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Benchmarking for International Competitiveness: Lessons for Public Policy

Densil A. Williams / densilw@yahoo.com
Department of Management Studies
University of West Indies, Mona

Beverly Morgan / Beverly.morgan@infochan.com
The Competitiveness Company
Jamaica Exporters' Association

ABSTRACT:
This paper presents the findings from a benchmarking study of Jamaica's competitiveness position viz-a-viz other similar small economies in the Caribbean. Using the Dual Double Diamond model and the Rank Xerox Benchmarking methodology as its guiding frameworks, the paper analyzed Jamaica's international competitiveness position in relation to Singapore, the most competitive small, open economy in the world. Comparisons were also made with three other small, open economies in the Caribbean and Central America, namely Barbados, Trinidad and Tobago, and Costa Rica.

The findings revealed that Jamaica's weak competitiveness position relative to its benchmark country, Singapore, results from a number of factors, including but not limited to an unstable macro-economic environment, weak institutions, distrust for public officials, and poor factor conditions. These competitiveness drivers were present in Singapore in a positive way, thus leading to the economy being able to upgrade its diamond of national competitiveness. The lessons learned from the Singaporean story have implications for Jamaica and other similar small, open economies that are experiencing a decline in their levels of international competitiveness.

Keywords: competitiveness, benchmarking, small economies.

RESUMEN:
Este artículo presenta los resultados de un estudio de "benchmarking" sobre la posición de competitividad de Jamaica en relación con otras economías pequeñas similares en el Caribe. Enmarcado en el modelo "Dual Double Diamond" y la metodología de "Rank Xerox Benchmarking", el trabajo analiza la posición competitiva de Jamaica a nivel internacional con Singapur, la economía pequeña abierta más competitiva en el mundo. También se compara la relación con tres economías en el Caribe y la

América Central: Barbados, Trinidad y Tobago y Costa Rica. Los resultados revelaron la débil posición de Jamaica relativa a Singapur, el país "benchmark". Algunos factores que inciden en estos resultados son un ambiente macroeconómico inestable, instituciones débiles, desconfianza hacia los funcionarios públicos y condiciones de los factores pobres. Estos conductores de la competitividad estaban presentes en Singapur de una manera positiva, lo que permitió a la economía mejorar su diamante de competitividad nacional. Las lecciones aprendidas de la historia de Singapur tienen implicaciones para Jamaica y otras economías pequeñas abiertas similares que están experimentando un declive en sus niveles de competitividad internacional.

Palabras clave: competitividad, "benchmarking", economías pequeñas.

Introduction

There is little doubt that as globalization deepens, it will have serious implications for the international competitiveness of economies all around the world. This is even more so for small, open economies. If these economies are to afford a respectable standard of living for their citizens through higher economic growth and higher per capita income, they will have to become involved in international trade. The growth in world trade has outpaced the growth in world output since the mid-1980s. Further, foreign direct investments (FDI) flows have grown faster than the growth in world trade and world gross domestic product (GDP). Indeed, between 1994 and 2003, world trade grew by 6.3% per year, world GDP growth was 3.6% and world FDI flow grew by 13.4 % per year (ITC, 2004). These developments occurred mainly due to the removal of distortions to trade (e.g. reduction in tariff barriers- in 2004, the average tariff on manufactured goods was 2.1 % down from 47% six decades before), improvement in technology and declining cost of communications (communication costs have fallen by 95% since the 1950s) and, a high mobility of foreign capital. If small economies are to survive in this highly integrated international market place, they will have to become more internationally competitive[1].

[1]International competitiveness is defined here to mean increased productivity over time. It will encapsulate countries operating at internationally accepted standards of cost, efficiency and also, using locally-owned resources to compete in an open market (Wint, 2003).

Unfortunately, some economies are losing competitiveness. This is even more glaring for the small, open economies in the Caribbean region. The Global Economic Forum World Competitiveness Index has revealed that many countries have slipped in their levels of competitiveness over time. Jamaica, for example; has seen its ranking slip from number 67 in 2006 to 86 in 2008 and, 95 in 2010. This poses serious questions about the economy's ability to attain sustained economic growth and development in an increasingly globalised world economy. How can small economies like Jamaica, improve their levels of international competitiveness in an increasingly globalised world economy? This question is at the heart of policy discourses in these economies.

This paper addresses some of the issues that are involved in enhancing the international competitiveness of a country. It argues that one way to improve international competitiveness is to benchmark the actions and activities of other similar, more internationally competitive economies. The lessons from these locations can be used to inform public policies that are aimed at increasing the attractiveness of the business environment in economies that are experiencing declining international competitiveness. Indeed, the competitiveness of a national economy really narrows down to the attractiveness of the location for facilitating the activities of enterprises, which are the units that are engaged in international trade and not national governments (Porter, 1990).

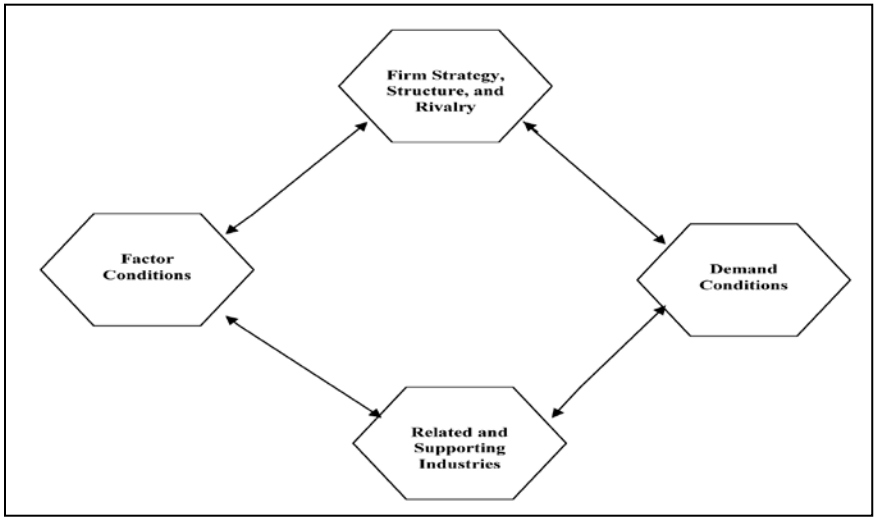
To address these issues, the remainder of the paper is organized as follows: the next section will look at the analytical framework that is used to conceptualize the arguments and provide theoretical justifications for the variables selected and the conclusions drawn. Following this analytical framework, the paper provides a brief description of the data source and the research method that is employed in trying to attain the research objective. The subsequent sections will present data that indicate Jamaica's competitive position. The paper will end with a discussion and some concluding remarks.

The Analytical Framework

The competitiveness of a nation is dependent on a number of factors and no single variable may fully explain this phenomenon.

Indeed, a number of researchers (e.g. Krugman, 1994) see it as one of the most elusive concepts. However, Porter (1990) tried to resolve this elusion by proposing an integrative model that can be used to operationalize the concept. Porter referred to this model as the diamond model of national competitiveness. Here, he argued that the competitiveness of a nation is derived from a combination of factors in the domestic environment working simultaneously. These he labeled as: demand conditions; factor conditions; the presence of related and supporting industry and, the strategy, structure and rivalry of competing firms[2]. A national economy which possesses the right combinations of these factors will see its level of efficiency and innovation improved, thus increasing its productivity and by extension its level of competitiveness. Figure 1 below captures a pictorial representation of the diamond model of national competitiveness.

Figure 1: Diamond of National Competitiveness



Source: Porter, M. E. (1990). The Competitive Advantage of Nations. *Harvard Business Review (March-April)*

[2] For a full explanation of these constructs, see **Porter, M. E. (1990). The Competitive Advantage of Nations. *Harvard Business Review (March-April)*.** The full explanation of these concepts is beyond the scope of this paper.

