

**An Investigation into The Factors Affecting Commercial Banking Fees in
the CARICOM Region.**

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ABSTRACT

Commercial banking fees have been a debating point in many CARICOM territories in recent years. This paper takes an econometric approach in an attempt to determine under what conditions will banking fees in the region change.

The author clearly highlights the issue then goes on to run a battery of tests using both macroeconomic variables and variables that are endogenous to commercial banks. Based on the information the author drew from the results, a conclusion was made that the variables tested do have both long and short-run relationships.

Keywords: Commercial Banking Fees, Vector Error Correction Model, Inflation, Gross Domestic Product, Risk, Deposit Rate.

1.0 INTRODUCTION

With the increase of commercial banking fees on personal and chequing accounts in the Caribbean over the past few years, there have been many concerns by consumers as to the reason behind such changes and the suddenness in which these changes occurred (CANA 2016). Sagicor Group Jamaica's president Richard Byles in an article published by the Jamaican Observer said that fees, in general, are used as a tool to recoup costs incurred by high taxes placed on banks. Sagicor Group Jamaica operates one of the islands largest commercial banks.

This study mainly focuses not on individual commercial banks but attempts to look at the joint effects of these banks in various CARICOM territories. Countries include; Trinidad and Tobago, Jamaica, Barbados and four countries from the Eastern Caribbean, namely; Antigua and Barbuda, Dominica, St Lucia and Grenada. The Eastern Caribbean region is comprised of four other members; St Kitts and Nevis, St Vincent and the Grenadines, Montserrat, and Anguilla. These member countries share a common central bank, the Eastern Caribbean Central Bank (ECCB), six of which are independent states and members of the International Monetary Fund (IMF) and the latter two being non-independent states.

Scope and Objective

This study is principally focused on commercial banking fees in the region which seem to be affecting all stakeholders. It is assumed that the size of fees charged

is influenced by several factors and are set with the intention to recover some of the cost of taxes and other services provided.

The paper seeks to determine the conditions under which commercial banks in the region will change their fees. These fees will be tested against gross domestic product (GDP), Consumer price index (CPI), Commercial Bank Loan Rate and Risk using a Vector Error Correction Model (VECM) to test short-run and long-run relationships. It will act as an exploratory research for future more in-depth analysis on banking fees in the Caribbean as there are no previous studies that take such approach.

1.1 Stylized Facts

List of Fees Across Commercial Banks in the Region

Fees charged by commercial banks in the region include but are not limited to:

1. Minimum balance violation fee
2. In-branch deposit transaction fee
3. In-branch withdrawal transaction fee
4. Dormant account fee
5. Stamp tax
6. Maintenance fee
7. Transfer fee
8. Weekly overdraft fee

9. Dishonoured cheque charge
10. Cheque clarification
11. Charge per entry/ Cheque
12. Transfer between accounts
13. Automated Teller Machine (ATM) transactions

Table 1 below shows the average of bank fees for the respective countries. It was calculated using fees and charges that were available from the more popular banks in the respective countries via their online websites. It should be noted that while the different types of fees mentioned above were present in most of the banks observed, not all banks posted all their fees. These fees and respective commercial banks can be found in the appendix.

Table 1: Comparison of Average Bank Fees Across the Region

	Jamaica	Trinidad and Tobago	Antigua	Barbados	St. Lucia	Dominica	Grenada
Monthly Service Charge	\$5.41	\$2.97	\$6.79	\$6.67	\$5.55	\$6.48	\$7.87
In-branch Deposit Fee	\$3.66	\$1.19	\$0.74	\$1.25	\$0.56	n/a	\$0.85
In-branch Withdrawal Fee	\$2.32	\$0.82	\$0.87	\$1.25	\$0.87	\$1.02	\$1.22
Dormant Account	\$5.20	\$17.12	\$7.41	\$5	\$5.56	\$5.56	\$5.84
ATM	\$0.08	\$0.57	\$1.85	\$1.31	\$0.50	\$0.56	\$0.93

All currencies were converted to US\$.

n/a represents fees that were not available.

Banks with fees that were n/a were not included in the average.

Commercial banks in the Caribbean charge an array of fees to its customers and a few of them were compared to show the difference across the region. Based on

the table, with respect to average monthly service charges, it is shown that most of the banks charge between \$5.40 and \$6.80. This is with the exception of Trinidad and Tobago who has the lowest average monthly fees of \$2.97 and Grenada, who has the highest average monthly fee of \$7.87.

Average in-branch deposit fees were relatively low, however, this was not the case for Jamaica since their average in-branch deposit fee was the highest at \$3.66. A figure could not be calculated for Dominica since this particular fee was not available on the banks' website. This fee was lowest in commercial banks across the eastern Caribbean according to the averages.

According to the table, average withdrawal fees were also similar across commercial banks in the eastern Caribbean with St. Lucia and Antigua both charging a fee of \$0.87. Jamaica had the highest withdrawal fees with an average of \$2.32.

A dormant account refers to one which has been inactive for a long period of time as specified by the particular bank. This means that the account holder does not withdraw money from the account or deposit money into the account. The average cost of such inaction is relatively constant across the region ranging from \$5 in Barbados to \$7.41 in Antigua. However, in Trinidad and Tobago, the average fees for a dormant account worked out to be \$17.12 which is significantly higher than that of the other CARICOM territories.

ATM fees were calculated using both withdrawal fees and deposit fees where applicable as all banks did not charge fees for deposits via ATMs. Antigua was

found to have the highest ATM fees, costing customers around \$1.85 per transaction. The second highest ATM fees were found in Barbados who had an average of \$1.35. Commercial banks in all other countries seem to charge similar ATM fees with the exception of Jamaica who had an average of \$0.08.

1.2 Literature Review

A commercial bank is considered to be a financial intermediary whose goal is to create revenue from its fund-base and fee-based services (Khir 2014). This is done by providing a range of services which include accepting deposits from customers and using those deposits to lend to other customers at a rate specified by the bank.

Income generated from fees can be recognized by the bank without having to pay a percentage to shareholders, therefore, the expectation is that the bank would prefer fee-income as opposed to fund-income as it is expected that they benefit more from this type of service (Khir 2014). Figures from the unaudited prudential returns showed fee income generated by commercial banks in Jamaica has been increasing constantly since 2008. Fee income accounted for just above 12% of total revenue in 2008 and increased to over 19% in the year 2013 (Jamaica 2014).

A survey done on banking charges in the Bahamas found that an average range of monthly fees on checking accounts has a lower bound of \$6 and an upper bound of \$8. When rates and fees were compared across institutions it was found that there were similarities. The authors believe that this is as a result of the institutions operating in an oligopolistic environment, in other words, there are

not many motivating factors to influence them to deviate from the setting of charges (Bahamas 2017).

