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Moving Barbados Forward

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More than forty years ago on the occasion of his receiving the Nobel Prize in Economics, Simon Kuznets distinguished between countries that experience increased income based on the exploitation of natural resources and what he called “modern economic growth.” The latter involved continuous technological change, structural transformation and institutional adjustments as well as increased output. As Kuznets put it, modern economic growth occurred in “the nations that derived abundance by using advanced contemporary technology – not by selling fortuitous gifts of nature to others.”¹

More recently Princeton economist Dani Rodrik has agreed. He writes that high growth rates are “almost always the result of rapid structural transformation, industrialization in particular.”² The growth of manufacturing is important because that sector is capable of achieving high rates of technological change. Its increased presence raises the productivity of the economy as a whole. At the same time, the increased economic diversification associated with structural change reduces the vulnerability of an economy to changing patterns of global demand. In combination, an increasingly diversified economy in which productivity growth is fueled by the advances secured in manufacturing is the vehicle of modern economic growth.

For a brief period of time it appeared that Barbados had embarked upon a classic path of structural change leading to economic development. Starting in the 1960s, the long-dominant sugar industry began a secular decline. Sugar constituted 23.4 percent of the

¹ Simon Kuznets, “Modern Economic Growth: Findings and Reflections,” in Assar Lindbeck (ed.) *Nobel Lectures in Economic Sciences, 1969-1980* (Singapore: World Scientific Publishing Co, 1992), p. 87. Modern economic growth and economic development are used synonymously in this paper.

² Dani Rodrik “The Past, Present and Future of Economic Growth,” Global Citizen Foundation, Working Paper 1 (June 2013) p. 5. Rodrik refers to the rapid growth of productivity of manufacturing in poor countries as “unconditional convergence.” See his “Unconditional Convergence in Manufacturing,” *Quarterly Journal of Economics*, Vol. 128, (2013), 165-204.

country's gross domestic product in 1955. By 1970 the percentage had fallen to 9.9 percent. In contrast, between 1970 and 1980 the manufacturing share of the country's output increased from 11.0 percent to 16.6.³ During the 1970s, the "wearing apparel" industry increased in importance and a "machinery and equipment" sector also emerged. Both however soon declined. By 2011, manufacturing's contribution to output was of minimal importance, averaging only 4.2 percent of the country's gross domestic product between 2006 and 2013.⁴

Instead of industrializing, Barbados' economy became dominated by tourism. Rapid growth was first experienced in that industry in the mid-1960s and 1970s when long-stay arrivals in the country grew by an annual rate of 16 percent.⁵ The industry's receipts increased from 14.0 million (B\$) in 1960 to \$81 million (B\$) in 1970.⁶ Today, tourism is responsible for almost 60 percent of the tradable goods and services produced the economy. Its contribution to Barbados' GDP of 11.7 percent dwarfs the 1.0 percent that sugar produces and is more than two and a half times the size of the manufacturing.⁷

Barbados thus did experience a once and for all adjustment in its structure of output, but it has remained in that tourist-dominated configuration since the 1980s. The industry has grown because it has successfully exploited the country's natural factor

³ Michael Howard, *The Economic Development of Barbados* (Mona Jamaica: University of the West Indies Press, 2006) p. 36, 63.

⁴ Central Bank of Barbados, *Press Release*, December 2013, Table 2.

⁵ DeLisle Worrell, Anton Belgrave, Tiffany Grosvenor and Alexis Lescott, "An Analysis of the Tourism Sector in Barbados," *Economic Review*, Vol. XXXVII, No. 1 p. 52.

⁶ Michael Howard, *The Economic Development of Barbados*, p. 76.