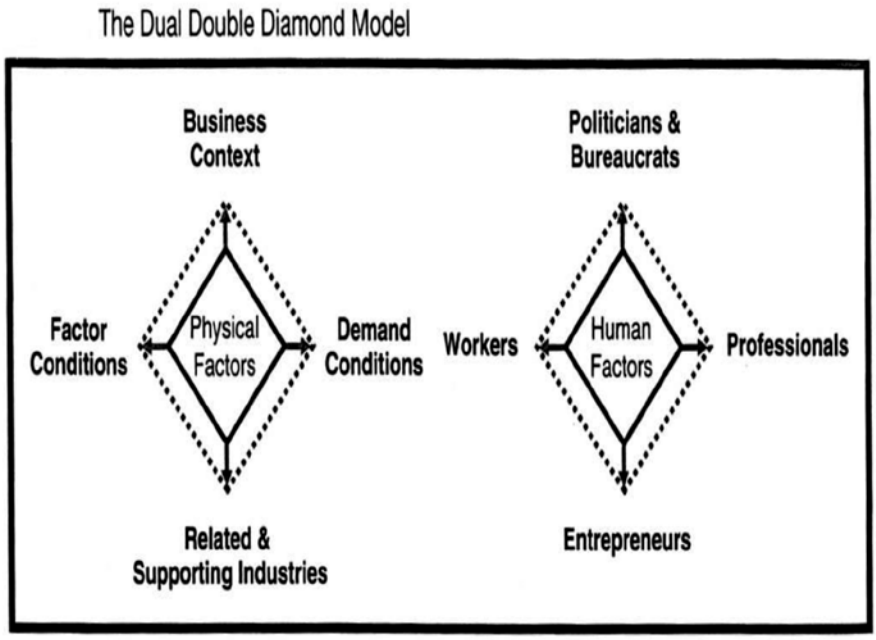
However, a number of researchers posit that Porter's diamond treats the issue of competitiveness in a very limited way (e.g. Rugman & D'Cruz, 1993; Cho, 1994; Dunning, 2003; Moon et al., 1998). They argue that multinationals integrating their ownership specific advantages into the home environment also influence the international competitiveness of the national economy (Ozawa, 1992; Rugman & D'Cruz, 1993). This dynamic interaction between the multinational and the domestic environment gives rise to what Rugman and D'Cruz refer to as the double diamond of national competitiveness. The role of the multinational is captured through its ownership advantage of specific assets that will help to shape the various elements of the diamond model. For example, the multinational will bring sophisticated management techniques to a domestic location that will enhance the factor conditions (e.g. higher quality of workers) in that location.

Further, other researchers argue that physical factors (as captured in the double diamond model) are necessary but not sufficient for enhancing the competitiveness of a national economy (Cho, 1994). A sufficient condition is to incorporate explicitly the role of human capital in the competitiveness process. In Porter's diamond, human capital is implied through systems of innovation and other indirect means. The human factors are to be explicit because they are critical for coordinating the aspects of the diamond in order for it to operate as a system. It is this explicit treatment of the role of human capital in facilitating the workings of the diamond model which gives rise to what scholars call the Dual Double Diamond model (DDD) of national competitiveness (IPS, 2008).

The DDD model incorporates the works of Porter's (1990) diamond model, the double diamond model of Rugam & D'Cruz (1993) and, the nine factors model of Cho (1994). These are possibly the three strongest theoretical lenses through which one can view the competitiveness of a nation. Indeed, the DDD model seems to explain national competitiveness in a more holistic way given its comprehensive nature. It incorporates in its explanation of national competitiveness, the physical factors, the role of the multinational enterprise and, the human factors. Therefore, this model provides a more comprehensive picture of the factors that are used to drive efficiency and innovation in a national economy in order to improve

productivity over time. In other words, it gives a better measure of the competitiveness of national economies. Figure 2 below captures the graphical representation of the DDD model.

Figure 2: The Dual Double Diamond Model



Source: Cho, D-A & Moon, H-C. (2006). A comprehensive methodology to enhance national competitiveness: An introduction to MASI methodology. Institute for Industrial Policy Strategies

The competitiveness models, although they were not developed with small, open developing economies as their frame of reference, can be adapted to explain the competitiveness of these economies. For example, in Porter's diamond model, the issue of macro economic stability is held constant because all the countries that were studied in order to derive the model had similar levels of economic stability. The role of government, therefore, was discussed in the context of being a mere facilitator in the development process and not as an active player. In the case of the analysis in this paper, all the countries do not have similar levels of economic stability and,

in some cases, macro-economic instability is what has characterized these economies for a long time. Therefore, the analysis will have to take this difference into consideration when using the models to explain the competitiveness in a small, open economy context. It is this type of adaptation that will help to strengthen the conclusion.

This paper will focus on the dynamic interactions among the various elements of the DDD to assess the level of international competitiveness of the Jamaican economy in relation to similar locations that have higher levels of international competitiveness. The aim is to understand what lessons can be learned from the better performing economies so that public policymakers in Jamaica can use the data/results to inform public policy decisions aimed at improving the international competitiveness of the Jamaican environment. Therefore, the main question that this paper will address is**: How does Jamaica's competitiveness position on selected variables compare with that of economies of similar size and, what lessons can Jamaican public policymakers derive from this assessment?** Based on the conclusions drawn from the results of the analyses, the paper will offer useful recommendations on how Jamaica may improve its competitiveness position.

THE RESEARCH METHOD AND DATA SOURCES

The objective of this paper is to assess the level of competitiveness of the Jamaican economy relative to other similar small, open economies. In this regard, a method that will allow a comparison of Jamaica's competitiveness position to that of a best-in-class economy will be required. As such, the benchmarking method was deemed most appropriate.

Benchmarking can be referred as an improvement tool. The benchmark is a standard by which an item can be measured or judged (Zairi, 1996). However, the process of benchmarking is more than just identifying a benchmark. It involves a systematic way of identifying, understanding and creatively developing superior strategies to improve real performance. The principles behind benchmarking is to: a) find a better way of doing what you do; b) better understand how what you do is being done and, c) adopt or adapt the best practices from other locations into your environment. The

benchmarking method adopted in this study is similar to that used at the enterprise level to establish superior performance[3]. A critical part of this process is to identify the benchmark.

CHOOSING THE BENCHMARK COUNTRY

To determine the benchmark country, a careful examination was undertaken. The examination ensured that this country is endowed with similar comparative advantages and competing in similar industries to those of Jamaica. With these considerations in mind, this study followed closely the Institute of Policy Studies (IPS) country grouping and selected from this, those countries that are candidates against which Jamaica could benchmark its level of international competitiveness.

For competitiveness analysis, the IPS categorizes countries in three mutually exclusive groups: small, medium and large. It further sub-divides each group into strong, intermediate and weak economies. The idea is that, if a country falls in the weak sub-group and wants to benchmark its international competitiveness, it should look at those countries in the strong sub-group to see what they are doing to have achieved a high level of international competitiveness.

Jamaica is a small, open economy[4]. Therefore, in benchmarking its level of international competitiveness, the benchmark must be a similar small, open economy which a higher level of international competitiveness. Based on the IPS categorization, Jamaica falls into the category of small economies. For benchmarking purposes, the strongest country in this grouping would have to be chosen. In the small, strong country category, the report lists countries such as Aus-

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[3] For a comprehensive review of this method, see Zairi (1996); for the rank Xerox framework. There seems to be a consensus in the academic community that this is the most robust approach to benchmarking.

[4] Small economies can be defined in various ways. These include population, land mass or national income. The most common definition, however, is based on population size. In most cases, these economies are defined as those with less than 5 million inhabitants (Wint, 2003). Others see them as having up to ten million inhabitants. Openness, on the other hand, refers to a country's share of trade in GDP. An economy is considered open if the share of trade in GDP is over 100 percent (Armstrong & Read, 1998).

tria, Belgium, Denmark, Hong Kong, Israel, Netherlands, Singapore and Switzerland. Of these countries, Switzerland, Denmark, Netherlands and Singapore are listed in the top 10 most competitive countries in the world for 2008-2009 based on the competitiveness assessment done by the World Economic Forum. Further, these countries have been in the top 10 most competitive nations in the world for the last five years[5]. As such, these countries became possible candidates for benchmarking Jamaica's level of international competitiveness.

