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AN ECONOMIC ANALYSIS OF NATIONAL ECONOMIES UNDER THE CARICOM SINGLE MARKET AND ECONOMY: TOWARDS A NEW ECONOMIC GEOGRAPHY (NEG) MODEL

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ABSTRACT

While the movement towards a single market regime in the Caribbean is regionally accepted as a step in the right direction, the wide and increasing disparities among Caribbean Community (CARICOM) nations create some legitimate concerns regarding the effects of deepened economic integration on lesser-developed member states. One of the most substantive attempts by regional bodies to address the negative impacts that may occur from the regional integration process has been through the provision of Country Assistance Programs aimed at providing technical and financial assistance to disadvantaged CARICOM member states. The problem is, however, that the bulk of these initiatives are being administered without concrete assurances that they are directed at the countries that need them the most. This article presents the findings of a recently concluded research aimed at developing a New Economic Geography (NEG) model for the Caribbean, which will facilitate the identification and measurement of disparities and cohesion among select regional states. A major outcome of the study is the formulation of a CARICOM Integration Index (CII) to facilitate an assessment of the readiness of regional states for full inclusion in the CSME. The article outlines the methodology used to devise the index and provides an overview of the main research findings, limitations of the study, and recommendations.

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1. Introduction

While the CARICOM Single Market and Economy (CSME) was officially launched in 2006, its origin can be traced back nearly two decades earlier. Amidst growing concerns over the dismal performance of the Caribbean Community (CARICOM) in the 1980s — evident by the intensification of regional protectionism and the gradual decline in intra-regional trade at the time — a decision was made to advance the regional integration process through the establishment of the CSME at the Tenth Heads of Government Conference held in 1989 at Grand Anse, Grenada (Nicholls et al., 2000). In addition to advancing the regional integration process, the CSME also represented a regional response to a rapidly changing and increasingly competitive global economy. By removing intra-regional barriers to trade within CARICOM, the CSME is primarily intended to foster competition among firms operating in the region with the aim of improving the region's overall competitiveness in a new and changing global market environment. As outlined under Chapter 3 of the Revised Treaty of Chaguaramas (CARICOM, 2001), a key component for the successful transition towards a fully integrated single market and economy will involve the unrestricted movement of goods, services, capital, and specific categories of skilled labor between CARICOM member states. The revised treaty also provides for the right of establishment. Essentially, this means that CARICOM nationals can establish companies and business enterprises in each other's territories and still treated as nationals of that territory.

The progression of CARICOM towards a CARICOM Single Market and Economy (CSME) has however created a new set of challenges and opportunities that should be anticipated and addressed in order to ensure that all of its member states benefit from the single market. While the movement towards a single market regime in the Caribbean

is regionally accepted as a step in the right direction, the wide and increasing disparities among CARICOM nations create legitimate concerns regarding the effects that deepened economic integration may have on lesser-developed member states. There is indeed a valid concern that deepened integration may lead to significant economic fallout in the member states of the Organization of Eastern Caribbean States (OECS) and Belize. As Lewis (2010, p. 16) puts it, "The CSME's focus on removing restrictions on businesses operating in the region and thereby facilitating easier access to resources such as land, labor and capital…has proved problematic for the OECS states which fear that they may well lose out from this arrangement, with an outflow of their already limited skilled human resources and a collapse of their less competitive businesses." For these states, the transition to a single market and economy threatens to increase the existing disparities between themselves and other larger regional states like Guyana, Trinidad and Tobago, Barbados, and Jamaica that are considered better placed to take advantage of the CSME.

One of the substantive attempts by regional bodies to address the negative impacts that may occur from the regional integration process has been through the creation of a special development fund and the provision of Country Assistance Programs (CAPs) aimed at providing technical and financial assistance to disadvantaged CARICOM member states. The problem is, however, that the bulk of these development assistance initiatives are being administered without concrete assurances that they are being directed at the countries or sub-regions that need them the most. Within CARICOM, the categorizations of More Developed Country (MDC) and Less Developed Country (LDC) status currently serve to operationalize the disparities between states. However, the inadequacy of these labels is quickly becoming apparent, as they were politically created categories based mainly on size rather than actual economic circumstances (Lewis, 2010). This method also does not differentiate between regions and sectors as stated in the Revised Treaty of Chaguaramas. As a result, regional bodies continue to administer development assistance without concrete assurances that they are being directed at the areas, sub-regions or sectors that need it the most.

This article presents the findings of a recently concluded research aimed at developing a New Economic Geography (NEG) model for the Caribbean, which will allow for the identification and measure-

ment of spatial disparities and cohesion among selected regional states. This essentially represents one of the first attempts to devise an evidence-based tool that can assist regional authorities in administering development funds geared towards offsetting some of the anticipated financial costs of dislocation that will result from the implementation of the CSME. A major outcome of the study was the formulation of a CARICOM Integration Index (CII) that facilitates the assessment of the readiness of regional states for full inclusion in the CSME. The article outlines the methodology used to devise the index and provides an overview of the main research findings, limitations of the study, and recommendations.

2. Placing the Regional Integration Movement in Context

The drive to achieve regional integration can be traced back to the late 1950s with the formation of the West Indies Federation. The Federation was created by Great Britain to function as a single political space made up of individual provinces from the English speaking Caribbean, most of which were seeking independence from the United Kingdom at the time. This was however short-lived as the union just lasted over four years from January 1958 to May 1962. The main reason for its failure relates to the internal political conflicts that had ensued between the federal government and the provincial governments, largely around issues pertaining to national sovereignty and balance of power.

