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BARBADOS

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BARBADOS

SELECTED ISSUES

July 13, 2016

Approved By
Western Hemisphere Department

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DATA ISSUES AND POST-CRISIS GROWTH IN BARBADOS[1]

Measurement problems and inconsistencies in Barbados' data continue to hamper and impede understanding of economic developments since the global financial crisis. This paper examines the data issues that have arisen since the crisis and investigates significant events that affected the economy over this period to shed some light on the likely path of economic developments. The paper finds that the key critical measures of economic development, such as nominal and real GDP may be mismeasured and inflation also appears to be consistently overestimated. The paper undertakes some stylized experiments to analyze the possible direction and size of the errors.

A. Introduction

1. **Measurement issues and data inconsistencies hamper understanding and assessment of the economic shock from the global financial crisis.** Like the rest of the Caribbean, Barbados was severely impacted by the crisis, but nominal and real GDP tell different stories about the economy's performance since the crisis. Real GDP growth numbers suggest that Barbados growth performance was in line with the other tourist-dependent economies in the Caribbean. However, the nominal GDP and price figures suggest that Barbados was hit much more severely than the other tourist-dependent Caribbean countries. Indeed, the growth and price data are internally inconsistent, and in some cases, these indicators are outliers when compared to indicators in similar, tourism-based Caribbean economies in the region.

2. **This paper tries to identify the data issues, clarify how they relate to the available information on economic developments, and undertake exercises to examine economic developments more closely.** The object of the paper is not to create an alternative data series but to spur discussion on the substantial data problems, and to point to where some of the larger data errors may be. The first section explains the apparent data inconsistencies, including by comparison with developments in similar countries in the region. The second section provides a more in-depth discussion on how the global financial crisis impacted Barbados and what this information can tell us about the quality of the data. The third section employs available data on capital and labor to build some stylized experiments. These are intended to provide a better understanding of real developments and an indication of size of the possible error in the official numbers. The results suggest, with some important caveats, that inflation seems to have been consistently overestimated, that nominal GDP appears to provide an inadequate measure of economic developments, particularly given the high inflation rates. At the same time, looking at the developments in total factor productivity (TFP) would suggest that the CBB may have overestimated real growth, although the real growth series is broadly plausible.

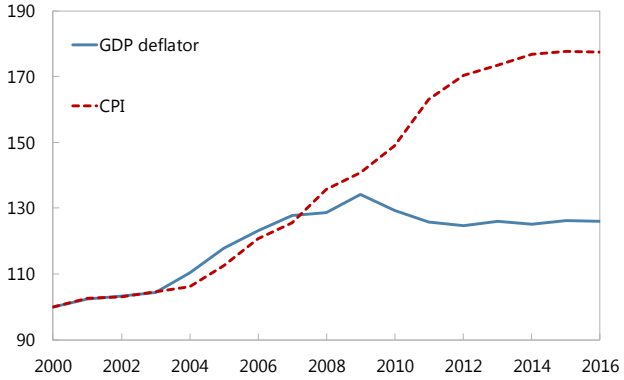
[1] Drafted by Thomas Dowling and Judith Gold

B. Data Inconsistencies

3. **Barbados was hit by several shocks during and in the aftermath of the global financial crisis, which may explain why it could have experienced a more profound economic downturn than its peers.** These include a somewhat longer lived downturn in tourism arrivals, a shock to the international banking and financial services (IBFS) sector followed by legislative and regulatory changes abroad that singularly affected Barbados, a decline in the construction sector which was an important engine of growth in the years leading up to the crisis, and finally the collapse of the financial conglomerate CL Financial and its Barbados based subsidiaries. In assessing the impact of these developments, the macroeconomic data reveal significant inconsistencies. The data problems are not new. Issues surrounding the methodologies and estimates of nominal and real national accounts and the consumer price index (CPI) are discussed in previous staff reports and are also the subject of extensive TA from both STA and CARTAC.[2] This section will look at the inconsistencies in the data and at other developments in the economy that could shed light on its reliability.

4. **Barbados' real growth seems broadly consistent with development in the rest of the tourist dependent economies.** [3] After contracting by 4.0 percent in 2009, real GDP growth was flat since 2010 (an average of 0.4 percent). However, the nominal series provides a different story. In four of the last six years real GDP growth exceeded nominal GDP growth and nominal GDP is 1.6 percent below the real GDP level index at end-2015. This difference implies substantial deflation at the same time that, CPI inflation is positive and relatively high. (Figure 1). Indeed, the large divergence between inflation and the implied GDP deflator is one of the critical puzzles regarding the actual developments in the economy following the global economic crisis.[4] The explanation for this may be an overestimation of inflation, underestimation of nominal GDP, or overestimation of real growth. In reality, the likely reason is probably a combination of all three. We will look at each of these measures in turn.

GDP Deflator and CPI
(Index: 2000=100)



Sources: IMF World Economic Outlook and Fund staff calculations.

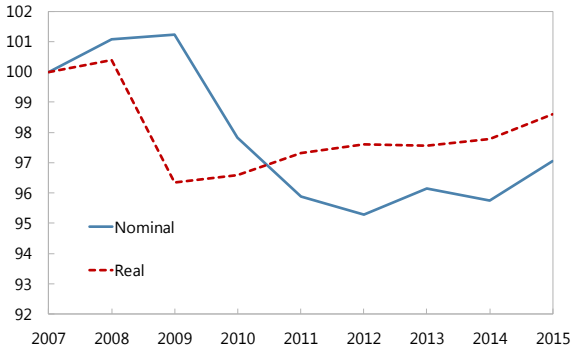
[2] 2015 Barbados Article IV Staff Report.

[3] Serious weaknesses exist in the estimates of real GDP including the base year weights used from 1974.

[4] One explanation why is discounting of hotels.

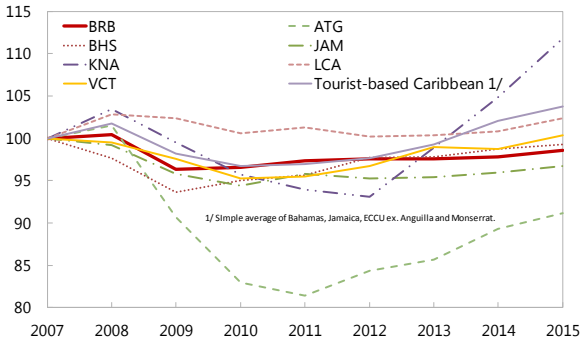
Figure 1. Barbados' Growth

Barbados Nominal and Real GDP, 2007-2015
(Index 2007=100)



Sources: Barbados Stastical Service, Central Bank of Barbados, and Fund staff calculations.

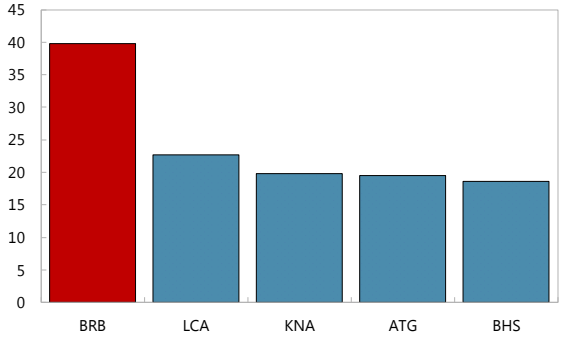
Real GDP, 2007-2015
(Index: 2007=100)



Sources: IMF World Economic Outlook and Fund staff calculations.

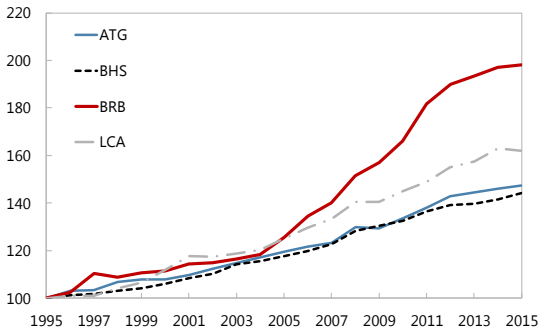
5. **CPI inflation in Barbados is consistently higher than in other similar Caribbean economies.** The tourism-based Caribbean economies share important features: fixed exchange rates, very high dependence on energy and food imports, and similar GDP per capita levels. Thus, while price levels may vary, inflation should move broadly at the same pace.[5] However, while Barbados' CPI is relatively in line with peers prior to 2005, since 2007 its cumulative inflation is nearly double that of the next highest peer, while the cumulative inflation in the other selected countries ranges from 19 to 23 percentage points. This result is particularly odd given the implied weak economy by the nominal GDP series deflated by inflation (see below). The higher measured inflation could reflect structural issues with the measurement of inflation, simply measurement errors, or both. The CPI basket has not been updated since 2000, and the share of food is around 33 percent compared to 20 percent for regional peers (notwithstanding similar per capita income levels).[6] There may also be simple measurement error. A recent indication of this is the January 2016 producer price index (PPI) which

Cumulative CPI Inflation, 2007-2015
(Percentage points)



Sources: IMF World Economic Outlook and Fund staff calculations.

CPI Prices, 1995-2015
(Index: 1995=100)



Sources: IMF World Economic Outlook and Fund staff calculations.

[5] Factors that could contribute to different rates of inflation over similar periods could be the speed of pass through of energy cost and changes in tax regimes, However, over time, one would expect, given the similarities in the economies, that cumulative inflation would be broadly similar.

[6] Efforts to rebase the CPI in 2010 failed because of weak survey response.

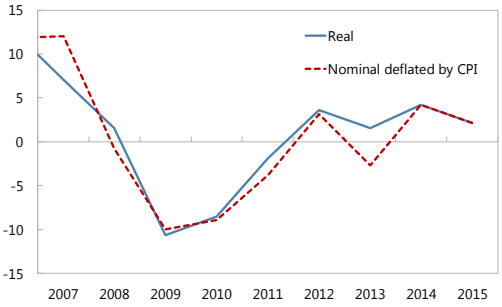
increased by 22.7 percent (y/y), mainly as a result of an increase of 302 percent growth (m/m) in one in sub group of distilling, rectifying, and blending of spirits and 76 percent (m/m) in other manufacturing. Such errors, on top of outdated CPI baskets, may be contributing to distortions in the price data.

6. **Estimates of economic developments based on nominal GDP and inflation suggest that Barbados' performance since the crisis was substantially worse than its peers.** Notwithstanding the possible distortion in the CPI, in the absence of a reliable deflator, the CPI inflation was used as a proxy for the deflator to generate an alternative real GDP path. Box 1 describes why the GDP deflator should move broadly in tandem with CPI inflation. Indeed, in the case of Antigua and Barbuda, Bahamas, and St. Kitts and Nevis nominal GDP growth deflated by CPI inflation moves in line with real GDP growth, confirming that that the CPI and GDP deflators generally move together (Figure 2) However, in Barbados, deflating the nominal GDP by CPI shows a large divergence between the two series. The growth dynamics of the nominal GDP deflated by CPI do not correspond to its Caribbean peers. Rather, to illustrate the significance of the problem, it is noteworthy that Barbados' post global crisis performance, based on this measure, looks similar to that of Greece, one of the hardest hit economies (Figure 3). The cumulative decline in real GDP from 2008 to 2014, deflated by CPI, is 37.1 percent in Barbados and 37.2 percent in Greece, compared to a decline of 2.2 percentage points when measured by the CBB real GDP growth estimate, and 1.3 percent in the tourism-based Caribbean economies. The next weakest economy is Antigua and Barbuda, which experienced a decline of 10.2 percentage points over the same period.