To narrow in on the benchmark, it was also important to find out which country's economy is most similar in structure to that of Jamaica. The analysis showed that Jamaica seems to be most similar to Singapore. Singapore has a population of approximately 4.4 million people while Jamaica has a population of approximately 2.7 million people. All the other countries in the top ten listing have population upward of 4.4 million people and are at the innovation stage of their national development, while Jamaica is at the efficiency stage. In addition, these countries are heavily involved in international trade, with trade accounting for over 100 per cent of their GDP. Indeed, like Jamaica, these economies are highly integrated into the world economy. The similarities between these countries and Jamaica are quite high, except that they reach the innovation stage of their national economic development life cycle while Jamaica is at the efficiency stage. As a result, the country size was used as the criterion to choose the benchmark country. In this case, Singapore was closest to Jamaica. In addition to the benchmark country, a number of other small economies (Costa Rica, Trinidad and Tobago, Barbados) which are similar to Jamaica were also analyzed in order to give some indication of how Jamaica's level of international competitiveness matches up with its regional counterparts. This inclusion is important to determine whether or not Jamaica's competitiveness decline is unique.

[5] To ensure that a strong competitiveness performance is not a one off incident which happened by luck, it was important to look at a five year period to ensure that the countries remain in the top five position over the period.

CHOOSING THE RESEARCH VARIABLES

The unit of analysis for this research is national competitiveness. The model used to operationalize this concept is the Dual Double Diamond (DDD) model as espoused by the IPS. This model has generated over 100 variables that are used to measure the constructs which best capture international competitiveness. Due to space and also data availability, not all the variables from the DDD model are used in this study. The variables chosen were proxies that capture the various elements of the DDD model. These proxies were derived directly from the listings of variables which appear in the DDD framework. Thus, this increases the validity of the findings given that the research is using established metrics which have been tested in previous contexts. Because the number of variables in the model is so large (over 100), the decision was taken to study at least two in each aspect of the framework. The two variables chosen were narrowed down to what is empirically feasible and also theoretically sound, that is, what reflects the tenets of the competitiveness theory as espoused in the diamond model and where data can be had for comparative purposes. The variables were randomly selected so as to reduce the bias in reporting on the level of international competitiveness of the economy[6]. The list of variables selected for this analysis is presented in the results section. The variables are reflected under each aspect of the diamond model.

THE RESEARCH DATA

Both competitiveness ranking data and hard data (i.e. statistical indicators gathered from organizations) for each variable are drawn from various sources for this study. Where hard data were collected, it was ensured that these were normalized in order to enable appropriate comparison between Jamaica, its benchmark country and,

[6] Although this study did not utilize the full set of variables, the validity of the findings still remains strong, because of the randomness with which the variables were chosen. The idea of the paper is to give a snapshot of the level of international competitiveness of the economy. Therefore, randomly selecting a few variables will tell the same story as when all variables are used.

its regional counter parts. The data on the competitiveness ranking were drawn exclusively from the World Economic Forum's-Global Competitiveness Report. The hard data were drawn from various sources, including the International Monetary Fund's-World Economic Outlook, the World Bank's-World Development Report and Doing Business Report, the International Labour Organization, United Nation Council on Trade and Development's-World Investment Report, and local and regional central banks, export agencies and investment agencies. The sources for the data of each variable used in the analyses are found at the foot of each diagram or table.

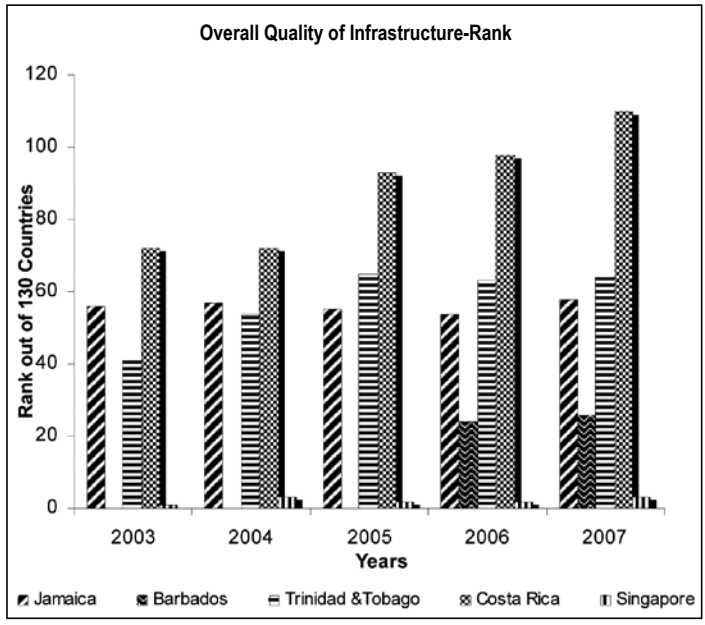
Assessing Jamaica's Level of International Competitiveness on Selected Variables

The DDD model highlights the various aspects of a nation which drives national competitiveness. Proxies which are derived from the different aspects of the diamond will be used to make an assessment of Jamaica's level of competitiveness in selected areas relative to other similar more competitive economies. The analyses will focus on each aspect of the diamond by adopting proxies which represent those aspects and compare their performance across the countries in the study. It is both the hard data and competitiveness rankings that were collected on each variable that will be analyzed across all the countries in the study. This section will merely report the findings; followed by a discussion of those findings in the subsequent section.

Factor Conditions

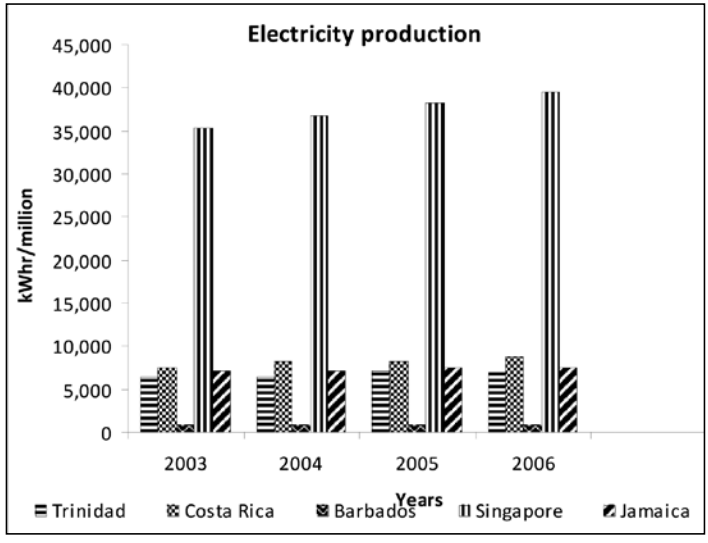
The factor conditions in the diamond speak to those inputs into the production process. To capture the competitiveness of Jamaica's factor conditions, three variables were used. These are quality of infrastructure, electricity production and, land area. Jamaica's position in relation to these variables when compared to the most competitive country, Singapore and other similar regional economies, is presented in the figures below.

Figure 3: Overall Quality of Infrastructure – Rank



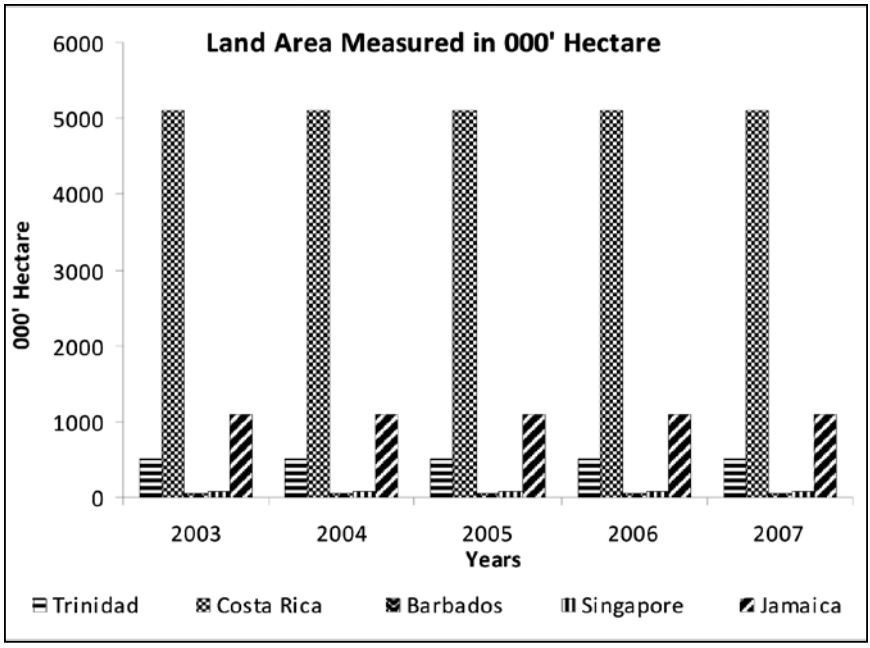
Source: Global Competitiveness Report-Various Years

Figure 4: Electricity production – kWh/mill



Source: Energy Statistics Database, United Nations Statistics Division

Figure 5: Land area measured in 000' hectares



Source: Food and Agriculture Organization of the United Nations (FAO) - Various Years
NB: Barbados and Singapore have very small hectares so their representation in the figure above is not highly conspicuous.

