Responding to the Crisis: Toward a More Modern Barbados

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None of the Caribbean countries has approximated the growth rates experienced in Asia. This is true for Barbados despite being designated as a high income country by the World Bank. Barbados’ purchasing power adjusted gross domestic product per capita peaked in 2008 at a little over $30,000 (Table 1). This level represented an impressive 84% increase over the $16,300 it experienced in 1960. But less impressive is the fact that Barbados’ current ranking among the top per capita income earners is principally due to the growth that occurred in the late colonial and early independence period. The country’s 1970 per capita GDP was not replicated until 1998. Thereafter it fluctuated within a narrow range, achieving its 2008 high water mark only to decline back to about $28,000 in 2010 (the last year for which the Penn tables provide data). Almost 4/5 of the country’s growth occurred in the ten year period from 1960 to 1970 when growth is measured from peak to peak: 1960 to 1970 and then 1970 to 2008.

In the region there has been a tendency to assign responsibility for slow growth, such as Barbados has experienced, to smallness of size. Indeed, overcoming that presumed obstacle has been one of the principle motives behind the effort to achieve regional integration. In its advocacy of integration, the West Indies Commission is representative. Its report declares that “the micro-markets of small states standing alone often cannot attract up-to-date equipment and technology
Table 1

Purchasing Power Parity Converted GDP Per Capita for Barbados and Iceland, Selected Years

1970-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Barbados</th>
<th>Iceland</th>
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<tbody>
<tr>
<td>1970</td>
<td>27,211</td>
<td>19,204</td>
</tr>
<tr>
<td>1975</td>
<td>26,349</td>
<td>25,331</td>
</tr>
<tr>
<td>1980</td>
<td>24,703</td>
<td>31,954</td>
</tr>
<tr>
<td>1985</td>
<td>21,992</td>
<td>32,785</td>
</tr>
<tr>
<td>1990</td>
<td>26,127</td>
<td>35,758</td>
</tr>
<tr>
<td>1995</td>
<td>23,630</td>
<td>35,337</td>
</tr>
<tr>
<td>2000</td>
<td>28,236</td>
<td>37,760</td>
</tr>
<tr>
<td>2005</td>
<td>28,575</td>
<td>40,448</td>
</tr>
<tr>
<td>2008</td>
<td>30,097</td>
<td>43,180</td>
</tr>
<tr>
<td>2010</td>
<td>28,089</td>
<td>35,612</td>
</tr>
</tbody>
</table>

Source: Federal Reserve Bank of St. Louis, Federal Reserve Economic Data, downloaded from research.stlouisfed.org/Fred2

geared to much larger production runs and much wider applications.”¹But though this view is widespread, it almost certainly overstates the impediment to development caused by a population size such as Barbados’. Since the pioneering work of Robert M. Solow in the 1950s, analysts have understood that the key to long-term economic growth is advances in total factor productivity.² Simply adding inputs to production risks the onset of diminishing returns and slowing growth rates. Fig. 1 charts changes in an index of total factor productivity for Barbados and Iceland, a country of a comparable population size. The latter’s experience in this regard serves to demonstrate that size is not an impenetrable barrier to development. While Barbados’s total factor

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¹ Report of the West Indian Commission, Time for Action (Kingston, Jamaica: The Press University of the West Indies 1992), p. 69
Index of Total Factor Productivity: Iceland and Barbados 1960-2010
February 28, 2015

Barbados total factor productivity

Iceland total factor productivity

Source: University of Groningen, University of California, Davis
2015 research.stu.edu.org
productivity trend line has been decreasing since the 1970s, suggesting the impact of diminishing returns, total factor productivity has increased in Iceland. Since the 1970s, that country’s index has increased by 26.8%, while Barbados’ declined by 15.0%.

The divergence in the trend in total factor productivity is an important contributor to the fact that Iceland has grown more rapidly than has Barbados. In 1970, Iceland’s per capita GDP was $19,204, about 30% lower than Barbados’. By 2008 however, the year before Iceland succumbed to the financial crisis, its GDP per capita had more than doubled, standing at $43,179, almost a third higher than that of Barbados. Smallness of size may create problems in the ways described by the West Indies Commission, but they are problems that can be overcome.

