Making a Case for Investment in Universal Childcare in Barbados

UNITED NATIONS
Barbados & the Eastern Caribbean
Anguilla • Antigua and Barbuda • British Virgin Islands • Commonwealth of Dominica • Grenada • Montserrat • Saint Lucia • Saint Kitts and Nevis • Saint Vincent and the Grenadines • OECS

JOINT SDG FUND

UN WOMEN

United Nations Entity for Gender Equality and the Empowerment of Women (UN Women)

UN Women is the United Nations organization dedicated to gender equality and the empowerment of women. A global champion for women and girls, UN Women was established to accelerate progress on meeting their needs worldwide. UN Women supports UN Member States as they set global standards for achieving gender equality and works with governments and civil society to design laws, policies, programmes and services needed to implement these standards. It stands behind women's equal participation in all aspects of life, focusing on five priority areas: increasing women's leadership and participation; ending violence against women; engaging women in all aspects of peace and security processes; enhancing women's economic empowerment; and making gender equality central to national development planning and budgeting. UN Women also coordinates and promotes the UN system's work in advancing gender equality.

Authors
Dr. Mahalia Jackman, PhD and Dr. Simon Naitram, PhD
Editor
Dr. Robin Haarr, PhD
UN Women Proofreading
Sharon Carter-Burke
UN Women Publications Coordination
Sharon Carter-Burke and Shadé Richardson
Graphic Designer
Vilmar Luiz

Making a Case for Investment in Universal Childcare in Barbados

UNITED NATIONS
Barbados & the Eastern Caribbean
Anguilla • Antigua and Barbuda • British Virgin Islands • Commonwealth of Dominica • Grenada • Montserrat • Saint Lucia • Saint Kitts and Nevis • Saint Vincent and the Grenadines • OECS

JOINT SDG FUND

UN WOMEN

Contents

Acknowledgements

Several officials at the Barbados Child Care Board assisted with the collection of current and unpublished data and made themselves available for consultations to ensure the accuracy of the information. The authors would like to thank them for their excellent guidance, insights and support.

A special thank you to the UN Women officials and consultants who generously gave their time and provided technical comments on drafted sections, chief among whom were: Isiuwa Iyahen, Debbie Budlender and Silke Staab.

Acronyms

BBD	Barbados Dollar
BERT	Barbados Economic Recovery and Transformation
BSLC	Barbados Survey of Living Conditions
CCB	Child Care Board
COVID-19	Coronavirus disease 2019
CSEC	Caribbean Secondary Education Certificates
ECCU	Eastern Caribbean Currency Union
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GoB	Government of Barbados
IMF	International Monetary Fund
MoE	Ministry of Education
SDG	Sustainable Development Goal
UN	United Nations

Executive Summary

This report makes an argument for public investment in universal childcare in Barbados; specifically, it explores the potential effects and benefits of investing in universal childcare. Effective provision of universal childcare is defined as one that eliminates barriers to equitable access and participation.

In Barbados, the childcare services market consists of both public and private childcare service providers. There are 15 public, government-run day care centres, which are heavily subsidised by the government. The price of public childcare is BBD 20 per week, less than 15 per cent of the total per-user childcare costs to government. Government spending on childcare represented less than 0.3 per cent of total government expenditures between 2017 and 2019. All 15 centres operate at full capacity and each childcare centre has several children on the waitlist. In 2019, 1,952 children were awaiting entry into public childcare centres, meaning that public childcare centres satisfied less than 40 per cent of the total demand; thus, government intervention in the childcare market is insufficient. Meanwhile, private childcare centres operate well below full capacity, but the cost of private childcare in Barbados is prohibitively high. On average, the price of private childcare for households in the lowest income quintile is equal to nearly 30 per cent of their gross income.

Focus group discussions with parents and guardians, including those on waitlists, revealed that the price of the service was the leading factor in their choice of public childcare. Current and past users of childcare centres consider public childcare centres to be of high quality. All focus group participants agreed that there was a need for more public childcare centres, as private childcare is unaffordable for many. In terms of funding childcare services, most users were willing to pay more than the current fee at public childcare institutions (i.e., at least 75 per cent more), but well below the per-user operating costs. This would suggest that universal childcare in Barbados hinges on public investment.

Within the context of Barbados, various scenarios for achieving universal access and their macroeconomic impacts are explored. There are two main ways that the government can provide increased childcare services: 1) direct intervention in the childcare market by increasing the number of public childcare centres; and 2) indirect intervention in the private childcare market.

With respect to direct intervention, three scenarios of expanded public capacity are explored: 1) increase capacity to cover existing excess demand; 2) increase capacity so that 50 per cent of children up to the age of three can be enrolled in public childcare services; and 3) increase capacity to ensure a public or

private space is available for every child aged three and under. With respect to indirect interventions, data are analysed to consider the case where the government offers subsidies that are 20 per cent, 40 per cent, 60 per cent, 80 per cent or 99 per cent of the median price of private childcare.

At the aggregate level, increases in public investment in childcare will have a range of short- and long-term effects. Although the analysis was constrained by data availability, estimates are provided on the short-term effects of public investment via its impact on labour market outcomes for parents, domestic consumption and the fiscal balance[1], as well as the long-term effects; these estimates are used to build per annum benefit-cost ratios.

Simulation analysis suggests that any public investment in childcare will have a positive net benefit to society. Expanding public childcare through direct intervention in a similar method to what is currently provided is expected to generate a BBD 1.4 to 1.7 benefit per dollar spent in the short-term. Over the long-term, this increases to a BBD 2.5 to 2.9 benefit per dollar spent. The estimated benefit-cost ratios are even greater when the government offers subsidies, as the cost of increasing take-up of formal childcare is much lower. The short-term benefits are between BBD 2.6 and 7.6 for each net dollar spent, whereas the long-term benefits rise to BBD 2.9 and 9.5 for each net dollar spent.

The analysis also suggests that there will likely be spillover effects on gender equality and poverty. In other words, increased access to affordable childcare is likely to reduce the unpaid childcare burden on women and increase their employment prospects, which may reduce the earning gap between men and women. Increases in women's income earning opportunities are likely to translate into higher standards of living and reduction in poverty.

A key concern regarding universal childcare in Barbados is financing such an endeavor. Barbados' status as a high-income country means it is not eligible for most overseas development assistance, which many countries use to expand their social services. Moreover, the Government of Barbados (GoB) is significantly fiscally constrained. The main policy recommendation from this study is that in the absence of sufficient funds, partial (and targeted) expansion of childcare services should be considered. Findings suggest that even moderate expansion of childcare services can have significant macroeconomic impacts, specifically if expansion of childcare services are targeted.

A moderate increase in the price of public childcare services could increase the Government's ability to invest in childcare. In fact, most parents were comfortable with moderate increases in the price of childcare. An increase in the price would reduce the long-term net fiscal cost to the Government; however, there would be a small subset of parents who would not be able to afford a price increase. Thus, consideration could be given to a progressive fee structure.

It is worth noting that direct and indirect intervention in the childcare market has its own set of costs and benefits. Increasing public childcare requires administrative capacity, but the Government can rely upon existing systems. In contrast, new subsidies might need to be administered via the existing income

1 Fiscal balance or government budget balance is calculated as the difference between a government's revenues (taxes and proceeds from asset sales) and its expenditures; it is often expressed as a ratio of the Gross Domestic Product (GDP).

tax system and welfare system, and through the national insurance system, or via some new structure. Should the GoB choose to subsidise private childcare, there must be a focus on quality. Expanding public childcare is the best way for the GoB to ensure the provision of high-quality childcare. The GoB can also consider regulatory or incentive-based approaches to improve the quality of private childcare, particularly if the Government chooses to subsidise private childcare.

Finally, consideration could be given to providing incentives for employer-supported childcare. The burden of expanding childcare does not have to lie solely on the Government, as more can be done through a collaboration between the Government and businesses to provide employer-supported childcare.

Introduction

In recent years, there has been substantial effort to increase public childcare provision in Barbados. The coronavirus disease 2019 (COVID-19) pandemic has led to a re-emergence of discussion about the need for affordable, high-quality childcare. Many parents struggle with the increased demands of childcare and paid employment brought about by government-imposed measures, such as school closures and 'stay at home' orders.[2] This study makes an argument for public investment in universal childcare in Barbados. Universal childcare does not necessarily mean achieving full coverage, but implies making childcare accessible to all children whose parents wish for them to participate.[3] Universal childcare should not be equated with free childcare or even compulsory childcare, rather it suggests that an effective universal childcare service eliminates barriers to equitable access and participation.

Background

Barbados is a small English-speaking island country in the Caribbean. Barbados is 430 km^2 (166 square miles) in area and divided into 11 subregions, called parishes. In 2020, the population of Barbados was estimated to be 287,375[4], up from 277,821 in the 2010 Population and Housing Census.[5] The majority of the population is of African descent (over 90 per cent). Like many Small Island Developing States (SIDS), Barbados has limited natural resources, a small domestic market, limitations on its import substitution possibilities and weak inter-industry linkages.[6] This translates into a high import content relative to the country's Gross Domestic Product (GDP), making the economy very dependent on foreign earnings, particularly tourism, to pay for its large import bills and to spur economic growth.[7] Despite these

2 Gromada, A., D. Richardson & G. Rees (2020), *Childcare in a Global Crisis: The Impact of COVID-19 on Work and Family Life.* Innocent Research Brief No. 2020–18, UNICEF.

3 Bennett, J. (2008). *Early Childhood Services in the OECD Countries: Review of the Literature and Current Policy in the Early Childhood Field.* UNICEF: New York, NY, USA.

4 Economic Commission for Latin America and the Caribbean (ECLAC). Retrieved on 6 November 2021 from: Population estimates and projections: Excel tables | Economic Commission for Latin America and the Caribbean (cepal.org)

5 Barbados Statistical Service (2013). *2010 Population and Housing Census Volume 1.* Barbados Statistical Service: Bridgetown, Barbados.

6 Worrell, D. (2020). An alternative policy approach to growth and stabilization in small open economies. In *Handbook of Caribbean Economies* (pp. 11-20), Routledge: New York, NY, USA; Briguglio, L. (1995). Small island developing states and their economic vulnerabilities. *World Development*, Vol. 23, No. 9, pp. 1615–1632.