Figure 3 above shows that the quality of infrastructure, which is a measure of factor conditions, Jamaica lags significantly behind Singapore but performed better than regional economies such as Trinidad and Tobago and Costa Rica over the five year period 2003-2007. Jamaica maintained an average ranking of 56 out of 130 countries over the five-year period, while the best in class country, Singapore, remained in the top three. Singapore leads Jamaica by a very large margin.

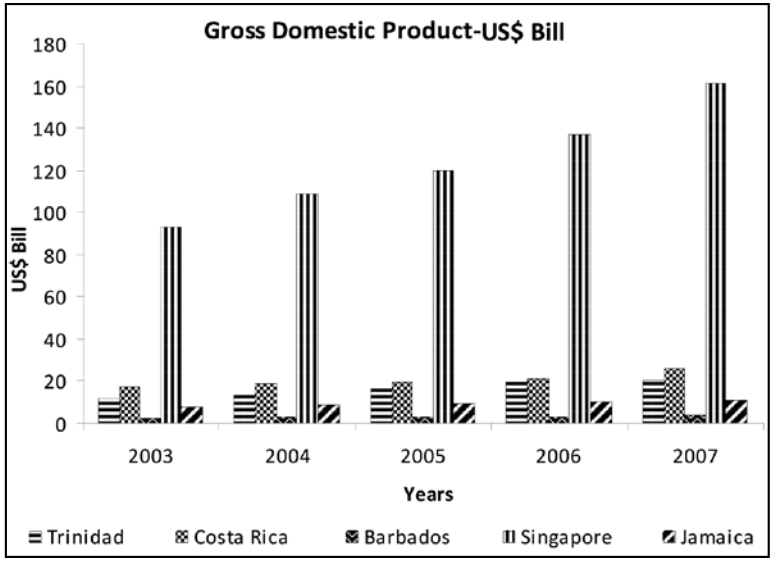
Jamaica's electricity production as measured by kWh/million persons is around 7000 kWh/million, while Singapore, a country slightly larger than Jamaica in terms of population, has production of over 35000 kWh/million persons. Figure 4 above shows that electricity conversion in Jamaica is not very efficient and thus significantly impacts on the country's factor competitiveness.

Figure 5 which looks at land area, suggest critically that size is not a serious deterrent to competitiveness. In terms of land area, Singapore is the second smallest of all the countries in the study; except for Barbados. It is however, highly competitive in terms of the quality of its infrastructure and its electricity production. Overall, Jamaica lags significantly behind Singapore in terms of the competitiveness of the factor conditions in its diamond of national competitiveness.

DEMAND CONDITIONS

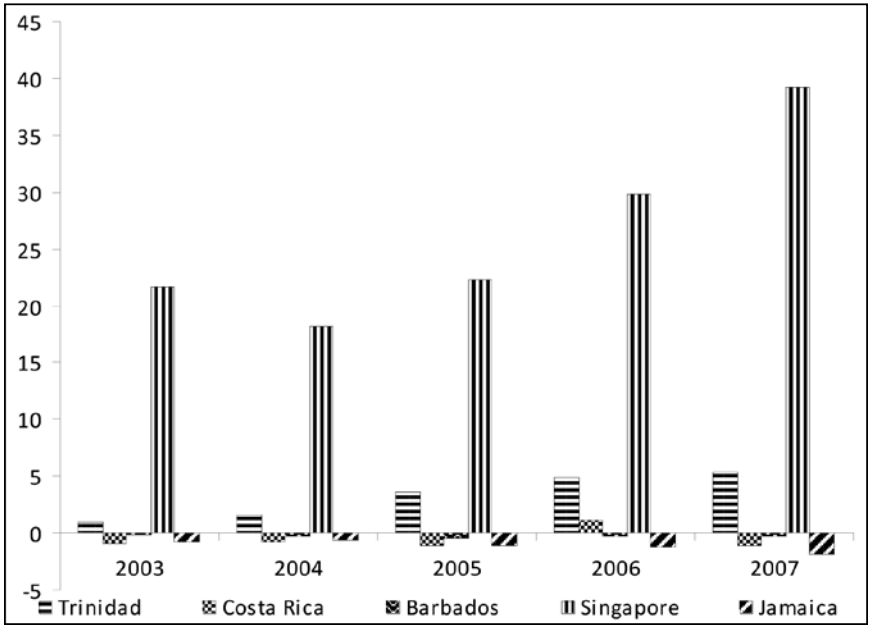
Demand conditions speak to the sophistication and quality of the home country demand. The proxy variables used to capture this concept reflect the transmission mechanism through which the quality of home demand is manifested. The two variables that were used are the overall size of the local economy measure by its gross domestic product (GDP) and the size of international trade measure by the current account **balance.** Jamaica's position in relation to the most competitive country, Singapore, and other similar regional economies, is presented in the figures below.

Figure 6: GDP - US$ bill



Source: Inter-American Development Bank

Figure 7: Current account balance - US$ bill



Source: IMF- World Economic Outlook Database, October 2008

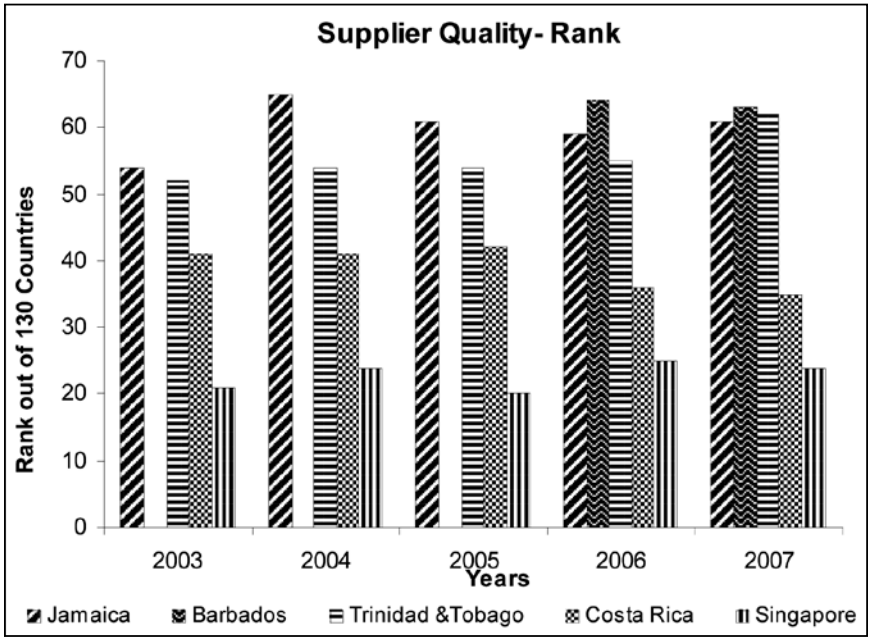
The analysis of this element of Jamaica's diamond of national competitiveness shows that the country is not very competitive in its demand conditions. The data presented in figures 6 and 7 above show that Jamaica needs to improve a number of elements (e.g. grow the economy to increase the GDP, increase the export of local goods etc) in order to improve the competitiveness in the demand conditions aspect of its diamond. Jamaica lags significantly behind its benchmark country, Singapore, on the selected variables which measure demand conditions.