Figure 2. Cross Country Comparisons

Antigua and Barbuda Real GDP Growth

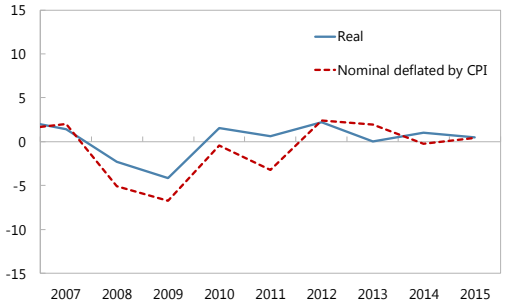
(Y/Y percent change)



Sources: IMF World Economic Outlook and Fund staff calculations.

Bahamas Real GDP Growth

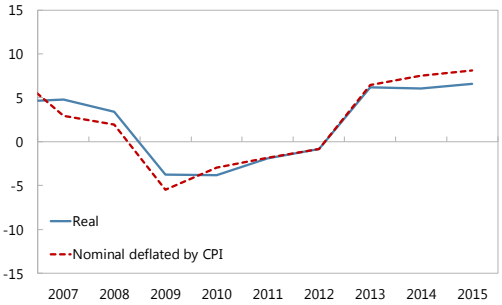
(Y/Y percent change)



Sources: IMF World Economic Outlook and Fund staff calculations.

St. Kitts and Nevis Real GDP Growth

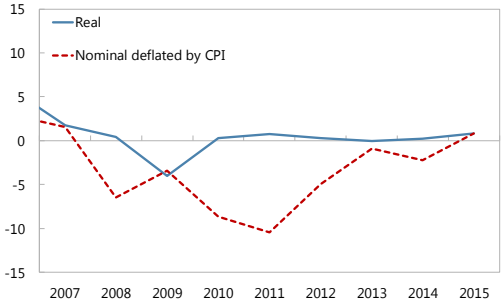
(Y/Y percent change)



Sources: IMF World Economic Outlook and Fund staff calculations.

Barbados Real GDP Growth

(Y/Y percent change)

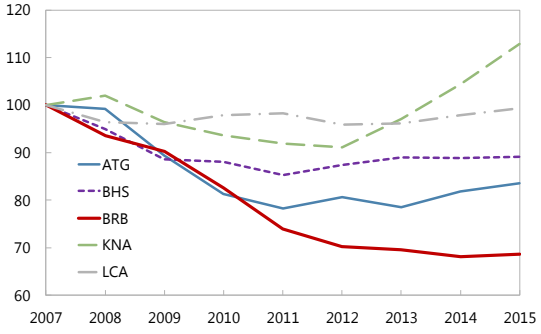


Sources: IMF World Economic Outlook and Fund staff calculations.

Figure 3. Nominal GDP Deflated By CPI Inflation

Nominal GDP Deflated By CPI

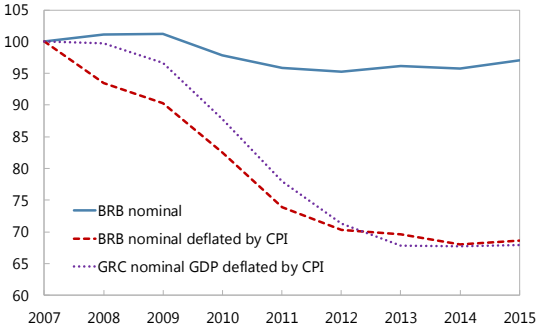
(Index: 2007=100)



Sources: IMF World Economic Outlook and Fund staff calculations.

Nominal and Real GDP, 2007-2015

(Index: 2007=100)



Sources: IMF World Economic Outlook and Fund staff calculations.

Box 1. Deflating by CPI Inflation

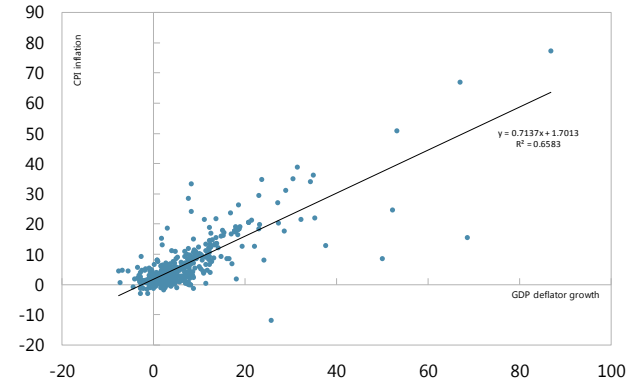
The relationship between the GDP deflator and CPI is not one for one and substituting one for the other is not best practice. However, in the absence of a reliable deflator, the CPI can provide a useful proxy, and there are several arguments why doing this, although flawed, represents a useful approximation.

- The GDP deflator is more of a broad-based measure of prices in the economy relative to CPI, but since GDP is dominated by private consumption, it is not unreasonable to suggest that growth of the GDP deflator in an economy that is highly dependent on imported goods is broadly in line with CPI inflation. In fact, prior to 2007 this was the case.

- A possible explanation why the two measures could diverge somewhat could be the heavy discounting of hotel rates following the global crisis. However, this could not explain the extent of the divergence, nor why was this not a phenomenon in the rest of the Caribbean tourist dependent countries, all of which suffered the substantial contractions in tourism arrivals (see the subsequent chapter).

- A simple regression of Caribbean countries' GDP deflator growth on CPI inflation generates a coefficient estimate close to 1 and an R-squared above 50 percent. These results suggest that changes in CPI and the growth of the GDP deflator are correlated.

Growth of GDP Deflator Vs. CPI Inflation, 1980-2015
(Percent change)



Sources: IMF World Economic Outlook and Fund staff calculations.

- Looking at a cross country sample of real GDP growth and growth of nominal GDP deflated by CPI, structurally similar countries (tourism-based, fixed exchange rates, very high imports, facing the same world prices), finds that nominal GDP deflated by CPI inflation is quite close to the reported real GDP series (Figure 2 in main text).

7. **Other economic developments in Barbados would not appear to be consistent with such a weak performance.** In Greece, since 2009, the unemployment rate rose 17.3 percentage points cumulatively while Barbados increased 4.0 percentage points over the same period. Private sector credit fell 15.6 percentage points, cumulatively, from 2009–15 in Greece while it rose 8.1 percentage points in Barbados. This does not mean to suggest that real growth is not weaker than the official data reports, but simply suggest that other economic developments would not appear to corroborate that it was as weak as implied by the nominal and inflation numbers, suggesting measurement error in nominal GDP, the CPI inflation, or both.

8. **There are a number of other factors that suggest that the data have important shortcomings.** Concerns about the quality of GDP statistics predate the global financial crisis. The

2008 IMF Article IV indicates that "it is likely that GDP is underestimated by as much as 25-50 percent". An IDB paper indicates that "Since the underestimation seems more severe in the non-tourism service sector and construction, perhaps the most dynamic sector in the economy in the last 5 years, it is very likely that the growth rate is also underestimated, although it is very difficult to quantify."[7] Preliminary source and use survey data estimated by the IDB suggest that nominal GDP may be underestimated by some 15 to 20 percent.[8] Another indicator that would point to the underestimation of nominal GDP is the relative stability of revenue performance. Tax revenues have been surprisingly resilient given the weak economic activity. Indeed, the tax-to-GDP ratio in FY2013/14 was only about 1 percentage point of GDP lower than in the year preceding the crisis, FY2007/08. However, the length and magnitude of the reported economic decline would suggest that tax revenue to GDP ratio should have been lower. Indeed, revenues from the IBFS fell by 3.5 percent of GDP from their peak in 2007 to 2013 on account of lower profits and legislative changes. In addition, the tax base was reportedly eroded by an increase in tax exemptions intended to attract foreign direct investment. Although the VAT tax rate was increased in 2011 (from 15 to 17.5 percent), the buoyancy of taxes raises questions about the reliability of the measurement of nominal GDP. A larger nominal GDP would show weaker tax collection, and in general would be more consistent with the general weak economic activity since the crisis.

Tax Revenues, 2005/06-2015/16
(In percent of FY GDP, unless otherwise indicated)

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	Est. 2015/16
Total revenue	**26.8**	**25.5**	**27.9**	**28.3**	**25.5**	**25.8**	**29.3**	**28.3**	**26.7**	**28.8**	**29.7**
Current revenue	26.8	25.4	27.8	28.2	25.1	25.7	29.1	27.6	26.7	28.1	29.5
Tax revenue	25.9	24.7	26.7	26.1	23.6	24.5	26.9	25.8	24.7	26.7	28.2
Income and profits	8.8	9.2	10.2	8.9	8.3	7.8	8.1	7.7	6.2	7.6	8.2
Goods and services	12.0	10.8	11.7	13.2	12.0	13.1	14.9	14.2	14.2	14.2	14.8
Taxes on property	1.7	1.7	1.6	1.3	1.2	1.3	1.5	1.5	1.8	1.8	2.1
Taxes on international trade	2.3	2.0	2.4	2.4	2.0	2.2	2.2	2.3	2.2	2.6	2.6
Other (levies, stamp duties)	1.1	1.0	0.9	0.2	0.1	0.1	0.1	0.1	0.3	0.5	0.5
Memorandum items:	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Nominal GDP, CY, percent change	10.9	10.4	5.6	1.1	0.2	-3.4	-2.0	-0.6	0.9	-0.4	0.3
Real GDP, CY, percent change	4.0	5.7	1.8	0.4	-4.0	0.3	0.8	0.3	0.0	0.2	0.8

Sources: Ministry of Finance and Fund staff estimates.

9. **On balance, the data suggest that nominal and real GDP and inflation numbers have serious shortcomings and are inconsistent both with each other and with other indicators of the performance of the economy.** While the real numbers may be overestimating growth, nominal growth and inflation would not appear to be consistent with the rest of the Caribbean and other economic developments. The next section will examine more closely the nature of the economic

[7] D. Artana and A, Downes indicate in their report that between 2000 and 2006, for instance, the real GDP increased by 13.3%, but in that period the electricity consumption increased 28% in the context of an increase in the relative price of energy. Another piece of evidence that economic growth might be underestimated is the tax collection from the International Business Companies (IBC) during that period increased by 115%, but the official figure for the nominal GDP growth for Business and General Services (where most of the IBC belong) is just 50%.

[8] The Survey was conducted in 2011/12 but not completed.