7 Worrell, D. (2020). Why and how to use fiscal policy to target the exchange rate. In *Handbook of Caribbean Economies* (pp. 161-179). Routledge: New York, NY, USA; Worrell, D. (2020). An alternative policy approach to growth and stabilization in small open economies. In *Handbook of Caribbean Economies* (pp. 11-20). Routledge: New York, NY, USA; Worrell, D. & S. Lowe (2013). Growth Forecasts for Foreign Exchange Constrained Economies. *Journal of Business, Finance and Economics in Emerging Economies*, Vol. 8, No. 1, pp. 1–25; Worrell, D. (2012). *Policies for Stabilization and Growth in Small Very Open Economies.* Group of 30: Washington, DC, USA.

challenges, Barbados is currently classified as a high-income country[8] with very high levels of human development.[9] These achievements are largely reflective of the country's strong political system, sound policies and a well-functioning social system, which includes: universal coverage of education at the primary, secondary and tertiary levels; universal health care coverage; home care programmes for the elderly; free public transportation for school children in uniform; a national insurance scheme; a child maintenance fund to aid single mothers; and a heavily subsidised childcare programme.

The GoB provides tuition-free education at the primary, secondary and tertiary levels. According to Section 41A of the Education Act, education is compulsory for children aged 5 to 16, meaning that preschool education is not mandatory. There are, however, policies in place aimed at facilitating affordable early childhood care and preschool education. In Barbados, early childhood care and preschool education largely fall under two categories: 1) day care centres aimed at children under the age of five; and 2) pre-primary schools for children aged three to five, spanning two instructional grades known as nursery and reception. As of 2016, there were 113 schools offering pre-primary school education, of which 77 were public schools.[10]

The GoB's commitment to affordable and accessible pre-primary education has resulted in high pre-primary school enrolment rates; as of 2015/2016, the net enrolment rate was 78 per cent for boys and 76 per cent for girls.[11] Access to formal childcare, however, presents a relatively worse picture. Despite successive government interventions, early childcare provision in Barbados remains insufficient. An analysis of available data on childcare provision in Barbados points to a lack of childcare centres for children under four years of age. In 2019, the total capacity of public and private childcare centres could accommodate less than 50 per cent of the population of children under four years of age. Moreover, the number of children registered and waiting for placement in public childcare centres exceeded the Government's capacity. Supply-side constraints point to a need for increased investment in formal childcare services.

Achieving universal childcare hinges on public investment as low-income families cannot typically afford childcare services offered by the private sector. A key concern regarding universal childcare in Barbados is financing such an endeavour. Barbados' status as a high-income country means that it is not eligible for most overseas development assistance, which many countries use to expand their social services; thus, the main concern is whether Barbados has enough fiscal space to expand childcare services.

In June 2018, the GoB entered an International Monetary Fund (IMF)-approved macroeconomic restructuring plan, known as the Barbados Economic Recovery and Transformation (BERT) Plan. The BERT Plan sought to restore macroeconomic stability after the fall out from the 2008/2009 global financial crisis. Barbados' fiscal position was most notably unsustainable, with the central government debt-to-GDP ratio reaching as high as 157 per cent in 2017.[12] The BERT Plan's short-term (four years) targets

8 Retrieved on 6 November 2021 from: Barbados | Data (worldbank.org)
9 United Nations Development Programme Human Development Reports - Barbados. Retrieved on 6 November 2021 from: | Human Development Reports (undp.org)
10 Ministry of Education, Science, Technology and Innovation (2017). *2015-2016 Statistics on Education in Barbados at a Glance.* Ministry of Education, Science, Technology and Innovation: Saint Michael, Barbados.
11 Ibid, 2017.
12 International Monetary Fund (2018). *IMF Country Report No. 18 /290 Barbados.* International Monetary Fund: Washington, DC, USA.

included a primary surplus to the tune of six per cent of GDP, a fiscal surplus equivalent to 2.4 per cent of GDP and a central government debt-to-GDP ratio of 95 per cent.

Barbados made significant progress in the first year of the BERT Plan. World Bank data indicates that by the end of 2019, Barbados reported a fiscal surplus to the tune of 3.8 per cent of GDP and a primary balance surplus equating to 6.3 per cent of GDP. The COVID-19 pandemic, however, significantly stalled the country's progress. Worldwide shutdowns led to a significant fall-off in travel and tourism revenues – the mainstay of the Barbadian economy.[13] National curfews and lockdown measures further constrained economic activity. In 2020, Barbados experienced an 18 per cent decline in GDP, a reduced primary balance and a climbing debt-to-GDP ratio (up to 144 per cent of GDP).[14] Given these developments, the IMF revised the BERT Plan targets; the GoB is targeting a primary balance of 0 for 2021/2022. Given the current situation, it is not surprising that there are concerns regarding increased public expenditures.

Rationale

While fiscal consolidation is imperative for macroeconomic stability, it should not come at the expense of childcare provision – one of the key bedrocks of any social infrastructure. Several studies suggest that public investment in universal childcare could bring several economic and social benefits, and can aid countries in meeting multiple targets of the 2030 Agenda for Sustainable Development. This includes targets related to each of the following Sustainable Development Goals (SDGs):

- SDG 1 – End poverty in all its forms everywhere
- SDG 3 – Ensure healthy lives and promote well-being for all at all ages
- SDG 4 – Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- SDG 5 – Achieve gender equality and empower women and girls
- SDG 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- SDG 10 – Reduce inequality within and among countries

It is well documented that early childcare is integral to child development and well-being.[15] Studies have shown that childcare is most beneficial to impoverished children, thus improving their life chances and promoting inclusion.[16] Research also suggests that accessible or affordable childcare services can

13 According to the World Travel Tourism Council, in 2019, travel and tourism's total contribution to Barbados' GDP was 29.6 per cent of the total economy; by 2020, given the impact of the COVID-19 pandemic, travel and tourism's total contribution to Barbados' GDP declined to 17.9 per cent of the total economy. This change represented a 53.5 per cent change in travel and tourism GDP versus a 23.1 per cent real economy GDP change. Retrieved on 6 November 2021: Barbados2021_ (1).pdf

14 Statistics taken from the Central Bank of Barbados' Review of the Economy in 2020.

15 Addati, L., U. Cattaneo, V. Esquivel & I. Valarino (2018). *Care Work and Care Jobs for the Future of Decent Work.* International Labour Office: Geneva, Switzerland; Dearing, E., H.D. Zachrisson & A. Nærde (2015). Age of entry into early childhood education and care as a predictor of aggression: faint and fading associations for young Norwegian children. *Psychological Science*, Vol. 26, No. 10, pp. 1595-1607; Ilkkaracan, I., K. Kim & T. Kaya (2015). *The Impact of Public Investment in Social Care Services on Employment, Gender Equality, and Poverty: The Turkish Case.* Istanbul Technical University: Istanbul, Turkey.

16 Çağatay, N., I Ilkkaracan & B. Sadasivam (2017). *Investing in Social Care for Gender Equality and Inclusive Growth in Europe and Central Asia*, Policy Brief No. 2017/01. UN Women Europe and Central Asia Regional Office: Istanbul, Turkey.

reduce gender inequality.[17] Studies have also found that low-quality childcare can have adverse effects on a child's cognitive development, academic success, health and social behaviours.[18]

Globally, childcare is not shared equally between parents; mothers spend a disproportionate amount of time caring for their children, compared to fathers.[19] The unequal distribution of childcare responsibilities among parents, coupled with inadequate or unaffordable childcare services, places significant constraints on women's availability for paid employment, and puts immense pressure on women to select jobs with hours that can be readily integrated into familial responsibilities. This, in turn, significantly affects the type and quality of work women can access.[20] The unequal distribution of childcare is often cited as a systemic source of gender inequality in the labour market, contributing to gender gaps in labour force participation and wages, as well as occupational segregation. For instance, in Turkey, an estimated TRY 20.7 billion (1.2 per cent of GDP) increase in expenditures on childcare centres and preschools, has the potential of generating 719,000 new jobs, of which 73 per cent went to women.[21] In contrast, the same level of investment in construction created only 290,000 jobs, most of which went to men, thereby exacerbating the gender labour force participation gap. When expansion of childcare availability targets disadvantaged households, the policy has the potential of reducing the relative poverty rate by as much as 1.1 per centage points.[22]

Purpose of the Study

This purpose of this study is to contribute to the policy debate on public investment in universal childcare in Barbados. In keeping with this purpose, this study aims to: document and analyse current expenditures for public childcare; evaluate accessibility of public childcare services (i.e., capacity, affordability, spatial distribution and selection processes); assess users' and applicants' perceptions of public childcare services in Barbados; evaluate the potential macroeconomic impacts of large-scale expansion of subsidised childcare; and formulate policy recommendations to boost public investment in childcare provision without draining public finances.

17 De Henau, J. (2019). *Employment and Fiscal Effects of Investing in Universal Childcare: A Macro-Micro Simulation Analysis for the UK,* IKD Working Paper No. 83. The Open University; Çağatay, N., I Ilkkaracan & B. Sadasivam (2017). *Investing in Social Care for Gender Equality and Inclusive Growth in Europe and Central Asia*, Policy Brief No. 2017/01. UN Women Europe and Central Asia Regional Office: Istanbul, Turkey.

18 Mateo Díaz, M. & L. Rodriguez-Chamussy (2016). *Cashing in on Education: Women, Childcare, and Prosperity in Latin America and the Caribbean* The World Bank: Washington, DC, USA

19 Samman, E., E. Presler-Marshall, N. Jones, T. Bhatkal, C. Melamed, M. Stavropoulou & J. Wallace (2016). *Women's Work: Mothers, Children and the Global Childcare Crisis*. Overseas Development Institute: London, UK.

20 Addati, L., U. Cattaneo, V. Esquivel & I. Valarino (2018). *Care Work and Care Jobs for the Future of Decent Work.* International Labour Office: Geneva, Switzerland.

21 Ilkkaracan, I., K. Kim & T. Kaya (2015). *The Impact of Public Investment in Social Care Services on Employment, Gender Equality, and Poverty: The Turkish Case.* Istanbul Technical University: Istanbul, Turkey.

22 Ibid, 2015.

Methodological Approach

Lack of data at both the macro- and micro-levels served as the main challenge for empirical analyses of the impact of childcare provision in Barbados. Gaining access to public sector data was a particular challenge, as many government-run childcare institutions still have paper-based record-keeping systems. Poor organisation and storage procedures meant that requisite historical public data could not be obtained. Moreover, the COVID-19 pandemic-related lockdown measures, stay-at-home orders and social distancing measures affected the data collection process. The inability to access data placed significant constraints on the methods employed and, by extension, the depth of the analysis that could be undertaken. As such, the methodological approach was influenced by the availability of data.
A mixed-methods approach was used in this study. The methods used to meet the study's objectives are detailed below and consist mainly of a desk review, focus group discussions (FGDs), key stakeholder interviews, and descriptive and regression analyses of available data. A simulation analyses was also conducted to estimate the cost for an increase in public childcare services in Barbados, with the aim of achieving universal childcare.

