LIBERALIZING TRADE IN TOURISM SERVICES UNDER THE CARIFORUM EU ECONOMIC PARTNERSHIP AGREEMENT: EXAMINING ITS EFFECT ON TOURISM RELATED FOREIGN DIRECT INVESTMENT IN THE OECS.

1. INTRODUCTION

Over the last sixty years, tourism in the Caribbean has grown in stature from a fledgling industry to become the leading employer regionally and the principal earner of foreign exchange in many of the region's tourism dependent countries. This has occurred against the background of declining fortunes in the once dominant agricultural sector and substantial changes in the international trade regime which have primarily affected exports of sugar and bananas from the Caribbean as noted by (Bishop 2010). Statistical data retrieved from the World Travel and Tourism Council (WTTC) Travel and Tourism Economic Impact Report 2018 on the Caribbean for 2017, indicates that the region is the most tourism dependent regional destination globally. In regional rankings regarding relative contribution for 2017 the Caribbean placed first in four out of six categories (See Table 1)

The regional tourism industry is characterised by several types of tourism product offering such as culinary tourism, cultural and heritage tourism, cruise tourism, eco-tourism, festivals, health and wellness tourism, meetings incentives, conference and events tourism, sports tourism and yachting tourism. Also, there are seven sub-regional markets within the Caribbean namely the Dutch West Indies, the French West Indies, Hispanic Caribbean, the Organisation of Eastern Caribbean States (OECS), other Caribbean Community and Common Market (CARICOM), other Commonwealth and the United States Caribbean. Data retrieved from the Caribbean Tourism Organisation for 2014 indicates that the region recorded a strong performance as 26. 3 million visitors partook of the region's diverse product offering spending US$29 billion dollars.

Additionally, demand for tourism in the Caribbean was very strong as the region experienced a growth rate of 5.3% outperforming the rest of the world which had a growth rate of 4.7 percent (Riley 2015). Today, tourism sits at the apex of all industries which

contribute towards economic activity in most countries of the Eastern Caribbean according to a report by (Enterplan 2006). However, the 2015 Briefing Paper on Foreign Direct Investment in Latin America and the Caribbean of the Economic Commission on Latin America and the Caribbean (ECLAC) indicated that there are some anomalies such as Guyana, Suriname and Trinidad and Tobago where tourism is outperformed by the natural resources sector. Despite the aforementioned exceptions, the tourism sector has still managed to attract substantial sums of tourism related foreign direct investment from North America, Europe, Asia and more recently the Middle East.

Regarding the Organisation of Eastern Caribbean States, the inflows of this type of foreign direct investment to six of the seven founding members[1] have been very significant during the period 1997 to 2013. Statistical data retrieved from the Foreign Direct Investment Flows of CARICOM Member States 2002-2013 Report shows that tourism related foreign direct investment has accounted for over fifty percent of the total foreign direct investment in those six islands on at least one occasion. Figure 1 indicates several interesting pieces of information. First, inflows of tourism foreign direct investment fluctuated generally throughout the period 1997-2013 in the OECS EPA signatories. Second, Antigua was the only country to record continuous increases in tourism foreign direct investment in the period 2003-2007 preceding the hosting of the Cricket World Cup in the Caribbean in 2007. Research undertaken by (Van Parys and James 2010) indicated that investment in the tourism sector in Antigua increased following the implementation of a corporate tax policy change extending corporate tax exemptions from 5 years to 25 years. Third, in 2007 foreign investment in the tourism sector was responsible for at least 70% of the total inflows of foreign investment in every country except Dominica which did not host any of the Cricket World Cup matches. Fourth, between 1997 and 2001 St Vincent was the only country where this type of foreign direct investment was responsible for 100% of foreign direct investment at any given time. Fifth, in the post-2008 period St. Kitts experienced dramatic decreases in tourism related foreign direct investment whilst

[1] Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines.

all other countries experienced fluctuations. This may possibly have been attributed to the Global Financial Crisis which occurred in 2008.

Indeed, it can be said that tourism related foreign direct investment is invaluable to these small island developing states. It creates employment opportunities for citizens, propels economic growth, creates spill-over effects concerning the transfer of technology and knowledge and it is considered as a source of financing for developmental projects.

The substantial inflows of tourism related foreign direct investment into these Eastern Caribbean territories occurred in the mid 2000's at the same time when negotiations for the impending EPA that was bringing radical changes to trade policy development in the Caribbean were taking place. Following the end of trade preferences for goods from the Caribbean which were declared incompatible with the rules of the World Trade Organisation a new trade regime informing trade relations between Europe and the Caribbean was proposed by the European Union (EU). Negotiations concerning the Caribbean Forum (CARIFORUM) – European Union Economic Partnership Agreement (EPA) commenced in 2002 and concluded in 2007. Subsequently, in 2008 the EU and all of the CARIFORUM member states except Haiti signed the EPA which provided for reciprocal duty-free trade in goods and for the first time ever the liberalization of trade in services (including tourism services) between both trading blocs. Additionally, the trade agreement covered issues pertaining to investment.

The economic importance of tourism to the region coupled with the preceding economic developments serve as the motivation for investigating the effect of liberalizing trade in tourism services under the CARIFORUM-EU EPA on inflows of tourism-related foreign direct investment into the sub-region. Additionally, undertaking such a study facilitates the empirical analysis of how other determinants will affect inflows of foreign direct investment to the tourism sector in the aforementioned countries. Furthermore, this paper is an original contribution to the existing literature regarding trade policy development and tourism development in the Caribbean. The reason being, to the best of my knowledge no previous study has modelled the effect of the EPA on inflows of tourism–related foreign direct investment in the OECS EPA signatories. The rest of the paper is organised as follows.

Section two identifies the theory regarding foreign direct investment which can best describe the phenomenon of tourism related foreign investment in the Caribbean. This is done by first describing the situation in the region and then outlining what the groups of theories say before determining which theoretical framework is most applicable in the context of this study. Section three describes the data used in the econometric modelling process, outlines where the data was sourced and provides a rationale for the inclusion of each variable in the model. It also explains the methodological approach to be used in this paper and the rationale for its choice whilst comparing it used against other approaches which were deemed to be unsuitable. The section also highlights the results of a series of diagnostic tests which are important to the study. The unit root tests are performed to ensure the stationarity of the data. The panel cointegration tests are conducted to determine if there is the existence of a long run relationship between the variables and to ensure that the risk of a spurious relationship has been minimised in the econometric modelling process. Section four presents the results of the econometric modelling and section five concludes the paper.