After the dissolution of the Federation, the Caribbean Free Trade Association (CARIFTA) was established three years later in 1965 with the primary purpose of removing tariffs and other barriers to intra-regional trade in goods. In addition to providing a springboard for free trade, CARIFTA was also designed to: (a) ensure that the benefits of free trade were equitably distributed among its member states; (b) promote fair competition through the setting of rules governing terms of trade between participating countries; (c) expand the variety of goods and services available for trade, and; (d) increase the trading of goods and services among member states.

In 1973, it was decided at the Seventh Heads of Government meeting to transform CARIFTA into a Common Market and create the Caribbean Community (CARICOM). The decision to transform CARIFTA into a Common Market was based on the former's inability to provide

for the free movement of labor and capital, or the coordination of agricultural, industrial, and foreign policies. The Community was established under the Treaty of Chaguaramas primarily to promote and advance economic integration and cooperation among its member states and to coordinate foreign policy for the region as a whole. It was envisioned that through market integration and functional cooperation CARICOM member states would be better able to take advantage of efficiency gains and economies of scales as well as create advantage when negotiating with international actors and Third States. Its major activities involved coordinating economic policies and development planning; devising and instituting special projects for the less-developed countries within its jurisdiction; operating as a regional single market for many of its members; and handling regional trade disputes.

Despite the relative success of CARICOM particularly relating to regional cooperation in areas such as health, education, and culture, the drive to achieve economic integration has met little success. A major reason for this relates to the fact that the Caribbean Community was established as a separate legal entity from the Common Market, which had its own discrete legal disposition. This institutional arrangement therefore facilitated regional states like The Bahamas to be able to join the Community without being parties to the Common Market regime. Based on the original Treaty of Chaguaramas, the Community was primarily established to address issues of foreign policy coordination and functional cooperation while issues of economic integration, particularly those related to trade arrangements, were to be addressed in the Common Market Annex.

The transformation of CARICOM into CSME represents the latest attempt by Caribbean leaders to move towards a fully integrated regional economy. The single market and economy is expected to usher in the following: (a) the free movement of goods, services, labor and capital; (b) rights of establishment in any territory; (c) a common external tariff (CET); (d) shared customs revenue; (e) the ability to transfer social security benefits across borders and; (f) a common standard of accreditation and equivalency (Bishop, et al., 2011).

Central to the CSME are a range of policy instruments and recommendations aimed at transitioning towards a single market economy supported by the harmonization of policy and legal/administrative measures covering a wide array of disciplines and sectors including

trade, agriculture, transport, and new measures such as e-commerce, competition policy, intellectual property rights, and sanitary and phytosanitary regulations. Currently, all CARICOM states with the exception of The Bahamas and Montserrat are members of the CSME.

Special treatment is provided for countries that are deemed disadvantaged under Chapter 7 of the Revised Treaty of Chaguaramas. The designation of More Developed Country (MDC) and Less Developed Countries (LDC) creates an operational categorization to determine which countries are to receive differential treatment. The problem is, however, that while there is some justification for the current designations, there is interest in a more sophisticated way of determining disadvantaged countries, regions, and sectors, as the current labels were based more on country size rather than on other relevant and more scientific indicators such as per capita income (CARICOM, 2010). This is further compounded by the wide disparities that exist within the region. Indeed, while significant similarities exist among Caribbean states, the region is by no means a homogeneous bloc. Development indicators show, for instance, that regional states are currently at various levels of economic and social development. This presents a clear challenge for advancing the regional integration process as it is bound to affect some states negatively and others positively.

3. Challenges with Implementing the CSME

There has been mounting concerns over the slow pace by regional authorities to implement the CSME (Brewster et al., 2002; Lewis, 2010). A large part of the reason for the limited progress to date in implementing the CSME has to do with the absence of implementation mechanisms that would allow decisions made at the level of CARICOM Heads of Government to be applied at the national level (Lewis, 2010, p. 12). Unlike the case with the European Union model, decisions made at the level of CARICOM do not automatically translate into action or have an immediate effect on the laws of member states. Largely, the decision to comply with the provisions of the CSME is left to the discretion of CARICOM member states. This has led to calls by some regional interests for the strengthening of the CARICOM Secretariat and the redesigning of the regional implementation mechanism.

The progression towards the CSME is also hampered by the weak institutional and legal arrangements that exist within CARICOM

(Arthur et al., 2010). For the most part, the CSME focal units that are currently responsible for overseeing the implementation process within participating CARICOM member states suffer from considerable resource constraints. As such, the ability of these agencies to facilitate and regulate member states' compliance and commitment to the CSME is greatly compromised. Additionally, there is limited coordination of policies and legislations among CARICOM member states. This presents a clear challenge for the full implementation of the CSME. For instance, the reluctance of some member states to revise their Alien Land Holding Laws that prevent overseas nationals from purchasing lands in their respective territories runs counter to the rights of establishment provision under the CSME, which is designed to extend national treatment to CARICOM, based firms. The successful implementation of the CSME will therefore require greater coordination and harmonization of policies around a range of critical sectoral and institutional issues across the region including trade, transportation, labor mobility, rights of establishment, social security, and industry and agriculture (Lewis, 2010).