Desk Review

The desk review focused on collecting and analysing secondary data and information from key documents and reports related to: expenditures on public childcare services; labour market outcomes and national accounts; number of children enrolled and on waitlists in public and private childcare centres; prices charged by each registered private childcare facility; applicants to public childcare centres and the outcomes of their applications; policies, strategies, plans and legislation linked to childcare in Barbados; current work of regional and sub-regional organisations, and national, regional, international and multilateral funding agencies related to childcare financed with public resources.

Focus Group Discussions

FGDs were used to collect primary data on beneficiaries and applicants assigned to waitlists for public childcare services, with a focus on their perceptions and experiences with public childcare services in

Barbados. Three virtual FGDs were conducted via Zoom between 5-6 February 2021.[23] Initially, the plan was to include 18 participants, including six past, six current and six prospective (currently on a waitlist) public childcare users. Child Care Board (CCB) representatives identified 18 mothers from four public childcare centres who volunteered to participate in the study. Although their participation was confirmed via telephone and email, only 14 mothers attended the three virtual FGDs. The 14 mothers were organized into three different focus groups:

- FGD 1 – Four mothers with a child(ren) on a waitlist for entry in a public childcare centre
- FGD 2 – Five mothers with a child(ren) enrolled in public childcare services
- FGD 3 – Five mothers with a child(ren) previously enrolled in public childcare services

The benefit of having a small number of participants in each FGD was that each participant had the opportunity to share their experiences in detail.

Table 1 provides demographic data for the mothers who participated in the FGDs. All participants ranged in age from 25 to 44 years and had a secondary education, and 57 per cent had completed a tertiary education. The majority of mothers were employed at the time of the study (79 per cent), and 57 per cent were single; only 21 per cent were unemployed and 36 per cent were married.

Table 1. FGD participants

Participant	Group	Age Group (Years)	Highest Education (Completed)	Employment Status	Marital Status
1	Waitlist	25 – 29	Tertiary	Employed	Single
2	Waitlist	25 – 29	Secondary	Employed	Single
3	Waitlist	30 – 34	Secondary	Employed	Single
4	Waitlist	30 – 34	Tertiary	Unemployed	Single
5	Present user	25 – 29	Secondary	Unemployed	Married
6	Present user	30 – 34	Tertiary	Employed	n/a
7	Present user	35 – 39	Tertiary	Unemployed	Single
8	Present user	35 – 39	Tertiary	Employed	Married
9	Present user	40 – 44	Secondary	Employed	Married
10	Past user	30 – 34	Tertiary	Employed	Single
11	Past user	30 – 34	Secondary	Employed	Single
12	Past user	35 – 39	Tertiary	Employed	Married
13	Past user	40 – 44	Tertiary	Employed	Married
14	Past user	40 – 44	Secondary	Employed	Single

23 FGDs were conducted online due to the COVID-19 pandemic.

Moderators conducting the FGDs used a structured FGD guide (**Box 1**). On average, FGDs lasted 45- 60 minutes and were recorded with the permission of participants; after which, recordings were transcribed.

Box 1. Topics covered in FGDs by type of FGD

Topic list	FGD1 Waitlist	FGD2 Present user	FGD3 Past user
What are the main factors that influenced your childcare choices?	✓	✓	✓
What are your views on the application process?	✓	✓	✓
What are your perceptions of the criteria for child placement in public childcare?	✓	✓	✓
How long have you been on the waitlist?	✓		
What alternatives to public childcare are you currently using?	✓		
What alternative childcare options would you have used if they could not access public childcare services?		✓	✓
What do you perceive as the usefulness of public childcare services in Barbados?	✓	✓	✓
What are your views on the number of places available in public childcare centres in Barbados?	✓	✓	✓
What are your views on the quality of services being provided by public childcare centres?		✓	✓
What are your views on current prices of public childcare?	✓	✓	✓
How much are you willing to pay for public childcare services?	✓	✓	✓

Key Stakeholder Interviews

Semi-structured interviews were conducted with CCB representatives. Interviews focused on information related to government-run childcare centres' capacities to meet current demands, as well as their views on the importance of scaling up investment and the challenges that would be faced in doing so. Interviews were also used to fill data gaps and to identify inconsistencies in data.

Simulations

A central barrier to accessing childcare in Barbados is cost. The definition of universal childcare used in this study was that everyone has access to affordable childcare. This statement does not in itself provide a specific quantitative target, however, everyone should have an option to choose whether they pay for childcare or not. At any non-zero price, it may be potentially unaffordable for some. Thus, the quantitative definition of 'universal' that guided this research was along the lines of 'with capacity for all at prices

affordable to each'. This could involve differentiated pricing options based upon defined acceptable thresholds for affordable childcare services (this will be detailed in later sections).

In the context of Barbados, three coverage scenarios were proposed for an increase in public childcare spaces.

- Scenario 1: Current public capacity cannot meet demand, as evidenced by the number of persons on the waitlists. This means that at present, there is a subset of the population that would like to use public childcare services, but is unable to do so. At a minimum, the definition of universal childcare means that the waitlist of public childcare services would be zero. This forms the first scenario where public capacity is increased to the point that expressed excess demand for public childcare services is met.

- Scenario 2: Capacity is increased such that 50 per cent of children up to the age of three can be enrolled in public childcare services.

- Scenario 3: Capacity is increased so that all children up to the age of three can be enrolled in a formal public or private childcare programme. This option gives the largest potential sum of money the government would need to spend on childcare services. This serves as the baseline against which to measure the aggregate social costs and benefits.

An alternative route to moving towards universal access to childcare is through indirect intervention. Here, the government subsidises private childcare services, making it more affordable. As childcare services become affordable, more individuals are expected to fill spaces in the private sector, and the private sector will adjust its capacity as demand dictates. The simulation also considers cases where the government offers subsidies that are 20 per cent, 40 per cent, 60 per cent, 80 per cent and 99 per cent of the median price of private childcare.

Measuring the Impact of Public Investment

At the aggregate level, increased public investment in childcare will have a range of possible short- and long-term effects. As previously mentioned, the analysis was constrained by a lack of data, however, estimates were provided on the short-term effects of public investment via its impact on labour market outcomes for parents/guardians, domestic consumption and the fiscal budget balance. Long-term effects were estimated to calculate per annum benefit-cost ratios.

- **Labour market effects:** The most attractive intended outcome of increased childcare is an expected increase in labour supply of parents/guardians, particularly women, as women are often the primary caregivers. A parent/guardian faces the choice of acting as the primary caregiver for a child or enrolling the child in formal childcare services while entering the labour market. In taking up formal childcare services, the parent/guardian pays a price (***p***) and receives an income (***w***) with probability (***x***). The increase in the individual income is therefore expected to increase by ***wx*** – ***p***. The expected increase in income is a critical measure of the labour market effect created by formal childcare services. Aggregate formal economic activity increases by the sum increased labour income ***wx*** and increased consumption of childcare services (***p***), which is calculated as ***wx*** + ***p***. But, when increased childcare

is provided by the government, formal childcare activity is reduced by the amount by which private childcare activity falls due to substitution away from private childcare and towards public childcare.

- **Consumption multiplier effect:** As noted above, there will be increases in aggregate income due to the increased employment of parents/guardians; in turn, this will increase domestic demand and have a beneficial impact on increased economic activity. Specifically, some fraction (***m***) of increased income is spent on domestic goods and services, including childcare services. If those in the domestic economy spend some fraction of that increase in demand on domestic goods and services, this eventually creates an increase in aggregate output in the amount of $y = (y \times x) / (1 - m)$.[24]

- **Fiscal costs:** The fees charged to parents/guardians are unlikely to be sufficient to cover the costs of universal public childcare; however, public investment will be necessary to reach this goal. As such, the first fiscal effect of expanding childcare is the increase in costs to the government. Whether expanding childcare through public childcare services, subsidies or tax credits, the government increases its fiscal outlay. This cost is defined as per child (***c***).

- **Fiscal revenues:** It is likely that there will be indirect fiscal benefits from the increase in aggregate output generated through new employment and the consumption multiplier effect. The increase in aggregate output (***y***) is taxable by the government through both direct and indirect taxation. Some share (***t***) of this increase accrues to the government. The total increase per child is $r = t \times y$, whereas the net fiscal benefit per child is $r - c$.

- **Long-term benefits:** Formal childcare services have several long-term impacts on parents/guardians and children. The impact on children can be either positive or negative and depends on the quality of formal childcare. High-quality formal childcare generates long-term benefits, compared to the alternative of informal childcare arrangements.[25] The long-term benefits of high-quality childcare include increased labour income, better health outcomes and lower criminal activity; whereas low-quality childcare can have negative effects on children.[26] In terms of measurable economic impacts on parents/guardians, both types of childcare result in greater human capital accumulation of parents/guardians through continued employment and educational opportunities.[27]

- **Implications for gender equality and poverty:** The abovementioned estimates are used to investigate the possible spill-over effects on gender equality and poverty in Barbados.

24 The authors did not consider the 'public spending multiplier' effect since it is likely to be small in an open economy and offset by efficiency costs created by increased taxation required to fund public spending.

25 García, J.L., J.J. Heckman, D.E Leaf & M.J. Prados (2020). Quantifying the life-cycle benefits of an influential early-childhood program. *Journal of Political Economy*, Vol. 128, No. 7, pp. 2502–2541; Havnes, T. & M. Mogstad (2011). No child left behind: Subsidised child care and children's long-run outcomes. *American Economic Journal: Economic Policy*, Vol. 3, No. 2, pp. 97–129.

26 Baker, M., J. Gruber & K. Milligan (2008). Universal child care, maternal labor supply, and family well-being. *Journal of Political Economy*, Vol. 116, No. 4, pp. 709–745; Baker, M., J. Gruber & K. Milligan (2019). The long-run impacts of a universal child care program. *American Economic Journal: Economic Policy*, Vol. 11, No. 3, pp. 1–26.