⁷ Central Bank of Barbados, *Press Release* December 2013, Table 1.

endowments – sun, sea, and sand, as well an educated population and market sensitive entrepreneurs. That success has resulted in enough growth so that the World Bank

Table 1

Percent Contribution of Tourism and Manufacturing to Total Value Added

	Tourism	Manufacturing
1970	26.1	11.0
1980	30.2	16.6
1990	28.8	11.0
2000	27.8	9.0
2011	23.4	5.2

Source: Computed from “Gross Value Added by Kind of Economic Activity at Current Prices, National Currency,” United Nations Data Online: data.un.org

considers Barbados a High Income Country. But that dominance has not resulted in the Barbados economy’s becoming technologically progressive. The country has experienced growth, but not development. What has happened in Barbados is comparable to Joseph Stiglitz’s discussion of what would have happened to South Korea if it had adhered to the comparative advantage that existed in that country in the 1960s. If it had, Stiglitz writes, “the country might today have been among the most efficient rice farmers...[but] it would not have embarked on its amazing development success.”⁸ So it is for Barbados and its tourist sector. The country has not moved up the productivity ladder as it would have if it had industrialized.

Furthermore, it is not likely that in the future that tourism will be a dynamic growth sector. Tourism in Barbados is a mature industry that confronts an ever more competitive global tourist industry. Worrell et al write that since the late 1980s “tourist

⁸ Joseph E. Stiglitz, “Comments,” in Justin Yifu Lin, *New Structural Economics: A Framework for Rethinking Development and Policy* (Washington DC: The World Bank, 2012) p. 60.

numbers have increased more slowly in Barbados than for the rest of the Caribbean, and they have also grown more slowly than for international tourism.”⁹ In addition, the dominance of tourism means that the Barbados economy as a whole has little resilience to external demand shocks. Recessions in its principle markets cause tourist arrivals to decline, creating damage that spreads throughout the entire Barbados economy. Such downturns were experienced in 1981-82, 1990-9, 2001, and currently persist following the financial crisis of 2007.¹⁰

II

To gain insight into Barbados’ failure to move up the industrial productivity ladder, it is useful to compare the changes it has experienced since it achieved Independence in 1966 with what occurred in a comparably small nation that did succeed in constructing a modern technologically advanced economy. Such a country is Iceland, a nation whose population of about 320,000 is similar to Barbados’ of about 275,000. But it is not size alone that makes Iceland a useful comparison country. During the same years that Barbados was making the transition from an almost total dependence on sugar, Iceland too was undergoing an economic reorganization, shifting away from fishing.¹¹ Yet what resulted from the structural changes in the two countries differed profoundly. Iceland’s resulted in economic development; Barbados’ did not.

In 1970, the first year for which national income and product accounts allow for a systematic comparison of the two countries, the level of economic activity in Iceland was

⁹ DeLisle Worrell et al, “An Analysis of the Tourism Sector in Barbados,” p. 55

¹⁰ Ibid., p. 53

¹¹ Michael Howard, *The Economic Development of Barbados* pp. 50-59. Haraldur Niels Sigurjonsson, *Analyzing Iceland Economy and Trade*, Master’s Thesis, Aarhus School of Business, 2011, p. 2

already substantially greater than that in Barbados. As indicated in Table 2, the latter's gross domestic product in 1970 amounted to about 56 percent of the level in Iceland. But what is of significance is that in the years thereafter the Barbados economy fell steadily behind. By 2012 Barbados' economy was less than one-fourth the size of Iceland's (Table 2).

Table 2
Barbados Gross Domestic Product Relative to Iceland's

1970	56.2
1980	38.7
1990	32.5
2000	28.0
2012	24.0

Source: United Nations Data Online, data.un.org

Table 3
Average Annual Rate of Growth of GDP at Constant (2005) Prices in U.S. Dollars

	Barbados	Iceland
1970-1980	2.75	8.49
1980-1990	0.98	3.10
1990-2000	1.11	2.86
2000-10	0.93	2.40

Source: See Table 2

The 1970s were years of peak economic growth for both countries, and the decade of the 2000s the slowest. But in each of the four decades in question, Iceland's growth rate exceeded Barbados'. Growth in Iceland remained at or close to 3 percent per year until the first decade of the new century, during which it experienced a devastating financial crisis. Even so, Iceland's relatively slow growth rate between 2000 and 2012 exceeded the less than 1 percent growth per year that prevailed in Barbados (Table 3).