Another obvious obstacle for the timely and successful implementation of the CSME pertains to the region's geographical limitations. The CARICOM member states, unlike most other economic blocs around the world, are separated from each other by the Caribbean Sea. This makes both air and maritime transportation critical for successful trade integration (Nicholls et al., 2000, p. 2). Yet, despite the inclusion of transportation in the revised Treaty of Chaguaramas, the current state of intra-regional travel remains relatively underdeveloped and expensive.

The integration process is also heavily impeded by the disparities that exist within the CARICOM, particularly with respect to the different levels of economic development and sectoral focus among member states. While similarities exist, the Caribbean is by no means a homogeneous bloc. Population size varies considerably, ranging from approximately ten million in Haiti to just under five thousand in Montserrat (United Nations, 2013). Incomes per capita, languages, ethnicity, and levels of economic development all provide areas of divergence between the region's countries with little to reconcile apart from ardent integration efforts. These disparities probably represent the most significant barrier to regional integration. Currently, the Bahamas, Barbados and Trinidad and Tobago are ranked as high-income economies with a per capita income of more than US$12,476 (World Bank, 2011).

All the other states are considered middle income and with Haiti being the only low-income state with a per capita income less than US$1,025. Guyana and Belize are both ranked as lower middle-income economies while the rest of CARICOM are ranked as upper middle-income economies.

Another major obstacle in bringing the Caribbean closer together is the wide differences in economic activity amongst the countries (Hornbeck, 2008). This has meant great difficulty in gaining consensus on policy areas as priorities vary widely between member states. The importance of services and tourism in the smaller countries diverges with the main exports of minerals and agriculture in the larger territories. In the case of Guyana, there has been evidence of greater interest in the South American community as opposed to CARICOM, having increasing meetings with countries like Brazil and a general courting of the South American countries (Bishop, et al., 2011). Hornbeck (2008) also notes that the diverging economic performance in the Caribbean region is causing distance between the countries.

Bishop et al. (2011) point to the differences in monetary policy as a clear point of conflict for integration. With some countries maintaining fixed exchange rates while others have floating currencies, a common standard and agreement on the future of a monetary union, harmonization of incentives and financial and investment services have been difficult to achieve. This aspect of integration is seen as very necessary due to the limited effect the free trade regime has had in fostering cohesion thus far.

Heterogeneity within the Caribbean has also created subregional groupings between more homogeneous states such as the case of the OECS. In 2011, the Revised Treaty of Basseterre came into force and created the Eastern Caribbean States Economic Union. These states have already established a monetary union with an independent central bank. There is some degree of concern that if CARICOM does not make huge strides soon enough the OECS could become the main force of integration in the region. In this context, Trinidad and Tobago and Belize have already expressed interest in joining (Bishop, et al., 2011).

All of these differences have affected the integration effort in some way. The turbulent economic conditions in the 1970s and 1980s characterized by political division, social unrest, increasing debt, and lethargic growth were all inhibitors of deeper integration (Hornbeck, 2008). Today, many of these structural challenges still exist, and the sit-

uation has probably worsened given the impacts of the recent global economic recession. As Lewis (2010, p. 14) puts it: "Despite the importance of properly identifying and addressing the challenges of implementing CARICOM decisions [with respect to furthering regional integration], the global economic crisis poses a more fundamental concern for the integration project that questions the very basis upon which the CSME was constructed."

With respect to global competitiveness, the entire region seems to be struggling. The region has had generally slow economic growth averaging 2.8 percent between 1961 and 2002, below that of East Asia, and there is a clear diverging pattern of growth between the countries (World Bank, 2005). In 2011 average economic growth was 2.2 percent, up from 0.9 percent in 2009. Economic growth ranged from -1.4 percent in Jamaica to 9.6 percent in Aruba (CCMF, 2012). While there is a diverging growth trend amongst the countries, the recent economic crisis has reversed the trend as high commodity prices have benefited the larger mineral exporting nations, causing Belize, Guyana, and Suriname to be the only countries registering sustained growth since 2006 (CCMF, 2012).

Preferential trade arrangements have also maintained other structural deficiencies that the Caribbean is still struggling to overcome. There is a high reliance on a narrow range of exports to a few overseas markets, mainly in the United States and Europe (World Bank, 2005). While this pattern has changed somewhat since 2006, the U.S. still accounted for one third of the region's exports in 2008 compared to 52 percent in 2004 (OTN, 2008). The Office of Trade Negotiations (2008) also reported that 58 percent of all merchandise exports went to no more than five countries. Hornbeck (2008) in his report to the U.S. Congress, noted that the trade arrangements only focused on a small range of products, which meant that as long as there was a secure market little interest was shown in diversifying economic activity, and the reduction in preferential treatment has to date been the most important adjustment for trade arrangements in the region. This has been difficult as all CARICOM states rely on exports to finance imports in what ECLAC (2010) refers to as a 'balance of payments constraint'. The erosion of preferences provided under the Caribbean Basin Trade and Partnership Act (CBPTA) and the introduction of the European Partnership Agreement (EPA) has compounded the situation by opening the banana and sugar markets to competition and further exposing the highly un-

competitive nature of the local industries. This has caused a fair amount of economic dislocation and alternative ways of producing and trading have not developed fast enough to keep pace with the fall out (Hornbeck, 2008).