Contrary to the findings of the previous study, a report on Survey Fees and Charges of Deposit-Taking institutions conducted by the bank of Jamaica showed that fees and charges are set independently by individual commercial banks which are influenced by their individual delivery costs, business strategies, and certain competitive factors. They found that fees range as high as 4.5 times more than the lowest offer in the market (Jamaica 2014).

Commercial banks in more concentrated markets were found to have higher fees, with all else remaining constant. This relationship, however, was higher with the presence of larger multimarket banks operating in the market (Hannan 2006). The article went on to state that larger commercial banks were found to charge customers higher fees than small banks. This was also found to be true in larger markets with the exception of ATM fees.

It was found that large banks in 25 major markets charged a higher average monthly fee for the use of automated teller machines (ATMs), maintenance, required balances and overdraft fees (Blumenthal 2011). According to the article, this came as a result of a regulation that was implemented which saw the cutting of fees that merchants pay for debit transactions to approximately 25 cents from 45 cents. Banks also attempted to recover billions of dollars in earnings lost due to rulings on overdraft fees implemented by the federal reserves by charging consumers more direct fees.

Bank fees are placed on anything imaginable including ATM's with a fault or a malfunction. Commercial banks in the United States managed to increase

overdraft fees every year over a seventeen-year period up until 2016, according to the chief financial analyst and senior vice president Mr. Greg McBride. Aside from the fact that fees on ATM transactions are increasing, it is expected that a consumer will have to pay two fees when using a competing bank's ATM. Within a year, cost to use an ATM for a non-customer rose .07% from \$2.90 to \$2.88 which has been the trend for twelve years running. There are also fees attached to using an ATM with malfunction, however, these fees are being withdrawn. According to a senior equity analyst Kevin Baker from the full-service investment banking company Piper Jaffray, there is an increased difficulty with which banks are faced with to generate income and ATM fees are seen as an easy avenue and are expected to increase (Cetera 2016).

A survey done on the Australian banking system found that domestic fee income from housing loans raised by 17 percent in 2009. This was believed to be as a result of early exit fees and break fees. These fees are charged as a tool to recover costs linked with transactions that banks overtake to fund borrowers (Australia 2010).

Commercial banks in Australia experienced an eleven percent decrease in fee income from household deposits in the year 2009 even though there was a large increase in deposits. This was as a result of a decline in income from transaction fees due to ATM fee reforms implemented by The Reserve Bank of Australia (Flood 2010).

According to Richard Byles, commercial banks are taxed around 40% and in response, they seek to find ways in which they can recoup these funds. Compared to such banks in the United States, commercial banks in the region pay 8% more in taxes for entities which are non-regulated, this tax is coupled with a tax on assets (Jackson 2015).

Based on a study done by the Queen's University in Canada, there is a positive relationship between inflation rates and saving rates (MacKinnon 1983). The results from this study showed that there is evidence to support the claim that inflation does, in fact, impact savings positively. This is thought to be so because income from financial assets is not measured in the most appropriate way. However, according to Deaton's hypothesis, inflation that occurs which was not previously predicted causes individuals to save even though they had no previous intention to do so (Erkki Koskela 2006).

According to Keynes, individuals will only refrain from consuming if they are faced with highly complex situations (Keynes 1936). Personal savings may increase as a result of high levels of inflation hence, it is expected that consumption will fall. Once there is a rapid increase in price levels meaning as inflation increases it is expected that persons will opt to save rather than to spend (Evans 1984). However, predicting inflation as little as one quarter ahead is extremely difficult (Banks 1986).

When GDP was tested against the rate at which people save it was found that there is some long-run relationship. However, in the short-run there was no

evidence that changes in GDP actually caused people to save more (Grietjie Verhoef 2013).

2.0 Methodology

Previous studies relating to factors affecting bank fees analyzed primary data gathered through the use of surveys, however, this study adopted an econometric model in an attempt to unveil the factors that influence bank fees throughout the CARICOM region. Tests employed include:

2.1 Model Specification and Definitions of Variables

Since the aim is to look at the effects of particular variables on commercial banking fees, the model can be specified as:

$$FEES = f(CPI, GDP, LOAN, RISK)$$

Where:

Fees represent the commercial banking fees,

CPI represents inflation,

GDP is the respective countries' revenue,

LOAN represents the weighted average loan rate; and

RISK is the potential loss of commercial banks.

2.2 Assumptions:

Due to a lack of available data, some assumptions were made to create the model, they include:

- Fees = deposit rate *[(monthly service charge + in-branch deposit fee + in-branch withdrawal fee + dormant account fee + automated teller machine) / 5].
- CPI = monthly CPI converted quarterly.
- GDP (Trinidad and Tobago) = annual GDP * quarterly percentage change in GDP.
- GDP (Eastern Caribbean) = annual GDP * quarterly percentage change in tourism).
- Loan Rate = annual loan rate converted into quarterly.
- Risk = mortgage rate – treasury bill rate.

Based on observations made regarding commercial banking fees in the Caribbean, five fees were selected, as they were the most common fees among all commercial banks in the region. Fees include; Monthly Service Fee, In-branch withdrawal fee, In-branch deposit fee, dormant account fee and ATM fees. These fees were then averaged to find a general fee figure for each country. This figure was then multiplied by quarterly deposit rate for the respective country in an attempt to capture fluctuations that may have occurred throughout the period.

Monthly CPI and Loan rate were averaged quarterly to represent quarterly data for the period of study. CPI was used as a proxy for inflation. In the case of Trinidad and Tobago, the quarterly percentage change in GDP was used to convert annual GDP into quarterly GDP where the percentage change would have reflected fluctuations per quarter. Similarly, for the Eastern

Caribbean, tourism was used as an activity variable to represent quarterly fluctuations in GDP as the quarterly percentage change in GDP was not readily available for this region.

The model was transformed using logs as they were not all represented by the same unit of measure. Implementing logs allows for the testing of variables in a common unit of measure. The model becomes:

$$\text{LFEES}_t = \alpha + \beta_1 \text{LCPI}_t + \beta_2 \text{LGDP}_t + \beta_3 \text{LLOAN}_t + \beta_4 \text{LRISK}_t + \varepsilon_t$$

The authors used quarterly data for this study as it allows for an empirical investigation on a number of issues (O'Hara 1997), the time period in focus was from the year 2006 to 2015. Based on the expenditure approach which says that $\text{GDP} = C + I + G + (X-M)$, it can be assumed that, with regards to the consumption schedule, an increase in disposable income there would cause an increase in consumption (Richard 2017). This increase may then positively affect GDP, meaning an increase in consumption may lead to an increase in GDP. Also, an increase in disposable income positively relates to savings. According to the marginal propensity to save theory, an increase in income will result in an increase in the proportion of income saved (Singh 2016). Due to this logic, the author chooses to test commercial banking fees against GDP to determine if this theory holds for the region, as an increase in savings is expected to cause a decrease in banking fees.