But from the Kuznets perspective concerning the nature of economic development, what is more important than growth rates is the extent to which the application of modern technology to production raised total factor productivity levels in each nation. Table 4 provides an index of that measure for each country, with 1970 set as the base year (index = 100).¹² The table makes it clear that Barbados has done poorly in this measure of

Table 4
Index of Total Factor Productivity, 1970 = 100

	Barbados	Iceland
1970	100	100
1975	92	107
1980	98	122
1985	94	115
1990	89	120
1995	80	115
2000	81	124
2005	79	115
2010	78	124

Source: Calculated from Feenstra, Robert C. and Robert Inklaar and Marcel P. Timmer (2013) "The Next Generation of the Penn World Table" at www.ggdc.net/pwt

modernization. The productive efficiency achieved in Barbados in 1970 was never again replicated, and the trend line over the entire period is steadily downward. The pattern is the reverse for Iceland. The years 1970 and 1975 were the low years for its productive efficiency. Thereafter the pattern is erratic, with some increases followed by decreases. But unlike Barbados, there is no long-term downward trend. The reading of 124 for the last year in the table indicates that Iceland currently is near its peak in productive efficiency, while Barbados' 78 suggests that it is at its bottom.

¹² This measure does not compare the efficiency of one country with the other.

Recent survey data compiled by the World Economic Forum validates the view that Barbados lagged while Iceland succeeded in adopting modern technology. Table 5 reproduces the responses of the 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 148 countries and each nation was ranked from #1 (the best) to #148 (the worst). On three of the four questions included in the table, Barbados ranks in the bottom 50 percentile of nations: 81st for capacity for innovation; 78th with regard to company spending on Research and Development; and 61st concerning production process sophistication. By contrast, Iceland's lowest score was 35th for company spending for R&D, while its ranking for firm level technology absorption

Table 5

Ranking of Barbados and Iceland Concerning Technological Progress

	Barbados	Iceland
Firm Level Technology Absorption	44	2
Capacity for Innovation	81	32
Company Spending on R&D	78	35
Production Process Sophistication	61	22

Source: Klaus Schwab, *The Global Competitiveness Report 2013-14*, (Geneva: World Economic Forum, 213) pp. 121, 215.

was #2 in the world. That Barbados has not achieved the technological sophistication in production required by modern economic growth, but that Iceland has, is quite clear.

III

In the Caribbean, smallness of size has long been thought to be a source of its

technological weakness. 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 “small states are wholly dependent on outside technology in every walk of life and every aspect of their economies.”¹³ But though this view is widespread, it almost certainly overstates the impediment associated with smallness of size. Economies of scale may be limited, but the application of advanced technology in production is not thereby made impossible. Arni Sverrisson shows that from the 19th century Iceland – and specifically its fishing industry – possessed an indigenous technological capacity that “powered Iceland’s transition from poverty to prosperity.”¹⁴ Iceland’s successful modernization suggests that if smallness of size is indeed an impediment to development, it is not a binding constraint.

Similarly, Barbados’ technological gap does not exist because firms suffer from an unfavorable business climate. The managers who responded to the World Economic Forum’s 2013-14 survey provided a favorable assessment of the institutions governing Barbados’ economy. As reported in Table 6, Barbados’ ranking on issues concerning institutions and policies was only slightly inferior to Iceland’s. In all but one of the variables listed in the table, Barbados ranked in the top 75th percentile of nations and in two of them its ranking was superior to Iceland’s. It is not likely that technology lags in Barbados because of institutional obstacles.

¹³ Report of the West Indian Commission, *Time for Action* (Kingston, Jamaica: The Press University of the West Indies, 1992) p. 69.

¹⁴ Arni Sverrisson, “Small Boats and Large Ships: Social Continuity and Technical Change in the Icelandic Fisheries, 1800-1960.” *Technology and Culture*, Vol. 43, Number 2 (April 2002) p. 227.

Table 6

Ranking of Barbados and Iceland Concerning Business Promoting Institutions

	Barbados	Iceland
Property Rights	38	32
Intellectual Property Protection	37	29
Burden of Government Regulation	19	30
Efficiency of Legal Framework in Settling Disputes	34	27
Judicial Independence	21	19
Protection of Minority Shareholders' Interests	39	59
Judicial Independence	21	19

Source: See Table 5.

A third possibility is that though there were Barbados entrepreneurs who were eager to be innovative they were thwarted in their efforts because of inadequate funding.