RELATED AND SUPPORTING INDUSTRY

The related and supporting industry element of the diamond speaks to the inter-connectedness of the industry sectors in the economy. To capture the competitiveness of Jamaica's related and supporting industries, four variables were used. These are: the quality and quantity of suppliers, quality of scientific research institutions,

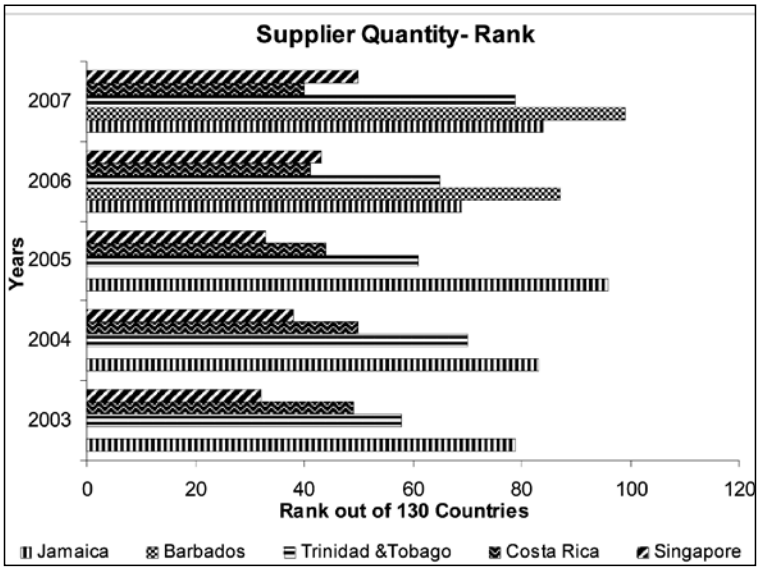
E-business readiness score and, the quality of management schools. Jamaica's position in relation to the most competitive country, Singapore, and other similar regional economies, is presented in the charts below.

Figure 8: Supplier Quality - Rank



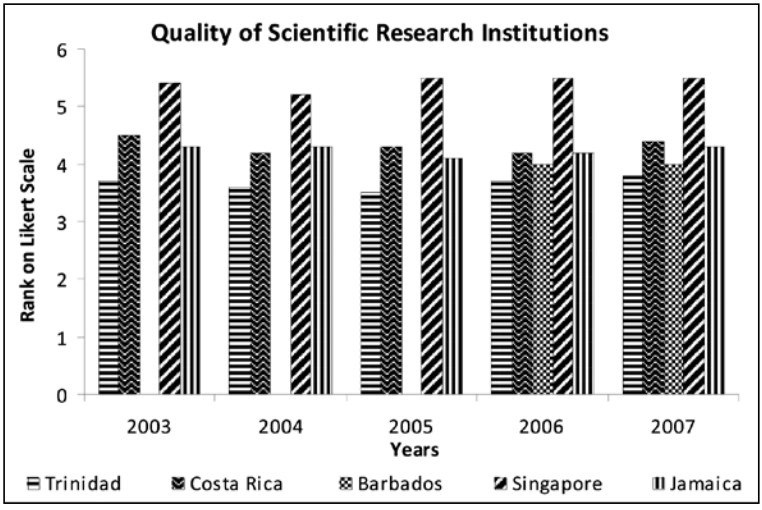
Source: Global Competitiveness Report - Various Years

Figure 9: Supplier Quantity - Rank



Source: Global Competitiveness Report - Various Years

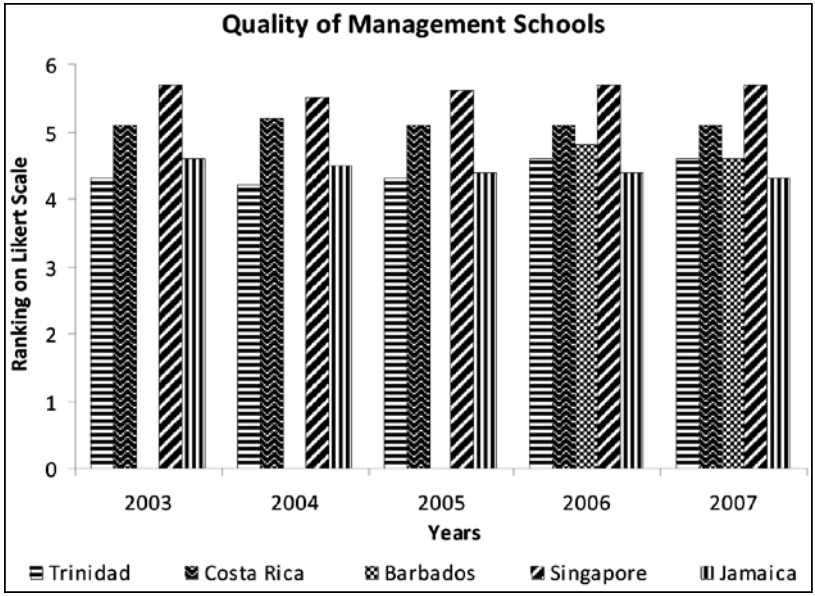
Figure 10: Quality of Scientific Research Institutions



Source: Global Competitiveness Report - Various Years

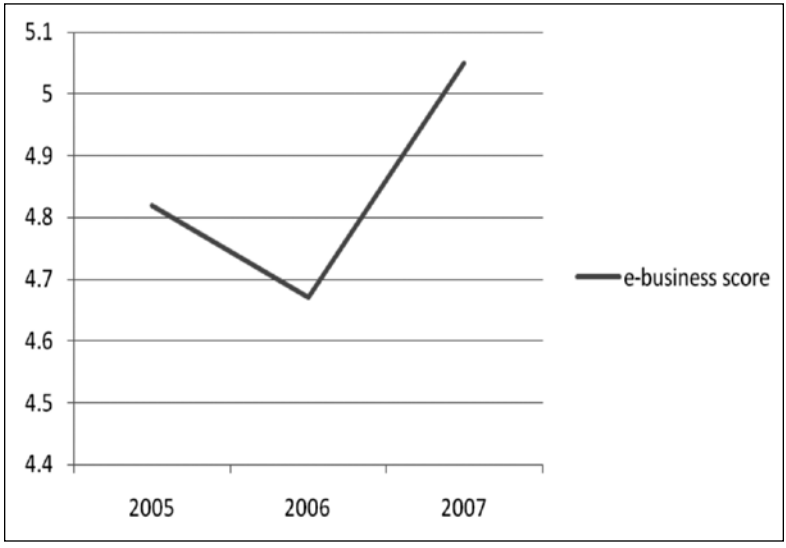
NB: The measurement of the Index - Quality of scientific research institutions in your country e.g. University laboratories, government laboratories are: 1=nonexistent, 7=the best in their fields. Values between 1 and 7 merely represent different variations of the extremes. Barbados' data were only available in 2006 and 2007.