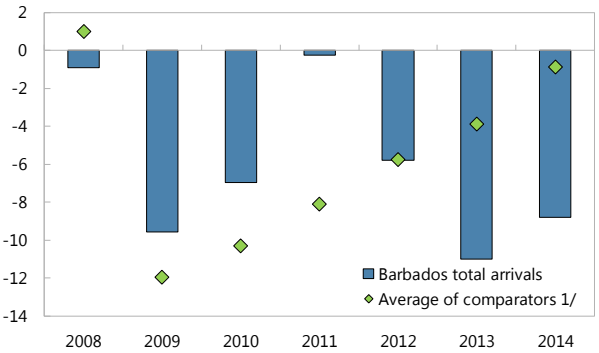
shock in Barbados to better understand why the Barbados economy may have had a much weaker economic performance than its peers.

C. Economic Consequences of the Global Financial Crisis

10. **The Global Financial Crisis affected Barbados in four distinct ways, generating an economic "tsunami" that may still not be fully appreciated.** The shock was multifaceted and taken together would suggest that the decline in the economic performance in Barbados could be more profound than its peers. First, tourism fell sharply and not only failed to recover, but suffered a second fall in 2012. Second, the IBFS, in addition to the impact created by the global financial crisis and the subsequent decline in capital flows, found itself facing increased competition due to changes in legislation abroad and under increased scrutiny from regulators from advanced economies concerned about tax havens. Third, the construction sector suffered a sharp contraction due to a large decline in investments by foreigners in second homes as well as a decline in domestic credit for mortgages. Fourth, the collapse of Colonial Life Insurance Company (CLICO) and British American Insurance Company Limited (BAICO), two insurance firms operating in Barbados, and the bankruptcy of CL Financial (a major conglomerate in the region and at the time, owner of Republic Bank), generated uncertainty and a loss of confidence alongside the freezing of a substantial amount of assets, as well as losses in income and investment. Given the data issues, these shocks cannot be measured, therefore this section undertakes a qualitative discussion to better understand how they may relate to the economic data.

11. **The contraction in tourism following the global financial crisis was longer lasting in Barbados.** While tourism initially declined less severely than the other major Caribbean tourism destinations,[9] it suffered a second decline and a slower recovery, in part because of weak economic performance in the U.K. (relative to the U.S.) and a loss of air lift.[10] Tourist arrivals from the United States and the United Kingdom, the source of around 60 percent of tourist arrivals in Barbados prior to the crisis, fell a cumulative 5.9 percentage points in the period 2008-2014, and total stay over arrivals fell 9.0 percent cumulatively compared to an average of 0.9 percent experienced by its comparators. This longer-lived decline could partially explain why the economic recovery in Barbados has lagged the rest of the tourist-dependent countries in the region, while at the same time also providing an explanation why the economic contraction was perhaps less severe initially.

Cumluative Growth of Tourist Arrivals
(Percentage points)



Sources: Caribbean Tourism Organization, CBB, and Fund staff calculations.
1/ Antigua and Barbuda, Bahamas, St. Kitts and Nevis, and St. Lucia.

[9] Comparators consist of Antigua and Barbuda, Bahamas, St. Kitts and Nevis, and St. Lucia.

[10] See subsequent chapter by Mwase and Gold on tourism.

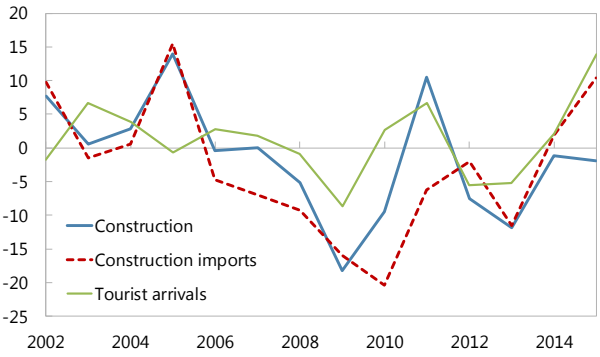
12. **The IBFS, the second most important sector in Barbados, after tourism, was also significantly impacted by the global financial crisis.** Reduced capital inflows, closer scrutiny of offshore banking and tax havens by foreign and domestic regulators, and changes in legislation abroad, resulted in a sharp contraction and subsequent stagnation of the sector. As noted earlier, direct tax revenues from the IBFS sector paid to the government declined 18 percent in 2008 and again in 2009. In 2010, IBFS-related revenues declined an additional 22 percent in response to reduced earnings and increased uncertainty following the crisis. Changes in Canadian legislation that eroded Barbados' preferential status vis a vis Canada—about 80 percent of IBFS business is reportedly with Canadian entities—also impacted both economic activity and direct tax revenues. In 2007, Canada extended its favourable "exempt surplus" tax treatment of foreign affiliates in tax-treaty countries to all jurisdictions that sign tax information exchange agreements (TIEAs). Prior to this Barbados had been the main destination for Canadian business investment, but the changes made other jurisdictions with lower taxes and a TIEA more attractive. In response, Barbados reduced its taxation of foreign entities to remain competitive with the other non-tax jurisdictions, reducing the rate from 3 percent to a range from 0.25 to 2.5 percent. The first of Canadian treaties with other jurisdictions went into force in 2011 and by 2013, direct tax revenues from the IBFS fell a further 46 percent.[11]

IBFS Sector, 2001-2013
(Millions BBD, left; Number, right)

Sources: Central Bank of Barbados and Fund staff calculations.

13. **Construction was also significantly impacted by the global financial crisis.** As tourism fell, the appetite for investment in tourism-based commercial construction fell and large-scale hotel and other commercial projects were halted or never started. On the residential side, foreign investors, primarily from the U.K., who drove the residential construction market suffered from wealth shocks. While there is no comprehensive data on the number of properties built prior to the crisis, the Caribbean Hotel and Tourism Association indicate that there are about 3,000 high end properties in Barbados, the majority of which were constructed in the

Real Construction GDP and Real Intermediate Construction Imports
(Percent change)

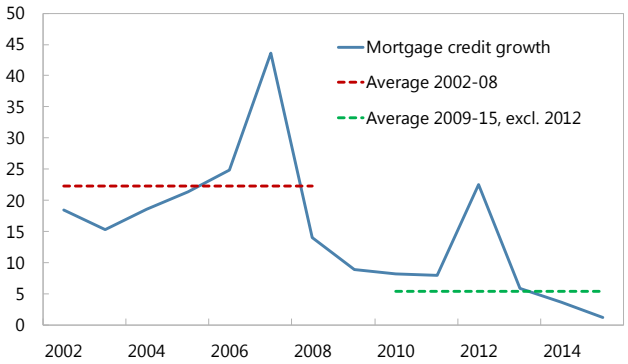


Sources: Central Bank of Barbados, FRED, and Fund staff calculations.

[11] See box 3 in the 2016 Barbados Article IV Consultation Report.

years preceding the global financial crisis.[12] The domestic residential market also grew at a healthy pace in the years prior to the crisis. The main indicator of this was growth in mortgage lending by the commercial banks, with an average annual increase in mortgage lending for commercial and residential properties from 2002 to 2008 of 23.4 percent compared to an average of 4.5 percent (excluding 2012 because of the merger with a mortgage based trust fund) during 2009-2015. Following the global economic crisis, the construction sector declined by about a cumulative 45 percent from 2008–15. Prior to the crisis, construction was the largest non-services sector in the economy.

Mortgage Loans 1/
(Percent change)



Sources: Central Bank of Barbados and Fund staff calculations.
1/ 2012 reflects the merger of a bank with a mortgage trust.

14. **CL Financial, a Trinidad and Tobago based financial services firm, collapsed in January 2009 resulting in the demise of two insurance subsidiaries (CLICO and BAICO) that were deeply entwined in the Barbadian economy.** The company owned three business lines aside from the two insurance companies. Many of the assets were sold since then, but a few remain including CLICO International Life Insurance Limited (CLI) and BAICO which are both being considered for restructuring by the Government of Barbados. While the economic impact is hard to quantify, the CLICO and BAICO saga resulted in a loss of wealth, a climate of uncertainty, and a damper on private investment. Around BD$288 million of frozen assets are still currently in judicial management and discussion of how to resolve the claims for the remaining assets continue.[13]

D. Stylized Experiments

15. **This section undertakes several stylized experiments based on growth accounting to investigate the possible range of error of the real GDP series, looking at some alternative assumptions about TFP.** The first assumes zero-growth in TFP to evaluate the TFP implied by real GDP estimate to generate a range of possible real GDP growth. The second experiment employs TFP estimates from studies of potential output and total factor productivity (TFP) for Barbados to

[12] An example of the change in this market is in a report in the Globe and Mail: "Before the crisis, foreigners piled into Barbados, buying up properties on the island's west coast. The boom was so fierce that a luxury mall—Limegrove Lifestyle Centre—was built, attracting tenants such as Cartier and Louis Vuitton. Developments like the Port Ferdinand luxury marina, which can house 120 vessels up to 18 metres long each, also sprung up. Today, however, both are surrounded by properties with "For Sale" signs. The situation is eerily similar in the Bahamas, where it would take more than a decade to unload all the foreclosed properties at the average annual rate of home sales." http://www.theglobeandmail.com/report-on-business/rob-magazine/perils-of-the-caribbean/article23199267/

[13] For more background, please see: 2010 Barbados Staff Report; Country Report 10/363 and 2011 Trinidad and Tobago Selected Issues; Country Report 11/74.

examine the consistency of the results of the first experiment. The section looks at labor market data to explain what may be driving the TFP results.

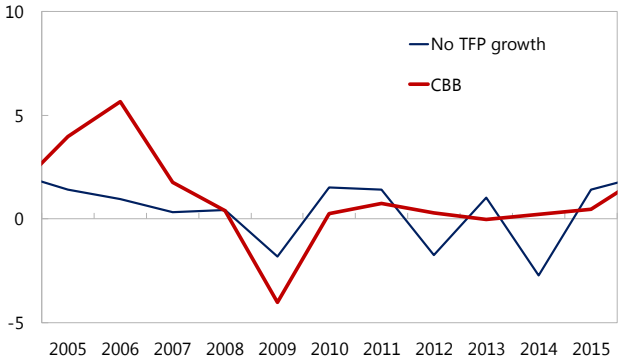
16. **Stylized experiment 1: Zero-growth in total factor productivity.** To determine the contributions of labor and capital alone, we assume TFP with zero-growth to provide a baseline estimate of real growth. Taking a production function approach, the paper employs the log linearization of the Cobb-Douglas production function:

$$Y_t = A_t K_t^{\alpha} L_t^{(1-\alpha)} \quad (1)$$

$$y_t = a_t + \alpha k_t + (1-\alpha) l_t \quad (2)$$

where equation (1) is the Cobb-Douglas production function and equation (2) is the log-linearized version with lowercase letters representing logged variables. The variable Y represents real GDP, A is total factor productivity (TFP), K is real capital stock, L is the labor input, and α is the capital share such that the production function exhibits constant returns to scale. Capital input data are obtained from the Penn World Tables version 8.1 from 1970-2011 and labor input data are from the Central Bank of Barbados from 1976-2015. Since the data series is incomplete, the World Bank's Development Indicators are used to fill in the historical gaps using the growth rate of working-age population. The series is backcasted to 1970 using a moving average of the next 5 years. A sharp (unexplained) decline in the 2006 employment data was smoothed using the difference over the period from 2005-07. Following Roache (2006), depreciation is assumed to be 5.8 percent per annum. The figure above shows the difference between these estimates and CBB real GDP growth series and provides us a view of the implicit TFP implied by the CBB real growth. Consistent with economic theory, prior to the crisis, in line with the economic expansion, the TFP growth is positive, and following the crisis of 2009-11, the implied TFP growth is negative. However, in 2012 and 2014, the data suggest that the TFP growth is positive, to overcome the decline in the labor and capital inputs. In other words, higher labor productivity would have had to compensate for the lower contribution provided by labor and capital in those years.

