians. This was expected, given the strong Anglophonic influence in Barbados due to its colonial past. The significant proportion of Christians in the sample may pose a limitation on the findings regarding the impact of religious affiliation on moral intensity perceptions. Hence, these findings should be interpreted with caution.

### *Instrument*

The first section of the questionnaire dealt with demographic information from which age, gender, religious affiliation and religious commitment were elicited in order to examine whether these variables impacted on perceptions of moral intensity. Age was broken down into four main categories: '16-20 years', '21-25 years', '26-35 years', and 'over 35 years'; religious commitment was rated on a 6-point Likert-type scale, from 0 to 5, where 0 represented 'no religious commitment' and 5 was 'extremely committed'.

Religious affiliation was measured by asking whether the respondent was either Christian, from other religious affiliations or had no religious affiliation.

**Table 1**  
**Sample Characteristics**

DEMOGRAPHICS	Frequency	Percentages
	N	%
<b>Gender</b>		
Male	32	31
Female	72	69
Total	104	100
<b>Age</b>		
16-20 years	41	39.4
21-25 years	45	43.3
26-35 years	14	13.5
Over 35 years	4	3.8
<b>Religious Affiliation</b>		
Christian	86	82.7
Other religions	13	12.5
No religion	5	4.8
<b>Mean number of ethics courses completed</b>	2.83	
<b>Mean number of accounting courses completed</b>	4.99	
<b>Mean number of auditing courses completed</b>	1.01	

Source: Authors' Compilation.

The mean number of auditing and accounting courses done by the students was approximately 1 and 5, respectively, and the mean number of courses containing ethics done by the students was approximately 3. This indicates that the students had been reasonably exposed to accounting and auditing concepts and had some degree of sensitivity to ethical dilemmas. Research has shown that a student's level of ethical exposure could contribute to the student's level of moral awareness (Ludlum and Moskaloinov, 2005).

### *Scenarios Used*

The study utilised four scenarios to assess perceived moral intensity (see Appendix A). Three of the scenarios were specifically related to auditing and accounting issues (scenarios 1 to 3), whereas one was related to a general non-audit-related issue (scenario 4). Each scenario was an adaptation of vignettes used in other empirical studies: Scenarios 1 and 3 were adapted and modified from Ziegenfuss and Singhapakdi (1994); Scenario 2 was adapted and modified from Rau and Weber (2004) while, Scenario 4 was adapted and modified from Vitell *et al* (2003). This approach [the use of scenarios] is favoured, (Carlson *et al* 2002), compared to other approaches which only highlight actions or behavioral intentions (Barnett *et al*, 1994). This approach allows for the issues to be presented in a 'three-dimensional' way, which is reflective of the real world where issues are seldom 'black and white.' Several studies on ethical decision-making judgments explored perceptions of the ethicality of scenarios to assess moral intensity (Vitell *et al* 2003; Silver and Valentine, 2000; Carlson *et al* 2002; Deconinck, 2004) and ethical reasoning (Barnett *et al* 1994; Ogilby, 1995).

Jones' (1991) moral intensity construct specified the magnitude of consequences, probability of effect, temporal immediacy, concentration of effect, proximity and social consensus (see items in Appendix B). Thus, these six categories were asked in relation to each scenario, to determine students' perceived moral intensity about the ethical dilemma within the given scenario. Singhapakdi *et al*'s (1996) scale was used to measure moral intensity. Items on this scale were measured on a seven-point Likert-type scale, ranging from 1 for strongly disagree to 7 for strongly agree.

### *Statistical tests*

Tests were conducted to examine the normality of the data. Results from Kolmogorov-Smirnov tests were all non-significant for the variables, indicating that the data were normally distributed (all  $p$ s > .05). Thus, the use of parametric tests was deemed appropriate. Independent sample t-tests were used to analyse the effects of gender on perceptions of moral intensity.

One-way ANOVA was used to analyse the effects of age and religious affiliation on perceptions of moral intensity. With regards to religious commitment, a Pearson correlation test was used to determine the relationship between religious commitment and perceptions of moral intensity.

To examine the dimensionality of moral intensity within each of the four scenarios, principal components analysis (with a varimax rotation) was conducted to calculate the factor loadings of scale items. The findings strongly supported a single dimensional scale.

Similar to Vitell *et al* (2003), the six dimensions were combined to constitute a summary measure of moral intensity for each scenario. This was deemed appropriate, given the theoretical assumption (Jones, 1991) that moral intensity is a combination of the six dimensions. Factor loadings were deemed acceptable.<sup>1</sup>

### **Results**

Students were asked to rate four scenarios on the six dimensions of Jones' (1991) moral intensity construct. Scores were aggregated to form an overall mean score of perceived moral intensity on each scenario. Table 2 shows the overall means and standard deviations for the four scenarios. Students expressed high levels of moral intensity on all scenarios.

However, students expressed the highest level of moral intensity ( $M = 5.87$ ) on scenario 4. Students' high moral intensity perceptions of scenario 4, which is non-audit-related, may be linked to the issue of self-preservation, given the 'health threatening' nature of the scenario. In addition, this non-audit-related scenario would require less technical knowledge and interpretation with respect to ethical decision making.

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<sup>1</sup> See Appendix C for reliabilities of all scales and factor loadings of scale items.

**Table 2**  
**Descriptive Statistics for Overall Perceived Moral Intensity  
 for the Four Scenarios**

Scenarios	Mean	Standard Deviation
Scenario 1	5.68	0.99
Scenario 2	5.75	0.96
Scenario 3	5.12	1.19
Scenario 4	5.87	1.21

Source: Authors' Compilation

#### *Gender and Perceptions of Moral Intensity*

Independent t-tests were conducted to examine whether significant differences in perceived moral intensity with respect to the four scenarios exist between male and female accounting students. Table 3 shows the results of perceived moral intensity by gender. There were no significant gender differences in perceived moral intensity for the three audit-related scenarios. However, a significant gender difference emerged for scenario 4, which was a non-audit-related scenario. Females ( $M = 6.09$ ) expressed higher levels of perceived moral intensity than males ( $M = 5.36$ ) on this scenario, [ $t(103) = -2.52, p < .05$ ]. The significant result for the non-audit-related scenario may indicate that ethical decision making is issue contingent.

Other studies investigating ethical decision-making suggest that the moral development of females may be faster, compared to that of males (Barnett *et al*, 1994; Buckley *et al*, 1998). Silver and Valentine (2000)

further explained that women tend to be more caring and supportive than males. Gilligan (1977) has also argued that females are more care-oriented, whereas males are more justice-minded. Hence, women would be more likely to be sensitive (that is, be morally intense) to unethical situations.

**Table 3**  
**Independent Samples T-test of the Impact of Gender on Perceptions of Moral Intensity**

	Male (n=32)		Female (n=72)		t	p
	Mean	SD	Mean	SD		
Scenario 1	5.52	1.14	5.76	0.93	-1.126	0.263
Scenario 2	5.84	0.99	5.72	0.95	0.627	0.532
Scenario 3	4.95	1.04	5.20	1.25	-0.974	0.332
Scenario 4	5.36	1.52	6.09	0.96	-2.519	0.016

Source: Authors' Compilation

Note: SD=Standard Deviation

#### *Age and Perceptions of Moral Intensity*

A one-way analysis of variance (ANOVA) was used to examine age differences in perceived moral intensity. Table 4 shows the results of this test. It was found that there were no significant differences among age groups in perceptions of moral intensity on all four scenarios (all  $p$ s > .05). This finding is consistent with those in previous research which indicated that age played an insignificant role in determining ethical decisions and behaviour (Barnett *et al*, 1994; Knotts *et al*, 2000).

**Table 4**  
**One-way ANOVA Results of the Impact of Age on Moral**  
**Intensity**

Age	Scenario 1		Scenario 2		Scenario 3		Scenario 4	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<b>16-20</b>	5.76	1.06	5.81	0.92	5.07	1.22	5.77	1.05
<b>21-25</b>	5.57	1.08	5.69	0.97	5.22	1.26	5.95	1.33
<b>26-35</b>	5.85	0.56	5.82	1.15	4.95	1.05	5.93	1.41
<b>Over 35</b>	5.63	0.75	5.71	0.89	5.21	0.46	5.75	0.87
<b>Overall</b>	5.69	1.00	5.75	0.96	5.12	1.89	5.87	1.21
<b>F-value</b>	0.381		0.136		0.235		0.183	
<b>P-value</b>	0.767		0.938		0.872		0.906	

Source: Authors' Compilation

Note: SD=Standard Deviation

However, the finding is inconsistent with that of Silver and Valentine (2000) who found marginal age differences in perceived moral intensity among college students. One explanation for the non-significant result in the current study can be based on the considerable proportion of young persons in the sample. Future research should further investigate the relationship between age and perceived moral intensity using both undergraduate and postgraduate (that is, who are likely to be older and more mature) student samples.

*Religious Affiliation and Perceptions of Moral Intensity*

Table 5 shows the results of the one-way ANOVA, examining the differences among students of different religious affiliations (Christians, other religions, and no religion) in perceptions of moral intensity. There were no significant differences in perceptions of moral intensity by religious affiliation on the three audit-related scenarios (all  $p$ s > .05). However, with respect to scenario 4, Christians ( $M = 5.98$ ) perceived greater moral intensity than those with 'no religion' ( $M = 5.62$ ) and those in 'other religious groups' ( $M = 4.67$ ), [ $F(2, 101) = 3.25, p < .05$ ]. This finding is not surprising, as it has been argued that the principles of Christianity are consistent with correct ethical decision-making (Ji, 2004). The finding is also consistent with that of Brown and Annis (1978) who discovered that religious affiliation influenced ethical beliefs.

However, the finding conflicts with previous arguments regarding the role of religion in ethical decision making. Notably, Kohlberg (1969) maintained that the level of moral judgment is independent of religious beliefs, and previous studies have found no relationship between religious affiliation and moral development (for example, Wahrman, 1981). As stated previously, the current finding should be interpreted with caution, given the ratio of Christians to the other groups in the sample. Future research could explore the impact of religious affiliation on perceptions of moral intensity, using more balanced samples comprising different religious groups.

*Religious Commitment and Perceptions of Moral Intensity*

Pearson correlations were computed to examine the relationship between religious commitment and perceived moral intensity for the four ethical scenarios (see Table 6). There were no significant correlations between religious commitment and perceptions of moral intensity on audit related scenarios 1 to 3 (all  $p$ s > .05). These non-significant results may suggest an increased likelihood of a Type 1 error in the association between religious commitment and perceptions of moral intensity on the scenarios.

**Table 5**  
**One way ANOVA Results of the Impact of Religious Affiliation  
on Moral Intensity**

Religion	Scenario 1		Scenario 2		Scenario 3		Scenario 4	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<b>Christian</b>	5.69	0.93	5.70	0.99	5.05	1.19	5.98	1.11
<b>No religion</b>	5.56	1.44	6.12	0.60	5.44	1.07	5.62	1.35
<b>Other religions</b>	5.87	0.98	5.77	1.23	5.63	1.37	4.67	1.93
<b>Overall</b>	5.69	1.00	5.75	0.96	5.12	1.19	5.87	1.21
<b>F-value</b>	0.179		1.057		1.091		3.252	
<b>P-value</b>	0.837		0.351		0.340		0.043	

Source: Authors' Compilation

Note: SD=Standard Deviation

However, religious commitment was positively and significantly related to perceptions of moral intensity on the non-audit-related scenario 4 ( $r = .20$ ,  $N = 104$ ,  $p < .05$ ). This finding is consistent with the results of Knotts *et al* (2000) and Kennedy and Lawton (1998) who found that persons with strong religious commitment were more likely to exercise high ethical judgments. Wimalasiri (2001) highlighted that the degree of religiosity is significantly related to moral reasoning, suggesting that persons who are committed to religious ideals and values are more likely to hold high moral beliefs.

**Table 6****Correlations between Religious Commitment and Moral Intensity**

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Commitment
Scenario 1	1				
Scenario 2	0.389**	1			
Scenario 3	0.381**	0.557**	1		
Scenario 4	0.242*	0.277**	0.242*	1	
Commitment	0.118	-0.098	0.017	0.201*	1

Source: Authors' Compilation

Note\* p &lt; 0.05; \*\* p &lt; 0.01

**Conclusion**

It was found that factors such as gender, age, religious affiliation, and religious commitment did not significantly influence perceived moral intensity on audit-related issues among final year undergraduate accounting students in the sample. This is especially relevant where accounting and auditing students are likely to encounter ethical dilemmas relating to accounting and auditing issues, in comparison to general ethical issues. This may suggest that proper training and exposure to ethical issues and the required standards of conduct could be used to develop ethically conscious professionals and assure ethical practices among the future accounting and auditing professionals of this sample. It was found that with respect to the non-audit-related scenario 4, gender, religious affiliation and commitment significantly influenced perceptions of moral intensity. However, age did not have a significant impact on perceptions of moral intensity with respect to scenario 4.

These findings confirm, to some degree, Jones' (1991) proposition that ethical decision-making is issue-contingent. Particularly, differences in moral intensity perceptions (among accounting students) were more pronounced on the non-audit-related issue than on issues relating to the profession. These findings may suggest that students are clearer on actions to take when issues have been codified (for example, audit professional codes of conduct). However, it would appear that issues outside of the professional codes of conduct are not so clear and are subject to one's interpretation and possible values system.