27 In the case of a CAD $5 a day childcare policy in Quebec, Canada, there was an increase in labour supply of 7.7- percentage points (or 14.5 per cent of baseline participation) for married women, even though there were negative effects on children. At the same time, there was a reduction in the share of women working without childcare (i.e., using informal childcare) and an increase in the share of women working with childcare. One-third of the total increase in labour supply was a crowding out of informal care arrangements. See Baker, M., J. Gruber & K. Milligan (2008). Universal child care, maternal labor supply, and family well-being. *Journal of Political Economy*, Vol. 116, No. 4, pp. 709–745.

Assessment of Public Expenditures on Childcare Services in Barbados

This section provides an overview of public childcare services in Barbados, which are delivered through the CCB. The analysis begins with an overview of public childcare services in Barbados and follows with an overview of public expenditures for childcare services. The analysis of public expenditures was constrained by limited data; aside from staff costs, itemized data specific to childcare services were not readily available. Childcare expenditure data that were available were gathered for three fiscal years (2017/2018, 2018/2019 and 2019/2020), to the extent possible.

Overview of Public Childcare Services in Barbados

The CCB is the entity designated to execute the delivery of public childcare services, including registration, licensing and regulation of private daycare centres. The CCB is a statutory body established through the Child Care Board Act, Cap 381 in 1969 and amended in 1981. Before establishing the CCB, the GoB played an active role in providing childcare services.[28]

In Barbados, the establishment of government-run childcare centres was largely intertwined with industrialization, which led to a significant increase in women's labour force participation and housing development. The Barbados Pioneer Industries Act 1958-54 provides for the establishment and development of industries in Barbados on a substantial scale, and aid to give relief from income tax and custom duties.[29]

In the late 1950s and early 1960s, governmental interventions in the housing market were extended to ensure housing for Barbadians at affordable prices. Interventions included direct investment in the provision of low-cost housing, leading to the establishment of 'housing areas'. As housing areas developed, it became apparent that a majority of households in the housing areas were headed by single parents

28 The discussion on social services in the Caribbean should start with the Moyne Commission Report, which was published in 1945, when most English-speaking Caribbean countries were still British colonies. The Moyne Commission Report highlighted various social problems in the Caribbean, including a lack of adequate childcare and family services. Following this report, Commissioners called for an expansion in social services at both governmental and community levels to combat these social problems.

29 Stoffle, R. (1977). Industrial impact on family formation in Barbados, West Indies. *Ethnology*, Vol. 16 No. 3, pp. 253–267. Initially, the tax exemptions that were offered in the Act were insufficient to attract industry; therefore, several acts were passed in the early 1960s, which allowed for increased tax exemptions. The GoB also constructed full-service industrial sites and rented these spaces at a discounted rate. Ultimately, industrialization provided employment opportunities, particularly for women, who made up roughly 70 per cent of the factory workers in Barbados.

who did not have access to childcare; this served as a barrier for women's participation in the industrial revolution.[30] Supply-side restrictions on childcare affected not only women's employment prospects, but also negatively affected children. In some instances, children were left on their own or under the care and supervision of older children; as a result, older children missed school to care for their siblings while their mothers were at work.[31] In 1963, the first housing area childcare facility was established in the Pine housing area.[32] The housing area childcare facility was mandated to ensure the physical, emotional and intellectual well-being of children in attendance, in an effort to reconcile work and family life for mothers of young children, and to ensure women's labour force participation.[33]

By 1969, there were 12 childcare centres in operation across various government housing areas. The CCB took over these childcare centres upon its inception. Today, there are 15 government-run childcare centres, of which 14 are attached to housing areas. Each childcare centre has a learning centre with trained childcare officers who follow an early childhood education (ECE) syllabus.[34] For many young children, the childcare centres serve as the starting point in their education journey.

In its delivery of childcare, the CCB largely follows the Child Care Board Regulations of 1985. **Box 2** presents regulations related to qualifications for staff working at public childcare centres, along with requirements related to health, discipline of children, record-keeping, accidents, fire precautions and minimum staff-child ratios. Although not explicitly stated in the Child Care Board Regulations of 1985, the CCB maintains that each childcare centre must have one supervisor and one assistant supervisor. Each childcare centre should also have one cook and one general worker per 30 children. The size of a childcare centre also determines the number of children it can accommodate; the CCB requires a minimum of 22 square feet of floor space for each child in a public childcare facility.[35]

30 Edmonds, J. & C. Girvan (1973). Child care and family services in Barbados. *Social and Economic Studies*, Vol. 22, No. 2, pp. 229–248.
31 Edmonds, J. & C. Girvan (1973). Child care and family services in Barbados. *Social and Economic Studies*, Vol. 22, No. 2, pp. 229–248.
32 The Pine is a district in Barbados.
33 Edmonds, J. & C. Girvan (1973). Child care and family services in Barbados. *Social and Economic Studies*, Vol. 22, No. 2, pp. 229–248.
34 Downes, A.S. (2001), *An Analysis of Economic and Social Development in Barbados: A Model for Small Island Developing States*, The Economic Commission for Latin America and the Caribbean.
35 During Covid, the floor space per child increased to 25 square feet per child and capacity stood at 947.

Box 2. Child Care Board Regulations governing childcare centres

Staff qualifications of	Each staff member must produce a certificate of character and a medical certificate of fitness. Staff must have appropriate training and experience acceptable to the CCB. Although regulations do not dictate the exact training needed, the CCB maintains that nursery assistants must have, at the least, two Caribbean Secondary Education Certificates (CSECs), of which one must be English A, and a post-secondary certificate related to childcare and nursery management.
Staff health	In keeping with the Health Services (Food Hygiene) Regulation of 1969, every year, childcare staff must pass a medical examination, that includes a blood test, and receive an annual food handling certificate.
Medical requirements for children	To be enrolled, children must have a valid medical certificate and parents/guardians must give their consent to admit their child to a hospital in the event of a medical emergency. Children with an illness or disease that is likely to affect other children's health are not admitted to the nursery, and children absent for three or more days are not readmitted without a valid medical certificate.
Record-keeping	Childcare centres are required to keep the following information: child's name; parent/guardian's name; residential address of the family; parent/guardian's work address, if employed; parent/guardian's telephone number; and name and address of the family doctor, if any.
Serious injuries	In the event of a serious injury, the officer in-charge at the childcare centre is required to contact the CCB, who will inform the parent/guardian.
Fire precautions	The CCB is required to consult Fire Services on the precautionary measures that should be taken by staff and children in the event of a fire.
Staff-to-child ratio	For children *without disabilities* the required staff-to-child-ratio is one nursery assistant to six children aged 3-23 months and one nursery assistant to 12 children aged 2-5 years. For children with disabilities the required staff-to-child ratio: one supervisor to three children aged 0-23 months; one supervisor for 6 children aged 2-6 years; and one supervisor to eight children aged 6-12 years.

Source: Child Care Board Regulations of 1985

Public Expenditures for Childcare Services

Table 2 presents the CCB's expenditures for three fiscal years (2017/2018, 2018/2019 and 2019/2020). During the review period, the CCB's approved annual budget was an estimated BBD 20 to 21 million, and included childcare services and programmes related to adoption, foster care, child abuse and residential care for children (i.e., children's homes). From 2017-2019, expenditures for childcare services averaged

BBD 8.1 million and covered 1,090 children (less than 10 per cent of the under four population in Barbados). Since the infrastructure for childcare centres are government-owned, the largest operating expense is for staff, which accounts for 88.3 per cent of total childcare expenditures. Spending for childcare represents nearly 40 per cent of the CCB's budget, but less than 0.3 per cent of total government expenditure during these three fiscal years.

The data shows that the GoB invests more in education, health, social protection, and housing and community amenities, as evidenced by annual expenditures, but falls short with respect to expenditures on childcare services. Lack of expenditures related to childcare services raises questions about the priority given to childcare services, particularly in comparison to recreation, culture and religion, which accounted for 1.5 per cent of government expenditures in 2019, and is more than five times the amount allocated to public childcare services.

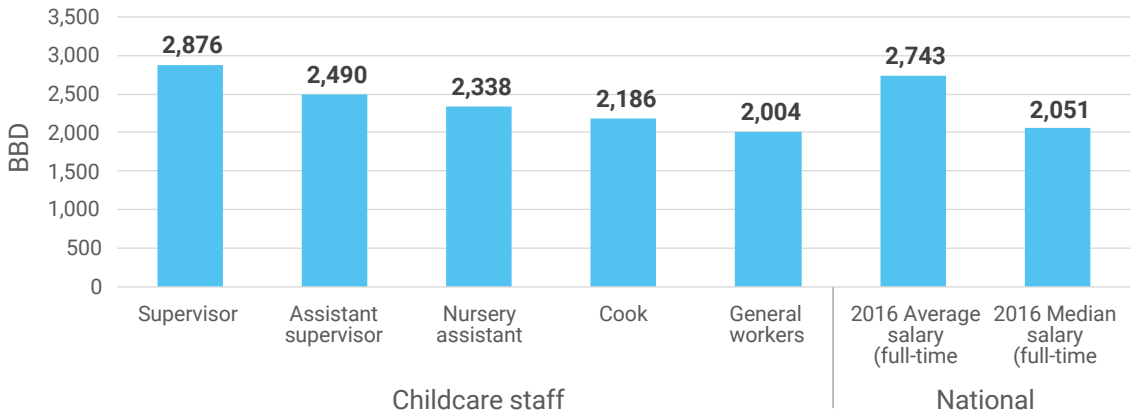
Table 2. Government expenditures for 2017/2018, 2018/2019 and 2019/2020

	2017/2018	2018/2019	2019/2020
No. enrolments in childcare centres	1,092	1,090	1,090
	BBD million	**BBD million**	**BBD million**
CCB's expenditures	20.0	20.2	21.1
Childcare services	7.7	8.2	8.5
Overhead staff costs for childcare programmes	6.8	n/a	n/a
Total government expenditures	4,542.2	3,220.1	2,887.5
General Public Services	2,173.9	797.9	785.0
Education	512.6	568.8	551.9
Social protection	410.5	404.1	405.9
Economic affairs	465.3	422.0	320.9
Health	318.4	324.1	310.1
Public order and safety	235.2	259.0	216.0
Housing and community amenities	158.3	164.8	110.7
Environmental protection	124.8	159.3	64.9
Defence	77.0	70.1	78.9
Recreation, culture and religion	66.1	50.2	43.3

na = not available; **Source:** Expenditure data was obtained from Barbados' approved estimates reports.