On the contrary, intra-regional trade has been very low, accounting for only 26.4 percent of all trade in 2002 (World Bank, 2005). While over the years with the progression of the free trade area and common external tariff there had been a gradual increase in intra-regional trade from 8.3 percent of total trade in the 1970s to 14.5 percent in the 2000s, this trend has been reversed in recent years (Bishop, et al., 2011). There is also a large imbalance as trade between the countries is dominated by Trinidad and Tobago's petroleum based exports which accounts for 86 percent of all intra-regional trade and 60 percent of all trade; the latter figure actually rose to 70 percent on the eve of the financial crisis due to high oil prices (CARICOM, 2010). Guyana, Jamaica, Suriname, and Trinidad and Tobago collectively account for 90 percent of all merchandise exports and 60 percent of all imports (OTN, 2008). While there is a pattern of larger countries in the region exporting more goods to smaller countries, Jamaica is considered an anomaly since it is the only net importer of CARICOM products (Hornbeck, 2008).

The entire region is, however, a net importer with the entire world, registering a negative trade balance since 1995, with the exception of 2006 (ECLAC, 2010). However, if Trinidad and Tobago is taken out of the equation, there has been a worsening trade balance since 1990 that only began to improve in 2008 (ECLAC, 2010). In 2012, the only countries that registered a trade surplus were Belize, Haiti, and Suriname (CCMF, 2012). All of this can be explained by the region's high degree of openness and integration into the global economy. The region has a very high trade to GDP ratio averaging 118 percent, and ranging from 46 percent for Haiti to 204 percent in the case of Guyana (World Bank, 2005). While the World Bank (2005) states that this is normal for small economies, Hornbeck (2008) notes that it increases the region's vulnerability to external shocks and changes in trade patterns. This degree of openness and high volume of external trade has also created a dependency on tariff income for some governments, such as the Bahamas, which derive up to 31 percent of their revenue from tariffs and other custom charges (World Bank, 2005). This high reliance on tariffs for revenue by these islands has also prevented some degree of

progress regarding the CET, as in the case of the Bahamas that for this reason decided not to join the CSME (World Bank, 2005).

It is also instructive to note that some of these developments have however been a force of integration in the region. For instance, external pressure from the European Union (EU) to negotiate the EPA with CARIFORUM was the first real exercise of negotiating as an economic bloc. Through the Caribbean Regional Negotiating Machinery, a successful outcome to the negotiations was secured, even though reactions to the agreed upon terms were mixed. The Office of Trade Negotiation, which replaced the CRNM, is also currently negotiating a Free Trade Agreement with Canada.

The difficulties faced by CARICOM as well as the mixed reactions to decisions and lack of support for a more powerful integration body such as a commission has left a feeling of pessimism amongst leaders in the region. There is a noted lack of drive, little urgency and minimal investment by the member states (Symbiont Consulting and KPMG, 2011). Even after decisions are made, there is an "implementation deficit" and institutional fragmentation that borders on decline (Bishop, et al., 2011). The region's relatively poor educational standards and brain drain is also contributing to the human resource deficit that is inhibiting progress. As of 2010, four years after the CSME was implemented, out of 1166 compliance instruments required for it to be fully functional, there were only 585 in effect, or just 50 percent (Girvan, 2010). The free movement of citizens is particularly lagging behind in implementation.

4. Measuring Regional Disparities

There is no consensus on a model to effectively measure disparities within a region. The problem lies in defining the term since it can mean many different things and applies to many different areas such as polarization, inequality, and convergence (Villaverde & Maza, 2009). Economic and trade theories link the convergence and divergence of regional and national economies with deepening economic integration. Therefore, within an economic bloc, the forces of market integration would have an effect on the way a region's economic indicators move in relation to each other. This includes per capita income, unemployment rates, inflation, and interest rates. There is a distinct difference in the traditional economic theory as opposed to the New Economic Geogra-

phy and New Trade Theory as they predict alternate and possibly opposing views on the effects of market integration on regional disparities.

Much of the same indicators used to measure disparities regionally have been adopted from global measurements such as monetary measures (GDP, GNI, GNP) and the Human Development Index (HDI). These measures are adopted because of their wide use and acceptance as standardized measures. Nevertheless, there are other measures used that may be unique to certain geographic regions. The EU, in adopting and implementing its 2007 Cohesion Policy, used measures of unemployment, income per capita, as well as the number of people connected to a water supply and motorway density (European Commission, 2012). They have also developed a regional Human Development and Human Poverty Indices in response to the fact that many countries have a high level of poverty despite their relative wealth.

In 2012, an index was developed to measure the level of integration within the EU. The index utilized twenty-five indicators covering the Single Market, Homogeneity, Symmetry and Conformity between the states. The index was also applied to EU-15 subset (with Luxembourg excluded). What was discovered was the existence of homogeneous groups within the EU that were at different levels of integration, with the original EU members (minus Italy) at the most advanced level of integration, while the UK and four of the "GIPSI" (Greece, Italy, Portugal, Spain and Ireland) were identified as being the least integrated into the EU (König & Ohr, 2012). The economic turbulence being experienced by these GIPSI countries and the case of Greece in particular lends some level of legitimacy to the particular method employed.

The variables used in the above-mentioned index are mostly economic in nature and do indicate a leaning towards economic integration as opposed to measuring social cohesion. Levels of unemployment, trade and per capita income do provide an insight into the level of disparity between nation states, but they can only be used cautiously to determine how cohesive a society actually is, as the level of cohesion can be attributed to a more subjective perception of identity, solidarity and unity within the community. Although the index is comprised of available economic series with long-term continuity, the exclusion of social-cultural and political factors limits its direct application to the CSME.