Real GDP Growth
(Y/Y percent change)

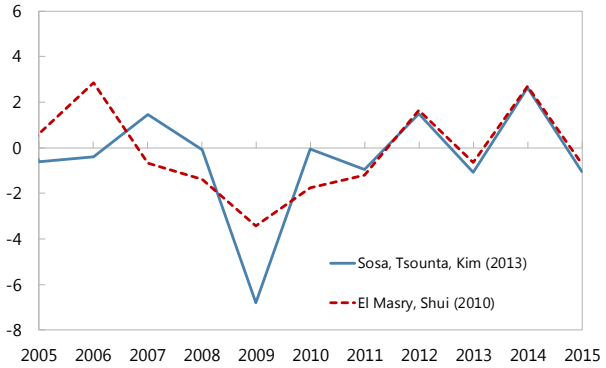


Sources: Central Bank of Barbados, Penn World Tables, WDI, and Fund staff calculations.

17. **Stylized experiment 2: Total factor productivity across different studies.** Total factor productivity exhibits a high level of variation across studies. El Masry and Shui (2010) uses a Solow residual estimated from the Cobb Douglas production function. A paper by Sosa, Tsounta, and Kim

(2013) uses a Solow residual but take into account human capital using Barro-Lee.[14] El Masry and Shui estimate a nominal capital stock using the BSS capital accumulation figures while Sosa, (2013) uses a Solow residual but take into account human capital using Barro-Lee.[15] El Masry and Shui estimate a nominal capital stock using the BSS capital accumulation figures while Sosa, Tsounta, and Kim use the Penn World Tables real capital stock series. These two papers produce TFP growth fairly consistent with each other following the economic crisis in 2009, and in line with the finding above, but somewhat at odds in the earlier period. In the period prior to the crisis TFP growth is generally positive, but fluctuates between the two studies, and is significantly lower in the Sosa study. After the crisis, the positive TFP growth in 2012 and 2014 is consistent with the prior experiment, although unexpected given the relatively weak economic outcomes.

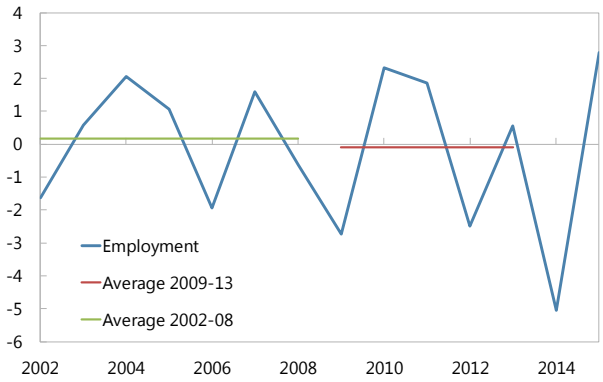
TFP Growth, 2005-2015
(Percent change)



Sources: El Masry, Shui (2010); Sosa, Tsounta, Kim (2013); and Fund staff calculations.

18. **Labor market development may provide some insight on why TFP growth could evolve in this way.** Employment growth in the build up to the crisis is very modest (average of 0.2 percent) while the labor shedding, was also minimal until the substantial decline in employment following the public sector retrenchment in 2014 (average of -0.1 percent between 2009-13). This reflects the relatively rigid labor market, and the high costs of hiring and firing employees. As a result, TFP contributed to higher growth before the crisis, while in the period following the crisis, in the absence of the expected fall in employment, TFP would be expected to be negative. However, on average, TFP is not significantly different than the pre-crisis period, suggesting that perhaps real GDP is overestimated. The years 2012 and 2014 particularly stand out, in that, in those years, the TFP was positive. A possible explanation for 2012 could be that after several years of negative growth and stagnation, the private sector started to shed employees, leading to an

Employment Growth, 2002-2015
(Percent change)



Sources: Central Bank of Barbados and Fund staff calculations.

[14] Thacker, Acevedo, and Perrelli (2012) was also considered. They use a Solow residual, but account for hurricane damage to capital stock. This measure of TFP contribution to growth is constant across 10 year periods.

[15] Thacker, Acevedo, and Perrelli (2012) was also considered. They use a Solow residual, but account for hurricane damage to capital stock. This measure of TFP contribution to growth is constant across 10 year periods.

improvement in TFP.[16] However, the recovery was not sustained in 2013 and TFP turns negative again. The positive jump in TFP in 2014 reflects the large retrenchment in the public service, which led to a decline in employment by 5.1 percent which was not accompanied with a corresponding decline in output translating into positive TFP growth. This too may suggest some overestimation of real growth.

E. Conclusions

19. **A simple analysis of the data on Barbados show very clear inconsistencies among the various measures of economic developments.** While real growth seems to have evolved broadly in line with the rest of the Caribbean, nominal growth and inflation developments suggest that Barbados was hit much harder by the global financial crisis. At the same time, these data may also be misleading. Nominal GDP seems to have inadequate coverage while inflation is much higher in Barbados than in similar economies in the region. A closer examination of the shocks faced by key sectors would support a story of weaker real growth. Estimates made by previous papers of developments in TFP support the result that TFP could be lower than implied by real GDP growth.

20. **Going forward it is critical to improve the quality of data. Good macro-policy requires reliable data.** Identifying the source of these inconsistencies and misalignments is difficult and this paper is intended to open a discussion on the need to improve the statistical reporting for Barbados in general and to help better understand the economic developments since the global crisis. Progress must be made with all agencies at the table to ensure open communication to begin to effectively address these issues.

[16] Some of the lack of labor shedding during the crisis was due to an informal agreement struck between government, the unions, and businesses that allowed companies who did not shed labor exemptions from NIS contributions.

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UNDERSTANDING TOURISM FLOWS IN BARBADOS[1]

This paper investigates the factors behind the recent decline in average daily tourism spending since 2013 in Barbados. Tourism arrivals have increased sharply but the pace of spending has been much slower. A key factor that has contributed to this is the decline in room rates. This may reflect downward pressure from growing number of rooms listed with online sharing platforms (e.g., AirBnb and HomeAway) as well as a decline in "production costs" as a result of lower real wages, import prices, and taxes. Lower average length of stay of tourists could also explain some of the slower growth in overall tourism spending. The findings suggest the tourism policies could continue to focus on raising earnings, including by maintaining the high tourism product quality as well as diversifying the tourism product, to safeguard Barbados niche in the high-end market.

A. Introduction

1. **Tourism is the economic mainstay of Barbados.** The sector is an important source of foreign exchange earnings, accounting for 48 percent of total exports of goods and services in 2015. Aside from its direct impact (e.g., accommodation, transportation, entertainment, and attractions), the sector makes an important economic contribution in terms of investment spending and employment. For example, the World Travel and Tourism Council (2015) estimates that, in 2015, travel and tourism accounted for 21 percent of total national investment and generated about 11.3 percent of total employment through direct activities in the sector and an additional 25.1 percent through wider effects—from spillovers into the economy, including the supply chain and induced income impacts through backward and forward linkages with the rest of the economy. [2]

2. **A key question facing policymakers is how the nature of the relationship between tourism arrivals and earnings has evolved in recent years.** It is motivated by recent data that suggest that despite growth in stayover tourism arrivals of 2.2 percent and 13.9 percent in 2014 and 2015, respectively, tourism receipts declined by 7.9 percent in 2014 and grew only by 3.6 percent in 2015. This can be contrasted with the long-run average, 1994–2007—the pre-global financial crisis period—when tourism receipts growth significantly exceeded that of stayover arrivals, averaging 6.2 percent and 2.8 percent per year, respectively. This chapter analyses the very recent trends in tourism arrivals and expenditures, assesses the factors underlying the decline in average spending per tourist, and proposes policy measures to address these. The chapter focuses on the evolution of tourism flows since 2013 and the factors for the decline in average expenditure per visitor. The main factor for the decline would appear to be lower room rates, which may be motivated by increasing competition including from the online sharing platforms. At the same time, lower production cost, including lower real wages and import cost could be sustaining high returns, notwithstanding lower

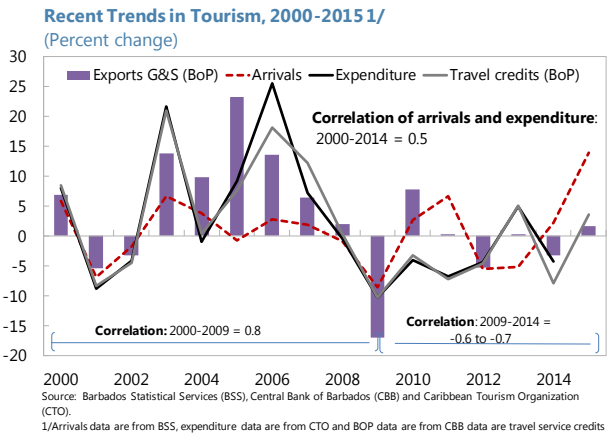
[1]Prepared by Nkunde Mwase and Judith Gold leading a team comprising Franz Loyola (WHD), Andrew Ceber (CARTAC), and staff from the Caribbean Tourism Organization, Central Bank of Barbados, Barbados Tourism Product Inc., and Barbados Tourism Marketing Inc.

[2] See World Travel and Tourism Council (WTTC) 2015 report for more information.

average spending. Going forward, policies should focus on not only increasing number of visitors but also average tourism spending.

B. Recent Trends in Tourism Flows in Barbados

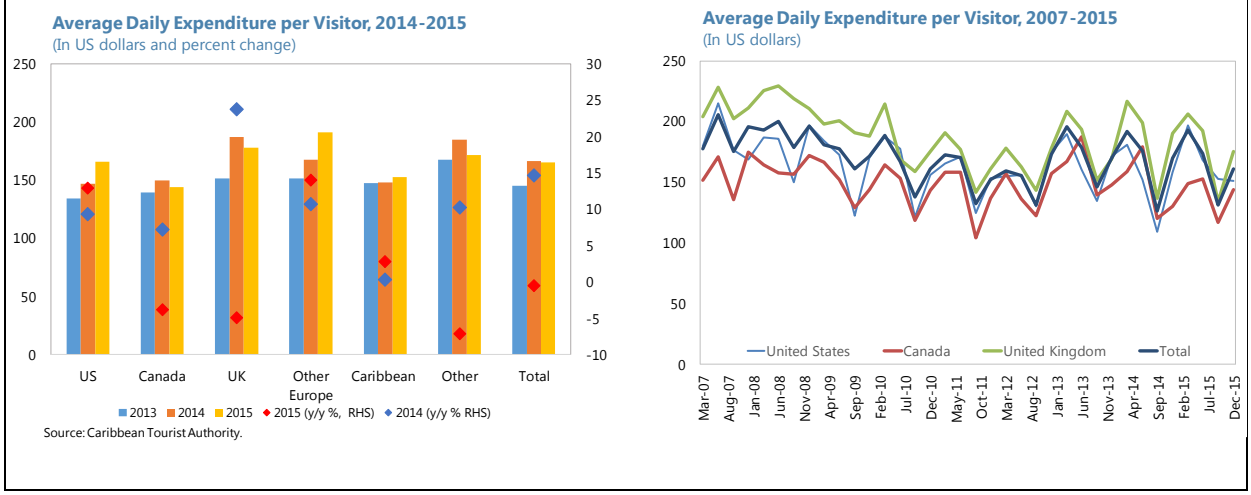
3. **Tourism expenditure and arrivals statistics provide a conflicting picture of performance in recent years (in text chart).**[3] Tourism statistics from 2000 until 2009 suggested a positive correlation between expenditure and arrivals growth, with the latter generally moving at a slower pace than expenditure. However, since 2009, the relationship has been mixed with the correlation between arrivals and expenditure turning negative in 2014. Reflecting the high share of tourism to Barbados export earnings (goods and services), the trend in tourism expenditure is strongly correlated with that for overall export earnings, and suggests that the lower-than average growth performance in export earnings in recent years mirrors tourism expenditure.