Inflation negatively affects an individual's purchasing power as it makes goods and services more expensive to consume. This negative effect, specifically in the case of an increase in inflation, is expected to result in an increase in savings

(Bahaw 2008). This too may have some impact on commercial banks' decision-makers in the region to change or even add fees to their services.

The other two variables, loan rate, and risk are two factors that can be considered as endogenous to commercial banks. These variables were added to the regression as it is expected to have some effect on the decision to change fees. While there may be other factors affecting commercial banking fees in the region, the author presumed that these two will have a significant part to play.

2.3 A Priori Expectations

Table 2: A Priori Expectations of the Variables

Variables	Description	Expected Effect (+/-)
GDP	This refers to the total final value of services and goods produced within a country during a particular period of time.	Negative
CPI	Measures the weighted average of prices of a basket of consumer goods and services.	Positive
Loan Rate	This refers to the rate at which a consumer is charged on borrowing.	Negative
Risk	This refers to the commercial bank's exposure to loss due to lending or other transactions.	Positive

3.0 Empirical Results and Analysis

3.3 Vector Error Correction Model (VECM)

The VECM model was used to further estimate long- run causality however unlike the Johansen cointegration test, VECM also indicates the direction of Granger causality between variables in the long-run while showing relationships in the short run. This test was also used to generate the Impulse Response Functions between variables in each CARICOM territory. The model also calculates the error correction term or speed of adjustment, which shows the speed at which variables revert to long run equilibrium.

VECM requires that there must be some long-run relationship among variables in focus hence cointegration was implemented previously and found that there were on cointegrating equations among variables and in some cases, there were two. The table below shows the long-run causality running from LCPI, LGPD, LLOAN, and LRISK to LFEES for each country.

Table 14: Long-Run Causality

Country		Coefficient	Std. Error	t-Stat	Prob.
Jamaica	C(1)	0.129506	0.661000	0.776980	0.4445
Trinidad & Tobago	C(1)	-0.028491	0.007050	-4.041313	0.0004*
Antigua	C(1)	-0.347176	0.102111	-3.400002	0.0023*
Barbados	C(1)	-0.156935	0.083897	-1.870563	0.0732***
St. Lucia	C(1)	0.027665	0.055803	0.495753	0.6244
Dominica	C(1)	-0.043813	0.031239	-1.402488	0.1707****
Grenada	C(1)	-0.559166	0.141726	-3.945412	0.0006*

*, **, ***, **** denote statistical significance at the 1%, 5%, 10% and 20% levels respectively.

Given that the error correction coefficient $C(1)$ is negative and the probability value is significant at the 1%, 5%, 10% or 20% level we can determine whether or not there is long-run causality running from the independent variables to the dependent variable.

The first country in focus according to the table above is Jamaica which has a coefficient of 0.13 and a p-value of 0.4445. This indicates that there is no long-run causality running from the independent variables to the dependent one which assumes in the case of Jamaica, banking fees are not influenced by GDP, inflation, loan rate and risk.

Trinidad and Tobago, as reported by the VECM results, holds a coefficient of -0.03 and a p-value of 0.0004 which is significant at all levels of significance. This means that there is long-run causality running from the independent variables to the dependent variable. Hence, we can say that commercial banking fees in Trinidad and Tobago are influenced by the country's GDP, the rate of inflation, loan rate and risks taken on by the respective commercial banks. However, the speed of adjustment while negative, is very small which means that variables will slowly return to equilibrium, implying that there are other factors that cause banking fees to change.

Moving along to Antigua as seen on the table the model produced a significant p-value of 0.0023 and coefficient of -0.35. These results suggest that there is long-run causality running from the independent variables to the dependent variable. While the speed of adjustment is faster here than for Trinidad and Tobago, it is still relatively slow so we assume that other variable also causes commercial banking fees to change in Antigua.

Results show that Barbados has a p-value of 0.0732 and a coefficient value of -0.15. This p-value is significant at the 20% level hence we can conclude that there is long run causality running from the independent variables to the dependent variable but at a slow rate similar to the previous results.

Commercial banking fees in St. Lucia has no long run relationship with the GDP, Inflation, loan rate and risk according to the results showing a p-value of 0.6244 and a speed of adjustment of 0.03. This definitely indicates that fees in St. Lucia are affected by other unknown factors.

Finally, Dominica and Grenada but has long-run causality running from the independent variables to the dependent variable with p-values of 0.1707 and 0.0006 respectively and speed of adjustments of -0.04 and -0.56 respectively. These results indicate that variables will converge to equilibrium slowly for Dominica implying that there are other variables affecting banking fees there and a relatively fast convergence to equilibrium in the case of Grenada.

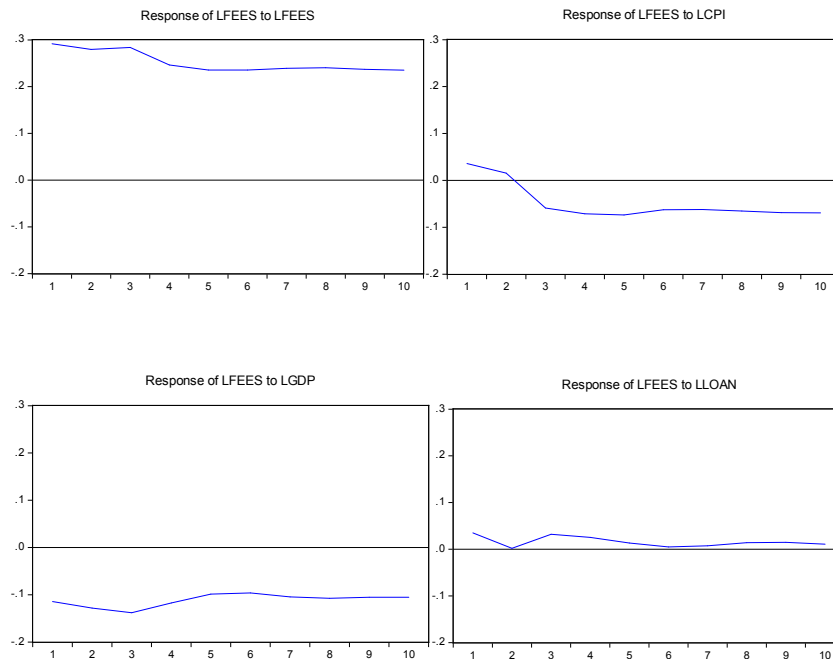
3.5 Generalized Impulse Response Function