There are five categories of staff in each childcare centre – supervisors, assistant supervisors, nursery assistants, cooks and general workers. **Chart 1** shows the average salary for each of these categories of staff in 2019, compared to national average and median salaries in 2016. Salary is important because low wages can translate into high turnover and disruptions in childcare continuity. Salary data were not available for private childcare centres; however, in Barbados, there is evidence of a public sector premium where, on average, public workers earn more than those in the private sector.[36] Data shows that only supervisors earn above the national average salary; whereas the majority of childcare staff earn less than the national average salary, but more than the national median salary.

Chart 1. Average monthly salary of childcare staff (2019/2020) and national salary averages (2016)



Source: Childcare staff salaries were obtained from the Child Care Board. National average and median salaries were obtained from the 2016/2017 Barbados Survey of Living Conditions (BSLC, which is weighted).

In terms of financing, public childcare services are heavily subsidised. The price of public childcare in Barbados is BBD 20 per week, less than 15 per cent of the total per-user childcare costs to the Government (approximately BBD 144 per week).[37] The remaining costs are covered through government grants, which are largely financed by tax revenues. In other words, public childcare services are financed through a cost-sharing mechanism, in which parents pay less than 15 per cent of the cost, and the rest is shared broadly by the population through their tax contributions. This is appropriate as everyone benefits from quality childcare, as high-quality childcare has a positive impact on early childhood development and learning.[38] An investment in quality childcare is an investment in human capital and economic and social development of families, communities and society at-large.

36 Jackman, M. & M. Moore (2021). Does it pay to be green? An exploratory analysis of wage differentials between green and non-green industries. *Journal of Economics and Development*, Vol. 23, No. 3, pp. 284-298; Bellony, A., A. Hoyos & H. Ñopo (2011), *Gender Earnings Gaps in the Caribbean: Evidence from Barbados and Jamaica.* Inter-American Development Bank: Washington, DC USA; Coppin, A. (1996). Male and female earnings in the Caribbean economy of Barbados: A human capital perspective. *The Review of Black Political Economy*, Vol. 25, No. 2, pp. 61–75.

37 This figure is based upon data in Table 1 and the following calculation: $\frac{\textit{average expenditure on day care}}{\textit{average number of children enrolled} \times 52}$. In the formula, 52 represents the number of weeks in a calendar year.

38 Britto et al. (2017). Nurturing care: promoting early childhood development. *Lancet* (Advancing ECD: From Science to Scale 2, Vol. 389, No. 10064, pp. 91-102.

Accessibility of Public Childcare Services in Barbados

Access to high-quality childcare is the bedrock of any policy aimed at universal care. Historically, evaluations of accessibility to childcare services have focused on the spatial distribution of childcare centres. Today, accessibility is viewed as a multi-dimensional concept.[39] This section analyses five dimensions of public childcare accessibility – affordability, capacity, location, opening hours, and the application and selection process.

Affordability of Public Childcare Services

As previously mentioned, the public childcare price of BBD 20 per week or BBD 86.66 per month per child is significantly less than actual operating costs. In addition, public childcare prices are well below the price of childcare services in the private sector, however, 2019 data for registered private childcare centres revealed significant variation in private childcare pricing. Private childcare prices ranged from BBD 238 to 850 per calendar month, with a mean price of BBD 377 per calendar month and a median price of BBD 346 per calendar month. In 2019, the lowest price for registered private childcare services was 2.8 times higher than the price of public childcare services. It is notable that the price observed for private childcare did not typically include the costs of lunch and/or snacks, whereas these are included in the costs of public childcare.

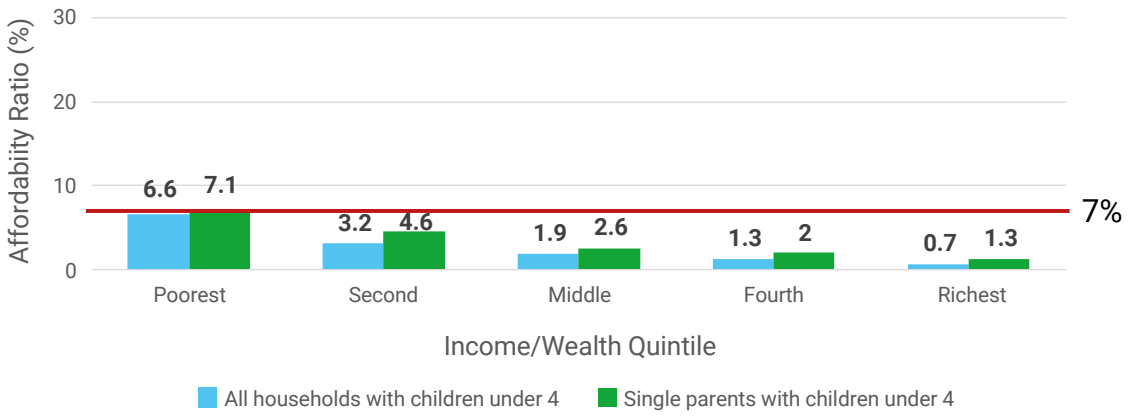
A discounted price is not sufficient to deem public daycare affordable, as affordability depends upon the ability of an individual or group to pay for some minimum level of service without it being an unreasonable burden on them. As such, this study employed an affordability ratio defined as the average monthly cost of childcare for one child, as a share of total monthly income for households with children three years of age and younger. To assess affordability, a threshold needs to be defined to determine what constitutes an acceptable share of household income that would be spent on childcare services. The study follows

39 Friese, S., V.K. Lin, N. Forry & K. Tout (2017). *Defining and Measuring Access to High-Quality Early Care and Education (ECE): A Guidebook for Policymakers and Researchers*, No. 2017–08. U.S. Department of Health and Human Services: Washington, DC, USA; Partika, A. (2017). Providing access to child care means more than providing enough slots. *Child Trends.* Retrieved on 19 December 2020 from: Providing access to child care means more than providing enough slots - Child Trends

the guidelines provided by the US Department of Health and Human Services (HHS), which suggests that an acceptable threshold for affordable childcare services is seven per cent of household income.[40]

Using the definition advanced by HHS, public childcare is affordable (**Charts 2 and 3**). Chart 2 shows that among the most vulnerable households (i.e., single-parent households in the poorest income quintile), on average, the affordability index is 7.1 per cent of their gross monthly income. In comparison, households pay nearly five times more of their monthly income to private childcare centers versus public childcare centers (**Chart 3**). On average, the price of private childcare for all households in the lowest income quintile is equal to 28.7 per cent of their gross income; thus, affording private childcare is particularly difficult for single-parent households, where the affordability ratio is below the seven per cent benchmark for only a subset of households in the highest income quintile. These data demonstrate that for many households, access to childcare services hinges on the availability of spaces in public-funded childcare programmes; however, capacity in the public sector tends to be very limited.

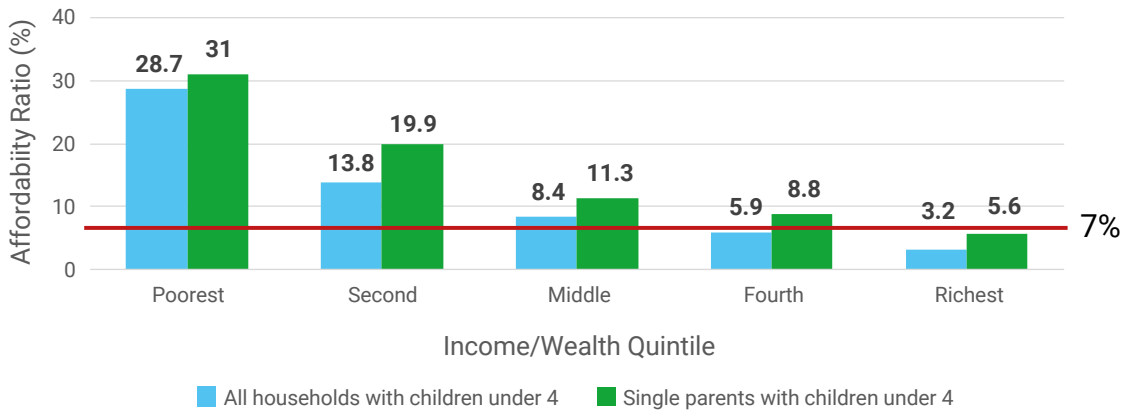
Chart 2. Monthly public childcare costs for a child under 4 years as a share of household income



Notes: The horizontal red line represents the 7 per cent benchmark. Data on prices came from the CCB, whereas data on total household income came from the 2016/2017 BSLC and is defined as the sum of (gross) employment income, including rental incomes, pensions, public assistance, alimony, maintenance and child support, money received from relatives and remittances from abroad for all members of the household. Income quintiles were calculated by the authors and based on weighted data.

40 This benchmark is taken from the U.S. Department of HHS, Administration for Children and Families, Child Care and Development Fund (CCDF). Retrieved on 11 November 2021 from: https://www.govinfo.gov/content/pkg/FR-2016-09-30/pdf/2016-22986.pdf

Chart 3. Monthly private childcare costs for a child under 4 years as a share of household income



Notes: The horizontal red line represents the 7 per cent benchmark. Data on prices came from the CCB, whereas data on total household income came from the 2016/2017 BSLC and is defined as the sum of (gross) employment income, including rental incomes, pensions, public assistance, alimony, maintenance and child support, money received from relatives and remittances from abroad for all members of the household. Income quintiles were calculated by the authors and based on weighted data.

Capacity of Public Childcare Centres

There are 15 government-run childcare centres and capacity is dictated by the physical size of the childcare centre (a minimum of 22 square feet of floor space is required per child). Currently, all public childcare centres operate at full capacity and each childcare centre has several children on the waitlist. Prior to 2012, the number of applicants on the waitlist was above 3,000, while capacity stood at about 1,057 (**Charts 4 and 5**). Simply put, for every space available in a public childcare centre, at least three children were on a waitlist for placement. Since 2012, the number of applicants on the waitlist has fallen significantly, coinciding with increased registrations at private childcare centres. There were also capacity increases, driven by expansions at two childcare centres. In 2019, public childcare centres accommodated a total of 1,090 children.[41]

Charts 4 and 5 show that demand for childcare services exceeds supply. In 2019, 1,952 children were on the waitlist for entry into public childcare centres, which were satisfying less than 40 per cent of the total demand. According to 2010 Population and Housing Census data, there were 11,509 children aged 0 to 3 in Barbados. The current capacity of 1,090 children means that less than 10 per cent of the population of children aged 0 to 3 could be serviced by public childcare centres; this estimate is based upon 2010 census data that showed there were 11,509 children aged 0 to 3 in Barbados. If public capacity remains unchanged, by 2030, public childcare centres will be able to accommodate only 12 per cent of children aged 0 to 3, and 13 per cent by 2050.[42] This is problematic, given that private childcare services are financially out of reach for many families. CCB representatives were aware of and concerned about the

41 In 2018 and 2019, the public sector operated below full capacity due to renovations. When operating at full capacity, childcare centers can accommodate a total of 1,126 children

42 Estimates are based on the 2019 Barbados Population Situational Analysis prepared by the Barbados Population Commission.

limited capacity of public childcare services, but noted that limited fiscal space serves as a major barrier to service expansion.