2. THEORETICAL FRAMEWORK

This section of the paper identifies the theoretical framework which can best explain the phenomenon tourism-related foreign direct investment in the Caribbean. To do so it is imperative to examine the character of such investment in the region before arriving at a plausible conclusion. According to (Falk 2016: 1) “The hotel industry is the most internationalised tourism industry as is evidenced by its high FDI inflows and outflows and the dominance of international hotel chains.” This statement is applicable to the Caribbean hotel industry as is evidenced by the presence of several multinational hotel chains such as Sandals International, Hilton Hotels and Resorts, Fairmont Hotels and Resorts and Four Seasons Hotels and Resorts all operating multiple branches throughout the Caribbean. This does not mean that foreign investment in the tourism industry is strictly limited to the accommodation sector. Foreign investors have also constructed golf courses, marinas, ports, restaurants and spas which has been outlined in the ECLAC Briefing Report 2015.

In order to ascertain which theory is most applicable in the context of this paper it is critical to know what issues are addressed by the theories on foreign direct investment. These theories can be classified into macroeconomic theories, microeconomic theories, other theories of FDI and theories of the multinational enterprise. The macroeconomic theories focus on economic features of countries which attracted foreign investors whilst the microeconomic theories highlight characteristics of firms which enabled them to expand their operations overseas. Additionally, the other theories of foreign direct investment acknowledge the existence of other factors which have an influence on inflows of foreign direct investment. Lastly, the theories of the multinational enterprise explain why multinational enterprises engage in cross border investment. They consist of the vertical theory, the horizontal theory and knowledge capital theory.

The vertical foreign direct investment model was developed by (Helpman 1984) who observed that then existing general equilibrium theories of international trade had developed without taking account of the multinational corporation. Thus, (Helpman 1984: 452) opined “we are in need of a theory that describes conditions under which firms find it desirable to shift activities to foreign locations and that is able to predict the pattern of trade that emerges under these foundations.”

The theory applies to single product firms and is characterised by monopolistic competition, differentiated products and economies of scale. There are inputs such as marketing, management and research and development which can serve the product lines without being located in their plants. Consequently, the production process is separated into headquarter and production related activities. This is based on the fact that both locations are dominated by different productive factors. Given these features, the model is considered as an extension of the Heckscher-Ohlin trade theory which stipulates that countries produce goods and services based on their most dominant productive factors. Additionally, firms maximise profits by making cost minimizing location choices. Usually these choices involve moving part of the production process to the host country where costs are lower than in the home country. Hence, it can be argued that the trade-off is between the lower cost of producing abroad and incurring trade costs to transport the goods back to the home country. In view of the foregoing, vertical foreign

direct investment will occur once the savings from overseas production exceeds the trade costs. It should also be noted that there are no transport costs, tariffs or tax advantages in the model. Furthermore, the model does not facilitate the emergence of multinationals between identical countries and there are no multi-plant firms.

(Markusen 1984) developed the horizontal foreign direct investment model to explain the feature of multi plant operations. In doing so the existence of intangibles which are important to a multinational enterprise's level of activity in a given industry was outlined. They are concerned with research and development, marketing and advertising and are closely related to the concept of economies of multi-plant operation. This refers to the technical or pecuniary advantages of a single owner of two or more production plants over an industry also characterised by independent owners of the same production facilities.

Whilst referring to Canada (Markusen 1984) further pointed out that existing research on that country emphasized economies of multi-plant operations to explain the incidence of American multinational enterprises operating there. Given these observations it was suggested that there are two alternatives for developing a theory of the multinational enterprise. One was based on strategic considerations regarding research and development, marketing and investments whilst the other was concerned with examining aspects of technology which illustrate how multi-plant production can be more efficient. It is the second approach which served as the foundation of a technology-based theory developed by (Markusen 1984). It would address several issues relating to market power, technical efficiency, the pattern of trade and world income distribution. Thus. the model was characterised by the following conditions. First, it should outline why a firm would wish to engage in direct investment as opposed to portfolio investment. Next, it should not rely on factor movements or factor price differences. Also, the concept of multi-plant operation should be explained to illustrate why it is superior to price collusion among independent producers. Furthermore, the model must establish that the multinational enterprise carries on an activity within several countries as opposed to supplying all countries from a single production facility. Finally, the model should allow positive

economic profits as alternative distribution of profits may have implications for gains from trade.

In developing this theory (Markusen 1984) focused on how firm specific activities of a multinational enterprise could have a positive impact on production costs in two ways. First this was done by alluding to the ‘public goods’ or ‘jointness’ aspect of a multinational firm’s production facilities when the example of research and development expenditures was cited. To illustrate the point, it was stated that an innovation could be incorporated into numerous additional plants without negatively affecting the marginal product of the innovation in existing plants. Hence the multinational is able to benefit from the value of its productivity in more than one location. Second, it was recognised that the centralization of firm specific activities such as managerial and technical departments yielded greater levels of efficiency and this had a positive impact on output.

The model is characterised by the identical features which are present in the neo-classical trade theories which focuses on 2 countries producing 2 goods utilising 2 factors of production. However, this assumption is included in the model to neutralize the Heckscher-Ohlin, Ricardian and demand bases for trade.