The application of modern technology to production is a principle source of increased total factor productivity. The difference between Barbados and Iceland in the use of modern technology in production is reflected in Table 2. That table reproduces the most recent responses of managers who answered questions posed by the World Economic Forum concerning how firms in their country deal with productivity issues. The survey was administered in 144 countries, and each nation was ranked from #1 (the best) to #144 (the worst). On each of the five questions concerning the utilization of modern technology, Barbados ranked at an inferior level compared to Iceland. Barbados’s ranking was best for “Firm Level Technology Absorption” but this was counterbalanced by a very low ranking for “Company Spending for R&D.” The difference between the two countries was especially marked with regard to the latter, where in contrast to Barbados’ ranking of 82, Iceland stood at 32. The gap between the two nations was large as well with regard to “Production Process Sophistication” and “Availability of Scientists and
Table 2
Ranking of Barbados and Iceland Concerning Technology Utilization

<table>
<thead>
<tr>
<th></th>
<th>Barbados</th>
<th>Iceland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Level Technology Absorption</td>
<td>29</td>
<td>5</td>
</tr>
<tr>
<td>Production Process Sophistication</td>
<td>58</td>
<td>24</td>
</tr>
<tr>
<td>Capacity for Innovation</td>
<td>57</td>
<td>46</td>
</tr>
<tr>
<td>Company Spending on R&amp;D</td>
<td>82</td>
<td>32</td>
</tr>
<tr>
<td>Availability of Scientists and Engineers</td>
<td>66</td>
<td>33</td>
</tr>
</tbody>
</table>


Engineers.” Barbados was ranked 58 and 66 respectively while Iceland’s ranking was 24 and 33. Even with regard to “Firm Level Technology Absorption,” where Barbados scored well (29), Iceland’s ranking was superior (5). In sum, these results are consistent with the data on global factor productivity. Firms in Barbados are less technologically competent than those in Iceland. The results in the *Global Competitiveness Report* also establish that technological backwardness is not a fate that small economies are doomed to experience. The question then that arises is what it would take for the Barbados economy to become more technologically advanced.

II

Recently, the former Chief Economist and Senior Vice President of the World Bank, Justin Yifu Lin, set out a new framework for promoting economic advance, a framework that he calls the “New Structural Economics.” Lin argues that a country’s current economic structure is
endogenous to its factor endowments. The expansion of the first requires an upgrading of the second. But Lin emphasizes that the endowments he is concerned with are not confined to the natural endowments that informed Ricardo’s discussion of comparative advantage. He writes “upgrading the industrial structure in a given country requires the upgrading of the factor endowment structure from one that is relatively abundant in labor and natural resources to one that is relatively abundant in capital, the introduction of new technologies, and the corresponding improvement in infrastructure to facilitate economic operations.” Such an upgrading, Lin argues, will alter a nation’s comparative advantage. His policy prescription follows: “…upgrading [of] the industrial structure …entails coordination of investments and compensation for externalities generated by first movers that cannot be internalized by private enterprises.” An activist development-promoting state is required. He concludes that “without this coordination and compensation, the process of economic development will slow.”³ A state-guided continuous process of structural change, in short, is how nations can move to higher levels of prosperity.

Lin’s argument concerning the need to upgrade endowments in order to increase productivity is similar to Joseph Stiglitz’ call for the creation of a “learning society.” Such a society is one in which the people of a country have learned how to produce high value products, using technologically sophisticated methods of production. Stiglitz writes, “at the center of creating a learning society is the identifying of sectors that are more amenable to learning….,” and which have positive spillovers that encourage the emergence of new sectors of economic activity. Because of the importance of learning, Stiglitz rejects the orthodox argument that a nation’s structure of production should be dictated by its existing factor endowments. Instead, he writes

that there is “no reason for countries to need to limit themselves to patterns dictated by endowments, as conventionally defined. More important is the ‘endowment’ of knowledge and entrepreneurship.” And he goes on, “a major focus of policy should be on how to enhance and shape those endowments.”

Citing the experiences of the rapidly growing countries in East Asia, Stiglitz concludes that what was important in their export-led growth was that “it was growth in particular kinds of exports that were associated with high levels of learning.”