#### *Implications and Future Research*

Given the above, educators need to consider that ethical decision-making among students is issue contingent. Therefore, they must recognise the need to improve or extend the ethics curriculum to address all aspects of ethics that include both professional and non-professional issues. This will ensure high ethical sensitivity to all types of moral issues. Thus, educators could implement more ethical case analyses and more discussion fora on a wide range of ethical issues in the auditing and accounting courses to prepare such students for the world of work. This is important to auditing and accounting students who will be the future auditors and accountants, and need to be educated to deal with various ethical dilemmas that may occur in the workplace, both professional and non-professional related.

The generalisability of these findings may be limited due to the non-probability sampling design and the relatively small sample size. Future research should consider using a probability sampling design on larger samples to achieve representativeness. Another limitation may be the possibility of social desirability bias, given the sensitive nature of the study. Further research should also look at fully understanding a wide range of factors that may enhance perceptions of moral intensity among students, particularly in other disciplines. This may involve the adoption of qualitative methodologies, which can serve to address the limitations of this quantitative study.

## APPENDIX A

### Scenarios

#### *Scenario 1 – ‘Overstatement’*

As a result of completing a financial audit of a company, an auditor determines that the company substantially overstated its operating results. The adjustment required to restate the company’s operating result properly will cause the company manager’s bonus to be substantially reduced. The auditor learns that the financial controller was told to overstate the operating results by the company’s manager.

**Action:** The auditor does not report the cause of the overstatement.

(Adapted from: Ziegenfuss, D.E. and Singhapakdi, A. (1994). ‘Professional values and the ethical perceptions of internal auditors’, *Managerial Auditing Journal*, 9(1):34-44).

#### *Scenario 2 – ‘Chris’*

Chris works for an auditing firm and conducted an annual audit of a machinery manufacturer that was about to go public. During the audit, Chris discovered that the firm had received a large loan from the local savings and loan association. It was illegal for a savings and loan association to make a loan to a manufacturing firm; they were restricted by law to mortgages based on residential real estate. Chris took the working papers and a copy of the ledger showing the loan to the boss, the partner in charge of the auditing office. The boss listened to Chris, and then told Chris, ‘I will take care of this privately. We simply cannot afford to lose a client of this status. You put the papers you have through the shredder.’ If Chris were to shred the papers, this would be in direct violation of the principle of “Integrity” of the AICPA’s Code of Professional Conduct and Bylaws.

**Action:** Chris shreds the papers.

(Adapted from: Rau, S.E. and Weber, J. (2004). ‘The Impact of the Enron Mega-event on Auditors’ Moral Reasoning’, *The Journal of Accounting & Finance Research*, 12(6):106-119).

*Scenario 3 – 'Non compliance'*

The draft of an audit report contains some comments unaddressed from previous reports, and a few appearing for the first time. All of the comments concern instances of non-compliance with company policies, none of which is serious in itself but together they indicate a lack of concern for the company's policies and procedures.

**Action:** All 'first-time' comments are removed from the audit report by the auditor because the auditor feels the client should be given an opportunity to correct the non-compliance.

(Adapted from: Ziegenfuss, D.E. and Singhapakdi, A. (1994). 'Professional values and the ethical perceptions of internal auditors', *Managerial Auditing Journal*, 9(1):34-44).

*Scenario 4 – 'Hazardous waste'*

A plant manager is concerned that the production process for a new product is putting too much hazardous waste into a nearby river even though the amount is not in excess of current government regulations.

**Action:** The manager decides to ignore the problem.

(Adapted from: Vitell, S.J., Bakir, A., Paolillo, G.P., Hidalgo, E.R., Al-Khatib, J. and Rawwas, M.Y.A. (2003). 'Ethical Judgments and Intentions: A Multinational Study of Marketing Professionals', *Business Ethics: A European Review*, April, 12(2): 151-171.

**APPENDIX B**

**Moral Intensity Items**

**Magnitude of Consequences**

The overall harm (if any) done as a result of the action would be very small.

**Social Consensus**

Most people would agree that the action is wrong.

**Probability of Effect**

There is a very small likelihood that the action will actually cause any harm.

**Temporal Immediacy**

The action will not cause any harm in the immediate future.

**Proximity**

If you were a personal friend of one of the person(s) harmed, the action would be wrong.

**Concentration of Effect**

The action will harm very few people, if any.

**APPENDIX C****Scale Items and Reliabilities**


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	<b>Alpha</b>	<b>Factor Loading</b>
<b>Moral Intensity- Scenario 1</b>	<b>0.712</b>	
The overall harm (if any) done as a result of the action would be very small.*		0.731
Most people would agree that the action is wrong.		0.299
There is a very small likelihood that the action will actually cause any harm.*		0.633
The action will not cause any harm in the immediate future.*		0.673
If you were a personal friend of the person harmed, the action would be wrong.		0.452
The action will harm very few people, if any.*		0.825
<b>Moral Intensity- Scenario 2</b>	<b>0.706</b>	
The overall harm (if any) done as a result of the action would be very small.*		0.792
Most people would agree that the action is wrong.		0.323
There is a very small likelihood that the action will actually cause any harm.*		0.847
The action will not cause any harm in the immediate future.*		0.714
If you were a personal friend of the person harmed, the action would be wrong.		0.318
The action will harm very few people, if any.*		0.828

	Alpha	Factor Loading
<b>Moral Intensity- Scenario 3</b>	<b>0.763</b>	
The overall harm (if any) done as a result of the action would be very small.*		0.813
Most people would agree that the action is wrong.		0.637
There is a very small likelihood that the action will actually cause any harm.*		0.803
The action will not cause any harm in the immediate future.*		0.751
If you were a personal friend of the person harmed, the action would be wrong.		0.363
The action will harm very few people, if any.*		0.713
<b>Moral Intensity- Scenario 4</b>	<b>0.792</b>	
The overall harm (if any) done as a result of the action would be very small.*		0.617
Most people would agree that the action is wrong.		0.766
There is a very small likelihood that the action will actually cause any harm.*		0.836
The action will not cause any harm in the immediate future.*		0.633
If you were a personal friend of the person harmed, the action would be wrong.		0.546
The action will harm very few people, if any.*		0.824

\* denotes a reverse-scored, negatively worded item  
Source: Author's Compilation

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## 'A Graduate in Every Household': The Potential Impact of a Rise in the Number of University Graduates on Output in Barbados

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Policymakers and education officials have set for Barbados the lofty goal of a university graduate in every household by 2020. This study uses annual data from 1970 to 2004 to provide a historical assessment of university level education on output, as well as forecasts of the likely effect that having a graduate in every household would have on national output. The essay estimates that if the target of a graduate in every household is achieved, it could add an additional 1.2 percentage points on annual real output growth.

**Keywords:** education, output, university enrolment.

### **Introduction**

Both policymakers and education officials have expressed the goal of obtaining at least one graduate in every Barbadian household by 2020. His Excellency, Sir Clifford Husbands, Governor General of Barbados, in the 2003 Throne Speech stated that:

*'The development of Barbados' most valuable resource, the talents of our people, is fundamental to my Government's central objective of transforming Barbados into a fully developed society in the shortest possible time. My Government*

*is [therefore] firmly committed to the goal of having at least one university graduate in every family by the year 2020.'*

More recently, Professor Hilary Beckles (Barbados Advocate, 2005) at the Independence Day celebrations of the Springer Memorial Secondary School stated that one of the goals of the University of the West Indies was to ensure that:

‘there is at least one graduate in every household in the country by the year 2020, and then, after that, aim for having every individual in every family holding a university degree in one field or another. We have adopted that strategy because we have recognised that the most reliable way to lift our families out of poverty is through the process of professional development *via* higher education.’

The impact that education has on economic output has a long established tradition in economics. Adam Smith (1776), the father of modern economics, notes in the introduction to the *Wealth of Nations* that ‘*the annual produce of a nation .... depends on the skill, dexterity, and judgment with which its labour is generally applied.*’ This early observation has been verified in numerous studies since.

Boamah (1996) estimates that human capital contributes between 20% and 48% of growth in Barbados. The United Nations Educational, Scientific and Cultural Organisation in their *Education for All Global Monitoring Report* (UNESCO, 2005) provide a survey of previous international research examining the link between education and output and conclude that there is ample evidence to show that the quantity and quality of education improves income and also generates various other private and public social returns.

There are only a few studies, however, that examine the level-specific effects of education, that is, the contribution of primary, secondary and tertiary education to national output. Barro and Sala-i-Martin (1995) were among the first researchers to look for these level-specific effects. The authors, using a panel of developed and developing countries, regress the growth rate of GDP per capita on initial income, a set of control variables and four measures of educational attainment: the average years of male secondary, the average years of male higher schooling, the average years of female secondary schooling and the average years of female higher schooling. Barro and Sala-i-Martin report that the male education variables

had a jointly significant impact on growth, while the female variables, in some instances, had a negative sign. The authors attributed this finding to discrimination in labour markets and collinearity in the education variables.

Building on previous research, Petrakis and Stamatakis (2002) also use a panel data approach to empirically test the education-growth relationship, but they attempt to identify whether the relationship differs for developed and developing states. The results presented in the study suggest that the education-growth relationship does vary with the country's level of development. In less developed countries, primary education is more important, while the effects of higher education in more developed countries takes precedence.

In cross-country regressions, Papageorgiou (2003) empirically estimates the impact of primary and higher level education on the components of growth. The author reports that primary education contributes mainly to the production of final output, whereas higher level education plays a leading role in innovation and technological development.

Loening (2005), the only study reviewed that uses time series techniques, investigates the impact of human capital on economic growth in Guatemala during 1951-2002 using an error-correction methodology. The author reports, in line with previous studies, that a better-educated labour force has a positive and significant impact on economic growth, with primary and secondary education being the most important for productivity growth.

This essay builds on this previous research to provide a historical assessment of university level education on output in Barbados as well as forecasts of the possible effect that a graduate in every household would have national output.

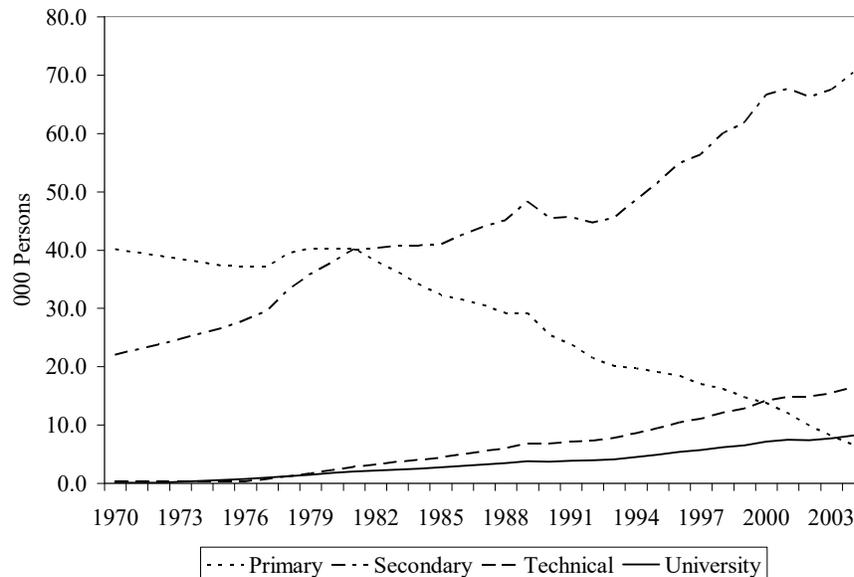
The structure of the essay is as follows. After the introduction, the data used in the study is presented in Section 2. Section 3 gives the historical estimates of university education on output in Barbados and also provides forecast of the impact of various scenarios of educational attainment on output. Section 4 summarises the main findings of the study and provides policy recommendations.

### Data

This article evaluates the education-output relationship by using data on the number of employees with university level education. An annual series on employment disaggregated by education is taken from the Continuous Household Sample Survey of the Barbados Statistical Service for various years. The surveys provided estimates of the proportion of the employed labour force with Primary, Secondary, Technical and University level education. Figure 1 presents the series on the distribution employment on educational attainment. The figure shows that at the end of 2004 most members of the labour force had received some formal secondary-level instruction.

**Figure 1**

#### Distribution of Employed Labour Force by Educational Attainment



Source: Barbados Statistical Services Department and Author's Calculations.

In contrast, for most of the 1970s the labour consisted mainly of primary level educated workers. The number of persons with university-level qualifications has risen significantly since the early 1990s. Since 1990 the number of employees with university level education rose to 10% per year approximately.

A “so-called” quality-adjusted measure of labour, to account for the educational attainment of the labour force, is calculated as the weighted average of labour with different levels of education:

$$z_t^l = \sum_{j=1}^4 w_j l_j \quad (1)$$

where the weights  $w_j$  are the relative wages in 2000, with  $l_j$  representing employees at the primary, secondary, technical or university levels. The data on wages by educational attainment is taken from Griffith (2001).

The stock of capital is notoriously difficult to measure. Therefore, capital is assumed to accumulate according to the following relation:

$$k_{t+1} = (1 - \delta)k_t + I_t \quad (2)$$

where  $\delta$  is the rate of depreciation and  $I$  is gross investment. Using firm-level data of companies listed on the Barbados Stock Exchange from the database used by Craigwell, Maxwell and Moore (2005), the authors find that  $\delta$  can be adequately proxied using a value of 0.02 for buildings and 0.08 for machinery. Nominal estimates of investment in machinery and equipment and investment in structures are available from the National Accounts Statistics published by the Barbados Statistical Service. Equation (2) is therefore a weighted average of the stock of machinery and buildings. The deflator used for investment in structures is the housing component of the retail price index, while the export price index for machinery from the US is employed to deflate the equipment and machinery investment series, given that most capital goods are imported from this country.