(Brainard 1997) also extended the horizontal model of foreign direct investment by exploring the extent to which multinational production-location decisions are explainable by a trade-off between maximizing proximity to customers and concentrating production to achieve scale economies. This resulted in the development of the production-concentration hypothesis. This proposition predicts that firms are predisposed to expanding production horizontally across borders the higher are transport costs and trade barriers and the lower are investment barriers and the size of scale economies at the plant level relative to the corporate level. The research undertaken by (Brainard 1997) relied on data concerning multinationals and it examined whether the share of total sales to foreign markets by overseas affiliates as opposed to exports can be explained by the proximity concentration hypothesis. It was discovered that affiliate production rises as a share of total foreign sales in light of the conditions stipulated in the hypothesis. Furthermore, it was realised that the effects of trade and investment barriers on the levels of trade and affiliate sales are similar to their effects on the relative shares. The higher

trade barriers which (Brainard 1997) are referring to are tariffs applied by governments to imports of goods from their trading partners. Hence avoiding trade costs and 'tariff jumping' are the primary reasons driving companies to engage in horizontal investment.

The vertical and horizontal models both share two similarities between them. They both speak about the geographical separation of headquarter and production related activity and the issue of cost minimization. On the other hand, the models can be thought of as opposites to each other for two reasons. First, the vertical model as proposed by (Helpman 1984) was premised on the industrial organization concept of economies of multi-plant operation whilst the horizontal model of (Markusen 1984) focuses on single plant firms. Second, the former model is concerned with differences in factor endowments and factor prices whilst this characteristic is not pivotal to the latter model.

The differences between these models means that theoretically combining horizontal and vertical motives for direct investment is complex and presents difficulties regarding analysis. This fact has been acknowledged by (Carr et al 2001) who made reference to the features of the models. They highlight where the conflicts will occur and illustrate the effects of these clashes. It is noted that the assumption of no trade costs in the vertical model will nullify the motive for horizontal foreign direct investment. Similarly, assumptions of the horizontal model regarding the use of productive factors in the same proportion eliminates the factor-price motive of vertical fragmentation within some multinational enterprises between countries.

The drawbacks associated with uniting these two models motivated (Markusen et al 1996) to develop a new theoretical model where both vertical and horizontal firms emerge endogenously. This is a corollary of "the simultaneous existence of trade costs and different factor intensities across activities" according to (Carr et al 2001: 693). The new model containing this novel feature would come to be known as the Knowledge Capital Model. It is premised on three major assumptions. First, knowledge based and knowledge generating activities are geographically separated from the production aspect of the multinational enterprise. They are then provided at a minimal cost to production facilities. Second, these activities are skilled labour intensive relative to production. Third, the

aforementioned knowledge - based services can be utilised simultaneously by multiple production facilities.

Subsequent to the development of the aforementioned theoretical models and particularly since 1995 there has been a proliferation of regional trade agreements many of which now include provisions concerning foreign direct investment. There has also been growth in foreign direct investment internationally which has been influenced by these regional trade agreements. This fact has resulted in academics empirically investigating the impact of regional trade agreements on foreign direct investment with greater frequency. In doing so, they have relied on the aforementioned theoretical models to explain the relationship between regional trade agreements and foreign direct investment and also to identify the pattern of foreign direct investment in each case.

The pattern of multinational enterprises operating several units in the accommodation sector across the Caribbean illustrates that the horizontal theory of foreign direct investment is best theoretical framework applicable in the context of this paper. This contention is supported by (Carr et al 1998: 3) writing on the theory as they opined "multinational activity should be concentrated among countries that are relatively similar in both size and in relative endowments (or per capita incomes)." Similarly, (Blonigen et al 2003) later observed "the horizontal model originates in (Markusen 1984) and describes a firm with plants that engage in the same activity in multiple locations." These two quotations describe the phenomenon tourism related foreign direct investment in the OECS.

3. DATA AND METHODOLOGY

This section of the paper first describes the data and then the econometric model used in this study. The dataset used in this study is annual data covering the period 1997 – 2013 for the six OECS EPA signatories. The variables selected consist of the dependent variable, three economic related variables and one dummy variable. Tourism related foreign direct investment (TFDI) is the dependent variable against which the independent variables will be empirically tested to ascertain how they will each affect it. Tourism related

foreign direct investment has been used in a recent study by (Fauzel et al 2017) as an independent variable among others to ascertain its effect on economic growth in Mauritius.

The data used in this study is reported in millions of United States Dollars and is contained in the Foreign Direct Investment Flows of CARICOM Member States 2002-2013 Report. The data for the years 1997-2001 was made available for this research in an email from the office of the Project Director of the Regional Statistics Programme. It was not made clear if the data was real or nominal and so it was assumed to be nominal and converted to real data using the consumer price index for 2013. This is the only variable that featured missing values for three of the countries – Dominica for 2006 and 2009 - 2013; St. Kitts for 2006 and 2008 – 2013 and St. Lucia for 2001. Following (Barbi and Da Costa 2016) and (Tahir et al 2018), the data was imputed through linear interpolation and the missing values were filled using STATA 13.

The independent variables to be used in this study are mainly economic in nature. Their inclusion within this model is justified on the grounds that they have been used in previous studies undertaken by (Root and Ahmed 1979) and (Paez 2008) which examined how foreign direct investment has been affected by manufacturing and a regional trade agreement. Research by (Ramasamy and Yeung 2010) focusing on the determinants of foreign direct investment in services also included identical variables. This study aims to predict how the identical economic variables will have an impact on the inflows of foreign direct investment to the tourism service sector in the OECS EPA signatories.

Trade openness (OPEN), is defined as the ratio of the total sum of exports and imports of goods and services to GDP which measures the trade restrictiveness of a host country**.** It was previously used by (Jang 2011) in a study and is included in the model because the research is interested in ascertaining what effect it will have on inflows of foreign direct investment to the tourism sector of OECS EPA signatories. The degree of a country's openness to trade can affect the level of foreign direct investment inflows in several ways. (Jaumotte 2004) stated that reduced import barriers discourage horizontal foreign direct investment. Conversely it can produce vertical foreign direct investment by facilitating the imports of inputs and machinery. Lower export barriers can stimulate vertical FDI through

the re-export of processed goods and other non-tariff jumping horizontal foreign direct investment by expanding the market size. This data was sourced from the World Bank World Development Indicators Database.

Inflation rate (IR) which measures the annual percentage change in consumer prices has been included in the model as a proxy for economic stability. Research undertaken by (Demirhan and Masca 2008) indicate that developing countries with low inflation rates have been effective in attracting foreign direct investment. This data was sourced from the World Bank World Development Indicators Database.