The fact is that Barbados has experienced the kind of structural change called for by Lin and Stiglitz. The problem is that it was a once and for all shift from agriculture, mainly sugar, to services, mainly tourism. Once that transition was completed, the country did possess a more advanced structure of production. Incomes, as we have seen, increased. But because the process of structural transformation stalled thereafter, and further upgrading was not achieved, the country’s development subsequently was constrained.

Throughout Barbados’s colonial experience, its economy was dominated by a tropical agricultural staple, sugar. On the eve of Independence, in 1965, the sugar industry was responsible for almost one-fifth (19.9 percent) of total output. But sugar’s dominance quickly faded in the post-Independence era. By 1975, tourism’s contribution to the economy had grown to a rough parity with it. Tourism grew because advances in air transport allowed the country to take advantage of its comparative advantage based on the abundant natural factor endowments of sand, sea and surf. By 2000, sugar was responsible for only 2.5 percent of GDP, while tourism contributed 15.5

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5 Joseph E. Stiglitz and Bruce C. Greenwald, Creating a Learning Society, p. 27
percent. Today, sugar contributes less than 1 percent of GDP, while tourism’s contribution is close to 16 percent.

Tourist arrivals increased by nearly four-fold between 1960 and 1970, and more than doubled between 1970 and 1980. But thereafter tourism’s growth slowed. During the decade between 1980 and 1990 passenger arrivals increased by only 16.8 percent. Growth was again slow in the next two decades, with arrivals in 2000 only 26.1 percent higher than they had been in 1990. Only 5.5 percent more tourists came to Barbados in 2007 than 2000. The global recession worsened the situation. Arrivals were almost 10 percent lower in 2009 than they had been in 2007. From that trough, arrivals began to rise. But as late as 2012 (the last year for which data are available at the World Bank site), tourist arrivals were 5.6 percent below the 2007 peak. The Central Bank of Barbados estimates that tourism’s contribution to the country’s gross domestic product fell from $(B) 150.0 million in 2006 to $(B) 124.3 million in 2013.

The trouble is that tourism has been a two-edged sword for the country. Barbados’ prosperity has depended on it, but its success has inhibited the nation from becoming technologically modern. The industry grew because entrepreneurs in Barbados took advantage of and successfully mobilized the country’s natural factor endowments – salubrious climate and easily accessible surf and beaches. Visitors were attracted to the country when these resources were complemented with investments in accommodations and facilities.

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But precisely the endowments that gave the country its comparative advantage in tourism militated against the upgrade the nation required for further advance – to achieve continuous structural change in Lin’s formulation or as Stglitz would put it, to become a learning society. Two factors seem to have been at work. In the first place, there is little scope for the use of modern technology in the tourist industry. The industry itself does not move to higher levels of productivity. Its growth is extensive, not the consequence of increased efficiency in the use of inputs. It produces a labor-intensive service, and like other personal-service industries, experiences little change in productivity over time. Second, because tourism uses labor and capital in ways that do not resemble their utilization in technologically advanced industries, few positive spin-offs emerge from it. A cluster of related, but higher productivity industries, does not develop. The entrepreneurs and labor force employed in tourism do not possess the set of experiences and skills that would allow them easily pioneer new sectors of economic activity. The technological characteristics of the tourist industry acted to limit Barbados’ structural transformation to a one time only event, not the continuous process that characterizes modernity.

Nevertheless, the tourist industry remains a bulwark in the Barbados economy. Its continued strength and profitability continues to be important for the country’s continued prosperity. No other industry approaches it as a foreign exchange earner. But it is doubtful that the industry will ever again revisit its halcyon days or serve as an engine of accelerated growth. Moody’s Investor’s Service paints a pessimistic picture. It argues that “Barbados is too small and too expensive to cater to mass market tourism, but it is too large and faces too much competition to depend entirely on the higher-end boutique tourism in which it has historically specialized.” As a result, it anticipates “continued anemic economic growth with limited prospects for improvement….”

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Furthermore, the likely impact of global climate change on tourism will intensify the urgency to achieve economic diversification. Almost certainly rising sea levels and increased storm intensities will damage the industry’s infrastructure and cause a further decline in future tourist arrivals in the future.\(^\text{10}\)

III

With the maturing of the tourist industry, Barbados is about to enter a new era. The emergence of new sectors of economic activity that employ modern technology in production is now necessary to protect the standard of living of the Barbados population. This means that the public sector will have to do act as an agent of economic transformation. For a high productivity, technologically advanced economy to emerge in Barbados, the government will have to take the initiative in constructing a collaborative effort involving the public sector, the business community and the labor force. The objective will be to encourage the establishment of new highly productive enterprises.\(^\text{11}\) In this, the Government will have to coordinate an array of incentives, tariff and tax changes, and public sector infrastructure investments if the Barbados economy is to be transformed. The country’s factor endowments will have to be upgraded.