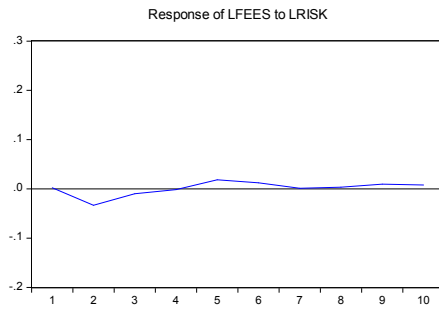
Jamaica

Figure 1 below shows that a one standard deviation shock on LFEES to itself will cause some fluctuations from the first to the third period with a decline from the third to the fourth period and relatively constant from the fifth to the tenth period. A one standard deviation shock to LCPI causes LFEES decline from the first to the second period with a sharp decline from the second to the third period. From the Fourth period onward, the graph remains relatively stable with slight fluctuations in the sixth, eighth and ninth period. When there is an innovation to LGDP, LFEES is residing in the negative region of the graph. There is a decrease

from period one to three followed by an increase from the third to the sixth period, the graph is relatively stable thereafter. LFEES tend to remain stable around zero when there is a one standard deviation shock on LLOAN. There are some fluctuations from the first to the third period with a decrease from the third straight to the fifth period, and constant thereafter to the tenth period. A one standard deviation shock on LRISK causes LFEES to decrease from zero into the negative region until the second region where it increases to the third period and is constant on zero with a slight increase from the fifth period then a decrease again in the sixth period. The graph then becomes stable around zero from the sixth period onward.

Figure 1: Impulse Response Functions for Jamaica

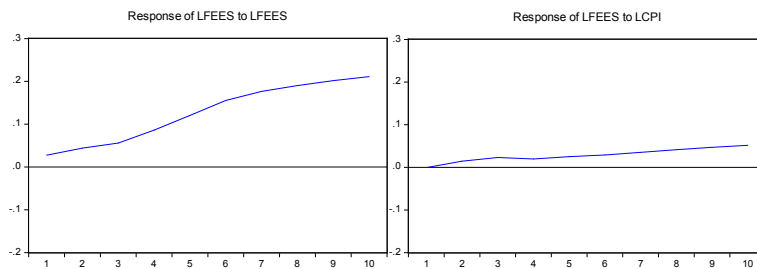


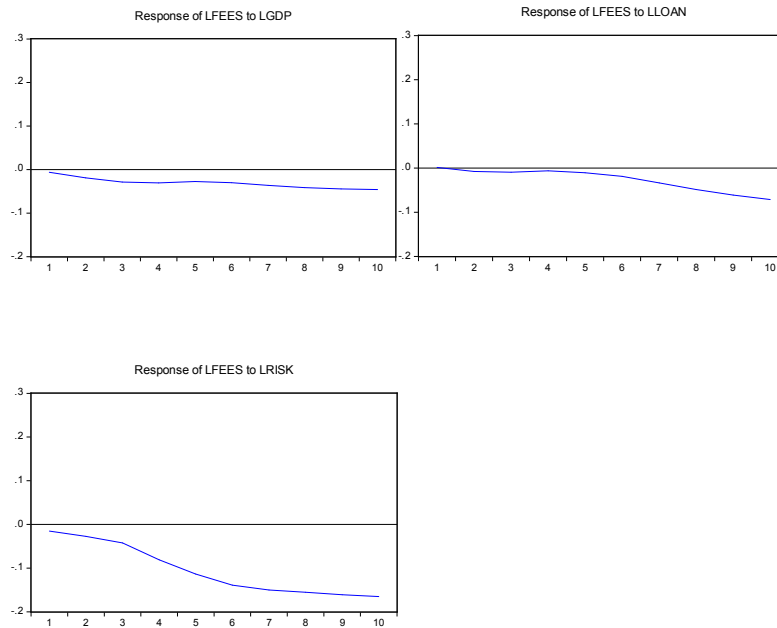


Trinidad and Tobago

An innovation to LFEES on itself causes it to rise constantly from the first to the tenth period. LFEES starts from zero and increases slightly to the third period with the graph remaining nearly flat from that period onward as a result of a one standard deviation shock to LCPI. A similar shock to LGDP causes LFEES to fall into the negative region from the first period which a constant but slight decline thereafter. A one standard deviation shock on LLOAN results in LFEES remaining flat at zero from the first to the fifth period with a decrease in the negative region from the fifth to the tenth period. A similar shock on LRISK sees LFEES in the negative region with a constant decrease from the first to the third period followed by a sharp decline from the third to the sixth period. From the seventh period onward the graph remains relatively flat.