To obtain an estimate of the change in the quality of capital,  $z^k$ , the approach proposed by Christensen, Cummings and Jorgenson (1980) is applied:

$$\ln z_t - \ln z_{t-1} = \sum_{i=1}^2 v_i [\ln k_{i,t-1} - \ln k_{i,t-2}] - [\ln k_{t-1} - \ln k_{t-2}] \quad (3)$$

where the weights  $v_i$  are the relative capital rental rates. Since data on the

rental rates of capital ( $R$ ) are not available for Barbados, they were derived *via* the following relation:

$$R_{i,t} = (1 + \rho_t)P_{i,t} - (1 - \delta)P_{i,t+1} \quad (4)$$

where  $\rho$  is the economy-wide real interest rate, proxied by the total loan rate minus the inflation rate, and  $P$  is the price index for capital item  $i$ .

### Education and Output

This section of the article presents the empirical estimates of education on output in Barbados. Following Loening (2005), one can estimate a production function of the following formula:

$$\log y_t = \log A_t + \alpha \cdot \log k_t + \beta \cdot \log z_t + u_t \quad (5)$$

where  $y_t$  is real gross domestic product,  $A_t$  is the level of technology or total factor productivity,  $k_t$  is the quality-adjusted capital stock and  $z_t$  is the quality-adjusted labour input. The author utilises an error-correction model to account for unit roots which are present in most macroeconomic time series. The estimated model therefore takes the following form:

$$\Delta \log y_t = c + \gamma_1 \Delta \log k_t + \gamma_2 \Delta \log k_{t-1} + \gamma_3 \Delta \log z_t + \gamma_4 \Delta \log z_{t-1} + \lambda_1 \log y_{t-1} + \lambda_2 \log k_{t-1} + \lambda_3 \log z_{t-1} + \varepsilon_t \quad (6)$$

The  $\lambda_i$  parameters can be used to calculate the required elasticities of quality-adjusted labour and capital with respect to output. The coefficient  $\lambda_1$  gives a measure of the speed of adjustment from disequilibrium. This approach, rather than the Johansen (1991) cointegration framework, is chosen due to the relatively small sample size.

Table 1 shows the estimated coefficients for Equation (6). The adjusted R-squared of the error-correction model suggests that it provides a reasonable specification of output dynamics in Barbados. The test statistics do not indicate any serial correlation, heteroskedasticity or non-normality at conventional levels. The loading coefficient is highly significant and suggests a moderate speed of adjustment towards the long-run growth path, equal to about 24 percent of the deviations *per* year, similar to that obtained by Loening (2005) for Guatemala.

**Table I**  
**Quality-Adjusted Production Function for Barbados, 1970-2004**

Explanatory Variables	Overall
Constant	4.385 (1.699)*
$\Delta k_t$	0.558 (0.116)*
$\Delta k_{t-1}$	-0.451 (0.104)*
$\Delta l_t$	0.263 (0.041)*
$\Delta l_{t-1}$	0.017 (0.046)
$y_{t-1}$	-0.245 (0.079)*
$k_{t-1}$	0.072 (0.044)
$l_{t-1}$	0.109 (0.043)*
Long-run elasticity of Capital	0.294
Long-run elasticity of Labour	0.445
Adjusted R-squared	0.870
S.E. of Regression	0.013
Jarque-Bera Residuals	0.597 [0.742]
Serial Correlation LM	0.058 [0.972]
White Heteroskedasticity Test	15.070 [0.657]
Observations	33

Notes:

- (1) Standard errors are given in curled parentheses below coefficients.
- (2) \* indicates significance at the 5 percent level of testing.
- (3) P-values are given in square brackets.

This implies that after a given shock it would take, on the average, approximately 5 years to reach the level of output consistent with long-run growth. The estimated elasticities are in line with those reported by Bosworth, Collins and Chen (1996) for developing countries and Boamah (1996) for Barbados: a 1 percent rise in quality adjusted capital boosts output growth by 0.3 of a percentage point, while a 1 percent increase in quality-adjusted labour leads to an expansion in output growth of about 0.5 of a percentage point.

One can then use Equation (1), forecasts for the quality-adjusted labour and the long-run coefficient estimates to predict the potential impact of a rise in the proportion of the employed labour force with a university degree:

$$y^f = 0.294k^f + 0.445z^f \quad (7)$$

where  $f$ , indicates forecast. Note that the other categories of labour are assumed to be unchanged, while the number of graduates rises in line with the simulation. For this simulation, the author assumes an unchanged capital stock.

Table 2 presents the estimated impact of various scenarios for the number of university graduates in Barbados by 2020 on output. The values provided in the table are the additional increases in growth. If the proportion of the employed labour force with a university rises to 20% by 2020, this will boost current projections for real GDP by a cumulative 8.6% or about half of a percentage point per year. The scenario that matches the goal of graduate in every household would be analogous to 50% of the employed labour force having a university degree by 2020. The table shows that in this instance, real GDP rises by an *additional* cumulative 19.5% or about 1.2% per year. If this scenario is achieved, it would imply a significant improvement in the standard of living of not only those individuals with a university degree but the entire society due to the rise in national output.

### **Conclusions and Policy Recommendations**

The present administration and education officials have set the goal of a university graduate in every Barbadian household by 2020. It is expected that this target, if attained would lead to significant gains in the standard of living of average Barbadians and a reduction in poverty.

**Table 2**  
**Projections for University Graduates and Output Growth**

	Graduates per Household			
	70%	80%	90%	100%
<b>Quality Adjusted Employed Labour Force</b>				
Between 2004 and 2020	0.192	0.274	0.356	0.438
Annual Average	0.012	0.017	0.022	0.027
<b>Output</b>				
Between 2004 and 2020	0.086	0.122	0.158	0.195
Annual Average	0.005	0.008	0.010	0.012

Source: Author's Calculations

This study, using annual data from 1970 to 2004, provides a historical assessment of university level education on output in Barbados as well as forecasts of the likely effect that having a graduate in every household would have on national output.

A production function is estimated, where real GDP is regressed on quality-adjusted series for labour and capital. The capital and labour elasticities from this model are in line with those obtained for other developing countries and a previous study for Barbados, and suggests that a 1 percent increase in quality adjusted labour leads to a rise in annual output growth of about 0.5 of a percentage point. Using the elasticity of quality adjusted labour and various scenarios for the proportion of the employed labour force, the study estimates that if the target of a graduate in every household is achieved, real GDP could rise by an *additional* cumulative 19.5% or about 1.2% *per* year between 2004 and 2020.

While the feasibility of having a graduate in every household is beyond the scope of this study<sup>1</sup> it is certainly an important factor in the

<sup>1</sup> for a discussion of this issue see Peters and Best (2005),

calculations above. Indeed, the above calculations implicitly assume that all university graduates will find jobs. However, Wolf (2002) argues that expanding higher education is not always desirable. A rise in the number of persons graduating from university could lead to credential inflation, since employers know that they can stipulate higher qualifications than the job actually requires. This can result in less qualified but competent people falling into lower skill jobs or unemployment, that is, 'diploma disease'. In such scenarios, the contribution of higher university enrolment would be lower. However, given that the gross enrolment ratio for Barbados is still only around 33% compared to 70% in more developed countries, this scenario seems some way off at present.

The paper also assumes that the quality of graduates leaving UWI does not change. This is important, since the gains from *quantity* can easily be outweighed by the losses in terms of *quality*. To ensure such losses do not occur, the UWI may need to enhance its quality assurance programme by investing more funds in student resources (that is, library resources, Information Technology resources to name a few) and support for staff. Greater energies need to be invested in departmental support and mentorship. Each department should have an advisor for women, men, overseas students, undergraduates and post-graduates. This can be done by reducing teaching load on staff that are part of this mentorship programme so that they can allocate this time to student support and counselling. The agenda for staff improvement would of course require the university to hire more teaching and support staff, but should also aim to improve the quality of teaching, administration and research. Consideration could be given to the mentoring of newly appointed staff, basic international comparison exercises to ensure that courses are being taught using textbooks similar to those employed in the same course at another university, blind peer review of courses and greater support for innovative research.

It is also important that the supply of graduates meets the demand in particular areas of study. For example, if the University produces 20 B.Sc. Accounts graduates, but there is only demand for 10 graduates, this leads to an oversupply and can result in the remaining 10 graduates taking up lower level positions and/or unemployment. The matching of supply with demand need not rely on monetary incentives. Simply providing potential students (sixth form students and Barbados Community College students) information

on the potential job market after they graduate should encourage more students to pursue careers in those areas that are in high demand.

The results presented in this study are encouraging: they show that Barbados, in the past, has benefitted from the high level of educational attainment of its labour force. Moreover, if the nation is able to achieve its lofty ambitions, it could move the country into a new era of development. However, it is important that the university focuses on quality, in addition to quantity, to ensure that Barbados obtains the maximum benefits from the planned expansion in the supply of graduates.

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## Commentary

### The Nature and Extent of Agricultural Export Diversification in Belize and Dominica

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Historically, agriculture in the Caribbean has been dominated by the production and export of traditional primary commodities (for example, bananas and sugar in Belize). In recent times, various countries have witnessed a marked reduction in the contribution of agriculture to GDP, attributed to factors such as contracting output as a result of natural disasters and other causes; increasing competition from imports and substitute goods; and unfavorable international market conditions, for example, low prices and obscured demand (CARICOM 1990).

One of the major driving forces behind agricultural export diversification initiatives in the Caribbean has been the threat to eliminate preferential access to the European market for various traditional commodities such as bananas and sugar. Opponents of the Lomé Convention have argued that preferential treatment to ACP agricultural commodity exports may have promoted over-specialisation in a small range of primary products, thereby discouraging the diversification of the countries' agricultural exports. As important as preferences may be, an even greater challenge facing Caribbean countries as they seek to diversify their export agriculture relates to phytosanitary and sanitary restrictions imposed by importing countries.

Usually, these measures result in the creation of a list of agricultural commodities that are permitted entry into the U.S. market.<sup>1</sup> Furthermore, the United States Congress has directed that the principal negotiating objectives with respect to agriculture should be to achieve more open and fair trading conditions for agricultural commodities by developing and strengthening trade rules while clarifying those that distort imports and exports; and creating a freer and more open global trading structure for agricultural commodities, among others (Lewis 1991). Perhaps, it is within this context that diversification takes on greatest significance for Caribbean countries and has prompted the implementation of various initiatives aimed at boosting the diversification of export agriculture.

Given the continuing pattern of uncertainty in the terms of trade experienced by Caribbean countries *vis-à-vis* agricultural exports, particularly primary commodities, many governments have recognised the urgency to diversify their agricultural sectors. Several projects have been identified as important mechanisms for fostering diversification of export agriculture at both the country-specific and Caribbean-wide levels.<sup>2</sup>

Notwithstanding these developments, the degree to which agricultural export diversification has occurred in Caribbean countries has received little attention empirically. Within this context, the purpose of this commentary is to determine the nature and extent of agricultural export diversification in the Caribbean countries of Belize and Dominica since 1970.

### **Theoretical Aspects of Agricultural Diversification**

Agricultural diversification has no unique meaning (Schmitz 1989). Schmitz (1989) offered two alternative definitions of agricultural diversification found in the literature. Agricultural diversification is a process whereby more and more activities are added either to a single farm enterprise or to a region. For example, through irrigation, diversification could take place if a wider set of production activities is added to the resource base over time. For

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<sup>1</sup>Lewis (1991) contained a list of admissible fruits and vegetables from Trinidad and Tobago to the U.S. market.

<sup>2</sup>CARICOM (1990) identified several potential projects and programs deemed necessary for fostering agricultural diversification in Caribbean countries. Evidence of actual implementation is lacking.

example, if the production of livestock adds to grain activities as a result of irrigation, then, irrigation would have generated agricultural diversification.

An alternative view considers agricultural diversification as a process that creates greater income stability to producers than they would otherwise have realised. Hence, if a country engages in, for example, five activities, all of which are correlated in the same manner, then, the country is not diversified since increases in prices will result in higher profitability for all industries. A reduction in prices will make all of the industries unprofitable at the same time. Therefore, a country that engages in several agricultural activities is not necessarily diversified. Real diversification requires some of the activities to be negatively correlated. In this scenario, growth in one industry should generate opposite characteristic in other industries.

Agricultural diversification is often conceptualised as an enviable outcome of the dynamics of economic development or the result of intentional policy option (McCalla and Valdés 1999). Agricultural diversification is a typical response to instability at the farm level. With regards to exports, agricultural diversification is a potentially efficient mechanism for diminishing the impact of risk on producers' welfare (McCalla and Valdés 1999). The inclusion of new products to the mix of commodities exported, the movement from primary to processed commodities and increasing the market share of existing products should all redound to a reduction in the variance of the value of production at both the farm and industry levels. The extent of the reduction depends on the correlation between different prices.