Perhaps the financial system was not sufficiently developed to allow technologically progressive firms to start up. In fact, the World Economic Forum's survey provides some support for this hypothesis. In it Barbados ranked 92nd out of 148 countries with regard to "financing [availability] through local equity market," 89th concerning "ease of access to loans" and 96th for "venture capital availability." These results make it clear that it is not easy for firms in Barbados to finance new investments.

Yet the fact is that a similar underdeveloped financial system in Iceland did not prevent firms in that country from achieving technological change. As Thrainn Eggerstsson reports, after the country achieved internal self-rule in 1918 its financial system had "a

closer resemblance to arrangements in the Third World than those in northwestern Europe.” Foreign investment was not permitted, foreign currency was strictly regulated, and negative real interest rates discouraged savings. From the end of the nineteenth century through 1930 there were only two commercial firms in the entire country. It was only after 1979 that a liberal financial system was constructed. But by that time Iceland had already experienced a long period of technological advance.¹⁵ What this suggests is that like population size, a underdeveloped financial system might be a brake, but it is not an impenetrable barrier to advancing technology. Unlike Barbados, Iceland was able to become more productive even as its financial system militated in the opposite direction.

IV

Barbados’ most recent economic performance has been mediocre at best. In every year since 2007 the tradable sector of the Barbados economy has declined. The combined output of tourism, manufacturing and agriculture has, in constant prices, fallen from \$261 (BDs \$ millions) in that earlier year to an estimated \$213.9 million in 2013. Nontradables were therefore the only source of the limited economic growth the country experienced during these years. Among the nontradables, the single most important source of growth was government, whose contribution to the economy grew from \$152.6 to \$180.4. But this increase was possible only because the government annually ran a budgetary deficit, reaching a level of 8 percent of the country’s gross domestic product

¹⁵ Thrainn Eggertsson and Tryggvi Þor Herbertsson, “Evolution of Financial Institutions: Iceland’s Path from Repression to Eruption,” University of Iceland, Institute of Economic Studies, *Working Paper Series*, WO5:10 (December 2005), p. 1

in 2012/13.¹⁶ By 2013 the ability of the government to continue to finance deficits of this size encountered resistance by lenders. The result was that the government has been forced to retrench, a process endorsed and promoted by the International Monetary Fund. Many thousands of public sector jobs have been and will be lost, the effective of which will be reduced consumption and further downward pressure on growth rates.

Clearly Barbados is in need of a new growth strategy that can lead to economic development. The urgency to find one resides not merely in the fact that the government expenditures will have to be cut and thereby unemployment increased. Nurturing new sources of growth is even more urgent because global climate change will almost certainly be responsible for a contraction of tourism in the future. Rising sea levels and increased storm intensities will damage the tourist infrastructure and will cause a decline in tourist arrivals. Tourism has not been a reliable source of growth in the recent past and it is even less likely to fill that role in the future.

A successful strategy to establish new sectors of industrial production will require a collaborative effort by both the government and business people. The public sector's responsibility will be to facilitate the encouragement of new enterprises by providing the appropriate infrastructure. The private sector will have to supply the ingenuity that will allow new firms and industries to prosper. Though it is not possible to identify in advance the industries that will emerge successfully, it is clear that in the initial stages the government will have to provide "infant industry" protection. Thereafter however the new firms will have to prove themselves by becoming successful competitors in the global market.

¹⁶ Central Bank of Barbados, *Press Release* December 2013, Tables 2 and 4.

It is possible that long established businesses in Barbados could become innovators. But they will have to do what they have failed to date to accomplish: develop the kind of manufacturing sector that development requires. Alternatively, technological innovation may involve the appearance of a new strata of business people with innovative competencies. The emergence of such a group however may prove to be a problem in Barbados. Though confirming data are lacking, it is generally understood that the private sector remains primarily the domain of the minority white population.¹⁷ The private sector's failure to diversify demographically may be explained by the fact that the country's income distribution is quite uneven. The 2010 Barbados Country Assessment of Living Conditions Report revealed a very high gini coefficient of 0.47. In contrast throughout the first decade, that measure of income inequality in Iceland ranged from 0.24 to 0.28¹⁸. This suggests that there is a large percentage of the Barbados population that lacks the wealth necessary to consider becoming vibrant business owners. The country may be in a self-reinforcing loop that inhibits the growth of entrepreneurship. Income is concentrated in the business elite, thereby discouraging the entrance of new entrepreneurs, tending to reinforce the position of the elite. 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.