Chart 4. Supply and excess demand in the public childcare sector

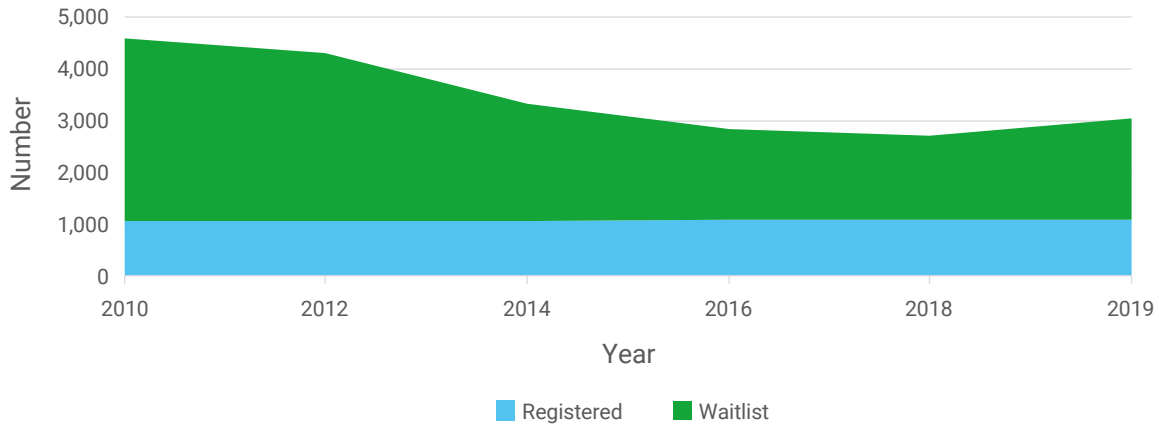


Chart 5. Demand and excess supply in the private childcare sector

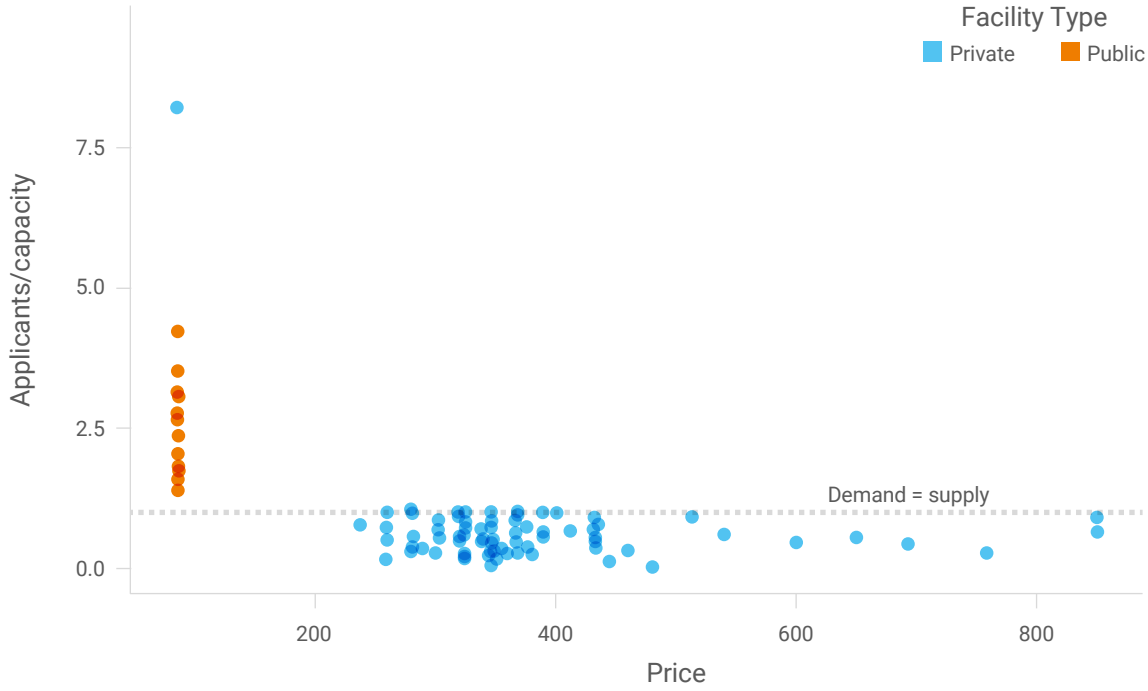
While the public sector is characterized by excess demand, most childcare centres in the private sector operate well below their capacity. The high demand in the public sector is due in large part to the service's low price relative to that of the private sector.

Figure 1 illustrates the relationship between demand[43] for childcare services and prices for both public and private childcare services in 2019. The dotted line represents the level at which demand for childcare centres are equal to capacity. The figure shows a drastic difference in demand for low-priced public

43 See notes under Figure 1 for details on the measures of demand for public and private childcare services.

childcare and high-priced private childcare. In 2019, only 15 per cent of private childcare centres operated near full capacity (90 per cent or more). In the 100 private child care centres, the total capacity was 4,026 spaces, yet only 2,150 children were in attendance.

Figure 1. Price and demand for childcare centres



Notes: The horizontal dotted line represents the point at which supply = demand. The circles represent individual childcare centres. Private childcare centres typically operate below full capacity, so the number of children enrolled as a ratio of the facility's capacity is a sufficient estimate of total demand. In comparison, public childcare centres are always full, with several children on the waitlist; thus, any measure of demand for public childcare must reflect this. In the figure above, the demand for each public childcare centre is measured as the sum of the number of children enrolled in the centre, and those on the waitlist divided by the centre's capacity.
Data Source: CCB.

Spatial Distribution of Public Childcare Centres

A fundamental element of accessibility to childcare services is the location of childcare centres relative to the geographical distribution of the population. As previously mentioned, public childcare centres were originally opened in established housing areas to service the childcare needs of residents of those housing areas, particularly women who were working outside of the home. Today, 14 of the 15 public childcare centres are attached to housing areas. This affects accessibility to childcare services for mothers and families living in residential areas far from the housing areas, particularly low-income households who are less likely to have access to a private vehicle. This situation is exacerbated by fact that impoverished households are more likely to be populated with young children, compared to non-poor households. According to the 2016/2017 Barbados Survey of Living Conditions (BSLC), nearly seven per cent of

persons living in poor households were 0-3 years of age, while less than three per cent of persons living in non-poor households were under the age of four.

Table 3 shows the number of public and private childcare centres by parish, and the number of children aged 0-3 enrolled and on waitlists. Most public childcare centres are in Saint Michael (eight or 53 per cent), where the capital and largest city of Barbados is located (Bridgetown), and Christ Church (three or 20 per cent); these are the most populous parishes in Barbados, with the largest number of children aged 0-3. It is notable that there are no public childcare centres in five of the 11 parishes, including Saint Philip, the third most populous parish of children aged 0-3.

It is notable that residential demographics have changed significantly since the establishment of the CCB. Yet, the fact that there are no public childcare centres in Saint Philip, where a large number of children aged 0-3 reside, suggests that the GoB's childcare policy has not responded to changing residential demographics.

Table 3. Public childcare centres by parish and parish demographics

Parish	Public Care Centres (2019)			Population of children aged 0-3 years	Poverty rate (Households)
	Number of centres	Capacity	Waiting lists		
Saint Michael	8	604	1,483	3,642	18.6%
Christ Church	3	252	245	2,073	17.4%
Saint James	1	78	30	1,007	13.5%
Saint John	1	66	54	415	23.9%
Saint Thomas	1	48	50	659	15.9%
Saint George	1	42	90	928	19.4%
Saint Andrew	0	-----	-----	268	17.1%
Saint Joseph	0	-----	-----	321	20.3%
Saint Lucy	0	-----	-----	445	17.8%
Saint Peter	0	-----	-----	495	15.6%
Saint Philip	0	-----	-----	1,256	12.6%
Total	**15**	**1,090**	**1,952**	**11,509**	**24.5%**

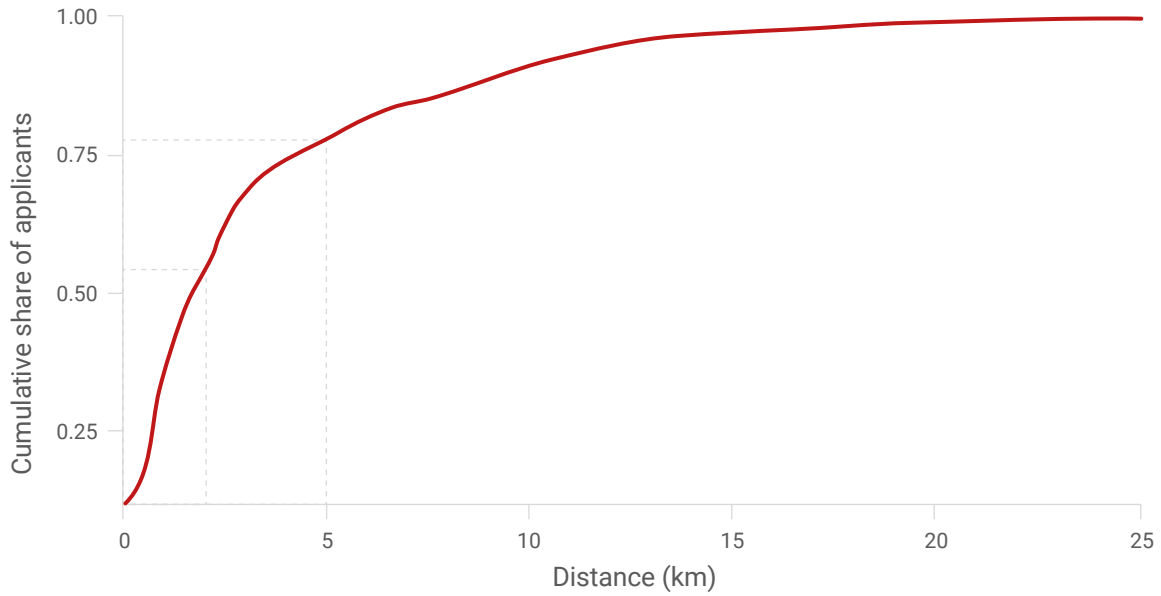
Sources: Data on public childcare centres were obtained from the CCB. Poverty statistics were estimated using the 2016/2017 BSLC. Population estimates for children age 0-3 years were from 2010 Barbados Population and Housing Census.