According to McCalla and Valdés (1999), if the correlation is  $-1.0$ , the variance of the portfolio will be lowered to zero (0); if it is  $+1.0$ , the variance of the portfolio is unaffected. For all scenarios in between, some reduction in the variance will be obtained. McCalla and Valdés (1999) suggested that agricultural diversification provides two advantages:

- (1) it expands the production possibility set, thereby generating more opportunities for income generation and employment creation and
- (2) it lowers the risk of having all of one's eggs in a single basket containing a small number of commodities with potentially high covariance risk.

Furthermore, Langham and Davis (1998), and McCalla and Valdés (1999) suggested that agricultural diversification could be pursued with two broad objectives in mind:

- (1) to expand the production and distribution of commodities to satisfy a higher proportion of domestic food consumption. In this scenario, agricultural diversification is seen as a means of generating domestic food security, or as an import substitution policy and
- (2) to increase the mix of agricultural commodities targeted for the export market in order to stabilise foreign exchange earnings. In this context, agricultural diversification forms part of an export promotion strategy within the context of international trade.

Moreover, McCalla and Valdés (1999) noted that agricultural diversification is less of a policy issue in developed economies due to the presence of institutions that enable economic agents to manage risk to stabilise their consumption over time.

Caribbean countries lack these risk markets. Hence, producers of agricultural commodities absorb the full extent of price and production risks. If they are risk averse, they will increase diversification, trading off income for lower risks. Simultaneously, some producers will accept increased risks if they are associated with higher income, purchasing insurance to grant them some degree of protection.

For Caribbean countries, agricultural export diversification is an important component of export promotion, structural adjustment, and employment generation (particularly in rural communities due to the dominance of agriculture). Indeed, McCalla and Valdés (1999) cited three justifications for agricultural export diversification (all of which apply to the Caribbean):

- (1) some countries depend heavily on income from traditional agricultural exports, many of which suffer from falling world prices;
- (2) many countries are characterised by the existence of a relatively large non-tradable sector due to high transactions costs (transport and others), which would remain largely underdeveloped even if price distortions are eliminated; and

- (3) externalities and market failures, which give governments tremendous flexibility to influence the factor intensity of long run growth. Such options favor an active pro-diversification policy as an avenue for improving competitiveness.

On the basis of these rationale, an agricultural diversification strategy should be directed towards the encouragement of agricultural exports to reduce the risk of food insecurity, the implementation of trade-creating policies between low and high potential zones, and the promotion of non-traditional agricultural exports, both primary and processed commodities.<sup>3</sup>

The extent of government's participation in the promotion of agricultural export diversification remains a moot issue because of a lack of agreement in the literature. McCalla and Valdés (1999) supported the case for a proactive role of government in promoting agricultural export diversification. Government's intervention should be limited to partial funding of the cost of searching for new export markets, through a subsidy and/or direct assistance from export promotion agencies. The rationale for government's participation is that, unlike industrial products, private producers of agricultural commodities will more than likely under-invest in searching for new markets for their commodities. The cost associated with searching for additional foreign markets is often high and could lead to the free rider problem among producers since any new markets penetrated will also become accessible to other producers and exporters. These arguments are theoretically appealing, but Caribbean governments may have to take an even greater explicit role in the promotion of agricultural export diversification given anticipated changes in the EU-ACP trading agreement, and the limited resources available to producers of agricultural commodities.<sup>4</sup>

### **Measuring Agricultural Export Diversification**

Various indexes have been advanced in the literature as measures of

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<sup>3</sup>The third element of this strategy is probably the most important from a Caribbean perspective and has in fact received tremendous attention, particularly since 1984.

<sup>4</sup>Caribbean governments also have the constraint of limited resources. They have to allocate more resources to agriculture if the sector is as important to the economies as have been argued.

diversification. Many of the indexes have been applied to measuring corporate diversification (Baldwin *et al.* 2001, Hoopes 1999, Hoskisson *et al.* 1993, and Ramanujam and Varadarajan, 1989). Amin Gutiérrez de Piñeres and Ferrantino (1997), and Stanley and Bunnag (2001), have conducted studies based on the analysis of export diversification.

According to Jacquemin and Berry (1979) most diversification indexes take the general form:

$$I = \sum_{i=1}^n S_i w_i, \quad (1)$$

where  $I$  is the diversification index,  $S_i$  is the share of the  $i^{\text{th}}$  commodity,  $w_i$  is an assigned weight, and  $n$  is the total number of commodities. Assigning different weights in Equation 1 produces a variety of diversification indexes.

If  $w_i$  equals  $\ln(1/S_i)$ , the Entropy index<sup>5</sup> is obtained:

$$E = \sum_{i=1}^n S_i \ln(1/S_i). \quad (2)$$

Gollop and Monahan (1991) maintained the assertion that there is no formal production theory that suggests a unique measure of diversification. Furthermore, they noted that none of the traditional indexes satisfy all of the desired properties that might be ascribed to a perfect measure of diversification. Gollop and Monahan (1991) suggested that a measure of diversification should vary directly with the number of commodities; vary inversely with the increasingly unequal distribution of commodities across the products' mix; vary directly with the degree of dissimilarity among the commodities; apply equally well in alternative scenarios (for example, to firms, industries, or even countries); and lie, if possible, between zero and one.<sup>6</sup>

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<sup>5</sup>According to Langham and Davis (1998), the Entropy Index was developed in information theory. Others have linked the origin of the index to the work of Theil (1967).

<sup>6</sup>The entropy index satisfies all but the last condition. The upper limit of the index is the natural logarithm of the number of commodities (that is,  $\text{LN}(555) \times 100 = 631.90$  in our case).

Hence, the use of a particular index rests ultimately on the properties of a given measure in relation to the objective of the analysis and data availability. Hence, the entropy index is employed in this study.<sup>7</sup> The Entropy index analyses diversification in terms of the relative significance of each commodity in total exports. The larger the value of the index the more diversified the exports. The entropy index has been widely used in the analysis of diversification that examined related and unrelated corporate diversification within a unified framework (Palepu 1985).

The data used in calculating the entropy index were obtained from the FAOSTAT online database and composed of observations on 555 agricultural commodities' categories (primary and processed crops and livestock) defined at the four-digit level. These commodity categories have been grouped into 23 broad product aggregates (Table 1).

Information on the product classifications and their concordance with other commodity categorisation systems are available online.<sup>8</sup> Thus, the analysis can assess the degree of total agricultural export diversification, the degree to which diversification has occurred within broad product aggregates (related diversification), and the degree to which diversification has occurred across these aggregates (unrelated diversification). To accomplish this assessment, let  $k$  denote the number of product aggregates (in the current analysis  $k = 23$ ) and define

$$S_k = \sum_{i \in k} S_i \quad (3)$$

as the share of total exports in aggregate group  $k$ . The measure of export diversification *within* this group is then given by

$$E_{wk} = \sum_{i \in k} \left( \frac{S_i}{S_k} \right) \ln \left( \frac{S_k}{S_i} \right). \quad (4)$$

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<sup>7</sup>Other measures of diversification include the revealed competitive advantage index (Balassa 1965), the Ogive Statistic (Conroy 1989), the Gini Concentration index (Stanley and Bunnag 2001), and the coefficient of variation and log-variance of product group shares (Imbs and Wacziarg 2003).

<sup>8</sup><http://www.fao.org/WAICENT/faoinfo/economic/faodef/FAODEFE.HTM#COMG>.

**Table 1****Commodity group aggregates for the classification  
of agricultural exports**


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Cereals and Derived Products	Cattle & Products
Roots and Tubers	Buffaloes & Products
Sugar, Sweeteners & Derived Products	Sheep & Products
Pulses & Derived Products	Goats & Products
Nuts and Derived Products	Pigs & Products
Oil-Bearing Crops & Derived Products	Poultry & Products
Vegetables & Derived Products	Horses etc. and Products
Fruits and Derived Products	Camels & Products
Water, Ice & Beverages	Rabbits & Products
Beverage Crops and Spices	Other Animals & Products
Vegetable Fibres	Other Animal Products

**Feedstuffs**


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Source: Adopted from Food and Agriculture Organization. "Definition and Classification of Commodities."

<http://www.fao.org/WAICENT/faoinfo/economic/faodef/FAODEFE.HTM#COMG>  
(10/15/03).

The measure of export diversification across the group aggregates is given by

$$E_A = \sum_{k=1}^K S_k \ln(1/S_k). \quad (5)$$

The entropy measure for total agricultural export diversification is

$$E_T = \sum_{i=1}^n S_i \ln(1/S_i). \quad (6)$$

Jacquemin and Berry (1979) showed that a significant advantage of the entropy index is that the measure for total export diversification may be decomposed into expressions involving Equations 4 and 5. To see this, the entropy measure for total agricultural export diversification may be rewritten as

$$E_T = \sum_{k=1}^K \sum_{i \in k} S_{ik} \ln(1/S_{ik}), \quad (7)$$

which, after some algebraic manipulation (Jacqueman and Berry 1979, p. 361-362), gives

$$E_T = \sum_{k=1}^K S_k E_{wk} + E_A. \quad (8)$$

Equation 8 says that the entropy measure of total agricultural export diversification can be decomposed into two distinct components: *within* broad product group (related) diversification, as measured by the weighted average of the within group entropy measures ( $E_{wk}$ ) and *across* broad aggregate group (unrelated) measure of diversification ( $E_A$ ).

### Agricultural Export Diversification in Belize and Dominica

This section discusses the nature and extent of agricultural export diversification in Belize and Dominica over the period 1970-2001.<sup>9</sup> All data were measured in terms of nominal values expressed in U.S. dollars.

Agricultural export diversification is sometimes conceived as the progression from traditional commodities to non-traditional commodity exports (Amin Gutiérrez de Piñeres and Ferrantino 1997). Within the context of the Caribbean, agricultural export diversification may be

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<sup>9</sup>The discussions throughout this section extends the analysis of Taylor and Francis (2003).

envisioned (in part) as the movement away from the export of primary products and toward processed commodities. This categorisation of diversification is borne out in the ensuing discussions.

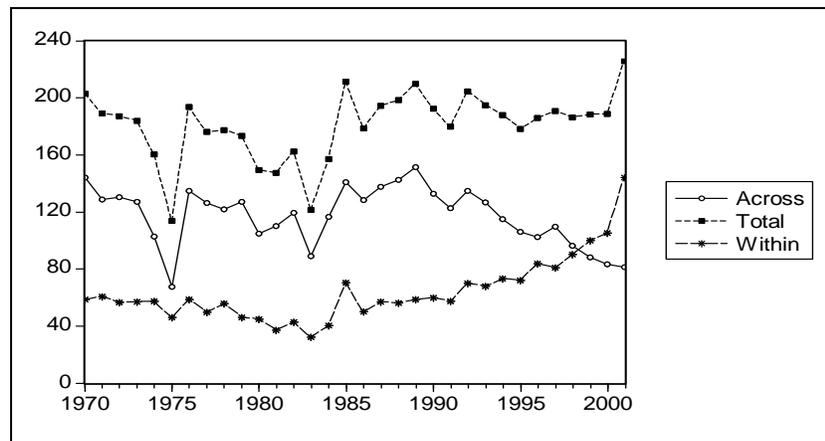
### *Belize*

Table 2 shows the estimated entropy indexes for total diversification, and the within and across commodity group decompositions for Belize over the period 1970-2001. These data are also plotted in Figure 1. The diversification measures for Belize exhibit a great amount of variability. From 1970 to the late 1980s, the index of total diversification showed no clear trend, increasing from 202.78 in 1970 to only 209.86 in 1989 (a 3.5% increase).

Most of the diversification of export agriculture in Belize (as reflected in the changes in the index) took place after 1990. The index increased by 17.2% from 192.53 in 1990 to 225.55 in 2001 (the sharpest increase being from 188.56 in 2000 to 225.55 in 2001). This result suggests some degree of agricultural export diversification in Belize.

**Figure 1**

**Estimated entropy indexes for Belize, 1970-2001**



Source: Author's Compilation

**Table 2**  
**Entropy Indexes for Belize, 1970-2001**

<b>Year</b>	<b>Total Index</b>	<b>Within Index</b>	<b>Across Index</b>	<b>Within (% of total)</b>	<b>Across (% of total)</b>
1970	202.78	58.61	144.18	28.90	71.10
1971	189.21	60.67	128.55	32.06	67.94
1972	187.02	56.57	130.44	30.25	69.75
1973	184.04	56.86	127.18	30.90	69.10
1974	160.21	57.42	102.78	35.84	64.16
1975	113.65	46.15	67.50	40.61	59.39
1976	193.38	58.57	134.82	30.28	69.72
1977	176.12	49.77	126.35	28.26	71.74
1978	177.54	55.79	121.75	31.42	68.58
1979	173.29	46.05	127.24	26.58	73.42
1980	149.44	44.62	104.81	29.86	70.14
1981	147.36	37.14	110.22	25.20	74.80
1982	162.33	42.78	119.55	26.35	73.65
1983	121.32	32.15	89.16	26.50	73.50
1984	157.26	40.51	116.75	25.76	74.24
1985	211.44	70.41	141.03	33.30	66.70
1986	178.47	50.19	128.28	28.12	71.88
1987	194.35	56.89	137.46	29.27	70.73
1988	198.56	56.24	142.33	28.32	71.68
1989	209.86	58.61	151.25	27.93	72.07
1990	192.53	59.96	132.57	31.14	68.86
1991	179.80	57.17	122.62	31.80	68.20
1992	204.60	69.82	134.77	34.13	65.87
1993	194.63	67.90	126.73	34.89	65.11
1994	187.81	73.00	114.81	38.87	61.13
1995	178.01	71.99	106.02	40.44	59.56
1996	185.99	83.57	102.42	44.93	55.07
1997	190.80	80.97	109.82	42.44	57.56
1998	186.11	90.01	96.10	48.37	51.63
1999	188.24	99.98	88.26	53.11	46.89
2000	188.56	105.37	83.19	55.88	44.12
2001	225.55	144.21	81.34	63.94	36.06

Source: Calculated from FAOSTAT Online Agriculture Database.