Gross Domestic Product Per Capita (GDPPC) is included as a variable to ascertain the effect of the host country's market size as a determinant of foreign direct investment. Research undertaken by (Jaumotte 2004) showed that there was a positive effect of domestic market size and the level of foreign direct investment received by a host country. This data was sourced from the World Bank World Development Indicators Database.

The most important variable in the context of this study is the dummy variable, the Economic Partnership Agreement (EPA) which serves as the foundation of the dissertation. It is included within the model as a proxy for the liberalization of trade in tourism services. The aim here is to empirically test how this trade policy reform will affect inflows of tourism-related foreign direct investment into these OECS microstates. The descriptive statistics of the variables used in this paper are set out in table 2 below.

Previous studies modelling services liberalization have focused on welfare effects – (Francois et al 2008); economic growth – (Terzi 2010); the implications of services liberalization – (Balistreri et al 2009) and productivity – (Arnold et al 2011). The most frequently used econometric technique was Computable General Equilibrium (CGE) modelling. It has been argued by (Plummer et al 2010) that there are several advantages to using this modelling technique when analysing the effect of a free trade agreement. First, it is grounded in economic theory as it is premised on assumptions consistent with microeconomic theory. Second, CGE modelling produces clear and exact quantitative results enabling policymakers to ascertain who gains or loses from a free trade agreement. Third, as a free trade agreement involves changes in trade policy in multiple markets, the analysis may be too complex using algebraic or geometric methods. On the

other hand, (Plummer et al 2010) acknowledged that there are disadvantages associated with the use of this technique. First, it requires substantial data. Second, the model's results may be sensitive to the assumptions and the data used. Third, CGE analysis of a free trade agreement does not generate results which illustrate how long it will take for economies to adjust and reach the new equilibrium. It has been contended that the technique is a long way from capturing dynamic features which are relevant to free trade agreements.

Meanwhile, (Font et al 2012) empirically tested the existence of an association between the liberalization of trade in services and inflows of foreign direct investment using a gravity model. The gravity model was introduced to economics by (Tinbergen 1962) and premised on the Newtonian theory of gravitation. Estimating a gravity model to measure the size of bilateral trade flows necessitates data concerning gross domestic product, population and distance. Other variables often used in such models include common language, common border and colonial ties.

Since its introduction to economics the gravity model has become the workhorse of international trade theory regarding forecasting the impact of changes in trade policy. However, one disadvantage associated with using this modelling technique is that it can generate spurious results if the data is inaccurate or important variables are excluded from the model. Conversely, its advantages include the following. The model has high explanatory power, it allows the researcher to control for other trade related variables and quantify any changes in a country's trade due to a free trade agreement.

Other models used in panel data studies include static and dynamic models. (Samargandi et al 2013) reviewed the general framework by making the distinction between static and dynamic models. They illustrated that the former consists of Pooled Ordinary Least Squares (OLS), fixed effects and random effects models. It was clearly demonstrated that Pooled OLS is an extremely restrictive model imposing common intercept and slope coefficients whilst disregarding individual heterogeneity. Conversely, fixed effects models assume the estimator has common slopes and variances but country specific variances. One weakness of this estimator is the biased estimates it yields when endogenous regressors are correlated with the error terms. Random effects models are less restrictive

regarding degrees of freedom as they assume common intercepts. The key drawback is the time invariant characteristic of the model meaning that the error is uncorrelated with the past, present or future which is known as strict exogeneity. Put differently, static models fail to capture the dynamic nature of data. Furthermore, concerning dynamic panel data modelling, (Roodman 2006) argued that the Generalised Method of Moments (GMM) Difference and System estimators performed well with datasets characterised by large numbers (N) of cross sections relative to small time periods (T). However, with small N, large T datasets the GMM estimators are likely to generate spurious results as the autocorrelation test may be unreliable. Additionally, the validity of the Sargan test of over identification restriction will be affected by the growing time span of the data as the number of instruments expands. Given the foregoing criticisms of the performance of GMM estimators it was imperative to find a more suitable modelling technique for use in this study that the dataset is characterised by a small N, (6 OECS EPA signatories) and a large time (T) period (1997-2013).

Alternatively, this study relies on Autoregressive Distributed Lag (ARDL) modelling as developed by (Pesaran et al 1999) in which a single equation is used to estimate long-run and short run dynamics. Additionally, it will determine whether a relationship exists between the liberalization of trade in tourism services (proxied by the EPA) and the level of inflows of TFDI to the six OECS EPA signatories. Consequently, the ARDL econometric technique was selected given its three advantages. First, it is suited for small and finite datasets such as that which is being used in this study as (Adeleye et al 2017) noted. Second, the ARDL approach does not require the variables to be integrated of the same order. (Belloumi 2014: 277-278) observed that the variables may be integrated of order one or zero or a combination of both. However, they cannot be integrated of order two. Third, both short run and long run coefficients can be estimated as (Papageorgiou et al 2016: 60) opined whereas the other dynamic panel estimator – the Generalised Method of Moments (GMM) – only captures the short run dynamics as (Samargandi et al 2013: 9) observed.

According to (Chirwa and Odhiambo 2018: 15) “(Pesaran et al 1999) make three critical assumptions when estimating a Panel ARDL model.” Firstly, the disturbances are

independently distributed across countries and over time. Secondly, it is assumed that there is a long run relationship between the dependent variable and the explanatory variables. This is related to the fact that the model is characterised by a stationary process which means that the error correction term must lie between 0 and -1. Furthermore, all of the variables must be I (0) or I (1). Thirdly, the Panel ARDL model assumes that there is long run homogeneity concerning coefficients of the regressors across the cross-sections in the long run.

Regarding Panel ARDL modelling, three types of estimators are frequently used in relation to dynamic heterogeneous panels. They are the Mean Group (MG) which imposes no restrictions; the Pooled Mean Group (PMG) which imposes common long run effects and the Dynamic Fixed Effect (DFE) which constrains all of the slope coefficients and error variances to be identical as (Pesaran et al 1999) stated.