Data for a sample of 579 applicants to the CCB suggests that parents prefer public childcare centres near to their homes. Figure 2 plots the cumulative share of the sample of 759 applicants against the distance between their residence and the childcare centre to which they applied. The data shows approximately 55 per cent of applicants lived within two kilometres (km) of the public childcare centre to which they applied, which is a three-minute drive[44] or a 24-minute walk to the centre. In addition, an estimated 77 per cent of applicants in the sample lived within five km of the public child care centre to which they applied,

44 In Barbados, the speed limit in most residential areas is 40 km per hour.

which is a 7.5-minute drive or a one-hour walk. Even if there is a public childcare centre in a person's parish of residence, they could still have some difficulty accessing the centre in the absence of a private vehicle. One official at the CCB shared the experience of one mother, *"We had a client this year who said that although she lives in Saint John, getting to the [public] childcare centre in Saint John requires that she takes three buses."*

Figure 2. Distance between applicant's residential address and public childcare centres



Source: CCB and author's calculation.

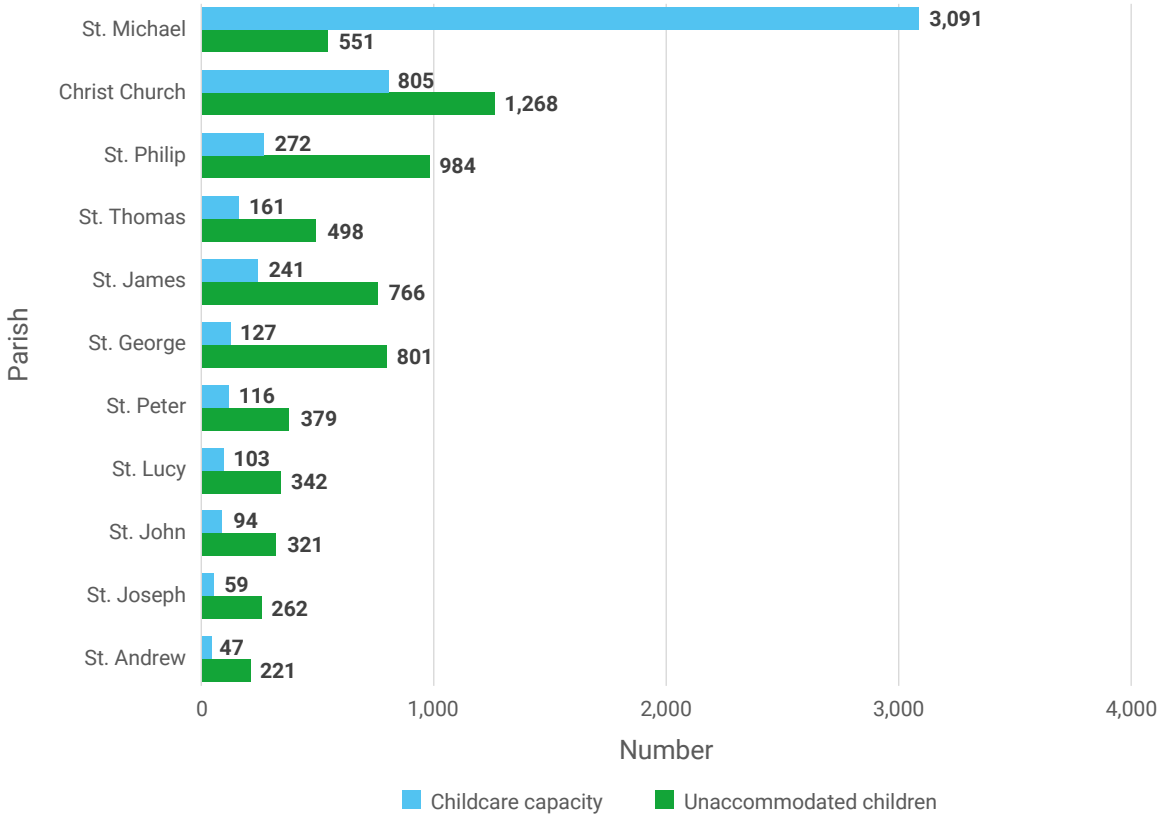
Findings in Figure 2 raise the question as to whether public childcare centres are in areas that the most vulnerable households can easily access. For instance, rural areas of Saint John (has one public childcare centre), Saint George (has one public childcare centre) and Saint Joseph (has no public childcare centres) have the highest household poverty rates (see **Table 3**).

For working parents without public childcare services in their parish, applying to a public childcare centre near to their workplace is an alternative option. In Barbados, the majority of businesses are in Saint Michael and Christ Church. Given these are the two most populous parishes in Barbados, the demand for public childcare centres would be highest in these two parishes, so space would be scarce. Thus, public childcare centres in Saint Michael and Christ Church have the largest waitlists (see **Table 3**).

It is important to point out that there is a private childcare centre in every parish, but private childcare care is very costly for many families, taking up a significant share of the household income, particularly among low-income households. Even if private childcare services were affordable across the income spectrum, the number of private and public childcare spaces is insufficient to cover the full population of

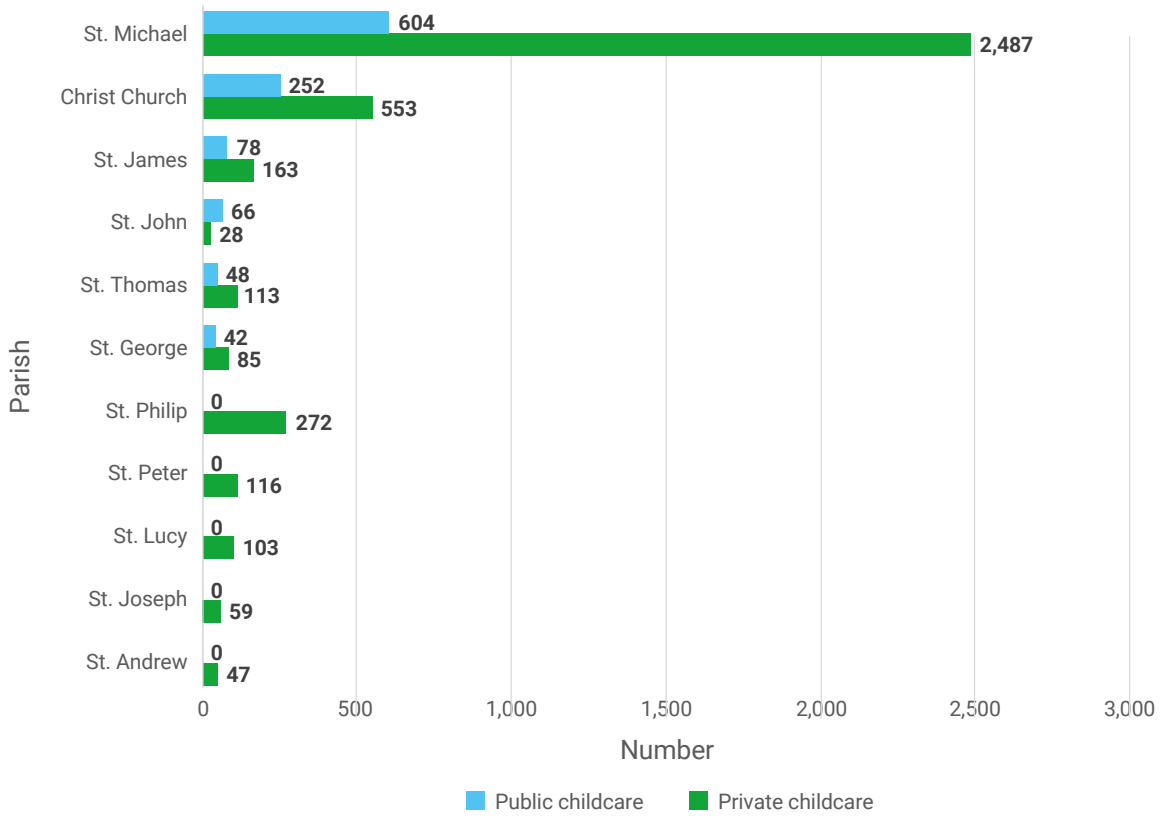
children aged 0-3 (**Charts 6 and 7**). In particular, Saint Michael has the greatest capacity (i.e., public and private childcare spaces that can accommodate 84 per cent of children aged 0-3 who live in the parish), whereas the combined capacity of private and public childcare centres in Christ Church can service only 37 per cent of children aged 0-3 living in the parish. No other parish can service more than 25 per cent of children aged 0-3 in the parish.

Chart 6. Childcare capacity per population of children aged 0-3 years by parish



Notes: The total of the blue and green bars represent the number of children aged 0-3 years for each parish. The green bar shows the number of unaccommodated children, assuming they were to attend a childcare centre in their parish of residence. The blue bar shows the total capacity that exists in both public and private childcare sectors. Source: CCB and 2010 Barbados Population and Housing Census.

Chart 7. Public and private childcare capacity per population of children aged 0-3 years by parish



Notes: The total of the blue and green bars represent the total capacity that exists in both public and private childcare centres. The blue bar shows the capacity in the public childcare sector by parish. The green bar shows the capacity in the private childcare sector by parish.
Source: CCB and 2010 Barbados Population and Housing Census.

Opening Hours of Public Childcare Centres

Recently, there has been increased awareness about the impact of the operating hours of public childcare centres on access to and provision of childcare services. The need for public childcare services is greatest among working parents/guardians, particularly working mothers/female guardians. Yet, there is a mismatch between the opening hours of public childcare centres and working hours of parents/guardians, which may exacerbate their ability to access and use public childcare services.

In Barbados, public childcare centres are open Monday thru Friday from 7:30 am to 5:30 pm, except on national holidays when childcare centres are closed. Typical working hours in Barbados are from 8:00 am to 5:00 pm, Monday thru Friday. For parents whose work begins at 8:00 am and/or ends at 5 pm, accessibility to childcare centres can be problematic if there is: limited flexibility at work to adjust their working schedule; their main mode of transport is via public transportation; and they do not work within proximity of the childcare centre.