For the years preceding 1998, most of the diversification occurred across commodity groups, which accounted for 65.1% of the total diversification on average over the period of analysis. Most of this diversification took place across 5 product groups: sugar, sweeteners and derived products; vegetables and derived products; fruits and derived products; water, ice, and beverages; and cattle and products. The index for across group diversification increased up to 1990, but declined thereafter.

The within group measure of diversification, which accounted for 34.9% of total diversification on average, remained fairly constant up to 1990, increasing from 58.61 in 1970 to 59.96 in 1990. The index more than doubled between 1991-2001, increasing from 57.17 in 1991 to 144.21 in 2001. During the period 1999-2001, the within group measure of diversification contributed more to total diversification than the across group index. Most of the diversification occurred within 2 product groups: fruits and derived products; and sugar, sweeteners and derived products.

The evolution of agricultural exports in terms of shares (Table 3) by commodities over the period of analysis demonstrates the extent and major driving forces behind agricultural export diversification in Belize. The changes that have taken place in the structure of agricultural exports from Belize over the past four decades are rather interesting.

In 1970, the top two export commodities (sugar and concentrated orange juice) accounted for 61.0% of Belize's total agricultural exports (sugar accounted for 52.7% and concentrated orange juice accounted for 8.3% of total exports). These same commodities accounted for 72.1%, 62.1%, and 53.5% of total agricultural exports in 1980, 1990, and 2000, respectively. In 1980, the share of concentrated orange juice declined to just 5.5%, but rose in 1990 to about 17.5% of the total. By 2000, the top export shifted from a primary product (sugar) to a processed commodity (concentrated orange juice, with a share of 28.9%).

Indeed, the data reveal a dramatic decline in the relative significance of sugar exports so much so that by 2000, the contribution of sugar to agricultural exports fell to 24.6% and sugar was overtaken by concentrated orange juice as the major agricultural export from Belize (Table 3).

**Table 3****Shares of Major Agricultural Exports from Belize  
for Selected Years (%)**

Commodity	1970	Commodity	1980
Sugar (Centrifugal, Raw)	52.7	Sugar (Centrifugal, Raw)	66.6
Orange Juice Concentrated	8.3	Orange Juice Concentrated	5.5
Orange Juice Single-Strength	7.3	Cucumbers And Gherkins	5.4
Natural Gums	5.7	Bananas	4.9
Grapefruit Juice Concentrate	3.6	Grapefruit Juice Concentrate	3.4
Fruit Prepared Nes	3.5	Cheese (Whole Cow Milk)	3.2
Crude Organic Materials 29	3.1	Molasses	3.1
Flour Of Wheat	1.6	Dry Skim Cow Milk	1.5
Grapefruit And Pomelo	1.5	Beverages Dist Alcoholic	1.0
Hide Nes	1.2	Fruit Prepared Nes	0.9
Molasses	1.2	Butter Of Cow Milk	0.6
Coconuts	1.0	Oil Of Vegetable Origin Nes	0.5
Beef Preparations	1.0	Beef And Veal	0.5
Bananas	0.9	Pastry	0.4
Oranges	0.9	Honey	0.4
Wheat	0.8	Beef Preparations	0.4
Bran Of Wheat	0.7	Natural Gums	0.3
Macaroni	0.6	Hide Nes	0.2
Germ Of Wheat	0.6	Chocolate Products Nes	0.2
Bread	0.5	Mangoes	0.2
Bulgur, Whole meal	0.5	Fruit Dried Nes	0.1
Pastry	0.5	Crude Organic Materials 29	0.1
Rice, Paddy	0.3	Food Prepared Nes	0.1
Rice, Husked	0.2	Wine	0.1

**Table 3 (cont'd)****Shares of Major Agricultural Exports from Belize  
for Selected Years (%)**

Commodity	1990	Commodity	2000
Sugar (Centrifugal, Raw)	44.6	Orange Juice Concentrated	28.9
Orange Juice Concentrated	17.5	Sugar (Centrifugal, Raw)	24.6
Bananas	10.3	Bananas	22.7
Cucumbers And Gherkins	5.8	Orange Juice Single-Strength	7.7
Grapefruit Juice Concentrate	5.0	Papayas	4.8
Cheese (Whole Cow Milk)	4.7	Grapefruit Juice Sing- Strength	3.6
Molasses	3.4	Beverages Dist Alcoholic	2.4
Beverages Dist Alcoholic	1.8	Molasses	1.4
Beans, Dry	1.7	Oranges	0.8
Beef Preparations	1.1	Beans, Dry	0.7
Dry Skim Cow Milk	0.7	Cucumbers And Gherkins	0.3
Butter Of Cow Milk	0.4	Cheese (Whole Cow Milk)	0.3
Pastry	0.3	Peas, Dry	0.2
Chocolate Products Nes	0.3	Grapefruit And Pomelo	0.2
Food Prepared Nes	0.3	Grapefruit Juice Concentrate	0.2
Beverages Non-Alcoholic	0.3	Cocoa Beans	0.2
Cocoa Beans	0.3	Meat Preparations Pigs	0.1
Fruit Fresh Nes	0.2	Cotton Lint	0.1
Natural Gums	0.2	Lemons And Limes	0.1
Tea	0.1	Natural Gums	0.1
Infant Food	0.1	Essential Oils Nes	0.1
Sugar Confectionery	0.1	Fruit Juice Nes	0.0
Fruit Dried Nes	0.1	Fruit Prepared Nes	0.0
Beer Of Barley	0.1	Beef Preparations	0.0

Source: Calculated from FAOSTAT Online Agriculture Database

Another interesting observation is that the number of agricultural products with shares of at least 1.0% declined from 13 in 1970 to 9 in 1980, increased to 10 in 1990, and fell again to 8 in 2000. The composition of agricultural exports became more concentrated. In 1970, the top five exports accounted for 77.6% of total exports, with sugar alone accounting for 52.7%. By 2000, the top five exports accounted for 88.7% of the total, with concentrated orange juice, the leading export, accounting for 28.9%; sugar, the second leading export, for 24.6%; bananas, the third leading export, for 22.7%; orange juice (single-strength), the fourth leading export, for 7.7%; and papayas, the fifth leading export, for 4.8% (Table 3).

Moreover, since 1980, coconuts, which had a ranking of 12 in 1970, with a share of 1.0%, no longer appeared in the top twenty-five agricultural exports from Belize. Also, cucumbers, gherkins, and cheese have exhibited the most dramatic increases in export performance. None of these products were ranked in the top exports in 1970. In 1990, however, they were ranked numbers 4 and 6, accounting for 5.8% and 4.7% of total agricultural exports, respectively. By 2000, they were ranked numbers 11 and 12; however, their contribution in terms of value dropped tremendously.

The evolution of the diversification indexes suggests that Belize experienced some diversification of its export agriculture. The data reveal some diversification from sugar to citrus and bananas. The changes in the contribution of orange juice and sugar have already been discussed. In 1970 and 1980, bananas accounted for only 0.9% and 4.9%, respectively of total agricultural exports. In 1990 and 2000, bananas' exports represented 10.3% and 22.7%, respectively of total agricultural exports. Clearly, with the reduction in the share of sugar, particularly since 1990, the shares of concentrated orange juice and bananas have increased.

### **Dominica**

Table 4 showed the estimated entropy indexes for total diversification, and the 'within' and 'across' commodity group decompositions for Dominica over the period 1970-2001. These data are also plotted in Figure 2. There is substantial variation in the changes in the diversification indexes for Dominica during the period 1970-2001.

**Table 4**  
**Entropy Indexes for Dominica, 1970-2001**

<b>Year</b>	<b>Total Index</b>	<b>Within Index</b>	<b>Across Index</b>	<b>Within (% of total)</b>	<b>Across (% of total)</b>
1970	94.84	53.78	41.06	56.71	43.29
1971	93.43	52.31	41.12	55.99	44.01
1972	119.83	70.54	49.29	58.87	41.13
1973	103.42	57.52	45.90	55.62	44.38
1974	114.51	67.22	47.28	58.71	41.29
1975	139.54	75.46	64.08	54.08	45.92
1976	129.89	57.33	72.56	44.14	55.86
1977	126.54	60.28	66.26	47.64	52.36
1978	116.19	53.95	62.24	46.43	53.57
1979	130.46	57.87	72.59	44.36	55.64
1980	114.82	47.60	67.22	41.45	58.55
1981	65.60	34.20	31.40	52.13	47.87
1982	102.09	43.70	58.39	42.81	57.19
1983	120.94	53.39	67.55	44.14	55.86
1984	125.66	50.11	75.56	39.87	60.13
1985	103.61	45.85	57.76	44.25	55.75
1986	84.27	37.69	46.58	44.72	55.28
1987	56.93	23.86	33.07	41.91	58.09
1988	49.44	24.24	25.20	49.03	50.97
1989	80.92	33.15	47.77	40.96	59.04
1990	86.79	40.10	46.69	46.21	53.79
1991	88.49	37.94	50.55	42.88	57.12
1992	97.51	43.57	53.95	44.68	55.32
1993	110.51	56.03	54.48	50.70	49.30
1994	113.99	49.81	64.18	43.69	56.31
1995	151.36	66.66	84.70	44.04	55.96
1996	156.57	72.53	84.04	46.32	53.68
1997	167.46	77.77	89.69	46.44	53.56
1998	178.23	83.59	94.64	46.90	53.10
1999	164.69	70.71	93.98	42.93	57.07
2000	171.93	69.78	102.15	40.59	59.41
2001	174.13	70.91	103.22	40.72	59.28

Source: Calculated from FAOSTAT Online Agriculture Database

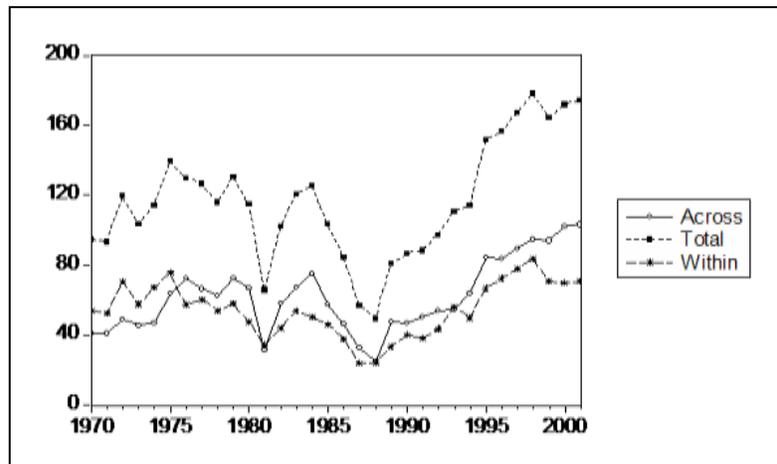
Three distinct phases in the Dominica’s diversification can be identified from Figure 4-2: 1970-1975, 1976-1988, and 1989-2001. During the period 1970-1975, the index of total diversification increased by 47.1% from 94.84 in 1970 to 139.54 in 1975 (Table 4).

Most of the diversification occurred within commodity groups (which accounted for 56.7% of the total diversification on average). Indeed, the within group measure of diversification increased by 40.3% from 53.78 in 1970 to 75.46 in 1975. All of the diversification happened within the ‘Fruits and Derived Products’ group. In terms of commodities, most of the diversification during the period 1970-1975 resulted from changes in the structure of agricultural exports attributed mainly to bananas, coconuts, grapefruit and pomelo, lemon juice, and oil of coconuts.

In 1970, these 5 commodities accounted for 96.0% of Dominica’s exports (bananas, 77.6%; coconuts, 3.2%; grapefruit and pomelo, 3.0%; lemon juice, 7.0%; and oil of coconuts, 5.2%). In 1975, these same commodities represented 90.5% of Dominica’s total agricultural exports (bananas, 63.1%; coconuts, 3.2%; grapefruit and pomelo, 7.9%; lemon juice, 7.9%; and oil of coconuts, 8.4%).

Figure 2

Estimated entropy indexes for Belize, 1970-2001



Source: Estimated entropy indexes for Dominica, 1970-2001

Dominica's export agriculture became less diversified (more specialised) during the period 1976-1988. The index of total diversification decreased by 61.9% from 129.89 in 1976 to 49.44 in 1988 (Table 4). Most of the changes in the index of total diversification were attributed to the across group measure of diversification (which accounted for 55.2% of the total diversification on average). The index of across-group diversification declined by 65.3% from 72.56 in 1976 to 25.20 in 1988.

Most of the changes took place across 5 commodity groups: beverage crops and spices, fruits and derived products, oil-bearing crops and derived products, roots and tubers, and vegetables and derived products. With respect to specific commodities, most of the changes in the structure of agricultural exports were attributed mainly to bananas and oil of coconuts. In 1976, bananas accounted for 68.1% of Dominica's total agricultural exports. In 1988, bananas' share increased to 92.0%. In contrast, the share of oil of coconuts declined from 10.5% in 1976 to 1.2% in 1988. Since 1989, Dominica's export agriculture witnessed increased degrees of diversification as evident from Table 4.