In the case of the CSME, while there are recognizable disparities between member states, there has been little attempt by regional authorities to devise a model to measure these disparities. Special and differential treatment based on the designation of lesser and more developed countries in the region was a condition that the OECS states made certain before they decided to join CARIFTA in 1968. The 1973 Treaty of Chaguaramas formalized the recognition of disparities with the affirmation of MDCs and LDCs. This arrangement allowed the LDCs to implement quantitative restrictions on trade and protect their trade share in the region. The categories created under the initial treaty were mainly determined by economic size and were concerned only with the states. Under Article 142 of Chapter Seven of the Revised Treaty of Chaguaramas a regime was created to manage the fall out experienced by disadvantaged countries, sectors and regions because of the CSME. Article 157(2) permits technical and financial assistance to be provided under the direction of the Council for Trade and Economic Development (COTED). This redirected the debate by including the possibility of disadvantaged regions and sectors, but there is yet still to be a comprehensive way of measuring the disparities between them in order to identify this disadvantaged regions and sectors.

In 2008, the CARICOM Development Fund (CDF) was launched with a four-year disbursement cycle and a capitalization of US$89.6 million targeted solely at the region's LDCs. The effects of the region's transfer facilities have however come into question as the combined effect of the Caribbean Development Bank (CDB), the Petroleum Fund, and the CDF, which distribute more than half of their funds to LDC countries, may be serving to increase regional disparities since several of these countries already have higher income per capita than MDCs and even the CARICOM average (CARICOM, 2010).

The distinction of LDC and MDC has some limitations and is slowly losing its relevance in functional application since some of the concessions that the LDCs have enjoyed are now granted to Guyana because it shares a lack of development and high debt that places it at as much a disadvantage to the rest of the community as the LDCs. As a result, Guyana has qualified and received funds from the CDF in its initial cycle, which was explicitly reserved for LDC countries. Although not an area of contention with the rest of the community, the inclusion of Guyana as a de facto LDC prompts a new and more relevant way of de-

termining levels of economic development and disparities among CARICOM member states.

5. The NEG and its Relevance to Classic Trade Theory and the CSME

Balassa's (1961) theory of integration proposes a path towards integration starting from economic cooperation towards the development of a free trade area. The next step involves creating a customs union with a CET and then a common market that would allow the free movement of capital and labor. Full economic integration is achieved when supranational institutions are instituted and there is a harmonization of fiscal and monetary policies, counter cyclical policies, and the creation of a monetary union. This is the path that the EU has taken since its Treaty of Paris in 1951, and currently there is a monetary union in the form of the Eurozone that includes 17 of the 27 member states comprising the regional bloc.

Classical trade theory uses the Hecksher-Ohlin-Samuelson model to predict that economic integration and increasing trade will equalize prices of products and factor inputs within a region. The Lerner-Samuelson theory's 'law of one price' will also affect factor inputs such as labor, thus eventually closing the gap between per capita incomes in an economic bloc. The result is an economic convergence between the regions. However, the New Economic Geography (NEG) predicts a different outcome for regions undergoing increasing trade (Cerina and Pigliaru, 2005; Ascari et al., 2012). The idea is that economic activity is influenced by spatial settings, and distance has a very real effect on how economies develop. The interplay of three main forces is considered: (a) increasing returns to scale in production as postulated by New Trade Theory; (b) the cost of transportation; and (c) mobile and immobile productive factors (Krugman, 1991a).

Increasing returns serve as the general justification for the centralization of economic activity resulting in the creation of cities. As trade and transportation costs fall, the benefits of having multiple factors of production in each domestic market are superseded by the benefits of locating to the larger market and shipping goods to the other (Krugman & Venables, 1995). External economies of scale are used in the NEG model to justify the high degree of concentration of separate industries within the same place. Since productivity and proximity work

hand in hand, mobile factors move towards higher productivity areas and this attracts even more firms. Firms benefit from labor market pooling, the availability of industry-specific technology, and spillover effects while labor benefits from the reduced risk of unemployment. This compounding effect is responsible for the agglomeration phenomena (Krugman, 1991b; Venables, 2006).

While agglomeration does not adversely affect industries, and actually allows firms to operate at a greater level of efficiency due to pooled labor markets, knowledge spillovers and closeness of suppliers (Krugman & Venables, 1995), the overall effect will be an increasing imbalance between regions characterized by diverging per capita incomes (Krugman, 1991b). It is therefore possible that deepening economic integration could increase disparities in per capita income (Myrdal, 1957) and agglomeration will favor bigger economies to the detriment of smaller ones (Kaldor, 1970) (Lucas, 1990).

The effect of the NEG on the Caribbean is yet to be fully understood or explored. Fears have been raised about the possibility of unbalanced development due to the various levels of economic development and the increased activity in certain areas at the expense of others (Symbiont Consulting and KPMG, 2011). Despite the reduction in trade costs, there are still barriers to the free flow of goods, and especially persons, as intra-regional transport is still considered expensive and making North America a more likely alternative for the casual traveler (Bishop, et al., 2011). In relation to trade, intra-industry trade is more unlikely to create divergent effects than inter-industry trade (Dluhosch, 2001; Giannetti, 2002). In determining what sectors are more likely to relocate, Venables (2006) suggests taking into consideration factor intensity where it is likely that unskilled labor will relocate to low wage countries or sectors valuing intellectual property (IP) are likely to relocate to countries that protect IP. He also suggests looking at how dependent a firm is on the local suppliers and network as well as how much fragmentation can occur in a firm or sector. While there is information on developed countries, he implores more research to be done on developing countries in assessing which industries are more likely to be relocated. The threat of agglomeration also remains low as long as there is a high degree of restriction on labor mobility within the region (Krugman & Venables, 1990).