Research undertaken by (Pesaran and Shin 1995) illustrated that the use of the ARDL (p, q, q,…..q) model can produce consistent estimates relying on the Mean Group Estimator which estimates parameters for each country and subsequently the average for the group. Further research by (Pesaran et al 1999) showed that when long run coefficients are homogeneous across groups and short run parameters vary, then the Pooled Mean Group Estimator is a more efficient estimator.

A linear model that is estimated has the form of an ARDL (p, q, q,…..q) model as developed by Pesaran, Shin and Smith (1999) and is denoted as follows

$$Y_{it} = \alpha_i + \sum_{j=i}^{pi} \lambda_{ij} Y_{i,t-1+} \sum_{j=1}^{q} \delta_{ij} X_{i,t-j} + \varepsilon_{it} \quad (1)$$

Where Y is a dependent variable TFDI, $X_{i,t-j}$ is the Kx1 vector of regressors for group ^{i} and α_i represents the country specific effects. This model can be reparametrized in the following way

$$\Delta Y_{it} = \alpha_i + \theta_i\left(Y_{i,t-1} - \beta_i X_{i,t-1}\right) + \sum_{j=1}^{p-1} yij\Delta Y_{i,t-j} + \sum_{j=1}^{q-1} yij\Delta X_{i,t-j} + \varepsilon_{it} \ (2)$$

Here β_i are the long-run parameters and θ_i are the error correction coefficients measuring the speed of adjustment towards long-run equilibrium. It is to be noted that this

modelling technique restricts the long run estimates to be identical across the panel, but the short run coefficients and error correction variances differ across groups on the cross section.

When using EVIEWS 9 only the PMG estimator is available for use in Panel ARDL analysis. However, before the actual model estimation takes place it is imperative to perform Unit Root tests. Several such tests including the Fisher Augmented Dickey-Fuller test, Levin, Lin and Chu test and Im, Pesaran and Shin test which all have as the null hypothesis that all panels contain a unit root are performed to ascertain the stationarity of the data. Additionally, (Asghar et al 2015: 393) opined “In panel ARDL approach unit root test is applied to exclude the possibility of I (2) variables.” Here, the unit root tests were first performed at levels with the intercept, then intercept and trend and finally at first difference with the intercept and intercept and trend where necessary.

Table 3 below indicates that only Trade Openness and Inflation Rate are stationary at level for all unit root tests used. The other variables are non-stationary at some point and thus need to be first differenced and become I (1) in order to become stationary. The main purpose of these tests is to ensure that none of the variables is integrated of order two I (2). If any of them are they cannot be included in the model as it would be a violation of a major assumption of the ARDL model as enunciated by (Pesaran et al 2001).

Given the mixed order of integration of the variables the traditional cointegration tests cannot be applied. This view was acknowledged by (Rafindadi and Yusof 2013: 124) who wrote “Due to the existence of mixed levels of integration among series we proceed to apply the Panel ARDL approach rather than traditional static or panel cointegration tests” Meanwhile (Chirwa and Odhiambo 2018) explained that using the PMG estimator of the Panel ARDL technique mandated that the variables should be cointegrated. They noted that several panel cointegration tests such as (Kao 1999), (Pedroni 1999, 2004) and (Fisher 1932) can be used to determine whether or not there is cointegration among the variables.

This study relies on the (Kao 1999) panel cointegration test which was performed using STATA 15 to determine if there is a long run relationship among the variables. According to the hypothesis of the (Kao 1999) cointegration test there is no cointegration. However,

the results generated are presented below in table 4 reject this in favour of the alternative that there is a long run relationship among the variables as all of the tests are below 0.05% and statistically significant.

4. RESULTS

The results of a Panel ARDL model are presented below. The model is estimated using the (2, 2, 2, 2) model selection criteria based on Akaike Information Criteria that was generated using EVIEWS 9 and applied to a linear model (See Table 2).

It was chosen because it had the lowest AIC score out of 4 model specifications considered **(**See Table 5).

Subsequently the (2, 2, 2, 2) specification was applied to the variables TFDI, GDPPC, OPEN and IR respectively and not the EPA, a dummy variable which remained fixed. The results of the General model presented below in table 6 indicate that all of the variables are strongly significant in the long run. In this study inflation rate (IR) appears as an indicator of economic stability and its coefficient is negative as was expected. A similar result was found in the work of (Seddeke and Rahman 2016) when they used inflation rate in a model as a determinant of foreign direct investment. Trade openness (OPEN) is a statistically significant determinant and carries a positive sign. Similar results were produced in (Demirhan and Masca 2008) where their results of that variable also showed a positive sign. The findings of this study concerning Gross Domestic Product Per Capita (GDPPC) indicated that its coefficient carries the expected positive sign. This result is similar to that generated in a study by (Jaumotte 2004).

In the short run inflation has a positive and significant effect on inflows of tourism related foreign direct investment for the period 1997-2013. Also, the EPA is not a statistically significant determinant of tourism related foreign direct investment.

At the country level the short run estimates presented in table 7 below which vary across the countries indicate that Gross Domestic Product Per Capita lagged one year is a statistically significant determinant of investment in the tourism sector in all islands.

Tourism FDI lagged one year is a statistically significant determinant of tourism investment in all countries except St. Lucia. The same applies to GDPPC lagged for two years. This result supports the established hypothesis that market size measured by GDP per capita is the main determinant for horizontal FDI. Also, inflation rate lagged one year is a weak statistically significant determinant only in the case of TFDI in St. Vincent and the Grenadines. Trade openness lagged one and two years is a strong statistically significant determinant of tourism investment in Antigua and Barbuda, Dominica, St. Kitts and Nevis and St. Vincent and the Grenadines.

Additionally, the error correction terms are all negative and statistically significant in the panel of countries. Such results indicate the presence of long run cointegration relationship among the variables in those countries. (Onafowora and Owoye 2012: 169) concurred with this view when they stated “According to (Banerjee et al 1998), a negative and statistically significant error correction term confirms the existence of a long-run cointegration relationship among the variables.” Only Antigua and Barbuda have an error correction term which is lower than -1.