4. **The average expenditure per visitor declined by 0.5 percent in 2015 driven by lower spending in UK and Canadian source markets (Figure 1).** This marks a break from previous years, where data point to large increases in average spending per visitor of 9 and 15 percent in 2013 and 2014, respectively. The UK market, which accounts for the largest number of arrivals and the longest length of stay, experienced one of the largest declines in weighted average spending per visitor (5 percent) in 2015. This could reflect a correction from the sharp 24 percent increase in 2014. In contrast, the weighted average expenditure per visitor from the US and other Europe has remained strong growing by 13 and 14 percent, respectively in 2015 and by 9 and 11 percent increase in 2014. Figure 2b suggests strong seasonality in average daily expenditure per visitor, across all the source markets, with large volatility particularly in recent years.

[3] The analysis focuses on nominal expenditure due to data issues in identifying the appropriate deflators (see previous chapter by Dowling and Gold on problems with growth measurement).

Figure 1. Average Daily Expenditures



C. Factors Explaining the Decline in Spending Per Visitor

5. **A number of factors could explain the decline in average spending per tourist.** One explanation may be a structural shift in tourism, mainly, the growth of the sharing economy, exemplified by new search engines and online platforms for sharing (e.g., Airbnb and similar sites, see Box 1), which could have shifted the supply of hotel rooms and increased competition, leading to lower room rates. A second factor could reflect pass-through of reduction in the cost of production, arising from declining real wages and import prices, related to the sector's effort to become more competitive. Third, the rise of all- inclusive resorts could further have affected average spending, notwithstanding estimates made to capture the cost of pre-packaged holidays, as expenditure by tourists in all-inclusive resorts tends to be lower. Fourth, decline in average length of stay and the maturity of the destination could also explain the decline in earnings per visitor. Whitehall and Craigwell (2006) note that maturity of a destination alters the demand for the tourism product irrespective of price-income factors and reduces average spending. Finally, data weakness could also affect the estimates of spending, but are less likely to explain recent changes in the relationship between arrivals and expenditures.

6. **The growth of the sharing industry and the expansion in the availability of rooms may partially explain the decline in tourism spending.** Barbados is reported to have the highest number of listing on online sharing platforms in the Caribbean (Box 1). Estimates based off an online search of some well-known online sharing platforms suggest that Barbados has about 3,182 rentals listed in Flipkey, 2,776 on HomeAway, and 300 on Airbnb available. [4]This is consistent with the fact that, Barbados has about 3,000 rooms in the form of villas and condominiums. These factors may be

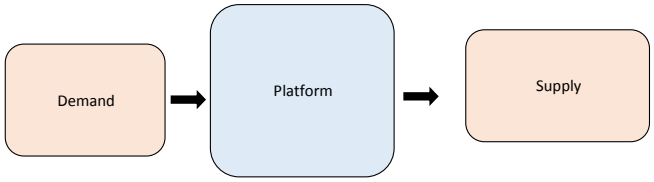
[4] Estimates based on online search on July 7, 2016. For the online sharing platforms cited, see https://www.flipkey.com/barbados-vacation-rentals/g147262/ ; https://www.homeaway.com/search/keywords:barbados; https://www.airbnb.com/s/Barbados?ss_id=yb72bwsq&s_tag=VecUhlYE

impacting tourism spending it two ways: first, they have expanded the room stock, creating competition for the hotels and perhaps putting downward pressure on room prices; and secondly, the spending by these visitors on accommodation, on average, may be lower. The increase in room stock is quite high considering that the total number of "official" rooms (i.e., hotel rooms, guest houses and apartments) is about 6,528 as at January 2016.[5] However, ascertaining the additional room stock is complicated as some of the places listed are also reflected in official statistics (e.g., some hotels are listed on Airbnb) and there is very likely high level of cross-listings of shared places (e.g., villas listed across various online sharing platforms). According to the CTO, spending by visitors using online sharing platforms is captured in the tourist expenditure surveys (i.e., they are identified for example as Airbnb customers) even though there is no official statistics on the number of visitors who stay in these accommodations.

Box 1. The Sharing Economy and Tourism

Tourism services have traditionally been provided by businesses such as hotels, Bed and Breakfast establishments, and tour operators. However, the development of the internet and, the creation of online platforms has made sharing easier, and have led to the proliferation of opportunities. Some known example of such a platform where individuals can book accommodation are HomeAway, FlipKey and Airbnb. As illustrated in the figure, the platform brings the suppliers and "demanders" of accommodation together through purchases made online through the platform.

Peer-to-Peer Model



Source: "Competition in the sharing model", 2014

The growth in such tourism services could have put downward pressure on average rental prices, by increasing the supply of accommodations (i.e., an outward shift the supply curve). In addition, it could change the slope of the supply curve, by expanding the stock of available accommodation on the lower end of the price as the cost of provision of tourism services in a sharing economy could be lower. Anecdotal evidence from discussions with the authorities and key stakeholders in the tourism sector and on line searches indicate that numbers of rooms available on online sharing platforms have grown rapidly and exceed 3,000 rooms, compared to room stock of about 6,528 in January 2016. Nevertheless, there may be significant overlap as some hotels now also regularly advertise on these platforms.

At the same time, there are many positive externalities. The availability of lower priced tourist accommodations may be bringing in tourists who would otherwise not come to the island. The increased in number of visitors has contributed to the rise in occupancy in the airplanes, thus supporting higher airlift than otherwise—by many accounts, airlift is one of the most important determinants of the success of the tourism industry. Finally, the platform allows smaller establishments to advertise with limited to no overhead costs. Overall, the sharing economy, while providing increased competition to some established hotels, should benefit the country considerably.

[5] However, the census rooms are about 5850 (as at January 2016, based on STI data collected by the Barbados Hotel and Tourism Association).

7. **The weaker growth in tourism spending is taking place alongside a decline in the average daily room rental rates (Figure 2).** A decomposition of recent trends in tourism expenditure suggests that the growth slowdown is mainly driven by a decline in the price of accommodation. Spending on accommodation has typically accounted for 55–65 percent of total expenditure earnings, suggesting that changes in this component have an important impact on overall average spending per visitor (Figure 2b). Average daily rental rates have declined consistently by 7 and 6 percent, respectively in 2014 and 2015 (Figure 2c). As discussed above, this could be the result of increased competition. However, occupancy rates have also increased, and demand remains high notwithstanding the increase in supply (Figures 2b-2c).

Figure 2. Average Daily Room Rental Rates

Figure 2a. Spending by Stayover Visitors, 1999-2015
(Percent of total)

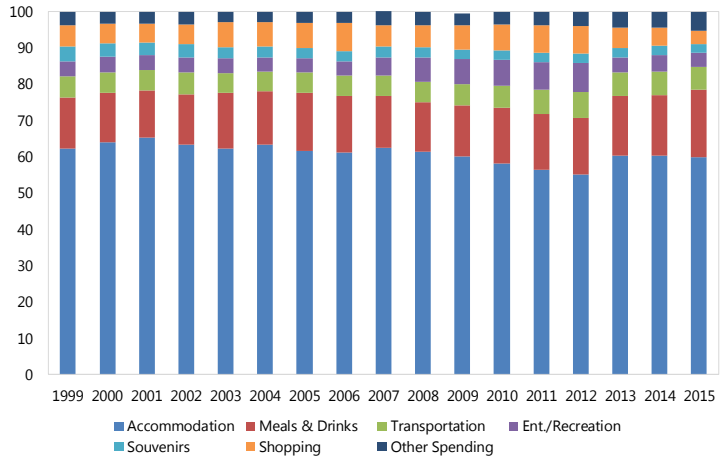
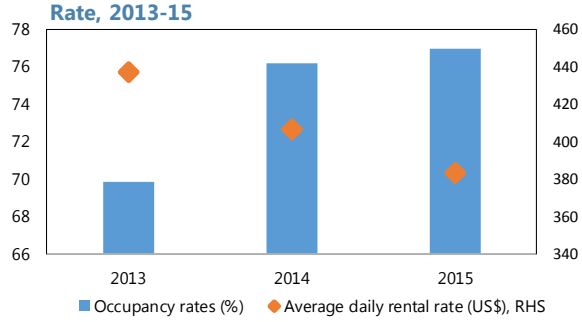
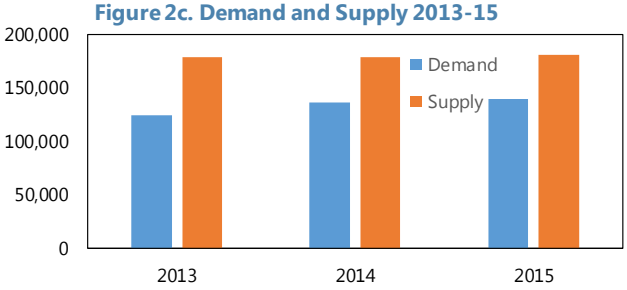


Figure 2b. Occupancy and Daily Rental Rate, 2013-15



Source: STR Global data shared by the Barbados Hotel and Tourism
Notes:
Occupancy rate: Rooms sold divided by rooms available as a percentage of rooms occupied.
Average daily rental rate: Room revenue divided by rooms sold.

Figure 2c. Demand and Supply 2013-15



Source: STR Global data shared by the Barbados Hotel and Tourism
Notes:
Demand: The number of rooms sold or rented (excludes complimentary rooms).
Supply: The number of rooms times the number of days in the period.