Figure 2: Impulse Response Functions for Trinidad and Tobago

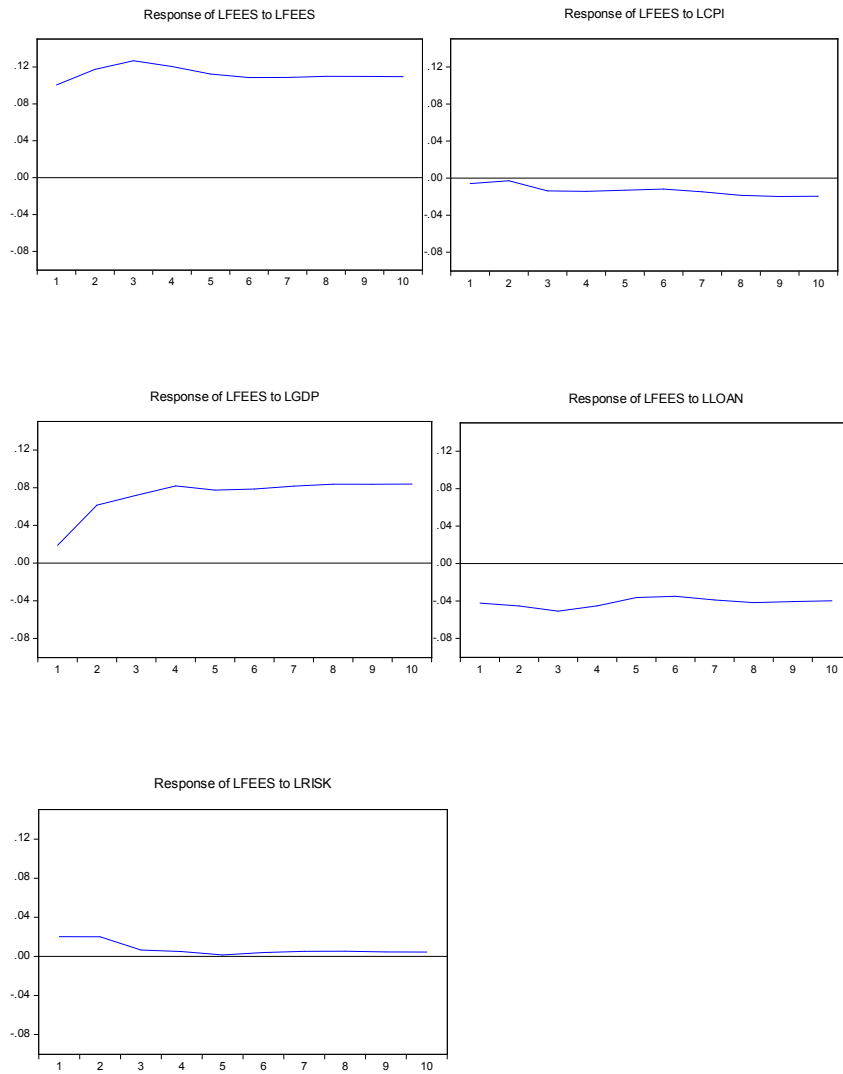




Barbados

Panel (1) in the figure below shows that with a one standard deviation shock to LFEES on itself, it is well above the x-axis. There is a minor increase from the first to the third period followed by a similar decrease from the third to the fifth and is flat thereafter. A shock to LCPI according to the second panel sees LFEES operating in the negative region with a slight decrease from the second to the third period and flattens out from the third period thereafter. An innovation to LGDP causes LFEES to increase sharply from the first to the second period. The increase slows down from the second to the fourth period and is flat thereafter. With a similar shock to LLOAN, LFEES operates in the negative region of the graph with a small increase from the third to the fifth period and remaining flat throughout to the tenth period. Finally, a one standard deviation shock on LRISK resulted in LFEES being flat in the first period leading to a decrease in the second period and leveling out from the third period onward on the x-axis or zero range.

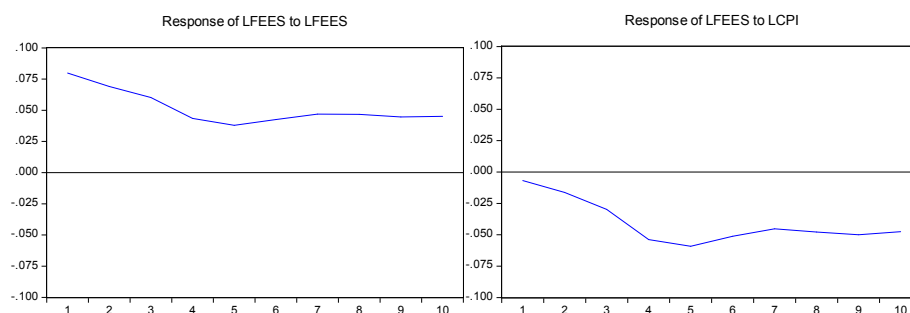
Figure 3: Impulse Response Functions for Barbados

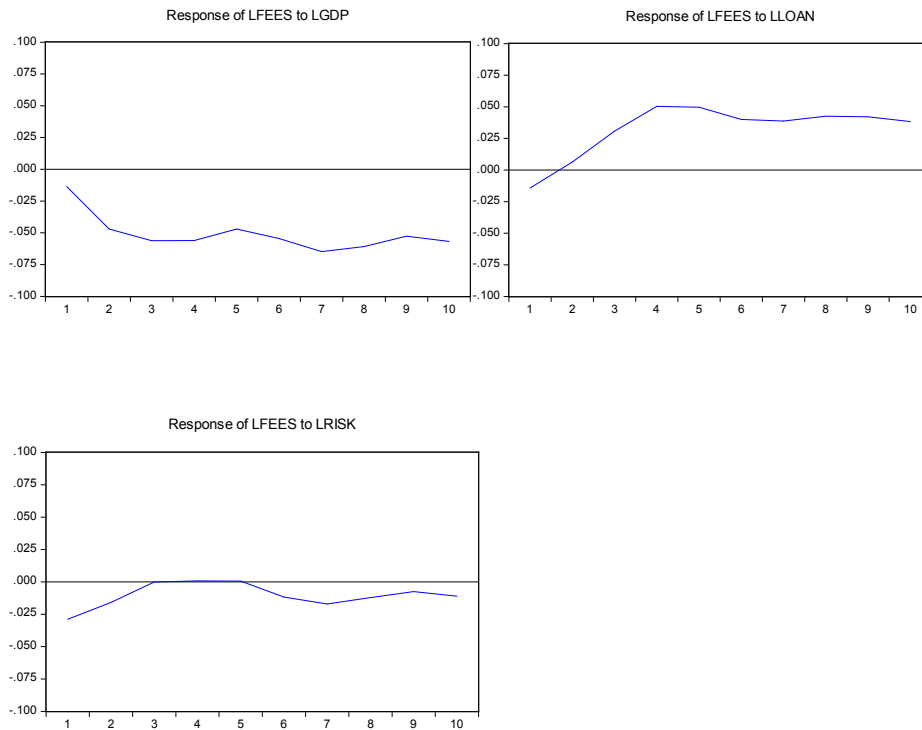


Antigua

In the case of Antigua, a one standard deviation shock to LFEES on itself causes it to decrease from the first to the fourth period with a slight increase from the fifth to the seventh period and flat thereafter. With a shock to LCPI, LFEES decreases from an already negative position from the first to the fourth period with a minor increase from the fifth to the seventh period and then flattens out thereafter. LFEES fluctuates from the first period straight to the tenth period without leaving the negative region due to a shock on LGDP. A one standard deviation shock to LLOAN causes LFEES to increase from the negative region into the positive region from the first to the fourth period. It flattens out for one period after, decreases in the following period and flattens out thereafter until the tenth period. When there is a shock to LRISK, LFEES increases from the negative region in the first period and reaches zero in the second where it will stay until the fifth period. There is then a decrease from the fifth to seventh period and an increase from the seventh to the ninth where it flattens out onwards.