The Economic Partnership Agreement (EPA) variable is a proxy for the liberalisation of trade in services and the result is not statistically significant in any country. However, its coefficient carries a negative sign for Dominica, Grenada and St. Lucia indicating that it causes a decrease in inflows of tourism related investment. Thus, it is argued that the EPA is capturing the negative effects associated with the Global Financial Crisis which began in 2008 when the EPA was signed. This result contrasts with those of the study by (Font et al 2012) which illustrated that the liberalization of trade in services had a significant and positive impact on FDI in Central and Eastern European countries and Mediterranean non-member countries. Conversely, the EPA has a positive effect on inflows of tourism related foreign direct investment in Antigua and Barbuda, St. Kitts and Nevis and St. Vincent and the Grenadines.

5. CONCLUSION

This paper modelled the effect of a trade policy reform which liberalized trade in tourism services between the CARIFORUM and EU groups of states on inflows of tourism related foreign direct investment to Antigua and Barbuda**,** Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines.

It sought to ascertain what effect OECS Gross Domestic Product Per Capita (GDPPC), OECS trade openness (OPEN), Inflation rate (IR) and the liberalization of trade in tourism services proxied by the EPA would have as determinants of inflows of tourism related foreign direct investment (TFDI). It was discovered that Gross Domestic Product Per Capita is a statistically significant determinant of foreign direct investment.

Incorporating the EPA as a variable makes the study unique as it is the first time that this specific trade agreement is being used in academic research as a determinant of tourism related foreign direct investment. Additionally, this is the first time that the horizontal model of foreign direct investment is being used as the theoretical framework to inform a study concerning tourism-related foreign direct investment in the Caribbean.

The data used in this study covered the period 1997 – 2013 and given the small size of the dataset, the Panel ARDL technique was chosen over other dynamic panel data analysis methods. Of the three estimators available for use regarding the Panel ARDL technique to execute econometric modelling, the Pooled Mean Group (PMG) estimator was chosen over the Mean Group and Dynamic Fixed Effects estimators. It has been used previously in several studies undertaken by (Bangake and Eggoh 2012), (Rafindadi and Yosuf 2013), (Chirwa and Odhiambo 2018).

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APPENDICIES

TABLE 1. CARIBBEAN TOURISM RELATIVE CONTRIBUTION AND REGIONAL RANKING 2017.

INDICATOR CONTRIBUTION	2017 % SHARE	REGIONAL RANKING
Direct contribution to GDP	4.8	3rd
Total Contribution to GDP	15.2	1st
Total contribution to employment	13.8	1st
Contribution to investment	12.9	1st
Contribution to visitor exports	19.8	1st
Direct contribution to employment	4.3	7th

SOURCE: ADAPTED FROM WTTC TRAVEL AND TOURISM ECONOMIC IMPACT (CARIBBEAN) 2018

TABLE 2. DESCRIPTIVE STATISTICS

Variable	Obs	Mean	Std. Dev.	Min	Max
TFDI	102	47.76823	49.47661	0.4372388	252.0907
GDPPC	102	20814.42	8109.078	10499.28	39764.68
INF	102	2.472492	2.093064	-1.672072	10.06624
OPEN	102	98.77451	17.97298	71	159
EPA	102	0.3529412	0.4802446	0	1

SOURCE: AUTHOR (2018)

TABLE 3. PANEL UNIT ROOT TESTS AT LEVEL AND FIRST DIFFERENCE.

LEVEL					
		INTERCEPT		**INTERCEPT & TREND**	
VARIABLES	**TESTS**	**STATISTIC**	**P-VALUE**	**STATISTIC**	**P-VALUE**
TFDI	**LLC**	-0.08587	0.4658	-2.89311	0.001***
	IPS	-1.05534	0.1456	-1.81644	0.034**
	ADF Fisher	19.5334	0.070	20.2894	0.061
GDPPC	**LLC**	-2.48271	0.006***	0.25442	0.600
	IPS	-0.76343	0.222	1.06721	0.857
	ADF Fisher	14.5282	0.268	6.23730	0.903

IR	**LLC**	-7.99365	0.000***	-5.08348	0.000***
	IPS	-7.09096	0.000***	-5.19950	0.000***
	ADF Fisher	63.2462	0.000***	44.0033	0.000***
OPENNESS	**LLC**	-2.50589	0.006***	-6.09259	0.000***
	IPS	-3.86376	0.000***	-4.73545	0.000***
	ADF Fisher	37.4648	0.000***	42.2683	0.000***

		FIRST DIFFERENCE			
		INTERCEPT		**INTERCEPT & TREND**	
TFDI	**LLC**	-2.93187	0.001***	-3.03735	0.001***
	IPS	-4.38803	0.000***	-3.29954	0.000***
	ADF Fisher	27.5631	0.006***	25.8069	0.011***
GDPPC	**LLC**	-5.80058	0.000***	-5.08456	0.000***
	IPS	-4.92555	0.000***	-3.99705	0.000***
	ADF Fisher	44.5507	0.000***	36.6285	0.000***

*** ** and * denotes significance at the 1%, 5% and 10% level.

LLC – Levin, Lin and Chu;

IPS – Im, Pesaran and Shin;

ADF Fisher – Augmented Dickey Fuller

SOURCE: AUTHOR (2018)

TABLE 4 PANEL KAO COINTEGRATION TEST RESULTS

	t Statistics	P value
Modified Dickey-Fuller	-2.9043	0.0018
Dickey-Fuller t	-2.4161	0.0078
Augmented Dickey-Fuller t	-4.2183	0.0000
Unadjusted modified Dickey-Fuller t	-2.9163	0.0018
Unadjusted Dickey-Fuller t	-2.4198	0.0078

SOURCE: AUTHOR (2018)

TABLE 5. MODEL SELECTION CRITERIA

Dependent Variable: TFDI					
Sample: 1997 2013					
Included observations: 102					
Model	**LogL**	**AIC***	**BIC**	**HQ**	**Specification**
4	-327.244295	8.672095	10.421962	9.377745	ARDL(2, 2, 2, 2)
3	-352.408793	8.831307	10.081211	9.335342	ARDL(2, 1, 1, 1)
1	-376.167749	9.225950	10.309201	9.662780	ARDL(1, 1, 1, 1)
2	-359.004995	9.244555	10.827768	9.883000	ARDL(1, 2, 2, 2)

SOURCE AUTHOR (2018)

TABLE 6 PMG ESTIMATION OF PANEL ARDL (2 2 2 2) – GENERAL MODEL.