Figure 11: Quality of Management Schools - Rating score



Source: Global Competitiveness Report

Figure 12: E-business Readiness - Score



Source: Global Technology Forum

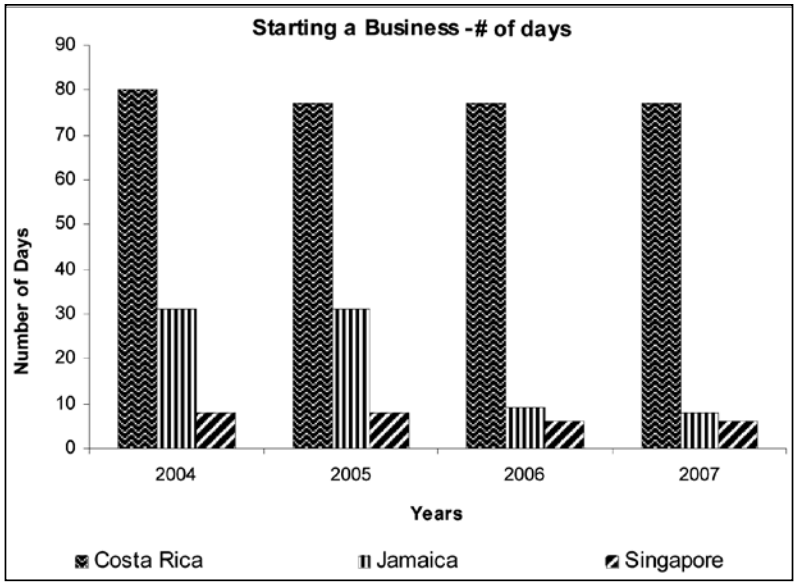
This aspect of Jamaica's diamond shows some positive results. The data in figures 8 and 9 above show that the competitiveness of the quality and quantity of supplier industries do not lag far behind that of Singapore. In fact, all countries in this study seem to have about similar ranking in this area. They do not log far behind best in class, Singapore. The data in figure 10 show that the quality of the country's scientific institutions is ranked highly, another indication that there is, indeed, a good foundation for building national competitiveness, especially in the knowledge economy. Further, the data in figure 11 show that the quality of management education, one of the fundamental areas of the national diamond, is where Jamaica's competitiveness has lagged behind its benchmark country and regional counterparts. The quality of management schools as measured by survey responses to a number of questions that are related to faculty qualifications, programmes offered and research output, shows that Jamaica's position has deteriorated over the years. Singapore, on the other hand, has shown improvement in these areas.

One of the areas that Jamaica has also done well in is its e-business scores. The data in figure 12 show that since 2006, the country's score has been improving, a signal that it is efficiently using technology to enhance business performance

Firm Strategy Structure and Rivalry

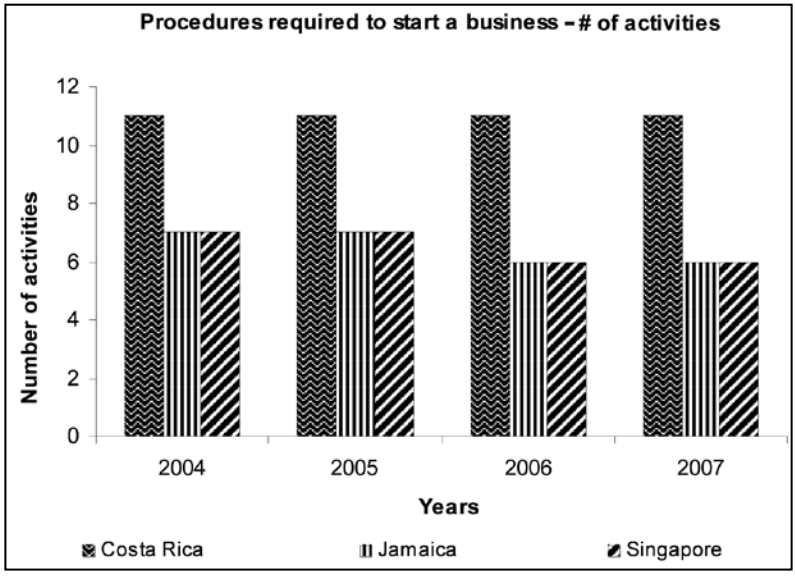
This aspect of the diamond speaks to what is happening at the enterprise level to shape innovation and competitiveness. It also reflects government's policy towards competition. To capture this aspect of Jamaica's diamond, two variables were used. These are: the time required for starting a business and the number of procedures required to start a business. These proxies reflect the transmission mechanism through which the construct of strategy, structure and rivalry manifest themselves. They reflect the speed with which competition can enter an industry sector. Jamaica's position in relation to the most competitive country, Singapore, and other similar regional economies, is presented in figures 13 and 14 below.

Figure 13: Starting a business - # of days



Source: Doing Business Report, World Bank

Figure 14: Procedures required for starting a business - # of activity



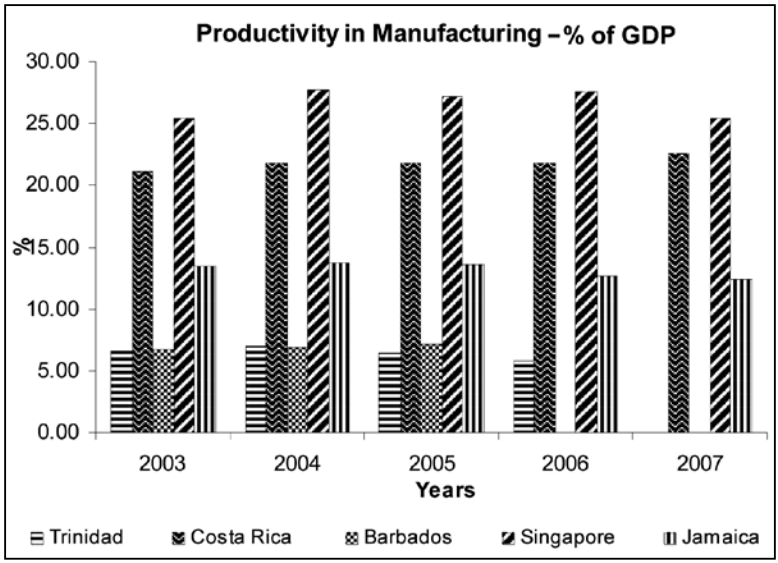
Source: Doing Business Report, World Bank

From the snapshot presented, Jamaica's competitiveness in this aspect of its diamond seems to match up well with the best in class, Singapore. The data in figure 13 suggest that the time required to start a business in Jamaica has reduced drastically since 2004 to fall in line with that of Singapore. This reflects an improved level of competitiveness in this area. Similarly, the data in figure 14, which captures the number of procedures required to start a business, show that it has reduced since 2004 to match that of Singapore.

Human Factors

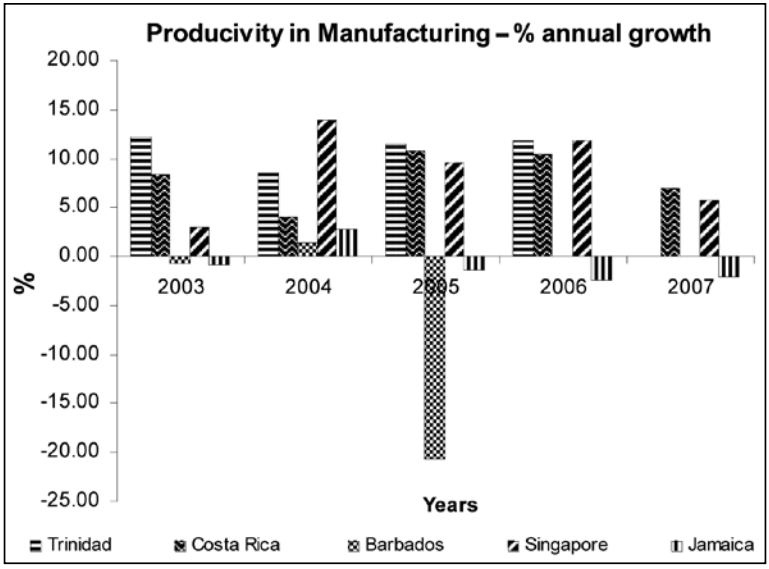
Besides physical resources, human resources also play an important role in driving international competitiveness of a nation. The DDD model explicitly incorporates the role of the human resources in enhancing a nation's level of international competitiveness. Here, we will focus on a few variables that capture the role of human factor in driving competitiveness of national economies. These variables include: productivity in the manufacturing and services sector, the level of trust of public officials, life expectancy, and, Human Development Index (HDI) score. Jamaica's position in relation to the most competitive country, Singapore, and other similar regional economies, is presented in the figures 15-21 below.