But even if the traditional business elite were to become more adventurous and a class of new business people were to emerge, there would be a problem - the relative

¹⁷ According to Hilary McD. Beckles, "an economically dominant white minority" representing two percent of the population "...controls over 75 percent of the private productive capital in the country." Hilary McD Beckles, *Chattel House Blues: Making of a Democratic Society in Barbados* (Kingston and Miami: Ian Rand Publishers, 2004) p. 154-5.

¹⁸ *Barbados Country Assessment of Living Conditions 2010 2nd Draft Report on the Survey of Living Conditions*. (Cave Hill, Barbados: Sir Arthur Lewis Institute of Social and Economic Studies, September 2011, p. 37; Statistics Iceland, "The Gini Index, Quintile Share Ratio and the At-Risk-Of-Poverty Rate, 2004-2012, www.statice.is.

unavailability of the human capital that is necessary to mount a successful industrialization strategy. For according to the World Economic Forum survey, though the country 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 63rd concerning “availability of scientists and engineers.”¹⁹ Barbados’ very high rate of tertiary educated emigration has drained the nation of precisely the kind of human capital necessary to launch a successful industrialization. A recent OECD study suggests that in 2005/06 over 80 percent of Barbadians with a tertiary education live in the countries belonging to that organization, most of which are economically developed (the comparable statistic for Iceland was 16.3).²⁰ Emigration, in short, has deprived Barbados of much of the human capital that is needed for industrialization.

Thus it is very likely that to be successful, more than just a private sector/public sector partnership will be required. In addition, the high level of technical skills possessed by Barbadians resident in the diaspora will have to be tapped. There is a technical knowledge gap that has to be filled. The most likely remedy lies with those who maintain ties with their home and can be successfully encouraged to make their knowledge available to encourage its modernization.

A model of what this might look like is provided by Iceland’s experience. Siogurdur Gylfi Magnusson reports that after that country had made big advances in its educational system during the 1970, in 1990 the government established a Icelandic Centre For Research. Its establishment, writes Magnusson “made it possible for the

¹⁹ In contrast Iceland ranks 28 with regard to availability of scientists and engineers.

²⁰ Organisation for Economic Cooperation and Development, *Connecting with Emigrants: A Global Profile of Diasporas* (Paris: OECD, 2012), p 100, 180. Jay R. Mandle, “The Role of Migration in Caribbean Integration and Development,” *Social and Economic Studies* Vol. 60, Nos 3&4 (September/December 2011) pp. 1-19.

large group of scholars and scientists who had gone abroad to work and study to return home.” Though he does not provide precise numbers in this regard, he does say that “a very large percent of the people in question accepted the opportunity,” resulting in “...industry in Iceland becoming more varied and diversified, as well as more stable and dynamic.”²¹ Efforts at tapping the talents of a diaspora population have succeeded elsewhere. In all cases however those successes have required government initiatives and incentives. Barbados therefore will need for a three part coalition – the government, the domestic private sector, and overseas engineers and scientists - to move the country to a new development path.

V

Barbados has experienced a structural transformation. It no longer depends on sugar. Instead it has become tourist-dependent. This is an industry that corresponds to the structure of its factor endowments and therefore one in which it possesses a comparative advantage. Nonetheless, the country has failed to proceed further in restructuring and has not become the producer of the high value products that are necessary for modern economic growth to occur. A comparison with Iceland rules out size, the strength of the financial sector or the business climate as unbreachable barriers to industrialization. For the kind of new industries that Barbados requires to be globally competitive will require not only private- public collaboration. The country will also have to gain access to the technical competencies that are more present among Barbadians living abroad than at home.

²¹ Sigurdur Gylfi Magnusson, *Wasteland with Words: A Social History of Iceland* (London: Reaktion Books Ltd, 2010) p. 250.