Dependent Variable: D(TFDI)
Method: ARDL
Sample: 1999 2013
Included observations: 90
Maximum dependent lags: 2 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (2 lags, automatic): GDPPC IR OPEN
Fixed regressors: EPA C
Number of models evaluated: 4
Selected Model: ARDL (2, 2, 2, 2)
Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
GDPPC	0.018567	0.001166	15.91914	0.0000***
IR	-7.181641	1.940828	-3.700298	0.0007***
OPEN	0.706577	0.150738	4.687448	0.0000***

Short Run Equation				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
COINTEQ01	-0.652875	0.226370	-2.884105	0.0064
D(TFDI(-1))	0.150138	0.302788	0.495851	0.6228
D(GDPPC)	0.007352	0.006786	1.083346	0.2853
D(GDPPC(-1))	-0.001960	0.005574	-0.351703	0.7270
D(IR)	2.036134	0.937259	2.172435	0.0360**
D(IR(-1))	1.278028	0.590981	2.162555	0.0368**
D(OPEN)	0.004306	1.154542	0.003729	0.9970
D(OPEN(-1))	-0.827084	0.674765	-1.225736	0.2276
EPA	7.210072	7.273621	0.991263	0.3277
C	-291.2772	154.6153	-1.883884	0.0671
Mean dependent var	1.680478	S.D. dependent var		39.30562
S.E. of regression	26.74325	Akaike info criterion		7.651849
Sum squared resid	27892.85	Schwarz criterion		9.273156
Log likelihood	-327.2443	Hannan-Quinn criter.		8.308371

*Note: p-values and any subsequent tests do not account for model selection

*** ** and * denotes significance at the 1%, 5% and 10% level.

SOURCE: AUTHOR (2018)

TABLE 7. PMG ESTIMATION OF PANEL ARDL (2 2 2 2) – COUNTRY LEVEL.

ANTIGUA AND BARBUDA

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-1.692641	0.059652	-28.37514	0.0001***
D(TFDI(-1))	0.537441	0.035238	15.25155	0.0006***
D(GDPPC)	0.010163	4.50E-05	225.9849	0.0000***
D(GDPPC(-1))	-0.010223	1.60E-05	-640.5316	0.0000***
D(IR)	-1.433295	20.83537	-0.068791	0.9495
D(IR(-1))	3.907560	9.044094	0.432057	0.6949
D(OPEN)	-0.886662	0.318349	-2.785186	0.0687*
D(OPEN(-1))	-3.083539	0.383671	-8.036926	0.0040***
EPA	20.32966	219.2444	0.092726	0.9320
C	-1055.995	18904.50	-0.055859	0.9590

DOMINICA

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.349090	0.009356	-37.31057	0.0000***
D(TFDI(-1))	-0.343987	0.028379	-12.12120	0.0012***
D(GDPPC)	-0.001393	3.58E-06	-389.1111	0.0000***
D(GDPPC(-1))	-0.002190	2.67E-06	-820.2468	0.0000***
D(IR)	1.008234	0.750039	1.344241	0.2715
D(IR(-1))	0.502525	0.216744	2.318517	0.1032
D(OPEN)	-0.002127	0.006407	-0.332034	0.7617
D(OPEN(-1))	-0.110819	0.006685	-16.57711	0.0005*
EPA	-1.196722	3.484177	-0.343473	0.7539
C	-105.8388	720.9356	-0.146808	0.8926

GRENADA

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.705337	0.017387	-40.56662	0.0000***
D(TFDI(-1))	0.920477	0.033983	27.08604	0.0001***
D(GDPPC)	-0.009299	4.46E-05	-208.4074	0.0000***
D(GDPPC(-1))	-0.019172	3.82E-05	-502.2340	0.0000***
D(IR)	5.158054	3.399587	1.517259	0.2265
D(IR(-1))	1.872962	2.496081	0.750361	0.5075
D(OPEN)	-0.114140	0.145478	-0.784590	0.4899
D(OPEN(-1))	0.111324	0.243944	0.456350	0.6791
EPA	-18.49818	102.5275	-0.180422	0.8683
C	-211.7694	2377.082	-0.089088	0.9346

ST. KITTS AND NEVIS

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.080151	0.005248	-15.27186	0.0006***
D(TFDI(-1))	0.690633	0.027136	25.45107	0.0001***
D(GDPPC)	0.010297	1.03E-05	998.3109	0.0000***
D(GDPPC(-1))	-0.001433	1.53E-05	-93.84417	0.0000***
D(IR)	1.784853	2.041665	0.874214	0.4463
D(IR(-1))	-0.038848	1.588674	-0.024453	0.9820
D(OPEN)	-2.860010	0.524753	-5.450204	0.0121**
D(OPEN(-1))	-1.911406	0.592994	-3.223314	0.0485**
EPA	22.08555	67.14155	0.328940	0.7638
C	-56.32048	1578.397	-0.035682	0.9738

ST. LUCIA

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.615275	0.063437	-9.698997	0.0023***
D(TFDI(-1))	0.158818	0.071391	2.224618	0.1126
D(GDPPC)	0.037400	0.001565	23.90052	0.0002***
D(GDPPC(-1))	-0.000559	0.000802	-0.696396	0.5363
D(IR)	1.818092	21.41783	0.084887	0.9377
D(IR(-1))	0.370681	21.18097	0.017501	0.9871
D(OPEN)	-1.479721	2.498009	-0.592360	0.5953
D(OPEN(-1))	-1.496771	6.382306	-0.234519	0.8297
EPA	-4.620340	1230.278	-0.003756	0.9972
C	-185.3792	7467.545	-0.024825	0.9818