Figure 4: Impulse Response Functions for Antigua



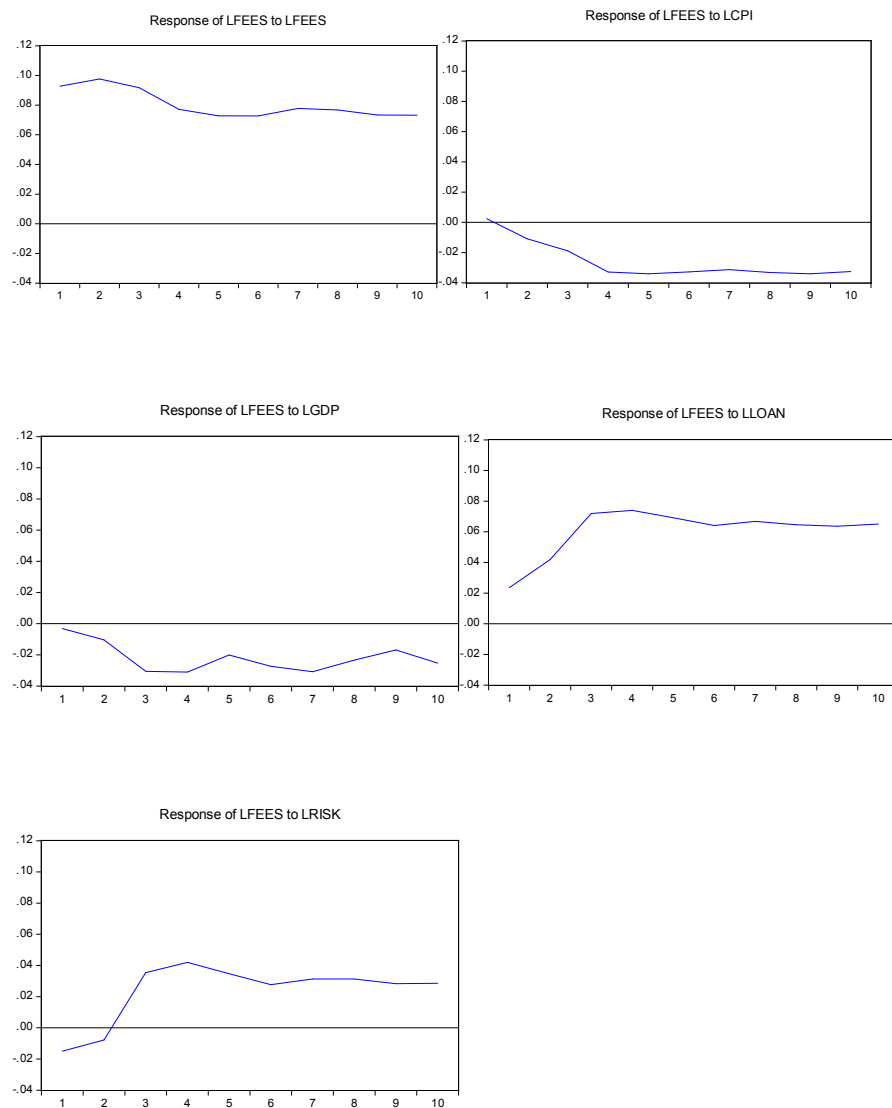


St. Lucia

An innovation to LFEES on itself causes it to begin well above zero. There is a decrease from the second to the third period, levels out by the fifth and is stable thereafter. A one standard deviation shock to LCPI causes a sharp decrease in LFEES from zero in the first period to -.04 in the fourth period. From the fourth period, it becomes flat and remains this way with minor fluctuations for all other periods. A one standard deviation shock to LGDP forces LFEES to fluctuate in the negative region of the graph from the first straight to the tenth period. A shock to LLOAN however, triggers a sharp increase in LFEES from .02 in the first period to around .07 in the third period. There is a decrease from the fourth to the sixth period and is flat thereafter. When there is a shock to LRISK, LFEES starts to increase out of the negative region and cuts the zero line in the second

period. The increase continues until the fourth period where there is a decrease up to the sixth period and flat for all periods following.

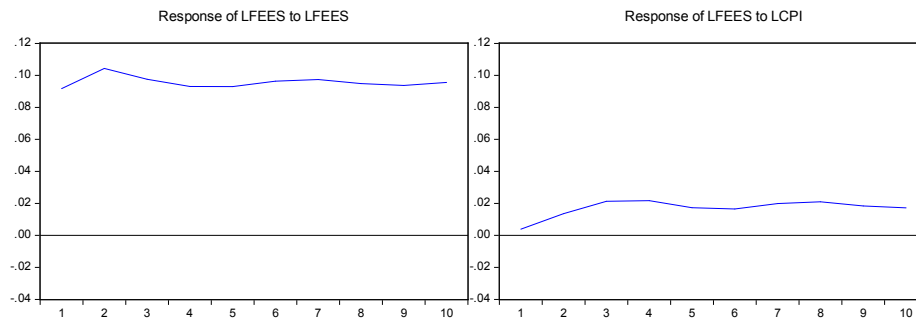
Figure 5: Impulse Response Functions for St. Lucia

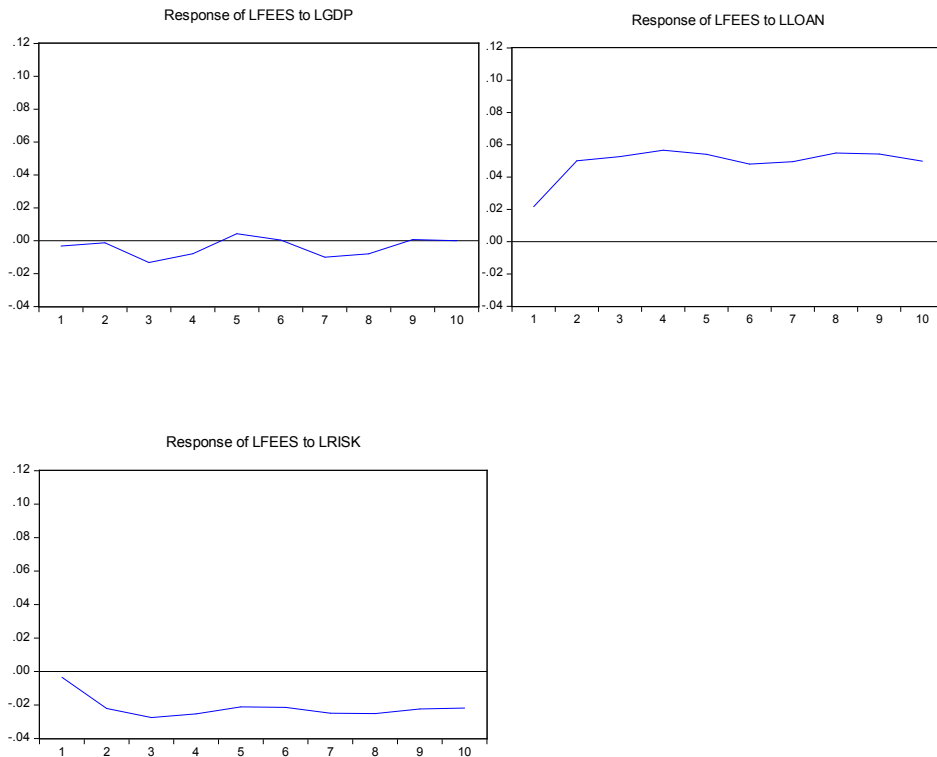


Dominica

When there is a shock on LFEES to itself there is little fluctuation throughout all ten periods with the line remaining relatively flat at .09. Similarly, when there is a shock on LCPI, LFEES increases from the first to around the third period but flattens out from that point onward. An innovation on LGDP causes LFEES to stick close to zero in the first period with a decrease in the second period and is reverted to from the third to the fifth period. This pattern continues until the ninth period and is then flat to the tenth period. A shock on LLOAN according to the figure will result in an increase from the first to the second period. From the second period onward, the line becomes flat with a minor fluctuation from the fifth to the eighth periods. A one standard deviation shock on LRISK cause LFEES to operate in the negative region throughout all periods with the only major movement being a decrease from the first to the second period. The effect becomes flat from the third period onward.