The 2010 CARICOM Trade Report featured the expansion of large regional corporations into other markets. Ansa McA1, Cave Shep-

herd, Sagicor, United Insurance, Goddard Enterprise and Grace Kennedy and Co. Ltd all operate in at least seven different Caribbean countries. While expansion may not necessarily be classified as relocation, there is a degree of fluidity in the sectors where these businesses operate in that can become a reason for movement. The report noted that much of the movement was, due to a saturation of home markets, isolated to 'big firms' which have reached a critical stage needed to move outside national markets and also heavily inhibited but not stopped by red tape and lack of information. The movement was also confined to "high growth sectors, sectors with which they are familiar, and sectors which require relatively small inputs of technology" (CARICOM, 2010). Banking was one such sector, and all the region's largest most mobile corporations are currently headquartered in Barbados, Jamaica or Trinidad and Tobago.

6. Methodology for Comparative Economic Analysis of the CSME

The model developed for measuring disparities between MDCs and LCDs in CARICOM uses several metrics of integration covering economic, social, and political spheres. For each sphere of development, an index is developed to represent the level of attainment of economic, social, or political integration of individual country in CARICOM. The constructs for these indices are made of indicators that have been traditionally used as measures of development; for example, a country's Gross Domestic Product (GDP) and its Human Development Index (HDI). Other newly defined indicators that reflect the current notion of development, for example, the Internet and mobile telephone service penetration rate, are also incorporated in the indices to arrive at a more robust representation of development. This layered modeling approach can be represented as follows:

$$CII = f(EII, SII, PII)$$

Where *CII* represents CARICOM Integration Index, *EII* represents Economic Integration Index, *SII* represents Social Integration Index, and PII represents Political Integration Index. The CII is assumed to be a linear function of the sphere-specific indices and the weighting of each sphere-specific index in the calculation of the overall CARICOM Integration Index is based on the explained variance accounted for by

the indicators that make up each sphere-specific index. Thus, CII is computed using the following formula:

$$CII_i = \sum_{j=EII}^{PII} \frac{\Omega_{ij}}{\Psi} X_{ij},$$

Where CII_i is the CARICOM integration index for country i, Ω_{ij} is the percentage explained variance of sphere-specific index j of country i, Ψ is the percentage total explained variance of all indicators for the three indices that constitute CII, and X_{ij} is the value of index j of country i. The above procedure assumes that EII, SII and PII have already been determined. The determination of these metrics is based on factor analysis of different indicators used in previous studies and new indicators suggested in this study.

For a particular sphere of integration covered in this study, the index for that sphere of development is determined as follows:

$$X_i = \omega_1 x_{i1} + \omega_2 x_{i2} + \cdots + \omega_k x_{ik} \quad ,$$

Where x_{ik} is a variable (indicator) k that contributes to the index X in country i, ω_k is the factor loading of variable k and X_i is a particular integration index for country i, i.e. EII, SII or PII.

Several indicators are considered and grouped into economic, social or political sphere. Following Konig and Ohr (2012), the economic integration index is sub-divided into CARICOM Openness, CARICOM Importance, and CARICOM Homogeneity sub-indices. CARICOM Openness measures the degree of intra-regional transaction in the value of economic activities in individual member country. CARICOM Importance measures the degree of a member country's reliance on intra-regional transactions relative to transaction with the rest of the world. CARICOM Homogeneity measures the degree of similarity in policies and socioeconomic attainment across member countries. Table 1 provides a description of the sample indicators that can be used to construct the indices and identify sources of data.

To facilitate comparison across countries, the indicators need to be normalized. The normalization procedure used is similar to that employed by Konig and Ohr (2012) in their construction of an index measuring European Economic Integration. The normalization involves converting the values to percentages relative to the maximum value for

each indicator. For each of the indicators (X) described above, the normalization required is specified as follows:

The indicators pertaining to CARICOM Openness and importance are normalized to:

$$NX_{i,t} = \frac{X_{i,t}}{X_{\max(j,T)}} \times 100,$$

Where $X_{i,t}$ is the nominal value of indicator X for country i at time t, $X_{\max(j,T)}$ is the maximum value recorded for indicator X among all j countries over the time period T, and $NX_{i,t}$ is the normalized value of indicator X for country i at time t.

The indicator of CARICOM Homogeneity is normalized to:

$$EII_{i,t} = \left(1 - \frac{|X_{i,t} - \bar{X}_{j,t}|}{|max(X_{j,T} - \bar{X}_{j,T}|}\right) \times 100,$$

Where $X_{i,t}$ is the nominal value of indicator X for country i at time t, $\bar{X}_{j,t}$is the average value of indicator X for the remaining j countries (excluding country i) at time t, $max(X_{j,T} - \bar{X}_{j,T}$ is the maximum deviation from the average observed for all j countries over T periods. The indicators used for computing the social and political indices are similarly normalized to facilitate comparison across countries. Using the normalized indicators, the closer the value of an index is to 100 percent for a CARICOM member country, the more integrated is the country in the CSME. To identify groups of countries that are more or less integrated, cluster analysis is applied to isolate clusters of country and to determine what factors make them to belong to a more or less integrated group of countries. The clustering results are then used in measuring disparities in economic, social and political development of CARICOM member states and for predicting possibilities of agglomeration in the CSME.