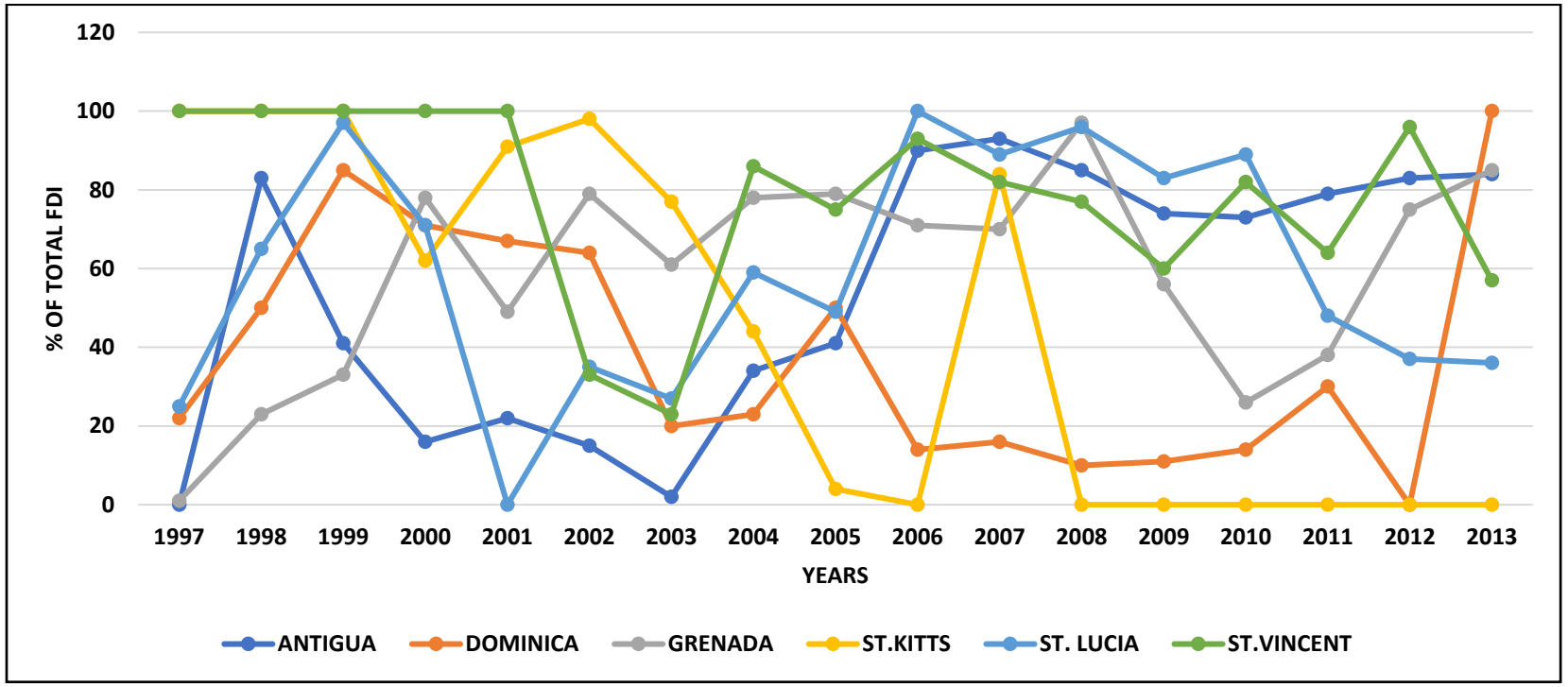
ST. VINCENT AND THE GRENADINES

Variable	Coefficient	Std. Error	t-Statistic	Prob. *
COINTEQ01	-0.474757	0.003907	-121.5140	0.0000***
D(TFDI(-1))	-1.062555	0.013665	-77.76010	0.0000***
D(GDPPC)	-0.003058	3.53E-05	-86.73675	0.0000***
D(GDPPC(-1))	0.021814	5.21E-05	418.6480	0.0000***
D(IR)	3.880868	1.461980	2.654529	0.0767*
D(IR(-1))	1.053289	0.667321	1.578384	0.2126
D(OPEN)	5.368494	0.519512	10.33372	0.0019***
D(OPEN(-1))	1.528709	0.348543	4.386001	0.0219**
EPA	25.16047	60.73484	0.414267	0.7065
C	-132.3600	339.3071	-0.390089	0.7225

*** ** and * denotes significance at the 1%, 5% and 10% level respectively

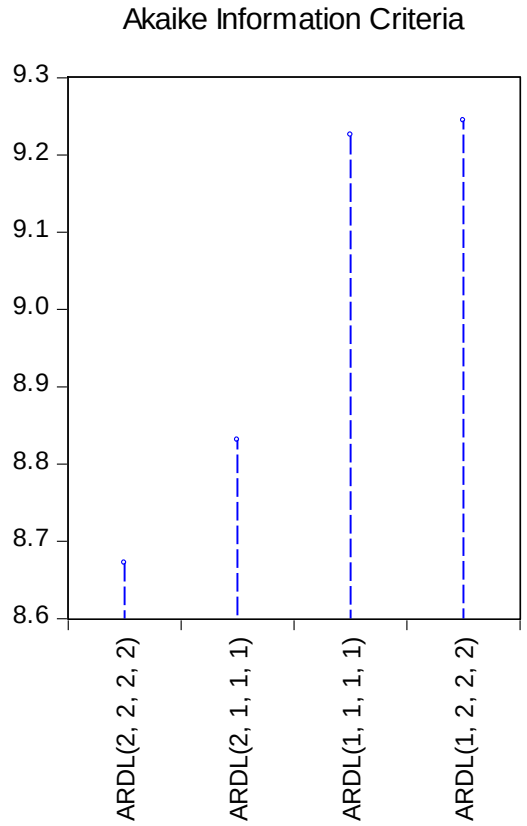
SOURCE: AUTHOR (2018)

FIGURE 1. TOURISM RELATED FOREIGN DIRECT INVESTMENT AS A PERCENTAGE OF TOTAL FOREIGN DIRECT INVESTMENT OECS EPA SIGNATORIES 1997– 2013



SOURCE: ADAPTED FROM FOREIGN DIRECT INVESTMENT FLOWS OF CARICOM MEMBER STATES REPORT (2014).

2. AKAIKE INFORMATION CRITERIA



SOURCE AUTHOR (2018)