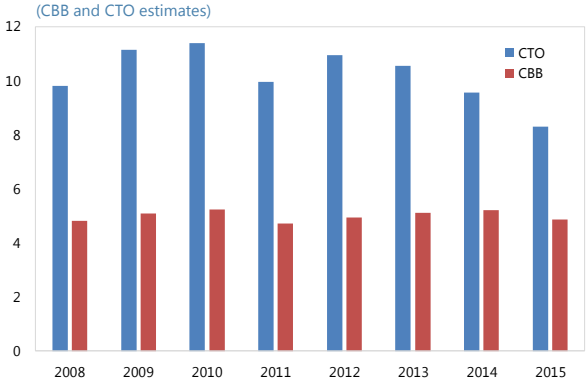
8. **The decline in room rates may also reflect lower production costs, which hotels may have passed through to improve their competitiveness.** Several factors have led to a substantial reduction in costs. The freezing of public sector wages—last increased in 2009—coupled with the public sector retrenchment in 2014 (about 11.5 percent of the total 26,000 employees in the central government, public enterprises, and statutory corporations)—and decline in import prices (including

oil) suggest a reduction in the per unit cost of production.[6] Lower import prices pushed prices down, with end-period inflation of -2.5 percent in 2015, compared to 2.3 percent in 2014 while real wages in the public sector are 11½ percent lower than in 2008. Another important factor could be the tax incentives offered to the sector in recent years, these are predominantly consisting of input taxes (customs duties, excises etc.) which would have further reduced costs. A cost-driven reduction in average expenditure per tourist, despite slower increases in tourism spending, could support an increase in spending in the economy (outside of hotels) an improvement in hotels net earnings and profitability, and as a result, a continued rebound in the economy. This would appear to be consistent with plans by about two-thirds of tourist establishments to refurbish or increase existing accommodations.

9. **The recent increase in all-inclusive resorts is unlikely to be the reason for the decline in average expenditure per tourist.** The entrance of a large well-known brand (Sandals) that opened its all-inclusive resorts in January 2015 accounted for less than 4 percent of total rooms in 2015. This may have contributed to an increase in arrivals[7], both directly and indirectly, including through increased visibility of the island, but the small number of rooms accounted by this group could not explain the decline in average spending per visitor. At the same time, continued rapid growth in this type of tourism could in the future, continue to reduce average tourism spending.

10. **Notwithstanding the broadly unchanged composition in visitors, average length of stay and air seats have declined.** The share of visitors from the UK (Barbados's traditional source market) remained broadly unchanged rising from 33 percent in 2013 to 36 percent in 2014 and 2015—reflecting in part the peak up in UK real private consumption in 2014 and 2015 to 2.5 percent and 2.9 percent from 1.9 in 2013.[8] However, the estimated average length of stay of visitors from UK to Barbados (i.e., the number of nights in Barbados) and direct air seats declined (Figure 3). More broadly, the average length of stay of visitors, both overall and those staying for less than 29 days has declined (in text chart). The CTO

Average Intended Length of Stay, 2008-2015
(CBB and CTO estimates)



Source: Central Bank of Barbados (CBB) and Caribbean Tourist Organization (CTO).

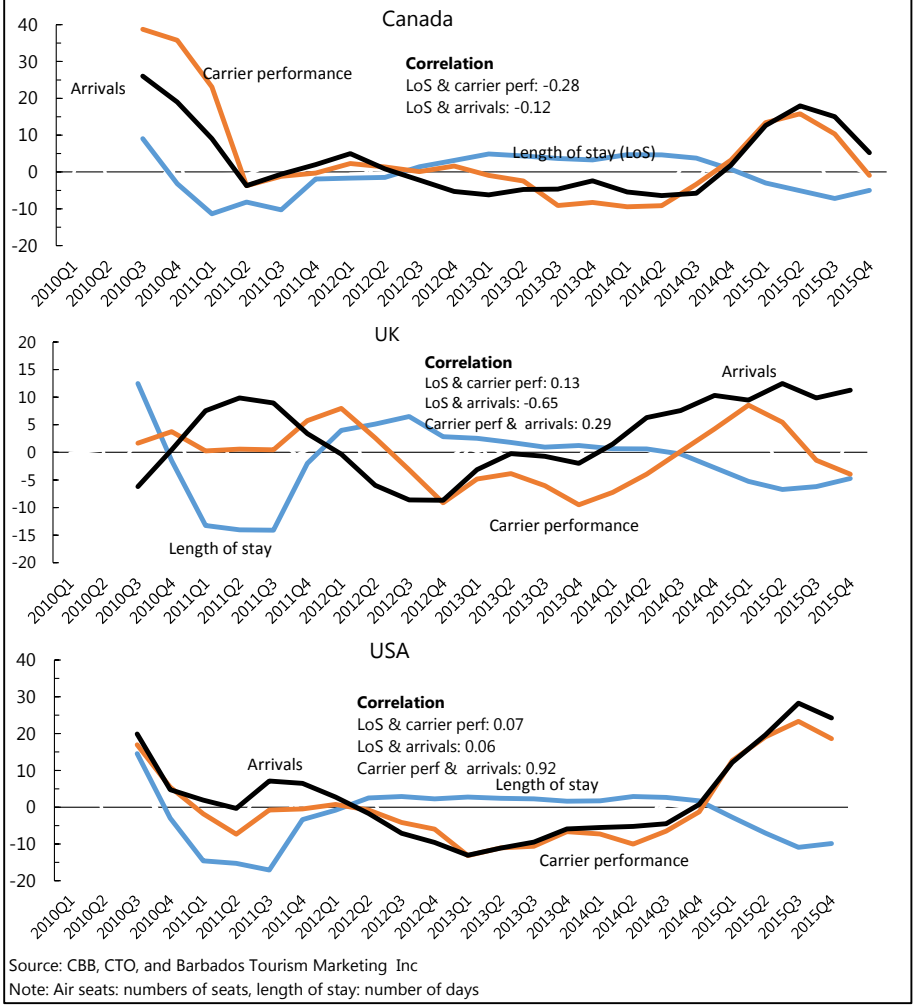
[6] The extent to which the reduction in real public sector wages and the retrenchment have filtered into the private sector need to be investigated further. However, in general the relationship between public and private sector wages in the Caribbean is considered to be strong.

[7] Discussions with the key stakeholders suggest that the entrance of Sandals resort, was the first time in many years that a well-known international brand has entered the market. The greater visibility of the Sandals group to the American market is expected to have positive spillovers through enhanced promotion of Barbados in this market and could account for some of the improvement in tourism flows. Similar efforts to attract well-known brands and to advertise Barbados could help enhance arrivals.

[8] Nevertheless, real private consumption growth remained lower than historical average of 3.7 percent in 1994-2007 (before the global financial crisis).

data focus on all visitors while the CBB focuses on visitors that stay for 1–28 days.[9] Within this, there are substantial differences in length of stay across source markets, with the biggest and most protracted decline occurring in the UK source market. There has also been a steady decline in the growth rate of air seats, particularly from the UK market. Scatter plot analysis of the major markets—Canada, UK and USA—suggests a positive relationship between air seats and tourism flows (Figure 4). This suggests that the change in the number of air seats in recent years is an important factor explaining tourism performance. To some extent, the variance in air seats could be attributed to market projections on Barbados tourism performance but it could also reflect idiosyncratic factors (e.g., airline mergers). Scatter plots of tourism flows and length of stay provide more mixed results (Figure 4) reflecting the different patterns of spending by different tourist groups. Visitors from Canada, while tending to stay longer, also spend on average a lot less, thus reducing the strength of the relationship between the length of stay and total spending.

Figure 3. Length of Stay, Air Seats, and Tourism Arrivals, 2010Q1–2015Q4
(Percent change, 3-month moving average)



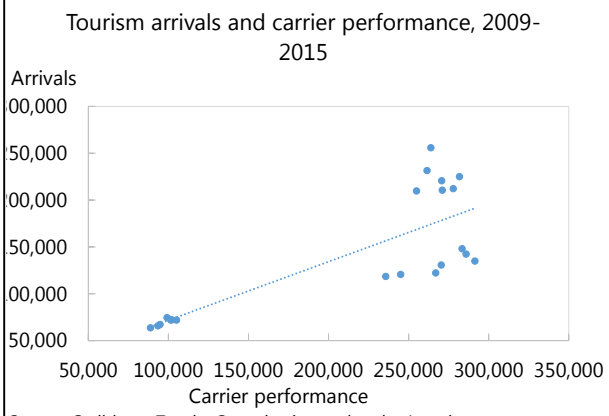
Source: CBB, CTO, and Barbados Tourism Marketing Inc
Note: Air seats: numbers of seats, length of stay: number of days

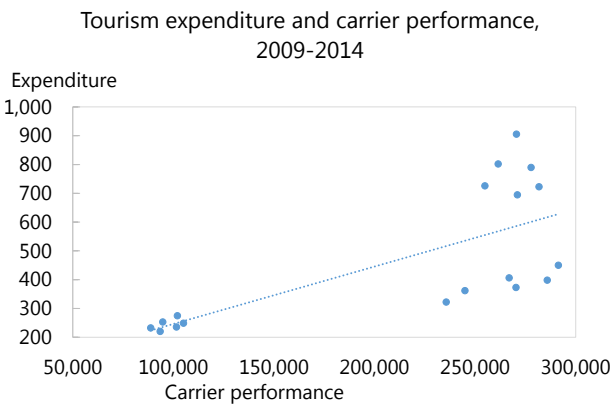
[9] Wright et al (2011) find that generally, however, it was observed that over 90 percent of tourist arrivals intended to stay between 1 and 28 days in Barbados during January 2004 and August 2011.

Figure 4. Tourism Arrivals and Expenditures

Tourism and Air Seat Performance, 2009-2015

(Number of tourist arrivals, total expenditure, and number of air seats)

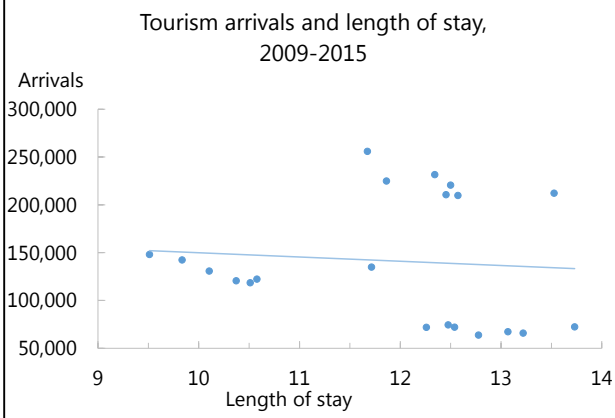


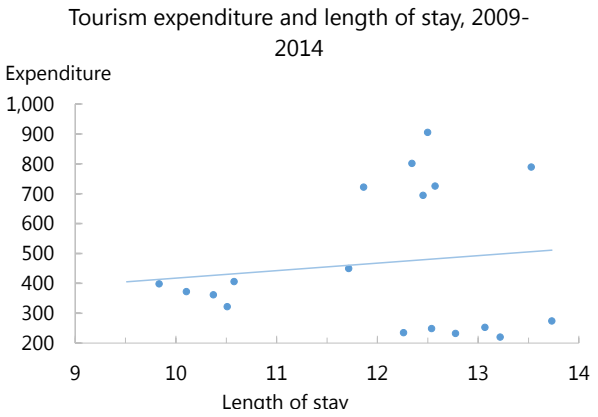


Source: Caribbean Tourist Organization and author's estimates.
Note: Carrier performance of airlift from Canada, UK and USA to Barbados