As the New Economic Geography model theorizes, regional agglomeration will affect national economies differently. Productive resources of capital and labor will relocate to countries where returns are higher. This concentration of economic activities due to agglomeration will be measured through CARICOM Openness indices and the impact of agglomeration will be assessed via CARICOM Homogeneity indices.

Table 1: Description and Sources of Indicators Used for Measuring a Country's CARICOM Integration Index

Indicator (X)	Description	Source
	ECONOMIC	
CARICOM Openness		
Trade in goods	Intra-CARICOM exports and imports of goods as a percent of GDP.	CARICOMSTAT
Trade in services	Intra-CARICOM exports and imports of services as a percent of GDP.	CARICOMSTAT
Capital movement	Intra-CARICOM stocks (inward and outward) of foreign direct investments as a percent of GDP.	CARICOMSTAT
Labor migration	CARICOM employees as a percent of the total employees (foreign and national).	
CARICOM Importance		
Trade in goods	Intra-CARICOM exports and imports of goods as a percent of total trade in goods.	CARICOMSTAT
Trade in services	Intra-CARICOM exports and imports of services as a percent of total trade in services.	CARICOMSTAT
Capital movement	Intra-CARICOM stocks of foreign direct investments as a percent of total FDI.	CARICOMSTAT
Labor migration	CARICOM employees as a percent of total foreign employees.	
CARICOM Homogeneity		
Per capita income	Real GDP per capita.	CARICOMSTAT
Purchasing power standards	Purchasing power standards.	World Bank
Labor cost	Labor costs (skilled and unskilled wage rates).	
Long-term interest rate	Long-term interest.	
Public debt ratio	Gross government debt as a percent of GDP.	CARICOMSTAT
Consumer tax rate	Implicit tax rate on consumption (GCT, VAT).	
Capital tax rate	Implicit tax rate on capital.	
	SOCIAL	
HDI	Human Development Index.	UNDP

Access to Education	Primary and Secondary School Enrolment rate.	UNDP
Poverty Headcount	Percent of population below poverty line.	World Bank
Life Expectancy	Life Expectancy at Birth.	UNDP
EPI	Environmental Perception Index	
Change in unemployment	Percentage change in annual unemployment rate.	CARICOMSTAT
Inflation	Harmonized Consumer Price Index (CPI, 2006=100).	CARICOMSTAT
ICT	Internet and mobile service penetration rate.	
	POLITICAL	
CARICOM participation	Membership and status in CARICOM.	CARICOM
CARICOM compliance	Number of treaties signed to.	CARICOM
CCJ membership	Membership in CCJ.	CARICOM
R&D Expenditure	Government expenditure on R&D.	UNDP
Business incubation	Time to start a business.	UNDP
Business Environment	Ease of Doing Business Index.	UNDP
Corruption	Corruption Perception Index.	UNDP

Using CARICOM Openness indices of capital movement and labor migration as examples, agglomeration will be indicated when a few member countries have values in the neighborhood of 100 percent while a large number of member countries have values that are much lower than 100 percent. The country attracting the highest CARICOM FDI over a given period as a percentage of GDP will have a CARICOM Openness index of capital movement of 100 percent, and the country with the highest proportion of CARICOM employees to total employees will have a CARICOM Openness index of labor migration of 100 percent. All other countries will have openness index value of less than 100 percent. Agglomeration will be implied when only few other countries have a value that is near 100 percent and dispersion will be indicated when several other countries have openness value close to 100 percent.

If evidence of agglomeration is observed after the computation of the indices, the implication of agglomeration on economic growth could be assessed using the other CARICOM Openness indices of trade

in goods and services and the CARICOM Homogeneity indices of per capita income, purchasing power standards, and public debt ratio. A positive correlation between CARICOM Openness indices of capital movement and labor migration, on one hand, and CARICOM Openness indices of trade in goods and services, on the other, is an indication of increased regional economic activities for the national economy and will be expected to spur economic growth. In similar manner, a positive correlation between CARICOM Openness indices of capital movement and labor migration, on one hand, and CARICOM Homogeneity indices of per capital income and purchasing power standards, but with negative correlation with CARICOM Homogeneity index of public debt ratio, on the other, will signify that agglomeration is associated with economic development. Consequently, in this model, countries that are likely to suffer from the negative effects of agglomeration in a CSME regime will be indicated through a negative correlation with indicators of economic development and a positive correlation with the indicator of national debt. In a situation where data availability permits the disaggregation of data analysis at the sectoral and industry levels, further examination of how specific sectors and industries within a member country will be affected by regional agglomeration can be performed.

7. Preliminary Results and Analysis

Data on the indicators listed in Table 1 were mainly sourced from several databases and reports prepared by CARICOM, the World Bank, and the United Nations Development Program (UNDP). The economic indicators were mostly available in CARICOMSTAT databases. Social and political indicators were collected from multiple sources. Most of the indicators required to compute the integration indices were either not available or available for different years in different countries. This misalignment of data posed a problem in the implementation of the method for computing the CARICOM Integration Index as proposed in this study.

In the case of economic indicators, trade data were available for all CARICOM member states, except The Bahamas and Haiti. Available data covered the period 1990 to 2000, but several countries had missing data on one or more variables that further limited the period over which the analysis could take place. Data on labor migration and labor cost were also unavailable. Although data on capital movement represented

by FDI, GDP and public debt were available for longer periods, available trade data constrained us to using only data for the 5-year period between 1995 and 1999. However, even for this limited time period, Antigua and Barbuda, Montserrat, and Suriname had incomplete data that required the three countries, in addition to The Bahamas and Haiti, to be dropped from further analysis.