In undertaking such an effort, Barbados will be able to take advantage of the favorable institutional environment that is already present in the country. But at the same time, the government will have to become more efficient and pro-active in promoting structural change than it has ever been in the past.

\(^{10}\)Jay R. Mandle, “Climate Change and the Integration Project,” Presented at Rethinking Regionalism: Beyond the CARICOM Project, University of the West Indies, Kingston Jamaica, October 7-9, 2013. Revised October 17, 2013, p. 1-3

\(^{11}\) The Governor of the Central Bank of Barbados, Dr. DeLisle Worrell, for example, has suggested that solar power could be an example of such industry. Perhaps China, a pioneering leader in this industry, could be persuaded to provide assistance to facilitate the industry’s start-up.
Table 3

Ranking of Barbados and Iceland Concerning Business Promoting Institutions

<table>
<thead>
<tr>
<th></th>
<th>Barbados</th>
<th>Iceland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Rights</td>
<td>37</td>
<td>27</td>
</tr>
<tr>
<td>Intellectual Property Protection</td>
<td>37</td>
<td>30</td>
</tr>
<tr>
<td>Burden of Government Regulation</td>
<td>16</td>
<td>41</td>
</tr>
<tr>
<td>Efficiency of Legal Framework in Settling Disputes</td>
<td>36</td>
<td>25</td>
</tr>
<tr>
<td>Judicial Independence</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>Protection of Minority Shareholders’ Interests</td>
<td>51</td>
<td>46</td>
</tr>
<tr>
<td>Number of Procedures to Start a Business</td>
<td>93</td>
<td>32</td>
</tr>
<tr>
<td>Number of Days to Start a Business</td>
<td>84</td>
<td>12</td>
</tr>
<tr>
<td>Burden of Customs Procedures</td>
<td>72</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: See Table 2.

Unlike their views on technology, the managers who responded to the World Economic Forum survey provided a favorable assessment of the institutions governing Barbados’ economy. Indeed their assessment was comparable to the one provided by executives in Iceland. As reported in Table 3, Barbados’ rankings on issues concerning institutions and policies were only slightly inferior to Iceland’s. In all but one of the variables listed in the table, Barbados ranked close to the top 75th percentile of nations and on one of them its ranking was superior to Iceland’s. However the data also make clear that in some respects the government bureaucracy has acted as a brake on business creation. The country is ranked at a low level with regard to both the number of procedures and days required to start a business and the burden of custom’s procedures. To some extent therefore,
the public sector will have to recreate itself in order to undertake development-promoting task that
it will be required to carry out, though it will be building on a firm foundation.

Even if a Government in Barbados were successful in designing a coherent set of policies to
achieve economic modernization, development might still elude the country. Two additional and
related problem areas will have to be resolved: the technological weakness of the country’s current
business community, and the loss of human capital the country has experienced because of
emigration. The problem of development cannot be solved by the public sector alone. Success will
depend on the technical competence of both the country’s managers and its work force. It will be
the responsibility of management and labor to supply the ingenuity and skills that will allow new
firms and industries to prosper in the global economy. Barbados is too small to create a learning
society if production is confined to the domestic consumption. The scale economies required by
modern technology can only be attained if firms export their products.

The problem is that an industrial policy targeted to already established businesses could prove to
be an exercise in frustration. It is far from clear that the private sector as currently structured is
capable of moving into industries that can become profitable with sales in global markets. Aside
from tourism, the country’s business people and labor force have little experience in competing in
global markets. At the moment, there are probably not enough managers and business executives
willing and/or able to undertake the new initiatives necessary to propel Barbados successfully
towards modernization.