Tourism and Length of stay, 2009-2015

(Number of tourist arrivals, total expenditure, and average number of days spent in Barbados)





Source: Caribbean Tourist Organization and author's estimates.
Note: Performance of from Canada, UK and USA source markets

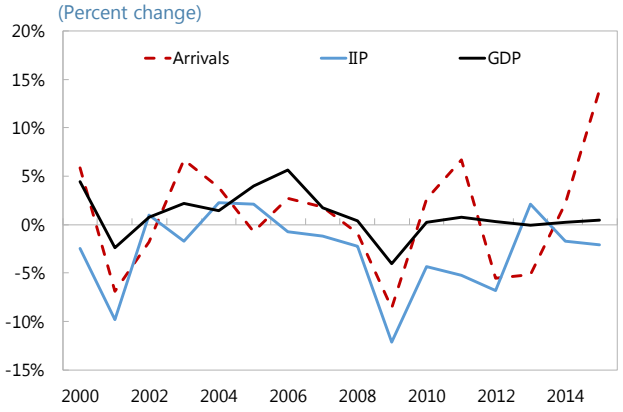
11. **The maturity of Barbados as a tourist destination could also partially explain the decline in average spending per visitor.** It has been well established that tourist destinations tend to follow a predictable lifecycle from birth to maturity, old age and finally decline (the a "Butler S-curve").[10] According to the tourist area lifecycle framework, destinations experience increasing difficulty in attracting tourists, despite marketing efforts, because of negative utility from, inter alia over-utilization of resources (see Greenidge and Whitehall, 2000, and Whitehall and Craigwell, 2006). In essence, the maturity of a destination alters the demand for the tourism product irrespective of price-income factors. This process eventually leads to decline unless rejuvenation occurs. Our main concern in this paper is the recent changes in the relations between arrivals and spending, so this is unlikely to be the main factor. However, it would be important to tack this issue over time.

[10] See Butler, 1980

12. **Data weaknesses could affect reliability of spending data but may have limited role in explaining recent changes in tourism flows in Barbados.** First, the total estimated spending by tourists in Barbados may be biased downwards to the extent that the surveys do not appropriately capture spending by those who fly in through private jets, particularly if this is markedly different (e.g., higher spending). This could adversely affect ability to monitor developments in the luxury end of the tourism product. However, the CTO estimates that the statistical error is within +/-2.5 percent and notes that exclusion of private jets is a common international practice due to the small percentage of persons arriving in this way. Further, this would not explain the decline is spending since this was always a feature of how the data was put together. Second, the limited number of variables used to weight expenditure per visitor could lead to errors given the large relative changes in the distribution of tourists' country of residence, accommodation, length of stay, and purpose of visit. This is particularly important given the high seasonability of tourism arrivals. The CTO notes that many countries execute surveys on a quarterly basis (up to every 2–3 years) and highlights the tension between frequency of surveys and costs. Thirdly, the self reporting aspect of expenditure surveys could affect the results as visitors may be unaware or inaccurately report their spening, but again one would not expect this to have changed over time. Page and Connell (2006) note that while many countries attach a high priority to the collection and analysis of tourism data, national and international tourism data sources are often criticized for lacking consistency and coherence.

13. **Understanding tourism trends is complicated further by weaknesses in other indicators.** Weaknesses in GDP accounting limit the usability of indicators of economic activity despite the fact that tourism is the economic mainstay of Barbados (in text chart).[11] Analysis of recent trends in tourism arrivals and indicators of economic activity suggest that despite the strong rebound in tourism arrivals in 2015, economic activity remained flat and industrial production turned negative. The economic growth data are surprising given that tourism is the economic mainstay of the economy. Alternative indicators of tourism performance collected through different sources could be used to provide useful information on recent trends. For example, the average daily room rental rates, occupancy rates and number of bedrooms could be useful proxies for tourism performance. However, currently, only hotels, guest houses and apartments are required to report information on number of bedrooms (and other indicators). To the extent that these tourists are more likely to stay in villas, which are not reported, and if the share of villas is increasing, this could weaken the usefulness of the information as an additional indicator/proxy for tracking tourism performance.

Tourism Arrivals, Production, and Output Indicators
(Percent change)



Sources: Barbados Stastistical Service and Central Bank of Barbados.

[11] See the previous chapter by Dowling and Gold on data challenges in GDP accounting.

D. Has Barbados Tourist Sector Become More Competitive?

14. **Qualitative indicators raise some questions about competitiveness.** A cross-country comparison using global indices indicates a decline in competitiveness. These include the World Bank's Doing Business survey, the World Economic Forum (WEF) Global Competitiveness report, and the Tourism-WEF Report all point to impediments to private sector growth, including public sector inefficiencies and delays caused by bureaucratic hurdles. However, lack of recent data for Barbados in some of the global indices could limit comparison of 2014–2015 changes.

15. **Overall tourism arrivals lag other countries.** While Barbados received the largest increase in stay-over visitors in 2015 in the Caribbean, after Cuba and Aruba,[12] this follows relative weak performance in the preceding year. For example, though tourism grew by an average of about 4.1 percent and 3.8 percent in Belize and Jamaica in 2000-2015, it grew by only 1.3 percent in Barbados and 2.2 percent in the ECCU and a mere 0.1 percent in Bahamas[13,14] Moreover, the volatility of tourism arrivals is much higher in Barbados, with big dips during periods of market turbulence (e.g., during the global financial crisis and the European debt crisis). This could affect market expectations and investors may remain cautious before substantially expanding investment.

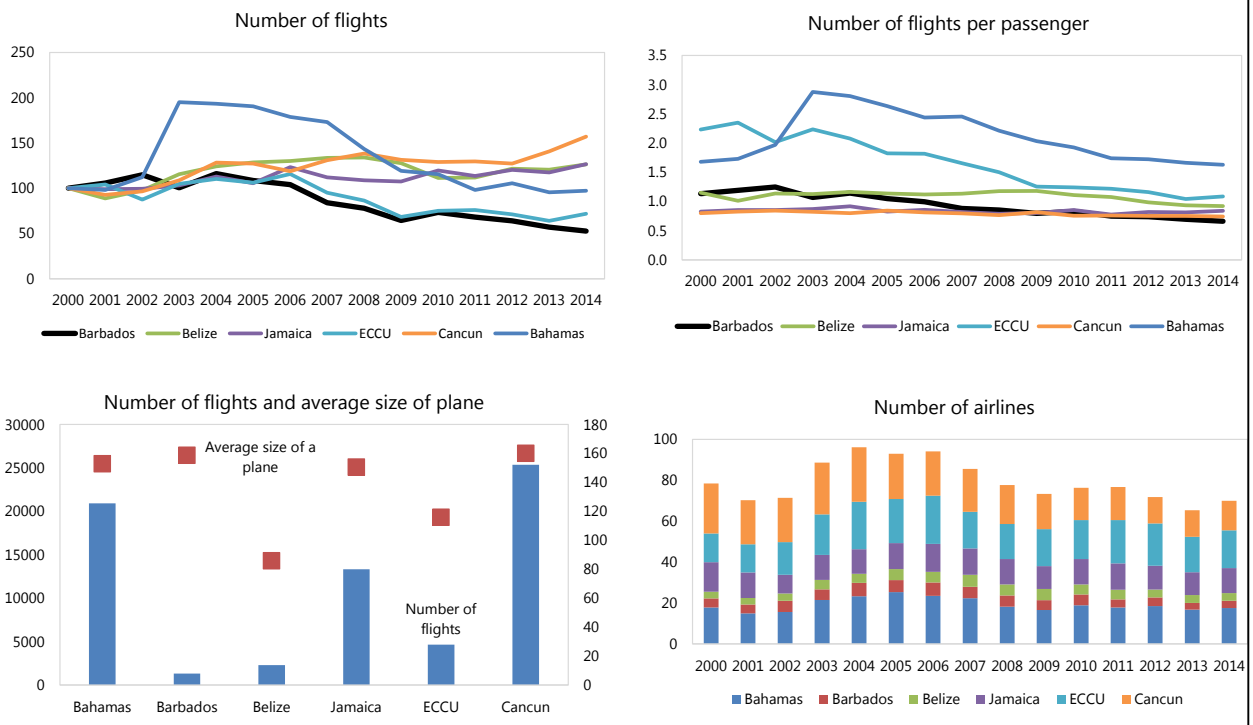
16. **Cross-country comparison on airlift also indicates that Barbados has lost significant ground (Figure 5), but more recently is seeing an uptick.** The number of flights to most Caribbean tourism-dependent economies has in general declined over the past decade, with a reversal in 2014 in all but Barbados. Indeed, Barbados has had the largest decrease in the number of flights, which has partly been attributed to the closure of the three Almond Resorts properties in 2012 (Andrews, 2015). However, evidence points to an increase in the number of flights in 2015. This could in part be attributed to the entrance of a large well-known tourism brand resort into the Barbados. The BHTA noted that this was the first time in many years that an internationally-recognized chain had entered the Barbados tourism market. These findings are consistent with Acevedo et al (2016) and Mwase (2013) on airlift and tourism flows.

[12] The increase in visitors to Aruba is related to developments in Venezuela.

[13] Due to lack of recent data, Bahamas data are 2000 through 2014.

[14] Although, as noted above, tourism spending grew much faster than tourism arrivals.

Figure 5. Selected Countries: Cross Country Comparison of Air Flights, 2000-14
(2000=100)



Notes: ECCU refers to total number of flights to the six countries excluding St. Vincent and the Grenadines
Average size of plane for ECCU is weighted average of the 5 countries above

17. **The authorities have taken broad range of steps to raise tourism value-added, specifically:**

- ***In September 2014, the Barbados Tourism Authority (BTA), a quasi-government organization, was replaced by two new institutions—the Barbados Tourism Marketing Inc. (BTMI) and the Barbados Tourism Product Authority (BTPA).*** BTMI is a private company that was formed by the government and tasked with marketing Barbados as a tourism destination. The BTPA is a statutory corporation (a quasi-government organization), designed to focus solely on the development and improvement of the island's current and future tourism offerings. BTMI has focused on innovative approaches to increase airlift and building "strong alliances" with travel agencies, tour operators and local partners to increase Barbados marketing presence. The BTMI and Barbados Hotel & Tourism Association (BHTA) launched "Brilliant Barbados", a promotion aimed at increasing forward booking for the softer summer and fall periods, with value-packed deals.

- ***Ongoing initiatives include updating visitor accommodation regulations to internationally-recognized visitor short-term accommodation standards—to ensure that Barbados product remains globally competitive.*** Other initiatives include a "Mystery Shopper Programme" for Visitor Accommodation, Tourism Services and Service Providers to objectively assess Barbados' tourism amenities and services. This is expected to provide valuable feedback to all Tourism

Service Providers and enhance product quality offerings and tourism services. Cultural tourism heritage element has been emphasized to encourage tourists to spend. Ongoing efforts to enhance segmented marketing (e.g., millennials) are being intensified and greater focus is being placed on repeat visitors, given surveys that suggest that they need more activities (through better information sharing of activities and events).