Figure 15: Productivity – Manufacturing: % of GDP



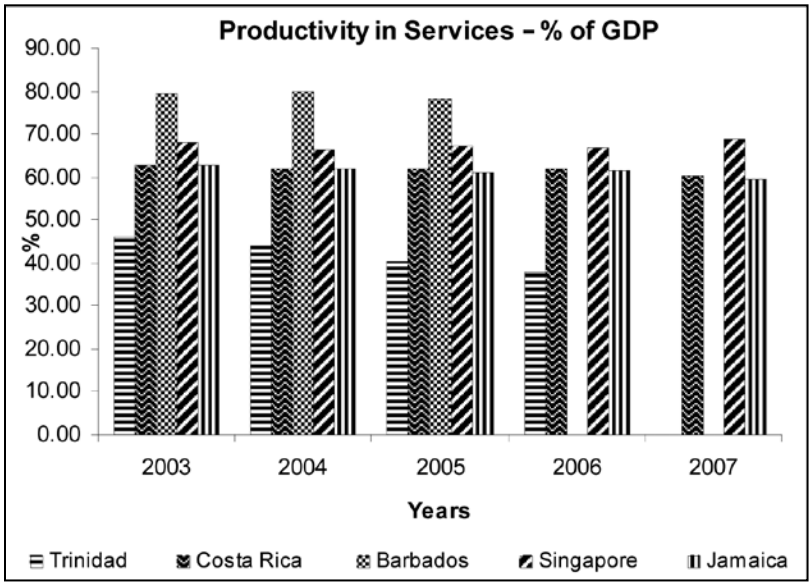
Source: World Development Indicators, World Bank

Figure 16: Productivity – Manufacturing: % annual growth



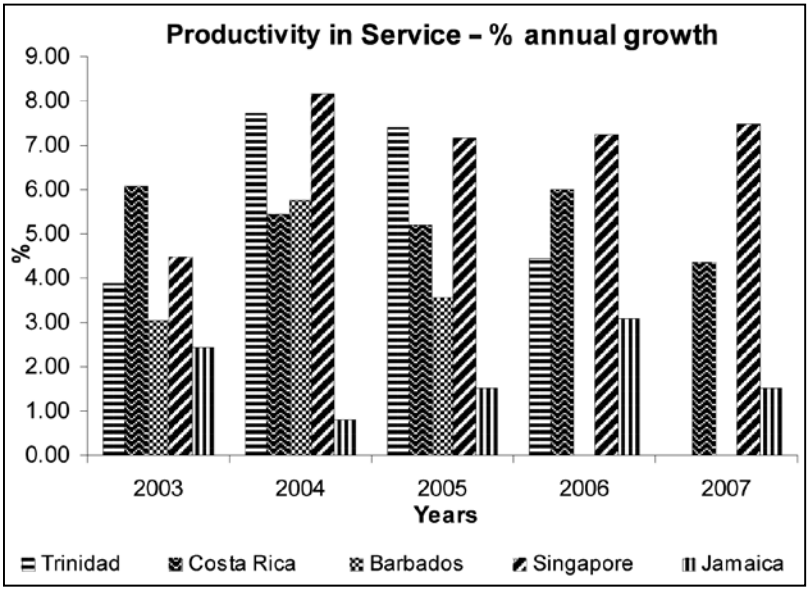
Source: World Development Indicators, World Bank

Figure 17: Productivity – Services: % of GDP



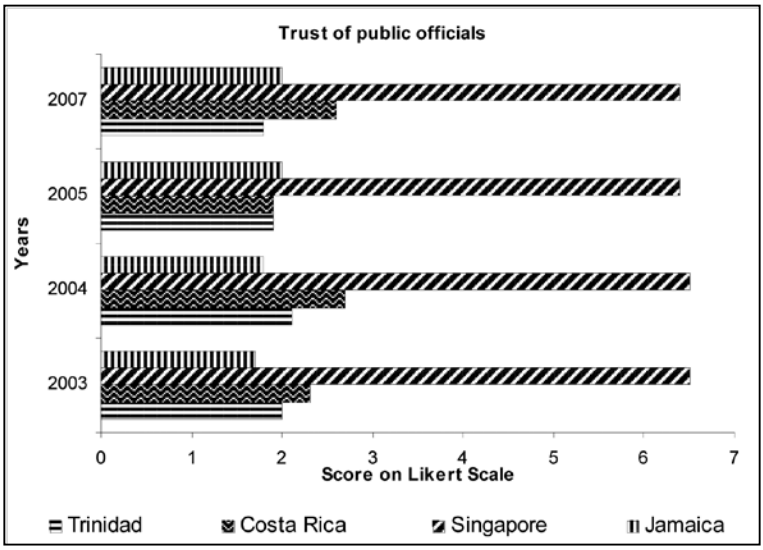
Source: World Development Indicators, World Bank

Figure 18: Productivity – Services: % anual growth



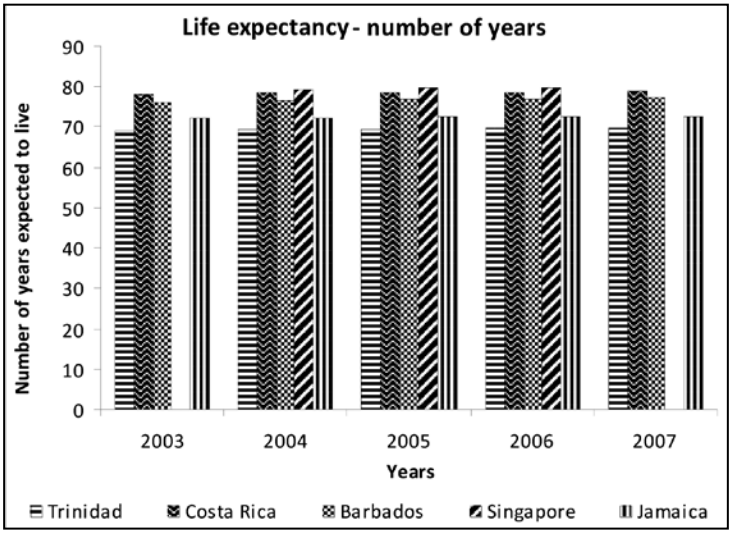
Source: World Development Indicators, World Bank

Figure 19: Trust of public officials



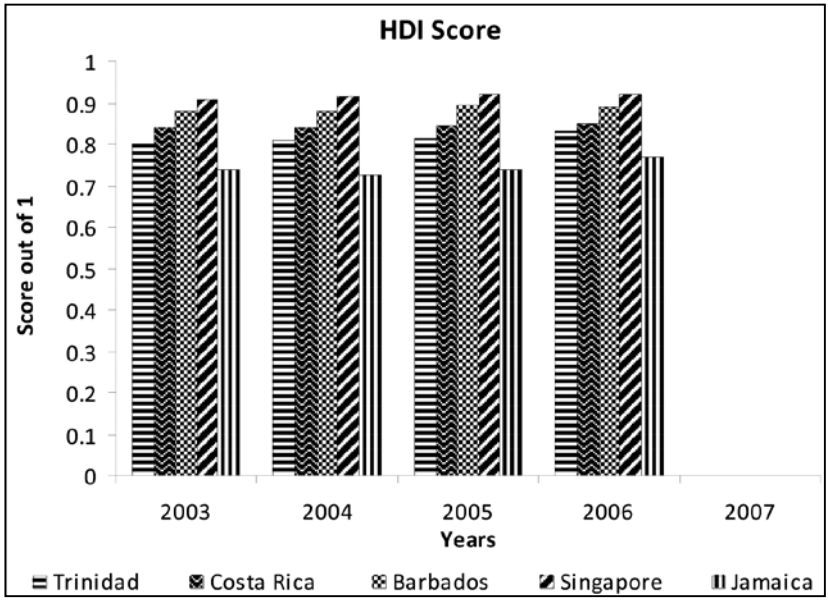
Source: Global Competitiveness Report- Various Years
NB: Score - Public trust in the financial honesty of politicians is: 1=very low, 7=very high. Values between 1 and 7 take variations of the extremes.

Figure 20: Life expectancy - Number of years



Source: Pan American Health Organization, Health Analysis and Statistics Unit

Figure 21: HDI - Score



Source: UNDP Human Development Reports

In relation to its human factor, Jamaica's competitiveness lags significantly behind its benchmark country, Singapore. The snapshot from the data presented in figures 15-18 shows that Jamaica has a problem in terms of the productivity of its work force. Productivity accounts for less than 15 percent of GDP compared to Singapore where it accounts for almost 30 percent of GDP. Further, the annual growth in productivity is quite disappointing. While its benchmark country, Singapore, shows positive growth in productivity, Jamaica has shown negative growth.