The index of total diversification more than doubled from 80.92 in 1989 to 174.13 in 2001. Most of the diversification occurred across commodity groups (which accounted for 55.6% of the total diversification on average). Indeed, the across group measure of diversification also more than doubled from 47.77 in 1989 to 103.22 in 2001.

Most of the changes in the across group measure of diversification occurred across 3 product groups: fruits and derived products, oil-bearing crops and derived products, and roots and tubers. In terms of commodities, most of the diversification during the period 1989-2001 resulted from changes in the structure of agricultural exports attributed mainly to bananas. Bananas' share of total agricultural exports from Dominica declined from 85.4% in 1989 to approximately 62.8% (Table 5) in 2000.

**Table 5**

**Shares of Major Agricultural Exports from Dominica  
For Selected Years by Value (%)**

Commodity	1970	Commodity	1980
Bananas	77.6	Bananas	71.1
Lemon Juice Single-Streng	7.0	Oil Of Coconuts	9.1
Oil Of Coconuts	5.2	Grapefruit And Pomelo	9.0
Coconuts	3.2	Food Prepared Nes	2.8
Grapefruit And Pomelo	3.0	Taro (Coco Yam)	2.6
Cocoa Beans	1.4	Lemons And Limes	1.1
Taro (Coco Yam)	0.7	Vegetables Fresh Nes	1.1
Oranges	0.5	Oranges	0.8
Lemons And Limes	0.4	Cake Of Coconuts	0.5
Avocados	0.3	Coconuts	0.5
Mangoes	0.3	Lemon Juice Single-Streng	0.4
Copra	0.3	Sugar Refined	0.3
Wheat	0.0	Mangoes	0.3
Flour Of Wheat	0.0	Crude Organic Materls 29	0.3
Bran Of Wheat	0.0	Cocoa Beans	0.2
Macaroni	0.0	Avocados	0.0
Germ Of Wheat	0.0	Beverages Non-Alcoholic	0.0
Bread	0.0	Wheat	0.0
Bulgur, Wholemeal	0.0	Flour Of Wheat	0.0
Pastry	0.0	Bran Of Wheat	0.0
Rice, Paddy	0.0	Macaroni	0.0
Rice, Husked	0.0	Germ Of Wheat	0.0
Milled/Husked Rice	0.0	Bread	0.0
Milled Paddy Rice	0.0	Bulgur, Wholemeal	0.0

**Table 5 (cont'd)****Shares of Major Agricultural Exports from Dominica  
for Selected Years by Value (%)**

Commodity	1990	Commodity	2000
Bananas	84.4	Bananas	62.8
Plantains	2.0	Oil Of Coconuts	4.6
Essential Oils Nes	1.9	Food Prepared Nes	4.4
Grapefruit And Pomelo	1.6	Roots And Tubers Dried	4.4
Crude Organic Materials 29	1.4	Plantains	3.9
Food Prepared Nes	1.3	Oranges	3.2
Taro (Coco Yam)	1.2	Yams	3.0
Grapefruit Juice Concentrate	1.1	Essential Oils Nes	2.1
Waters,Ice Etc	0.8	Vegetables Fresh Nes	1.6
Oranges	0.8	Avocados	1.3
Oil Of Coconuts	0.7	Pepper,White/Long/Black	1.2
Yautia (Cocoyam)	0.5	Coconuts	1.1
Avocados	0.4	Cigarettes	1.0
Yams	0.3	Grapefruit And Pomelo	0.8
Lemons And Limes	0.3	Fruit Juice Nes	0.6
Sugar And Syrups Nes	0.2	Vanilla	0.6
Pumpkins, Squash, Gourds	0.2	Lemons And Limes	0.6
Coconuts	0.2	Berries Nes	0.4
Ginger	0.1	Macaroni	0.3
Mangoes	0.1	Mangoes	0.3
Vegetables Fresh Nes	0.1	Cinnamon (Canella)	0.3
Lemon Juice Single-Strength	0.1	Lemon Juice Single-Strength	0.2
Beverages Dist Alcoholic	0.1	Beverages Non-Alcoholic	0.2
Macaroni	0.1	Crude Organic Materls 29	0.2

Source: Calculated from FAOSTAT Online Agriculture Database

### **Summary and Conclusions**

The analysis conducted in the previous section of the commentary revealed that both Belize and Dominica experienced varying degrees of agricultural export diversification since 1970. Most of the diversification of export agriculture took place after 1990 for Belize. This country also experienced a decline in the sugar industry, but an expansion in the citrus and banana industries.

However, diversification occurred during the periods 1970-1975 for Dominica (mostly within commodity groups), and after 1989 (when most of the diversification occurred across commodity groups). This country's agricultural export of bananas dominated across the decades.

Indeed, both Belize and Dominica have large primary agricultural commodities that dominate the countries' agricultural export structure. The extent of diversification in the two countries suggests that size matters. Relative to Belize, Dominica is a small country thus, there may exist significant resource constraints to the diversification of agricultural exports beyond that observed since 1970. However, the absence of agricultural export diversification may also be related to the disincentives to diversification implicit in the significant commodity preferences for sugar and bananas received by Dominica from the European Union. Belize has also become increasingly concentrated in commodity exports, which receive preferential access to European and North American markets.

These results are consistent with the conclusions that the promotion of agricultural export diversification in Caribbean countries was to some degree successful. Despite data limitations, it may be conjectured that the level of diversification resulted from export promotion programmes funded by international donors, and diversification initiatives undertaken at the country-specific, and wider Caribbean levels.

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## **Book Review**

**Strategic Repositioning: A Caribbean Perspective on Economic Policy Making** by Marion V. Williams: Bridgetown, Barbados: Central Bank of Barbados, 2005. Pp.vi+375. ISBN 976-602-076-0

### **Introduction**

The new global economic environment is characterised by the integration of commodity and financial markets, rapid developments in information and communications technology and biotechnology, new production relationships within transnational corporations, the liberalisation of trade in goods and services, the removal of trade preferences for such commodities as sugar, bananas and rice, the growth of regional economic blocs in Europe, Asia and North America, the rapid growth of the economy of China, the strengthening of global institutions such as the World Bank, the International Monetary Fund (IMF) and the World Trade Organisation (WTO) and concerns with national and global security.

These features have forced small developing countries to rethink their relationships with larger and more developed countries in the world economy. These small developing countries are now required to be more productive and hence competitive in goods and services produced for the export market, to be more cost and quality conscious, to commit more resources to new areas of economic activity and to expend resources in negotiating their position in the global economic landscape. In recent years, there have been calls for ‘special and differential treatment’ for small economies and the need to use trade preferences as a developmental tool.

In short, small developing countries, have had to engage in the ‘strategic repositioning’ of their economies in light of global changes which

have a significant impact on their economies. 'Strategic repositioning' is defined as the process of changing the economic structures, relationships and production systems of a country in order to achieve specific economic and social objectives. Such 'strategic repositioning' can be prompted by either internal or external economic and political changes and usually requires the implementation of a 'strategic plan'. The recent adoption of a Strategic Plan for Barbados 2005-2025 and the Vision 2020 plan for Trinidad and Tobago has brought to the economic forefront, the need to engage in 'strategic repositioning' in the Caribbean.

It is therefore timely, that the Governor of the Central Bank of Barbados and the Government's chief financial adviser, Dr. Marion Williams has produced this publication entitled *Strategic Repositioning: A Caribbean Perspective on Economic Policy Making*. It is a collection of forty-seven (47) speeches, presentations and essays prepared by the Governor over the past seven years. The articles cover some of the elements needed to strategically reposition Caribbean economies, namely: sound macroeconomic policies, skilful economic planning and management, financial sector development, human resources development, productivity growth and service excellence, prudent regulation, good governance and stronger regional cooperation. The collection offers a rich menu of ideas and some of the policies needed for small developing countries like those in the Caribbean, to successfully reposition themselves over the next decade.

### **Structure of the Book**

The book begins by setting out the challenges facing small developing countries in the new global environment and the need for these countries to restructure their economies. Particular attention is paid to the nature of trade and financial liberalisation. Dr. Williams clearly outlines the challenges associated with economic liberalisation and the prerequisites for small developing countries to benefit from such liberalisation in order to avoid severe economic dislocation which can be caused by the process. For example, there is a need to strengthen the information systems used for economic decision-making in the region.

As expected, a significant part of the text focuses on issues of macroeconomic policymaking and financial sector development in the 'strategic repositioning' process. For example, issues of predicting currency

crises, managing international reserves and understanding how monetary policy influences economic activity are covered in Part 2 of the text. The crises in Argentina and Barbados in the 1990s are used as examples to highlight the need for economic surveillance, good economic data and risk management in (small) economies subject to the vagaries of the international economic environment. The case studies also show the contrasting approaches to managing crises in a fixed exchange regime (a relatively large economy and a small economy).

As the Government's chief financial adviser, Dr. Williams has provided a lot of advice on the development of the financial sector of small economies and the role of the sector in the strategic repositioning process. Part 3 focuses on the development of a regional capital market in providing the long term funds for the development process. Part 4 deals with the financial institutions and systems needed to complement capital market expansion: commercial banks, mutual funds, pension funds, credit unions, international business companies, mortgage companies and the Central Bank. Dr. Williams examines the nature and role of these institutions and systems in driving the repositioning process in the region. Along with the discussion on insurance companies and risk management in Part 8, these articles provide deep insight into the thinking of the Governor on the financial matters and are required for students of the Caribbean economy.

As a Governor of a Central Bank, the regulation and governance of the financial sector is paramount and these issues are surprisingly covered in two articles in Part 5. However, issues of prudential regulation are covered in other articles in the book.

Although financial issues are central to the head of a Central Bank, it is imperative that other issues of national economic importance be examined. Dr. Williams has examined education in Part 6, the services sector in Part 7, productivity in Part 9 and the CARICOM Single Market and Economy (CSME) in Part 10. While finance greases the engines of the economy, it is important to know how the engines work. In the discussion on education, Dr. Williams examines the interface between the education system (especially higher education) and the needs of the labour market in a technologically driven era. It is suggested that education institutions should be more cognisant of these global changes and restructure their programmes to fit these needs.

The vexing issue of financing higher education along with research and development in the Caribbean also attracts the Governor's attention. She suggests partial cost recovery and new sources of financing as means of dealing with higher (university) education in the 21<sup>st</sup> century Caribbean. Such systems should, however, not deny access to those who are gifted but are needy. Productivity growth is critical to enhancing international competitiveness. Dr Williams outlines aspects of productivity management which are vital in a services-oriented economy. Prior to this discussion, she argues that the services sector (financial and professional services) should play a key role in the export development of Caribbean economies. In this regard, excellent service quality, in all its dimensions, would be key to the survival of small developing economies in the global market. This issue fits into the National Initiative for Service Excellence (NISE) in Barbados.

The final section of the book looks at the role of economic integration in the strategic repositioning of small states. Dr. Williams supports the CARICOM Single Market and Economy as it provides for economies of scale and scope for a range of activities and production opportunities, production integration, monetary union and a common external negotiating position.

### ***Conclusion***

As is expected with a collection of speeches and papers over time, there is some degree of repetition in these articles. This repetition, however, serves to indicate the consistency of thought and the need for emphasis. The articles provide a sense of optimism for small Caribbean economies once the appropriate policies and programmes are implemented. The key lies in proper *implementation* and skillful economic *management*. For small economies, the management of change and risk is very important in tackling the challenges and in taking advantage of the opportunities. In the international arena, small Caribbean countries need to be both skilful and smart in their negotiations in order to maximise the net gains from international economic intercourse. Power and politics are important elements in economic policy making at all levels. Dr. Williams' book provides some of the measures which small Caribbean economies should adopt to deal with their strategic repositioning to global change. The contents have been limited by the overall approach to the exercise. Hopefully, a second volume would deal with other aspects of the

strategic repositioning programme such as new governance structures, non-financial institutions and systems, social capital, the interaction between the services sector and other sectors (agriculture and manufacturing), public and private sector management and the role of foreign capital, and so on.

This text covers several of the contemporary issues of economic policy and management in small developing countries from a central banker's perspective. Its non-technical style should make it highly valuable reading for students, fellow economists, government policy makers and advisers, business persons, bankers, labour unionists and the general public interested in economic and financial matters. I recommend the text very highly to those who are interested in contemporary economic policy issues. It is a welcomed addition to public education on economic matters.

Andrew S. Downes

## **Book Review**

**The Practice of Economic Management: A Caribbean Perspective** by Courtney N. Blackman: Kingston, Jamaica: Ian Randle Publishers, 2006. Pp.xxxiii+422. ISBN 976-637-243-8.

### **Introduction**

The challenges facing small developing countries like those in the Caribbean make issues such as sound economic management and strategic repositioning very critical to those charged with managing the affairs of Caribbean countries. The economic managers in the region are currently grappling with the establishment of a Caribbean Community Single Market and Economy (CSME), trade negotiations within the World Trade Organisation (WTO) and with the European Union in the form of Economic Partnership Agreements, the impact of globalisation, the effects of economic and natural shocks and the socio-economic demands of the people. The management of small open developing economies in the current environment therefore needs sober reflection and creative thought coming from the intellectual community and informed commentators.