It is therefore likely that for Barbados to become a learning society, a new stratum of entrepreneurs
will have to be cultivated. Not tied to traditional business practices, a new cohort of business people
could, with the proper training and encouragement, become the source of the dynamism that the
country needs, and which the current incumbents have not provided. Again, the Government will
have to take the lead. In particular it will have to address the financing requirements of new start-up businesses. At the moment the country ranks at the very low level of 101 out of 144 nations in *The Global Competitiveness Report*’s “ease of access to loans” and “venture capital availability” categories. In addition, foreign direct investment will have a role to play as well. Long ago, W. Arthur Lewis suggested that domestic business people will have to learn “the tricks of the trade” from overseas based investors. But even with this the case, Barbados’ future will rest in Barbadian hands. Development is not accomplished by proxy; learning has to occur domestically. But in whose hands? Though confirming data are lacking, it is generally understood that the well-capitalized sector of the Barbados economy remains primarily the domain of the minority white population. Largely successful commercially, these business people have concentrated on tourism and sales in the domestic market. As a result, as the survey data reveal, they, in general, are not technologically sophisticated. Their ranks will have to be augmented if a transformation of the Barbados economy is to be achieved. A new group of more technologically sophisticated entrepreneurs will be needed to collaborate with the incumbents. In Barbados’ demographic context that means that the country’s business community will have to become more racially diverse.

The limited size of Barbados’s current entrepreneurial class is almost certainly explained by the fact that the country’s income distribution is quite unequal. The 2010 *Barbados Country*

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Assessment of Living Conditions Report revealed a high gini coefficient of 0.47. This suggests that a large percentage of the Barbados population lacks the wealth necessary to becoming technologically sophisticated business owners. Because of that, the country is in a self-reinforcing loop that inhibits the growth of entrepreneurship. Income is concentrated in the business elite, thereby making the entrance of new individuals into that grouping difficult. That loop will have to be broken, something that can only be accomplished by a government whose commitment to development includes a widening of the country’s entrepreneurial class.

Emigration too has played a role in Barbados’ limited use of advanced technology in production. A recent OECD study suggests that in 2005/06, over 80 percent of Barbadians with a tertiary education lived in the countries belonging to that organization. The result is that the human capital necessary for the country to modernize is in short supply. Evidence of the importance of this outflow appears in the Global Competitiveness Survey. Though Barbados ranks 6th in the world with regard to the quality of its education system, and 9th concerning the quality of math and science education, its ranking is, as mentioned above, 66th concerning “availability of scientists and engineers.” Barbados’s very high rate of emigration by college educated individuals has drained the nation of precisely the kind of human capital necessary to become economically modern.

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16 Sarah Widmaier and Jean-Christophe Dumont, Are Recent Immigrants Different? A New Profile of Immigrants in the OECD based on DIOC 2005/06, OECD Social, Employment and Migration Papers, No. 126 (Paris: OECD, 2010) Table 9, p. 32.
It is therefore very likely that to be successful, the government, as part of its effort to upgrade the country’s endowments, will have to act to reverse the brain drain. Such a reversal can be accomplished by encouraging and rewarding Barbadians living in the diaspora to make their skills and knowledge available to Barbados-based firms. The technical skills they possess are in short-supply and modernization will require that they be utilized. A model of what this might look like is provided by Iceland’s experience. Sigurdur Gylfi Magnusson reports that after that country had made big advances in its education system during the 1970s, the government, in 1990, launched an Icelandic Centre for Research. Its establishment, writes Magnusson “made it possible for the large group of scholars and scientists who had gone abroad to work and study to return home.” Though he does not provide precise numbers, he does say that “a very large percent of the people in question accepted the opportunity.” As a result, “industry in Iceland became more varied and diversified, as well as more stable and dynamic.”\(^19\) Efforts at tapping the talents of a diaspora population have succeeded elsewhere. In all cases however those successes have required government initiatives and incentives.

IV

Barbados no longer depends on sugar; it possesses a tourist economy. But tourism, though it has resulted in an impressively high per capita income, has not triggered the economic diversification and productivity growth that largely define development. Iceland’s experience suggests that size does not represent an insuperable barrier to those characteristics of modern economic growth. To move forward, Barbados needs a Government that will undertake an industrial policy involving a collaborative effort between itself and the country’s traditional elite, new entrepreneurs, and

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overseas professionals. Together they can transform Barbados into a “learning society” and in that way allow the nation to become a successful participant in the global economy despite its smallness of size.