Figure 6: Impulse Response Functions for Dominica



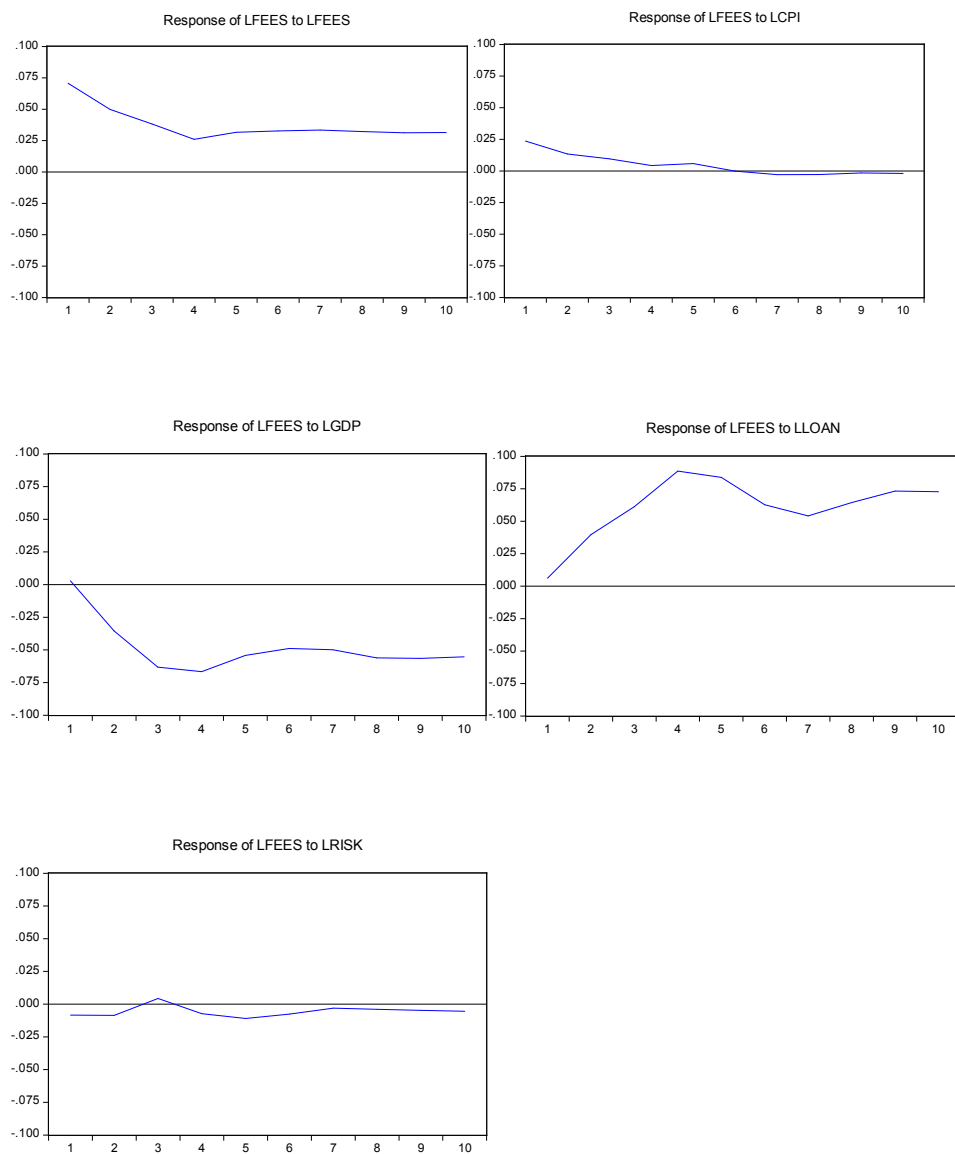


Grenada

As for Grenada, a shock on LFEES causes itself to decrease from .06 in the first period to .02 or thereabout in the fourth. The graph becomes relatively flat from the fourth period onward. An innovation on LCPI decreases LFEES from .02 up to the fifth period where it reaches zero and is stable on zero thereafter. LREES decrease from zero in the first period to -.02 in the third as a result of a one standard deviation shock on LGDP. It increases slightly from the fourth to the sixth period and is relatively flat thereafter. An innovation on LLOAN causes LFEES to increase constantly until period four where flattens and starts to decrease to the seventh period. There is a constant increase from the seventh to the ninth period and then it flattens from the ninth to the tenth period. When there is a shock on LRISK there isn't much effect to LFEES. It remains constant

around zero with minor deviations in the third period where it is just above zero and from the fourth to the sixth period where it is just below zero.

Figure 7: Impulse Response Functions for Grenada



4.0 Conclusion

Fees not derived from the macroeconomic conditions for the economy. Instead we found that fees are likely to be followed from the leading banks emanating from the OECD countries. Bank fees are growing rapidly Pisani (2017). This suggests that domestic banks are engaged in price fellowship.

Results from the study found that CPI, GDP, Loans rate risk had some influence on fees charged by commercial banks. Based on these finding there are some suggestions about which variable will cause fees to change. Results show that in Jamaica and St. Lucia none of the variables mentioned above had any long or short-run relationship with commercial banking fees. This means that changes in fees in Jamaica will be caused by other factors which were not included in this study

It was found that banking fees in Trinidad and Tobago are influenced by all the mentioned factors in the long-run, however, because of the slow speed of adjustment, it was concluded that there may be factors other than the ones tested that may cause bank fees to fluctuate. In the short-run, it is expected that changes in each factor may cause banking fees to fluctuate, however, this effect may be stronger with changes in inflation and the loan rate.

Antigua's GDP, CPI, loan rate and risk all appear to have a negative relationship with their commercial banks' fees. This means that with an increase in any of these variables, it is expected that bank fees will decrease, and vice versa. In the long-run, it is expected that, among other things, these variables will have some

part to play in the fluctuation of banking fees. The only factor that does not seem to affect banking fees in the short run is inflation.

Results for Barbados showed that all factors with the exception of GDP had a negative relationship with banking fees. It was suggested that there was some long-run causality running from the mentioned variables to banking fees, however, as in the case of Trinidad and Tobago, the speed of adjustment was found to be very slow which suggests that other factors also influence banking fees. None of the variables seemed to effect fees in the short run.

Results for Dominica found that all variables with the exception of GDP had a positive relationship with banking fees in that country. Therefore, fees are expected to change in the same direction of those variables. When GDP changes fees are expected to change in the opposite direction. Long-run causality exists but the causality was found to be weak hence it is strongly suggested that variables other than those tested are responsible for changes in Dominica's commercial banking fees. The only variable that seemed to have some short-run relationship with fees was GDP but this too was not a strong effect.

Finally, banking fees in Grenada were found to have a positive relationship with CPI and the loan rate but a negative one with GDP and risk. It was suggested by the results that there was a strong long-run relationship among fees and the independent variables. There was also short-run causality, with the strongest effects coming from GDP and loan rate.

Commercial banking fees in the CARICOM region are affected by a number of factors, some known from the results of this study and others that remain unknown. The results may also assume that fees are changed arbitrarily since in

some cases where it was expected that fees will have a positive relationship with certain variables such as inflation, results showed the complete opposite.