This is the third book of speeches and essays published by Sir Courtney Blackman- an economist, former Governor of the Central Bank of Barbados, former diplomat and international business consultant. The other publications were: *The Practice of Persuasion* (1982) and *Central Banking in Theory and Practice: A Small State Perspective* (1998). A common element in the three books is the use of the word '*Practice*'. The focus has been on practical issues and targeted at those who have to engage in the practical affairs of central banking and economic management. Indeed, as Sir Courtney admits in the introduction to this book that there are three

perspectives which inform the essays in *The Practice of Economic Management*: the **Managerial**, the **Small State** and the **Caribbean**. Sir Courtney has long held the view that the ‘managerial input’ is critical to the success of organisations, sectors and countries; hence it is not surprising that practical management issues feature prominently in this book. Such an emphasis complements the economist’s focus on physical and human resources in the production and distribution of goods and services. It also widens the perspective of economists seeking to understand various relationships and outcomes in an economy.

### **What is Economic Management?**

Although those involved in economic, financial and business affairs refer glibly to the concept of ‘economic management’, there has been little attention paid in the literature to the principles and practice of economic management. Although Sir Courtney does not give an explicit definition of economic management, a close reading of the papers provide some idea of the nature of economic management: Economic Management is concerned with the formulation and implementation of economic policies to achieve economic objectives and also with the process of economic decision making. It is therefore concerned with both short-term macroeconomic stabilisation policies and long term strategic development planning.

The *elements of economic management* include:

- i. the formulation and implementation of strategic plans for the medium – and long-term development of a country;
- ii. the formulation and co-ordination of economic policies and programmes to maintain macroeconomic stability (fiscal, monetary, commercial, incomes, policies and so on.)
- iii. the design and implementation of incentive systems related to investment, production, trade and so on, in order to promote private sector development;
- iv. the identification, implementation and evaluation of public sector activities (for example social infrastructure, human resource development) to support/promote private sector development;

- v. the design of laws, regulations, rules and institutions to ensure the smooth functioning of the economy.

Economic management must therefore take into consideration the ideology of the political directorate, the socio-economic concerns of the population, the concerns of special interest groups (who engage in lobbying and rent-seeking behaviour); clientelism, the role of the State in economic activity, the quality of the institutions and human resources available to the country, the data systems, the technological capacity of organisations, *inter alia*. In effect, economic management is a multi-dimensional exercise and involves a great deal of judgment, skill, diplomacy, experience, knowledge and luck. It goes well beyond the technical aspects of economics to incorporate other elements of the social and behavioral sciences.

### **Contribution of the Practice of Economic Management: A Caribbean Perspective**

The above background informs the nature of the articles in Sir Courtney's book. They draw on an academic background in modern history, business administration, money and banking and international business. Sir Courtney makes a case for a prospective economist not to study economics at an undergraduate level, but history, mathematics and philosophy. I would argue this position for a person wanting to be a manager, and not only an economist. The essays also draw on a practical/managerial background as a chief financial adviser to a government in a small developing country (that is, a Central Bank governor) and as an international business consultant.

Several of the principles and requirements for sound economic management are covered in the twenty-two articles in the book. Although Sir Courtney laments his lack of mathematical and statistical sophistication, the articles are very clearly written, logically argued and largely persuasive. In **Section 1**, the focus is on Development and Management: Contending with the Left. In the five essays, Sir Courtney takes issue with the Marxist and New World Schools of Economics which took root in the Caribbean in the 1960s and 1970s. His criticism also extends to the Compton Bourne report on **Caribbean Development to the year 2000**. In essence, he argues that these models of development for the Caribbean place too much emphasis on the State which cannot be an adequate engine of growth for

Caribbean economies. In his analytical framework for the study of Caribbean public enterprise, Sir Courtney provides guidelines for the scope and operations of such enterprises. The private sector is viewed as the engine of growth in the Caribbean. Drawing on his management background, Sir Courtney argues the case for an open systems approach to planning and management in the Caribbean and provides ten (10) principles of economic management which should be adopted by small developing states including an adequate level of foreign reserves, timely decision making, surveillance of the international environment, high quality infrastructure and human resources and a focus on efficiency and quality. There is a call to enhance management training in the University of the West Indies (UWI) which has occurred since these essays were written.

**Section II** examines more technical economic management issues in the context of a small open developing economy: managing foreign debt, resolving balance of payments (BOP) problems and choosing the appropriate foreign exchange regime. Most of these articles were written when Sir Courtney was Governor of the Central Bank of Barbados (1972-1989) and provide insights into the managing of the key aspects of a small open developing economy.

Although there is some repetition in the papers, Sir Courtney provides a list of prescriptions/suggestions with respect to managing the external balance of Caribbean states. Several of these suggestions draw on his views in **Section 1** – improve quality of management, improved infrastructure, less centralised governmental systems, adoption of an open systems approach, good monitoring systems and the judicious use of the market mechanism.

Having been critical of the ‘left’ in Section 1, Sir Courtney is also critical of other extremes as he contends with the ‘Right’ in **Section III**. Although he sees a critical role for the private sector and the market mechanism in the economic development process, he is highly skeptical of the precepts of the ‘Washington Consensus’. His main arguments are outlined in his Sir Winston Scott lecture on *The Free Market in the Context of Globalisation: Myth, Magic or Menace?* He points out that ‘dollarisation’ is ‘a policy of despair, appropriate only for countries that have lost all confidence in their capacity to conduct their own affairs’ and ‘a consequent loss of flexibility in national economic management’.

A number of critical issues facing the Caribbean are examined in **Section IV** – wages, prices and productivity, human resources development, integration and the challenges facing Caribbean business organisations in the new international economic and political environment. These matters continue to challenge Caribbean economic and business managers and Sir Courtney's thoughts on such matters are worth reading especially since he focuses on the role of management in resolving some of the issues. The chapter on the 'Economist as Advisor' is interesting reading for the budding public sector economist. I would add to Sir Courtney's list, a good knowledge of institutions and psychology, in order to ground the technical tools.

The **final section** looks at the celebrated '*Barbados Model*'. Some of the reasons why Barbados has been able to do so well are spelt out in the three chapters. The chapters emphasise the **pragmatic** nature of economic management adopted by the Barbadian economic authorities over the years.

In any collection of essays of this type, there are issues which are not covered adequately or mentioned at all. Sir Courtney admits that he does not cover Trade and Regional Integration issues. This is unfortunate since these are the current pressing issues facing the Caribbean, that is, trade negotiations with the European Union and the World Trade Organisation. In addition, managing in a new technological environment - e-government and e-commerce- is not discussed. The management of programmes at the boundary of economics and sociology – social security, poverty, health and education – would warrant some discussion in a book on the practice of economic management given the impact of demographic and social change on the economy. It is acknowledged that such issues would be better covered in a textbook format on economic management than a collection of essays format. The collection is nevertheless a useful start to what can become a new subject area since there is little literature explicitly on 'economic management'.

### **Conclusion**

*The Practice of Economic Management: A Caribbean Perspective* offers the reader a rich menu of advice on the economic management of small developing states. Although it has a Caribbean perspective, several of the ideas and suggestions would be useful to economic managers in other small states in the Pacific, Africa and Europe.

The papers are well written, easy to read and very engaging. It is clear that they were born out of experience and practice with good roots in economic analysis. Sir Courtney Blackman has brought management issues to the forefront of economic analysis.

For practitioners, the book would be a useful summary of the pragmatism needed in the management of economic affairs. For the academic, it provides a sober reading for the realm of practical economics and for students, both in economics and public management, the book will be valuable to their overall education, for example, in a course on Economic Analysis of Public Policy. For the general public, the ease of the prose and the simplicity of the language (in most of the essays), makes this book a journey into what practical economics is all about.

The book is highly recommended and I look forward to Sir Courtney Blackman's next book of essays on the practice of management. Hopefully, this book will encourage the teaching of economic management principles within the university as a capstone course.

Andrew S. Downes

## **Book Review**

**Education for Economic, Social and Political Development in the British Caribbean from 1896 to 1945** By Kazim Bacchus: The Althouse Press, 2005. Pp.322. ISBN 0-902354-54-8

### **Introduction**

This recent book by Professor Bacchus is required reading for all persons who wish to familiarise themselves with the origin and evolution of formal education in what is now the Commonwealth Caribbean. It deals specifically with the period 1896 to 1945, and forms part of a trilogy by Professor Bacchus on the subject of education and development in the Region. The other two works in the trilogy preceded the one now under review and are: *Utilisation, Misuse and Development of Human Resources in the Early West Indian Colonies (1990)* and *Education as and for Legitimacy: Developments in West Indian Education between 1846 and 1895 (1994)*. I am happy to review Bacchus' latest work since I have been keeping in touch with his writings on education and development ever since his publication of *Education for Development or Underdevelopment? (1980)*.

Let me begin by elaborating on my opening statement that the book is required reading by summarising its purpose and content. Thereafter, I will draw attention to what I consider to be some of the main weaknesses of this important work.

### **Purpose and Content**

As stated by Professor Bacchus himself in the *Preface*, the purpose of the research project which produced the trilogy was to 'throw light on the

social, economic, and political forces that influenced the development of education in the ex-British Caribbean Colonies'. His intention was not to provide an all-encompassing *historical* account of education in the Region during the colonial period. Rather, as has been pointed out by Professor Carl Campbell in the *Foreword*, what Professor Bacchus wanted to do was to use historical materials to provide a sociological analysis of education and development in the Region. Bacchus achieved that broad objective by (a) devoting his very first chapter to the topic '*Socioeconomic and Political Factors that Influenced Educational Development*' and (b) setting himself the task in the final chapter of providing a sociological interpretation of the educational developments between 1896 and 1945.

Six of the remaining ten chapters focus on *primary* education and centre around the following: enrolment and attendance, accommodation, equipment and other supplies and services, the curriculum and its emphasis on Agricultural Education, the quality of the teachers, and matters related to financing. The other four chapters deal with the role of education as perceived by the colonial authorities and their advisors, opportunities for secondary education, the goals of secondary education and the curriculum of the secondary schools, and vocational, adult and 'higher' education.

Bacchus' book contains historical data on the topics listed above for the large number of territories that made up the British West Indian colonies: Jamaica, Trinidad and Tobago, British Guiana, the Leeward Islands, the Windward Islands, The Bahamas, the Turks and Caicos Islands, Bermuda and The Cayman Islands. None of the less than a handful of books on education in the former British West Indian colonies has ever attempted this task. Like Shirley Gordon's *A Century of West Indian Education: A Source Book (1963)*, the publication by Bacchus is nothing short of a major landmark in the scholarly literature on the origin and evolution of education in the Commonwealth Caribbean as a whole.

### **Some Weaknesses of the Study**

Like any other book, this one by Bacchus has its weaknesses. For starters, there is a slight error on page 207 about where the Girls' Foundation School in Barbados was established and which institution bore the cost for the founding of that school. The Girls' Foundation School was founded not in the parish of St. Michael as stated by Bacchus, but in the parish of Christ

Church, and it was founded with funds from the Vestry of the latter parish, not the Vestry of the former. In addition, it was the St. Michael School, not the Foundation Girls' School, that was founded in 1928. The property for the St. Michael School was bought in 1924.

Secondly, and more seriously, the scaling for Figure 9.1 on page 206 seems inappropriate. Years are shown on the horizontal axis and enrolment on the vertical. As set out in the chart, years 1 to 10 are supposedly at equal intervals, but in actual fact they are not. For example, the interval between Year 1 and Year 2 is actually 6 years (1894 - 1900), between Year 2 and Year 3 some 3 years (1900 - 1903), between Year 3 and Year 4 six years (1903-1909), and so on. Understandably, Bacchus was perhaps trying to avoid listing every individual year between 1894 and 1938, but the way it is done in the chart is mathematically problematic.

A third case of weakness is the inadequate space for the examination of secondary and tertiary education. Half of the book's twelve Chapters deal exclusively with primary education. The two Chapters on secondary education and the solitary Chapter on Vocational, adult and 'higher' education give the impression of being an afterthought. Bacchus would have left himself less open to criticism if he had made it crystal clear that while he wished to include something on each of the three levels of the educational system his main concern would have been with primary education.

A fourth area of weakness, and in my view the greatest area of weakness of the book, is the over-emphasis on descriptive detail and the absence of a conceptual or theoretical framework with rigorously defined concepts which would help us understand (a) the type of social structure which existed in the Region in the period under review, and (b) the very limited role played by the educational system as an agent of social change.

If we take first the question of the type of social structure which prevailed in the Region during 1896 to 1945, we are informed by Bacchus that there were some modifications to the social structure of the societies in question:

'Class distinctions became less rigid and the sharp barriers that existed between whites and blacks slowly eroded. In this context, education became an important instrument for social and occupational mobility, as educated blacks and coloureds were increasingly employed as teachers, nurses, junior civil servants,

journalists, printers, clerks, chemists, and druggists. Some even moved into higher-level jobs, especially those who received a tertiary education in Britain.' (p.16)

Bacchus went *on to point out* while a 'black and coloured middle class' was emerging in the various territories, the locals, even those educated in Britain, still had difficulty in advancing beyond a certain level. In his view, the 'old caste and class system based on colour' continued to dominate most aspects of social life in the British West Indian colonies right through to the 1940s.