- ***The BTPA has started dialogue with Airbnb with the aim of having Airbnb collect room taxes*** (following on other countries where Airbnb is collecting and remitting taxes on behalf of the host (e.g., France, Portugal and Netherlands).[15]

- ***The government has also made strides towards enhancing the stock of tourism human capital.*** It has implemented a number of training programmes in tourism and hospitality studies at the Barbados Community College, the PomMarine Hotel and a three-year undergraduate degree in Hospitality and Tourism Management at the Cave Hill Campus, UWI.

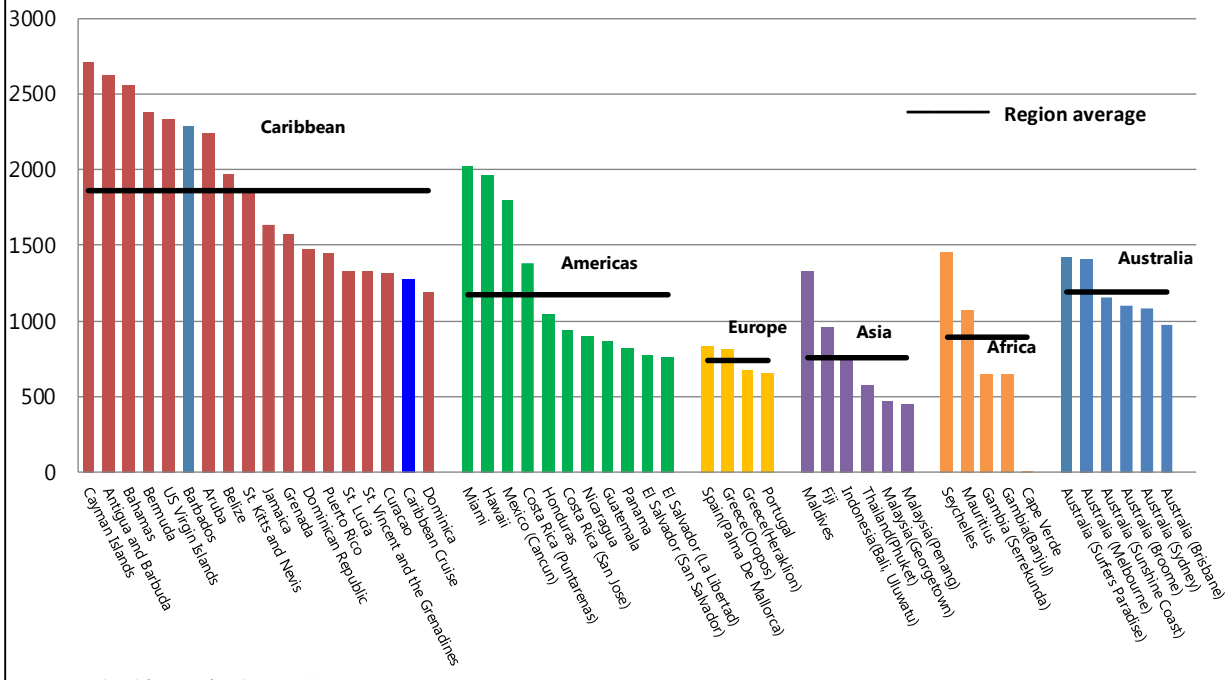
18. **The authorities are also making efforts to improve the compilation of tourism data.** The BTPA has drafted some changes to the regulations to require all places offering tourism accommodation to report data. This has been submitted to the Ministry of Tourism and following review and white paper, would be submitted to cabinet.

E. Policy Recommendations

19. **Tourism strategy could focus on sustainably increasing tourism arrivals while ensuring the net earnings from tourism remain high.** This is particularly important given Barbados size and limit to its expansions. Hence, the strategy could include measures to attract higher spending visitors, including through marketing campaigns by targeting "active vacationers" as well as those that "lounge" on the beach. A corollary of this is continuing to enhance the "tourism experience" through wider selection of attractions and activities to undertake on island. It also suggests the need to remain competitive, there is need to continue enhancing the quality of the tourism product offered (see Laframboise et al (2014). Barbados is relatively more expensive than other destinations (Figure 6), including other Caribbean islands, with higher weekly expense and average hotel cost (see Laframboise et al, 2014 for discussion on methodology). This could help to maintain high returns from tourism as long as the recovery of numbers of visitors continues. This is particularly important as tourism development has costs, including the infrastructure (e.g., airports, sewers, water) and the training of human capital to support the tourism product. In addition, as noted in Acevedo (2016), Laframboise et al (2014), and Mwase (2013), airline accessibility could also help enhance tourism performance.

[15] https://www.airbnb.com/help/article/653/in-what-areas-is-occupancy-tax-collection-and-remittance-by-airbnb-available

Figure 6. Week at the Beach Index—Jan 9-16, 2016
(In US dollars)



Source: Updated from "Laframboise et al., 2014."
1/Room rate: see"http://www.travelocity.com/", average room rate is from Jan 9-Jan 16 2016, access date: Dec 3, 2015
2/Taxi, Meals, Water, Beer, Coffee: see"http://www.numbeo.com/cost-of-living/"an "http://www.worldcabfares.com/index.php", access date: Dec 3, 2015
3/Total Cost without Tax: 7 * (3 star hotel) + 2 * (average taxi ride from main international airport to capital city) + 7 * (1 inexpensive meal + 2 mid-range meals) + 7 * 2 liters water + 7 * 0.5 liter beer + 7 * regular coffee
4/ Caribbean Cruise based on cost of an All-Inclusive 7-day average rate in February

20. **In addition, to better understand trends in tourism, it is critical that efforts to improve the data are intensified.** Without reliable data it is difficult to understand real developments, and identify where policy actions are needed.

- Completing the tourism satellite accounts is key to improving data collection. This project has faced delays due in part to lack of sufficient human and financial resources. There is tension between collecting accurate information (including on tourism labor and investment) and publishing the data already available. The data could provide a useful information base to analyze potential consequences and an analytical tool for proactive policy responses to various tourism strategy scenarios. The Ministry of Tourism has indicated that an officer has been assigned to this task and work is slated to begin shortly.

- Central to improving data on tourism is to provide appropriate incentives for respondents to provide accurate information. Continued efforts should be made to collect data on tourism flows to online sharing platforms, villas and other accommodation flows, through provision of appropriate incentives to self-report, including revising the regulations to require all tourism accommodation provides to report their services. In addition, to help support macroeconomic policy analysis, efforts (including understanding of the balance of payments) could be made to better capture actual "spending" in the country.

F. Conclusions

21. **Despite the rebound in tourism arrivals, average expenditure per tourist in Barbados has declined in recent years.** The drop in average expenditure per tourist appears to reflect lower room rental rates, which may be in response to increased competition from nontraditional accommodation sources (including online sharing platforms like HomeAway and Airbnb), and lower costs arising in part from real wage freeze, lower import prices, and lower taxes. Notwithstanding this fall, total tourism expenditure growth has remained positive, occupancy rates remain broadly stable and demand (and supply) for accommodation remains high. Hence, the lower average spending is not inconsistent with a continued economic recover. Nevertheless, going forward, the policy focus should continue to be on building the tourism sector, by diversifying and enhancing the tourism product. The limited size of the Island points to the need to continue to concentrate on increasing average spending as well as total spending, while maintaining the Island's relative competitiveness in the high-end of the tourism market.

Annex I. Understanding Barbados Tourism Statistics

1. **To better understand the recent trends in tourism flows, it is important to understand the coverage and compilation of the data.** This analysis focuses on stayover tourism visitors. There are two types of visitors: tourists and same day visitors. These are distinguished from other residents by the length of stay. While the international best practice (UN-WTO definition) is that tourists are visitors staying at least 24 hours—but less than 365 days—and same-day visitors are visitors staying less than 24 hours, within the Caribbean the definition varies. Barbados applies a narrower definition for tourists, with a reduced maximum cutoff period of 6 months.[1] Within these categories there are special categories: cruise passengers are a special type of same-day visitor (even if the ship overnights at the port) while yacht visitors are either tourist (stayover) or same day population based on their length of stay. Bajan nationals that are permanently resident abroad are categorized as tourists if they return for the reasons above.

2. **The Barbados Statistical Services (BSS) compiles data on arrivals based on the immigration forms that all persons entering Barbados must complete.** All person arriving in Barbados are captured as long as they exit the airport (i.e., clear immigration). This implies that regardless of how the visitors enter Barbados (e.g., private jets), where they plan to stay (e.g., with family and friends), or length of stay (e.g., over 28 days), all non-residents that clear immigration (and therefore complete an "embarkation-disembarkation card" (ED-card) are counted as visitors to Barbados.[2] Griffith (2009) notes that visitor statistics compiled in this manner cover the entire population and that this statistical distribution is preferable to that coming from a sample survey, since it is free of sampling error which is inevitable in a sampling distribution.

3. **Information from the immigration forms is used to classify visitors by purpose of visit and other categories.** The ED-cards include questions on the purpose of visit, place of residence and the expected/intended length of stay. Purpose of visit of tourists is decomposed into "business", "pleasure/holiday/vacation", "visit friends/relatives" and "other". This information is used by the BSS to classify tourists and calculate the average length of stay. The BSS defines average length of stay as "the number of beds occupied (bed nights) divided by the number of registrations over the same period". Tourist arrivals are analogous to the number of registrations. According to Griffith (2009), the available evidence suggests that expected length of stay in reality does not depart significantly from the actual length of stay.

4. **The Caribbean Tourism Organization (CTO) estimates tourism expenditures based on surveys it conducts of select persons at the exit ports.** The CTO conducts monthly surveys—seven days consecutively for all one week-during periods when flights (and cruise ships and yachts) are

[1] The 6-month definition is used to distinguish tourists from persons resident in the country for the purposes of the census. Immigration officers would usually stamp visitors E-D cards for periods less than 6 months. If a visitor wishes to stay in the country for a longer period, the individual would normally need a work permit or a student visa, unless they are classified as diplomatic personnel.

[2] Visitors going from one flight to another but not going outside of the airport (connecting) are not considered tourist arrivals. See Wright et al, 2011

departing from Barbados. The expenditure surveys are limited to persons that have spent more than 24 hours in Barbados and that are in the main airport/cruise departure section. Similar to many other countries, persons travelling by private jet are excluded from the expenditure surveys in Barbados; the CTO notes their expenditure is not typical of the average tourist spending due to small percentage of persons arriving in this way and their high net worth. Moreover, these type of visitors are not present in departure lounges—which is where the surveys are conducted—as they typically arrive and go through a different area of the airport and proceed straight to their plane. For pre-package visitors, the CTO typically obtains background information from tour operators regarding the cost of various goods and services in the package.

5. **Average expenditure for stayover tourist is computed based on the self-reported spending of the visitor.** Specifically, the CTO estimates the average daily spending of visitors using information on total spending based of the expenditure survey and total number of visitor arrivals provided by the ED-card data. Average expenditure per visitor is a weighted by country of residence, length of stay, and type of accommodation.

6. **The CBB estimates travel receipts for the balance of payments using expenditure data from the CTO complemented by other travel data.** Specifically, it augments the tourism travel receipts with data on spending on health and education travel of non-residents that visit Barbados for these services.

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