Bibliography

- Australia, The Reserve Bank of. 2010. "Banking Fees in Australia ." *The Reserve Bank of Australia* 31-35.
- Bahamas, The Central Bank of the. 2017. *Survey of Retail Banking Charges in the Bahamas*. Bahamas: The Central Bank of the Bahamas.
- Bahaw, Edward. 2008. *Comprehensive Economics*. Port of Spain: Caribbean Educational Publishers.
- Banks, The Effects of Inflation on Commercial. 1986. "G.J. Santoni." 15-25.
- Blumenthal, Khan. 2011. "WEEKEND INVESTOR--- The New Basics-- Getting Going: How Debit-Card Fees Ruin Banking Relationships." *Wall Street Journal*, October 01: B.8.
- CANA. 2016. "ECCB concerned at increase fees by commercial banks in the sub-region." *Daily Express*, May 24.
- Cetera, Mike. 2016. "2016 Bankrate Checking Account Survey: ATM Fees Stay on Record-Setting Streak." *Bankrate*.
- Erkki Koskela, Matti Viren. 2006. "Inflation and savings:resting Deatron's hypothesis." *Applied Economics* 579-590.
- Evans, M.H. Pesaran and R.A. 1984. "INFLATION, CAPITAL GAINS AND U.K. PERSONAL SAVINGS: 1953 - 1981." *The Economic Journal* 237-257.
- Flood, Filipovski B and D. 2010. "Reform of the ATM System ." *The Reserve Bank of Australia* 37-45.
- Grietjie Verhoef, Lorraine Greyling and John Meamba. 2013. "Savings and economic growth: a historical analysis of the relationship between savings and economic growth in the CAP colony economy, 1850-1909." *Munich Personal RePEc Archive* 2-34.
- Hannan, Timothy. 2006. "Retail deposit fees and multimarket banking." *Elsevier* 2561-2578.
- Jackson, Steven. 2015. "Bank Fees Continue To Increase in 2014." *Jamaica Obcerver* , May 5.
- Jamaica, Bank of. 2014. *Report on Survey Fees and Charges of Deposit-Taking Institutions*. Jamaica: Bank of Jamaica.
- Keynes, John Maynard. 1936. *The General Theory of Employment, Interest and Money*.

- Khair, Mohammed Fairouz Abdul. 2014. "Actual Costs in Fees and Charges in Islamic Banking ." *ISRA International Journal of Islamic Finance*, December: 7.
- Mackinnon, Russell Davidson and James. 1983. "Inflation and the Savings Rate." *Department of Economics, Queen's University, Kingston, Canada* 731-743.
- O'Hara, Charles A.E. Goodhart Maureen. 1997. "High frequency data in financial markets: Issues and applications ." *Journal of Empirical Finance* 73-114.
- Richard, Linda. 2017. "The Relationship Between Income & Expenditure." *Chron*.
- Singh, J. 2016. "Saving Function of Income: Meaning and Relationship between Saving and Income." *Economics Discussion* .
- Erkki Koskela, Matti Viren. 2006. "Inflation and savings:resting Deatron's hypothesis." *Applied Economics* 579-590.
- Evans, M.H. Pesaran and R.A. 1984. "INFLATION, CAPITAL GAINS AND U.K. PERSONAL SAVINGS: 1953 - 1981." *The Economic Journal* 237-257.
- Grietjie Verhoef, Lorraine Greyling and John Meamba. 2013. "Savings and economic growth: a historical analysis of the relationship between savings and economic growth in the CAP colony economy, 1850-1909." *Munich Personal RePEc Archive* 2-34.
- Keynes, John Maynard. 1936. *The General Theory of Employment, Interest and Money*.
- Mackinnon, Russell Davidson and James. 1983. "Inflation and the Savings Rate." *Department of Economics, Queen's University, Kingston, Canada* 731-743

4.4 Appendix

4.41 Commercial Banking Fees and Charges

Table of Fees and Charges for Grenada

Fees and Charges	First Caribbean	RBC	Scotia
Monthly Service Charge	\$10.65	\$9.26	\$3.70
In-branch deposit fee	Free	\$1.28	\$1.28
In-branch withdrawal fee	\$1.28	\$1.28	\$1.11
Dormant account	7.41	\$4.26	n/a
ATM	\$0.74	Na	\$1.11

Table of Fees and Charges for Barbados

Fees and Charges	First Caribbean	RBC	Scotiabank
Monthly Service Charge	\$7.50	7.50	\$5.00
In-branch deposit fee	\$1.25	Free	\$1.25
In-branch withdrawal fee	\$1.25	\$1.25	\$1.25

Dormant account	\$5.00	\$5.00	n/a
ATM	Na	\$0.88	\$1.75

Table of Fees and Charges for Trinidad and Tobago

Fees and Charges	RBC	First Citizens Bank	Republic Bank	Scotiabank
Monthly Service Charge	\$3.72	\$2.23	\$2.23	\$3.68
In-branch deposit fee	\$1.19	n/a	n/a	n/a
In-branch withdrawal fee	\$1.19	n/a	\$0.45	n/a
Dormant account	\$26.79	\$7.44	n/a	n/a
ATM	n/a	\$0.68	\$0.45	n/a

Table of Fees and Charges for Dominica

Fees and Charges	First Caribbean	RBC
Monthly Service Charge	\$3.70	\$9.25
In-branch deposit fee	n/a	n/a
In-branch withdrawal fee	\$0.93	\$1.11
Dormant account	\$7.41	\$3.70
ATM	\$0.74	\$0.37

Table of Fees and Charges for St. Lucia

Fees and Charges	First Caribbean	RBC	Scotiabank
Monthly Service Charge	\$3.70	\$9.26	\$3.70

In-branch deposit fee	Free	\$1.11	n/a
In-branch withdrawal fee	\$0.75	\$1.11	\$0.75
Dormant account	\$7.41	\$3.70	n/a
ATM	\$0.75	\$0.37	\$0.37

Table of Fees and Charges for Jamaica

Fees and Charges	FGB	FCIB	BNS	NCB
Monthly Service Charge	\$3.85 - \$5.40	\$4.24 - \$3.85	\$5.24	\$7.15
In-branch deposit fee	Free	n/a	\$2.96	\$4.36
In-branch withdrawal fee	\$1.54	n/a	\$2.96	\$2.47
Dormant account	\$3.85	n/a	\$7.71	\$4.05
ATM	Free	n/a	\$0.46	\$0.23

Table of Fees and Charges for Antigua

Fees and Charges	First Caribbean	RBC	Scotia
Monthly Service Charge	7.41	9.26	3.70
In-branch deposit fee	n/a	0.74	n/a
In-branch withdrawal fee	1.11	0.74	0.75
Dormant account	7.41	n/a	n/a
ATM	0.74	n/a	1.11