We do not encounter in Bacchus' study any attempt to specify how the terms 'caste' and 'class' are being used and to defend such use. This is unfortunate since some scholars such as Cox (1970) have contended that the caste system was a particular *cultural* phenomenon which never existed outside of India and that possible physical differences between castes did not constitute significant status indices. In his attempt to bring greater clarity to the concept of caste, Cox had this to say:

Since it is not physical differences of groups that determine their position in the hierarchy, nor is it differences in wealth or 'religion', then what might the criterion of status be? The basis of status differentiation among castes appears to be caste *dharma*, or the way of life of the caste, estimated finally by the expressed or assumed opinion of Brahmans. Each case has a presumptive, inherited *dharma* in which vocation plays a major role... (1970:13)

(my emphasis)

In addition to the problematic assumption of the existence of a caste system in race relations in the British Caribbean Colonies, there is the failure of Bacchus to engage in a rigorous treatment of the concept of class. Bacchus' concern is evidently with social stratification, but then he would need to make a clear distinction between the concept of *political class* and that of *social class*. Here again I wish to refer to a pertinent observation by Cox:

Social classes form a system of co-operating conceptual status entities; political classes, on the other hand, do not constitute a system at all, for they are antagonistic. The political class is a power group which tends to be organised for conflict; the social class is never organised, for it is a concept only.

Although the political class is ordinarily weighted with persons from a special sector of the social-status gradient, it may include persons from every position. Hence we do not speak of political classes as forming a hierarchy; they may conceivably

split the social hierarchy vertically; therefore, there is here no primary conception of social stratification. In other words, members of the political class ordinarily do not have a common social status. These classes, therefore, are not thought of as social-class strata but as organisations arranged face to face against each other. Furthermore, unlike the social class, the political class seeks to attract members to itself, and group solidarity is highly valued.

Social solidarity is not a characteristic of social classes, for it is expected that persons are constantly attracted upward and away from their social position, while those who fall may be allowed to sink even farther. (1970: 154- 155)

I have drawn heavily on Cox because if, like Bacchus, we are interested in the process of national and regional development, we need to be very clear about the type of social structure which was inherited from the colonial period and the role played by the educational system in that process. Here again, we must be critical of Bacchus, this time for not having defined the concept of 'development'. We were rightly advised by no less a scholar than Dudley Seers (1973) a generation ago that the term 'development' is one which means different things to different people, and that meaningful discussion of this concept cannot take place unless we start out by deciding precisely what we mean by it.

With regard to the role played by the educational system during the period 1896 to 1945, I would have liked to have seen Bacchus pay explicit attention to the major theoretical perspectives in the Sociology of Education and to identify the particular perspective which helps to shed the most light on the changes which took place in the educational arena during that period. An examination of the relative explanatory power of reproduction theories as opposed to structural-functionalism would have been very useful.

I must stress, however, that in spite of its weaknesses the book is to be treasured. Like Professor Campbell in the *Foreword*, I hope that Bacchus will complete his mission by doing yet another study, this time on education and development in the Region since World War II.

Anthony Layne

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## **Book Review**

**The Power of Greed: Collective Action in International Development**  
by Michael Rosberg: Edmonton, Alberta. The University of Alberta Press,  
2005 Pp.299. ISBN 0-8864-429-9.

### **Introduction**

This manuscript is written without resort to faddish ironic skepticism, but there is a Naipaulian tragic-comic feel to the narrative about Belizean development. The author, Michael Rosberg, sets about seeking to probe the content of survival strategies among groups in Belize, highlighting its stultifying or catalytic effects, all in an effort to critique the absence of a pragmatic mode of thinking and doing on the part of development scholars and practitioners. The author's craft is that of a literary writer committed to the social science endeavour. The analysis at times extends to the wider Caribbean, and further the Third World. Its abiding contribution is in the very illustrative ways that Rosberg expands the definition of clientelism focusing on four sorts of acts, services for votes; political favours for cash; material goods for political favours: and inequitable and extra-political exchanges. He argues that this inhibits real and sustainable development in low-income countries. He illustrated his point in this way:

‘The definition [needs to] cover cases where politicians are required to grant favours to receive political financing from interest groups or rich entrepreneurs, or vice versa. For example, if such an entrepreneur wished to assemble a strip of land along the waterfront where the mangroves are protected by law, he or she would have to offer enough of a material or financial payment to make the appropriate politicians and civil servants agree to look the other way while the landfill comes in and the fencing is erected.

Such action can distort general infrastructural development planning. Exceptions are made because special favours are granted. The action can also have negative impacts on the natural environment.' [p.33]

Rosberg's thesis necessitated a trawling of the literature as debates on the politics of development, of citizenship, of human development, of governance and democracy, and of social capital were conflated to provide explanation about Belizean, and at times, Third World under-development. All of this of course is addressed in very novel and unconventional ways with little carry-over from the dependency debates of the 1960s and 1970s. The 'missing screws' are to be found in the politics of clientelism, the complex web of dependency relationships it spawns and how its inner workings and logics function to socially scupper the market, deliver poor services, stifle national productivity, and pervert households and economies. Here, Rosberg deploys the term economics in a very expansive way to address the costs and benefits of social institutions and behaviours. I am not convinced, however, that more ground was covered beyond what would normally apply should one speak to the country's political economy, or social economy. Moreover what was unspecified and unexamined is the change in 'development' policy from promotion of technology and grand infrastructure projects, to local projects and 'attitude' development (for instance, education in family planning and HIV/AIDS; small business development; and good corporate and statal governance). This is odd as it is the 'failure' of this kind of developmental lending that is central to Rosberg's angst.

There are as many pearls of literary insight in the book as there are unfortunate lapses into ethnocentrism. We are fortified by Rosberg's use of the term 'dynamic stasis' to explain how a country's underdevelopment relates to both the vicissitudes of international capitalism and how this is perpetuated by local forces and dynamics. He also points up the local Belizean context as a terrain where the complex networks of favours and obligations invariably lead to restricted national productivity. But rather than interrogate the nature and role of the state and the social class formations, ideas and ideologies – set against the backdrop of exchange relations and global capitalism -- we are treated to a hyper-particularistic discourse. The characters and performers summoned in his narrative act perform to affirm his point of view that nothing seems to work in Belize, in the Caribbean, in the Third World - the political system, the market

economy, law and order, human relationships and, of course, his main concern -- project attempts in the area of sustainable development. The dialogue of pessimism is reflected in the negative reading of state-societal networks.

It is plainly obfuscatory to bundle all such networks in discourses of corruption *pace* patron-client relations. How then will we explain the reproduction of social orders, why these countries have featured peaceful alternation of rule between political parties, all at a time when neoliberal development formats require cuts in social spending and exposure to footloose capital investment? This is to do with the deep cultural attachment to clientelism and how social forces accommodate its practice as effective governance. The argument is plausible but what is missed in the fog of intrigue and analysis is how the very easy social contact possible in Caribbean small states, has historically also allowed for social capital formation based on trust, mutuality and cooperation. Exactly where do trust and cooperation end and clientelistic collusion begin?

It is the cultural-political project rather than the anthropological guarantees that is of grave concern. Indeed the author supplies us with an engaging analysis of clientelism, Belizean style, grounding it in day-to-day experiences, that resonate well with the existing literature by Caribbeannists on charismatic leadership and patronage-based politics in the wider Caribbean. However the Caribbean and the Third World are used as counterfoils for Western modernity. They function as simplistic places against which processes of modern urbanisation, industrialisation, democratisation, nationalisation and so on could be gauged. Homi Bhabha, Paul Gilroy and Stuart Hall each call into question those approaches that facilitate a conceptual separation of the Western core from its 'margins' – countries of the former colonial world, where these, they argue, were co-constitutive spaces of Western modernity. Rosberg's manuscript reproduces ethnocentrism through the deployment of literary techniques that seek to portray the North as a standard superior to which the Third World will do well to emulate. Belizean society is thus exoticised as historically at odds with benign romantic imperialism of the 19<sup>th</sup> century. And in keeping with the need to promote business cooperatives, Rosberg furnishes us with a view of 21st century global capitalism as presenting enough neutral space for all firms and states to succeed within as long as capital meets resources and professional attitudes. The recommendations are fine as far as they go but

these are enclave in character and do not in themselves constitute a broad development strategy. But this is a slight digression. My point here is a caution against portraying Belize (and the Caribbean) as a geography of difference rather than as one of the central spaces in the making of 'our' modernity.

This book makes a contribution to popular culture and literature on Caribbean societies but its ethno-centric excesses hobble its social science contribution to development studies. We can, however, read Rosberg's thesis as bold, disturbing, and controversial. It is also engagingly witty and tongue-in-cheek. Still, too many of the lives and practices of Belizeans are read off as simply that of a struggle for survival when this would warrant a greater examination of social relations of power (that is, shifts in the balance of global socio-political forces over time, the role of the state, class development, the creolisation process, race and gender development, changing values across the rural/urban dimension, and so on). As it stands, it accents the problem of patronage and clientelism but traces its route and roots in the integrity, morality and ethical sensibilities of the actors involved.

This is the muse of the exotic encounter where context, structure and constraint are elided for what appears on the surface.

Don Marshall

## **Book Review**

**Experiencing International Business and Management: Exercises, Projects and Cases** by Betty Jane Punnett: New York: M.E. Sharpe, 2005. Pp ix + 150. ISBN 0-7656-1515-0

*Experiencing International Business and Management: Exercises, Projects and Cases* by Betty Jane Punnett is a teaching aid for use by students and course coordinators. As the title states, the book is a collection of exercises, projects and cases, supplemented by a overview of the theory of international business and management. The book is intended to act as a supplement to any basic textbook in international business management.

The book contributes to a new dimension to, not only the teaching of international business and management, but also to an understanding of the international business environment. This objective is achieved especially through the application of the projects outlined for use by instructors. Although the author suggests that not all exercises and projects need to be undertaken, the book, in order to be truly beneficial in providing a holistic understanding of international business, should be taken as a whole. This is especially true for undergraduate students, as the book appears more geared towards this level. Despite this, there are several elements that post-graduate students would find useful, especially as it relates to the projects at the end of the manuscript.

The book initially introduces the underlying concept behind such a collection of exercises, projects and cases, which is related to experiential learning; learning that occurs from experience. Undoubtedly lecturers in all fields should appreciate this concept. This manuscript easily facilitates such an approach that encourages students to investigate theory in such practical circumstances.

The section that follows provides an overview of international business management. As the book is intended to complement any basic textbook in international business, this section simply acts as a primer to

those new to the discipline. With this in mind, this section does not go into any of the conceptual debates on internationalisation. However, students would need to be cautioned that the implicit assumption of this section is debateable, namely, that the stage approach to internationalisation holds true.

This has been countered with research that attributes the increasing importance of small to medium sized enterprises (SMEs) in international activity to network and behavioural models (see Chetty, 1996; Bell, 1995), rather than the incremental models developed by scholars in the 1970s (see Johanson and Valne, 1977; Leonidou and Katsikeas, 1996). Despite this shortcoming in the overview, the current text is useful in encouraging an understanding of the complex issues at work in the exercises and projects; this is as opposed to the simplistic approach of stage theories of internationalisation.

In terms of some of the exercises presented, perhaps more introductory information as to how to conduct the sessions could be provided. However, this would be the role of the instructor and should not be considered detrimental to the overall manuscript. Related to this is a few more instructional guidelines for instructors and students in terms of what is expected from the various exercises. This would not be required for all the exercises, but would really assist in the quizzes presented as exercises. The author states in Exercise 19: Cross-Cultural Awareness Quiz that, '*This quiz is not intended to teach you specific lessons about different cultures but, rather, to make you aware of the many subtle, and not so subtle, issues that need to be considered when moving cross-culturally*' (p.91). The aim here, in a multiple choice-like quiz, is to make the student aware of issues that cause offence in different countries, however, no guidance is given as to what they are expected to learn. This would not be in the form of '*the answer to question 1 is b*', but more in line with '*the student is expected to appreciate that in country X, people are averse to Y*'. Although many texts on international management may provide this information, the author cannot guarantee that all of these issues will be dealt with, and if they are not, this will only leave the student confused. For example, there is a question concerning a trip to Rio de Janeiro. In a hypothetical reference to the student's scanty knowledge of Spanish, the student is asked whether you would attempt to speak Spanish to your counterparts or speak English slowly. It needs to be made clear what is expected of the student here; to understand that they do not speak Spanish in Brazil, but Portuguese, or

whether there is some vagary about Brazilians and how you speak to them. The same is true here for Exercise 20: Cultural Scenarios. In reference to this, a useful addition would be to request students to justify their answers to ensure that they are on the correct line. This would be in keeping with the rest of the text.

Despite these minor shortcomings, the text will encourage students to think critically about their discipline. This is especially true of the project outlines that are provided. This is especially true of Project 4: Individual Personal Profiles. The aim of this project is to review a number of profiles of personnel in your company and decide whom to send to different foreign countries. The ten profiles provided are supposed to be assessed in terms of suitability for overseas assignments, and students are required to state reasons for their choices. The profiles appear very realistic, and as would be expected, the uniqueness of the individuals makes this a complicated choice.

In this sense the student learns that there are no right or wrong answers in reality and that one must try to maximise returns based on your resources.

Overall, instructors should not consider this a text to use as a course outline with no work on their part- but as a very useful companion in structuring a student-centred course. The text provides a useful model that could be translated to other courses that instructors may teach, and hopefully this trend of encouraging critical thinking among students will continue.

Jonathan Lashley

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