In addition to productivity concerns, the country performs very poorly in the area of trust for public officials. Trust among public officials as shown in figure 19 has consistently been very low in Jamaica while its benchmark country, Singapore, shows consistently high levels of trust among its public officials. This clearly does not augur well for the role of the human resources in co-ordinating the other aspects of the diamond in order to improve the country's international competitiveness.

Two aspects of the human resources show positive signs for enhancing improved competitiveness. These are life expectancy and the human development index score. Like Singapore and the other countries in this study, figure 20 above shows that life expectancy in Jamaica is very high. The average life expectancy stands at about 75 years old. Similarly, the human development index, a measure of the overall quality of life in a country, shows that Jamaica's score matches up well with those of its benchmark country and its regional counterparts. Jamaica consistently reports a high score on this index. The data in figure 21 shows that Jamaica's scores are generally closer to one (1), which shows a high level of human development.

DISCUSSION AND CONCLUDING REMARKS

The aim of this paper was to benchmark Jamaica's competitiveness position in relation to other more competitive economies with similar features. The data shows that Jamaica's competitiveness position has been deteriorating since 2006. It moved from a position of 68 in 2006 to 95 in 2010. Using the DDD model as the analytical framework through which to view issues of national competitiveness; this study highlighted a snapshot of Jamaica's competitiveness position on each segment of the model, using selected variables as proxies for the segments. The aim is to derive general lessons from Jamaica's benchmark country, Singapore, which public policymakers in Jamaica and other similar, small open economies, can use to improve Jamaica's competitiveness position.

Overall, the results revealed that while Jamaica's competitiveness position in some areas of its diamond is good, its competitiveness position generally makes for uncomfortable reading. The analyses revealed that the country's greatest competitive strengths are in the firm's strategy, structure and rivalry segment of its diamond. Jamaica's strongest competitive advantages seem to be in areas such as; the time to start a business and the number of procedures required to start a business. Despite these positives, the benchmarking analysis revealed a number of weaknesses in the country's competitiveness position. Indeed, there are a number of lessons that Jamaica and other similar, small economies that are facing deterioration in their levels of competitiveness can learn from Singapore, the most com-

petitive small, open economy in the world. These lessons will help them to make improvements to their diamond of national competitiveness and thus become a more attractive location for local and international investments.

From a reading of the literature of Singapore's successes, one could deduce that creating an enabling environment is critical for any country to enhance its levels of international competitiveness. The analysis of the data suggests that a critical variable that must be considered for improved international competitiveness is economic stability. A reading of the literature on Singapore's improved international competitiveness performance suggests that macro-economic stability is an important factor that contributed to the country's improved competitiveness position. Macro economic stability is also important for the flow of foreign direct investments (both inward and outward) which contribute revenues to help governments maintain economic stability (Williams, 2009). The lesson here is that macro-economic stability matters for improved international competitiveness. This is a lesson that other small, open economies will have to learn.

Unfortunately, Jamaica has had a long history of macro-economic instability as manifested in long and sustained high inflation rate, high interest rate, unstable exchange rates, large budget deficits, and unsustainable external balances. These conditions have impacted negatively on the cost of doing business in the local economy. As such, the goods and services produced in this environment are generally globally uncompetitive when compared to places like Singapore, which have managed to maintain stability in their macro economy. To generate stability in its macro economy, like Singapore, small economies such as Jamaica will have to generate a surplus in their fiscal accounts. This will require growing government revenue and/or cutting government expenditure. The lessons from Singapore showed that this fiscal discipline has been a major driving force in their quest for enhancing the competitiveness of the various elements of their diamond of national competitiveness.

Another important lesson from the study is that the quality of domestic infrastructure matters. In upgrading its diamond of national competitiveness, Singapore made sure to improve the quality of its

human and physical resources. Universities recruited high quality faculty, they focused on areas with specific skills that are needed for improved international competitiveness (e.g. math and science education), they linked pay to productivity, provided computer access to their citizenry so as to improve their skills in areas of information and communication technologies in order to enhance the efficiency, productivity and, reduce the cost of doing business. Also, the quality of their sea and airport infrastructure is of a high standard. This has helped to improve the efficiency with which international business transactions are carried out.

There are a number of ways in which Jamaica and other small economies can improve their human and physical infrastructure in order to upgrade their diamond of national competitiveness. These economies should focus on promoting the use of information technology in all aspects of business transactions (the public sector should take a lead role in this effort); improve access and the ability to take up the increased access to tertiary education (this can be achieved through the granting of more subsidized university places and offering more grants to lower income students); local educational institutions should partner with highly internationally competitive institutions in developed economies to offer training to local citizens (these institutions must also recruit faculty with international recognition); and, there has to be a clear system of linking pay to productivity. This will help to deal with some of the inefficiencies in the labour market which account for the low levels of productivity, nationally. For example, when pay is linked to productivity, this may help to reduce the number of absenteeism and overtime work.

A critical lesson from the Singapore experience is the role of trust in enhancing a country's competitiveness. This is an important factor that is usually ignored in analyses of national competitiveness. However, the experience in Singapore suggests that this factor cannot be ignored. People in Singapore have a high level of trust for their public officials as captured in the data presented in figure 19 above. This seems to translate into a strong work ethic which impacts on efficiency and productivity in the workplace. Indeed, trust of public official is important if citizens are to unite around a national movement to build national competitiveness. Public officials are the ones who the

citizens look to for leadership in driving national competitiveness. Small economies like Jamaica can build up a high level of trust in their public officials if they engage in greater partnership between the public sector and the people sector that is, non-governmental organizations; promote the idea of active citizenship where people are encouraged to carry out civic engagement and good social behavior; and, promote the idea of strong families in order to socialize people in the value of hard work and ethics.

Another important lesson from the Singaporean experience is that strong institutions do matter for international competitiveness. Institutions are important to provide critical information in dealing with cross border transactions and understanding issues specific to the local business environment. High quality institutions will reduce potential transaction cost thus making commerce (whether cross border or domestic) much more efficient. The data in figure 11 above show that management schools in Singapore, for example, are rated highly in terms of their levels of international competitiveness. This results from their efficient business processes, high quality staff and, their emphasis on the use of technology to enhance productivity. The implication for small economies like Jamaica is that they will have to upgrade the capacity of their local institutions in order to improve their diamond of national competitiveness. Institutions are important as a related industry in the diamond of national competitiveness. There is no doubt that institutional void will contribute significantly to market failures which are inimical to a country's quest for improved international competitiveness.

The results from this analysis are consistent with the arguments espoused in the literature on competitiveness which suggest that if countries are to improve their productivity, there should be some level of stability in their macro-economy, which is a foundation for improving the other aspects of its diamond. The fact that these results come from a location where the DDD model has never been used before, the results provide sufficient evidence for theorists on competitiveness to build a general theory on competitiveness of economies. In other words, the results in this paper have strong external validity.

Concluding Remarks

The deterioration in Jamaica's level of international competitiveness results from a number of factors including but not limited to; an unstable macro-economic environment, weak institutions, a low level of trust for public officials, poor factor conditions including infrastructure and inadequate critical human resources, among other things. The data from the competitiveness ranking of economies as appeared in the Global Competitiveness Report from the World Economic Forum, revealed that Singapore has been able to remain in the top 10 most competitive countries in the world and, as the most competitive small, open economy precisely because it possesses the correct mix of the factors identified above.

Possessing the correct mix of competitiveness drivers will help a country to upgrade the various elements of its diamond of national competitiveness as presented in the DDD model and therefore improves its international competitiveness. Small economies like Jamaica that have seen a decline in their competitiveness position in recent time should adopt and adapt the lessons from the Singaporean experience in order to help them to upgrade their diamond of national competitiveness. Future research on the subject should focus on how countries like Jamaica should adopt the policy prescriptions which are derived from the analysis above. The uniqueness of the Jamaican situation will require a nuanced understanding of the competitiveness drives and thus there should not be a cut and paste approach to the implementation of the policy prescriptions.

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