For social and political indicators, data were available for life expectancy and inflation across all countries. Data on the other indicators were irregular, resulting in data gaps that required these other variables to be excluded from further analyses.

Under the current situation of limited data, the proposed method cannot be fully implemented. More specifically, data on indicators measured after the introduction of CSME are required to investigate if agglomeration is taking place post-CSME. Unfortunately, such data are not currently archived in any central database that can be accessed. In addition, data on several of the new indicators suggested in the current study are not currently obtainable. Faced with these data limitations, only indicators — but not the indices — are computed in this preliminary analysis. With plans underway to collect unavailable data, it is anticipated that a richer and updated dataset will enable us to compute the composite CARICOM Integration Index sometime in the near future as specified in the methods section.

Economic integration indicators of CARICOM Openness and CARICOM Importance using aggregated data on trade in goods and services and CARICOM Homogeneity based on real GDP and public debt ratio were computed. Only the social integration indicator of life expectancy was computed, and data limitation did not allow any political integration indicator to be computed.

Over the 1995-1999 period considered, Dominica in 1997 was the most open economy among the 10 CARICOM states included in the analysis and Belize in 1996 was the least open economy. Over the period, Belize was in general less open than other countries while the OECS countries were generally more open. Similar results were obtained for the Importance indicator with Dominica's economy in 1997 showing the greatest dependency on other CARICOM states. In contrast, Belize in 1997 showed the least dependency on other CARICOM states.

Income levels vary widely among member states during the period of analysis. Barbados had the highest real GDP per capita in 1999 while Guyana had the lowest in 1995. In terms of Foreign Direct Invest-

ment, St. Vincent and the Grenadines in 1997 recorded the highest level of FDI as a proportion of GDP while Barbados in both 1995 and 1996 recorded the lowest level. While the trend in FDI was less consistent, OECS countries seem to have had higher levels of FDI in general. The ratio of outstanding public debt to GDP was highest for Guyana in 1998 and lowest for Barbados in 1995. Relative to Guyana, all other countries recorded lower ratio of public debt to GDP.

Life expectancy was similar across member states, except for Guyana with a relatively lower life expectancy. Barbados in 1999 recorded the highest life expectancy while Guyana in 1995 had the lowest life expectancy. Despite data challenges, Factor analysis was performed on the limited indicators to illustrate how the economic, social and political indices would be computed when a more complete dataset is available. Using the six indicators of openness, importance, FDI, real GDP per capita, life expectancy and ratio of outstanding public debt to GDP to perform factor analysis, two components were extracted accounting for about 77 percent of the total explained variance of all indicators in the dataset. The rotated component matrix is presented in Table 2.

Table 2: Rotated Component Matrix Showing Factor Loadings

Indicator	Factor Loading	
	Component 1	**Component 2**
Openness	0.913	-0.264
Importance	0.955	0.118
FDI	0.774	-0.119
GDP per capita	-0.031	0.763
Life Expectancy	-0.209	0.852
Public Debt	0.015	-0.903

Even with limited data, the factor analysis result is compelling. It shows that two components or indices could be extracted from the six indicators analyzed. The first component consists of the openness, importance, and FDI indicators while the second component consists of GDP per capita, life expectancy, and public debt. Openness, importance and FDI all have high and positive factor loading on the first component while GDP, life expectancy, and public debt have high fac-

tor loading on the second component. However, while GDP and life expectancy have positive loadings, public debt has a negative loading.

The implications of this illustrative analysis, albeit based on limited data, are that Openness, Importance and FDI are related and it could be inferred that the more open an economy is, the higher the level of FDI in that economy. On the other hand, income level, represented by GDP per capita, is associated with longer life expectancy and high public debt works against a higher level of income and longer life expectancy across member states. Therefore, component one could be regarded as a CSME index measuring level of economic development and integration while component two could be designated as a social index measuring levels of social development and integration for each member state.

8. Concluding Thoughts and the Way Forward

This study is an acknowledgement of the inadequacy with current methods of determining disadvantaged states, regions and sectors in CARICOM as required under the Revised Treaty of Chaguaramas. The article presents the preliminary findings from an ongoing project aimed at developing an economic model that can measure disparities between CARICOM countries as well as their level of cohesion with each other. This would allow regional authorities to make well-informed decisions about which countries and sectors should receive priority attention for development assistance based on an empirical process using reliable economic and social data. The development of this model will also assist local governments in their attempts to better position their economies to take advantage of regional integration.

Attempts to measure disparities among countries and regions have focused largely on indicators such as gross domestic product, national income, and the relatively new Human Development Index. Within the context of regional integration, it is accepted that more information is needed to capture the levels of readiness and cohesion in single markets. The model used for this study has utilized a layered approach incorporating metrics covering spheres of economic, social and political integration, and cohesion. The study sought to develop three indices that were to be merged in order to provide a measurement of CARICOM Integration (CII). Based on the preliminary findings, regional integration seems to be unleashing market forces which can have coun-

terproductive effects by increasing disparities between sub-regions and thus needs to be addressed by a strong regional development policy. Now that there is a proto-model to determine which areas are in need of special attention, the next step is to populate the model with the relevant information so that it can be applied. This would allow critical regional organizations like the Caribbean Development Fund (CDF) and other development agencies and governing bodies to better visualize the effect market forces are having on various regions and sectors and serve to promote a more coordinated approach defined by consensus and scientific evidence.

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