Accessibility is particularly difficult for workers with non-standard hours, i.e., persons who work evenings, nights and weekends. There is, however, no publicly available data on the prevalence of non-standard working hours in Barbados. Those most likely to work non-standard hours are in health care professions and the service sector, including the travel and tourism industry and sales.

Application and Selection Processes

According to the CCB, parents/guardians can apply directly to the public childcare centre of their choice, and copies of the applications are sent to the CCB. If there is no space available for the child at the childcare centre of choice, applications are not re-routed to available slots at alternative childcare centres; this implies that a person might apply to a childcare centre with a shorter waitlist and get a spot sooner than another person who applies to a childcare centre with a long waitlist.

When asked about the selection process, representatives of the CCB noted that entry into the public childcare programme is largely on a 'first come, first served' basis. In keeping with the original policy initiative where centres were placed to serve nearby communities, CCB representatives noted that the public childcare centres try to ensure that a subset of members of the community are placed at each centre; the intent is to provide a small measure of priority to those who live in the community. Applicants are fast-tracked in special cases, such as when teen mothers must return to school and there are children with a high-risk of endangerment. These special cases are often identified by CCB officers, persons in the community or officers at institutions, such as the Welfare Department, medical facilities and/or the Ministry of Education (MoE). CCB officials noted that admittance for special cases is infrequent.

If a 'first come, first served policy' largely governs the decision to admit a child to a public childcare programme, then one should not observe patterns of those who are accepted and those placed on waitlists. To evaluate if there is a pattern in acceptance, a sample of 575 applications were analysed, of which 275 applications (48 per cent) were accepted and 300 (52 per cent) were placed on waitlists.[45] Three factors were analysed: 1) distance between the childcare centre and the applicant's residence; 2) marital status of the parent/guardian; and 3) applicants' income.[46] In general, the analysis revealed that children are admitted to public childcare centres on a 'first come, first serve' basis.

Table 4 shows the bivariate relationship between admissions to public childcare centres and each of the three abovementioned factors. In terms of distance between the childcare centre and the applicant's residence, the data shows there is no statistical relationship with application acceptance. In other words, nearly 49 per cent of applicants living within two km of the childcare centre were approved, and 48 per cent of applicants living outside of the two km radius were approved. This seems counter to the designation of these childcare centres as being intended to serve the residents of the housing areas within which they were constructed.

45 The initial sample consisted of 591 application forms; however, 16 were eliminated due to age. Among the 591 applications, 300 applicants were placed on the waitlist and 16 were rejected and removed from the analysis.
46 Variables are based on information from the application form.

Table 4. Determinants of admission to a public childcare centre

Variable	Admitted	Waiting List	Chi-square test of independence
Distance from centre			
< 2 km	149	158	$x^2 = 0.025$ p-value: 0.873
> 2 km	123	134	
Marital status			
Single	203	244	$x^2_{weekly} = 5.130$ p-value: 0.077
Married	52	38	
Other	4	7	
Income			
Weekly incomes (BBD)			
< $200	16	25	
$200 - $300	36	48	$x^2_{weekly} = 4.506$ p-value: 0.222
$301 - $400	24	22	
$401 and over	6	17	
Monthly income (BBD)			
< $2,000	23	51	
$2,000 - $3,000	37	43	$x^2_{monthly} = 6.570$ p-value: 0.087
$3,001 - $4,000	14	12	
$4,001 and over	10	7	
Missing application data			
No address	4	7	
No marital status	16	11	n/a
No income	109	78	

N.A. = Not applicable

In terms of the marital status of the parent/guardian, this had no statistical significance on admission. In terms of applicant's income, it is notable that income information was missing for 68 per cent of the applications analysed (i.e., 187 of the 275 applications); thus, it is unclear whether these applicants were unemployed, did not have an income at the time of application or chose not to report their income. Applicants had the option of reporting their income on a monthly or weekly basis. The application form uses intervals to code weekly and monthly income, rather than a single figure. Unfortunately, the response options given for weekly and monthly income did not correspond, so one cannot fully merge the income data.[47] Consequently, information for weekly and monthly modes are presented in **Table 4**. Among applicants who reported their income, 68 per cent could be considered low income (earning up

47 The weekly income of interval BBD 401 or more corresponds to a monthly income of BBD 1,737.67 per month or more. Persons in this category could fall into any of the monthly income categories.

to BBD 2,0000 per month)[48], suggesting that the demand for public childcare services comes largely from low-income parents/guardians. The chi-square tests suggest that irrespective of whether the analysis uses monthly or weekly income data, income levels and admissions are unrelated, at least at a five per cent level of significance.

The first come, first served policy raises questions as to whether the most vulnerable households can access public childcare services. Discussions with officials at the CCB suggest that a large majority of children in public childcare come from low- to middle-income households (i.e., less than BBD 75,000 per year).[49] CCB representatives pointed out that there are benefits to having children of different demographics in public day care centres (i.e., socioeconomic status), even at a young age, however, given the public childcare sector's lack of capacity to provide services to all children in need, there is the potential for an implicit bias toward parents/guardians and children most in need of childcare services (i.e., low-income households and/or single parents).

It is notable that CCB data does not demonstrate a true sense of applicant vulnerability to public childcare services. For instance, being single, not married does not equate with being a single-parent and does not exclude cohabiters. In addition, the application form focuses on applicant's income, as opposed to household income, making it difficult to determine the true economic vulnerability of the household. This, coupled with the large share of the sample who opted not to state their income, means that the observed insignificant relationship between income is indicative and not conclusive.

48 The estimate comes from merging those who make BBD 400 or less a week and those who reported making less than BBD 2000 a month

49 Based on Barbados' income tax brackets, low income refers to persons earning less than BBD 25,000 per annum, middle income ranges from BBD 25,001 to BBD 75,000 per annum and high-income persons are those earning more than BBD 75,000 per annum.

Perceptions and Experiences with Public Childcare Services in Barbados

This section presents data on perceptions of public childcare services in Barbados. The focus is on documenting the reasons for choosing public childcare services and perceptions of the application process, including the criteria for entry into public childcare services, the quality of childcare services, the number of places available in public childcare centres and the price of public childcare services.

Factors in the Selection of Childcare Services

As a starting point, FGD participants discussed the main factors that influenced their choice of childcare services. **Table 5** shows that all FGD participants cited the price of the service as the leading factor in their choice of public childcare services. This is in keeping with previous findings that demand for public childcare services was sensitive to childcare service prices. For many participants, the price of private childcare would be a burden. One participant who initially enrolled their child in private childcare explained,

> *"My husband was pushing towards it [public childcare] because my salary was not a lot at that moment, and they [the private childcare centre] charged BBD 85 per week, plus you have to take foodstuff. They [private childcare centre] sent a paper for you every week telling you to bring a potato or macaroni; you even take snacks and juice even though you pay every week. It was a bit draining as we had rent and two other kids. He [the husband] said he would try to get into the government one, which is BBD 20 a week, and you do not have to bring anything."*

Table 5. Factors influencing choice of public childcare services

Reasons for choosing public childcare services	No. of FGD participants (N=14)	
	n	%
Price	14	100
Positive word-of-mouth feedback	6	43
Accountability	3	21
Location	2	14
Opening Hours	1	7

In addition to price, FGD participants also cited positive word-of-mouth feedback (43 per cent), accountability (21 per cent), location (14 per cent) and opening hours of public childcare services as reasons for choosing public childcare. Positive word-of-mouth feedback from friends, family and persons in the community about the quality of public childcare influenced their choice. One current user explained,

> *"One of my friend's daughter was going to a public nursery and she had told me about them. My eldest, he went to a private nursery, so I was somewhat iffy about government nurseries. But they [my friend] were so positive about it [the public nursery] that we decided to look into it [public childcare services]."*

In terms of accountability, one parent who was on the waitlist explained, *"With the Child Care Board being the regulatory body for all the nurseries, having your child in a nursery with them is more beneficial. I mean, the level of care and accountability; this is why I chose them."* Other FGD participants echoed similar sentiment, noting that they felt that the CCB would be more likely follow written guidelines and take action if the guidelines are breached.

Two FGD participants also identified the location of the childcare centre as the main factor influencing their choice. One participant said they chose the pubic childcare centre because it was *"close to the father's place of work"* and another said it was *"close to me [my home]."* Only one participant chose a public childcare centre because of its opening hours.

Participant Views of the Application and Selection Process

FGD participants used terms such as 'easy' and 'straightforward' to describe the application process, although several participants did express dissatisfaction with the length of time they spent on the waitlist after submitting their application. All FGD participants spent some time on the waitlist and the length of time varied significantly. Among past and present users, time spent on the waitlist ranged from six weeks to two years, with two to three months being the most common; whereas most prospective users had been on the waitlist for three to six months. Generally, those on the waitlist for more than three months expressed concern about the wait time.

In terms of the criteria for entry to public childcare centres, one FGD participant noted that they were aware of the CCB's 'first come, first served' policy because they had asked about the criteria when they applied for entry. The remaining 13 participants were not aware of the 'first come, first served' policy; rather, six participants assumed that admission was related to one's income and three participants assumed that admission was linked to the applicant's residential or work address.

There were several concerns about the CCB's first come, first served policy. The general sentiment was expressed by one participant on the waitlist was that *"it is not a fair system . . . I believe that persons that make more [money] should leave the public services for persons who cannot afford private care."* Two other users (one on a waitlist and one a current user) had a different view; although they agreed that vulnerable households should be given priority, they felt that everyone should have access to quality childcare services. One current user explained,

"It is not just about costs or who could afford it, it is about care. Persons who want to access the service should be able to. It is not free . . . if they pay their taxes, they should be able to access it too!"

Quality of Public Childcare Services

Questions regarding the quality of public childcare services received were limited to present and past users. More specifically, present and past users were asked to rate the quality of public childcare services using a scale ranging from 1 to 10, with 1 being 'poor service' and 10 being 'excellent service'. Among the ten present and past users, on average, they rated the quality of public childcare services as a nine.

Participants were asked to explain their scores and whether there were any areas for improvement. Most participants held the view that public childcare staff often go above and beyond the call of duty. One user who gave a score of 10, explained,

"My son is suggested to have Down's syndrome. I say suggested, as he has not had the chromosomal analysis, but he is high functioning. There is an auntie [caretaker] who is not his auntie, but who understands and also has a son with Down's syndrome. She does therapy with him and stuff like that. The other aunties are also great. My son has a challenge with spitting up a lot, and they have suggested so many different things and tried so many things. They have been so accommodating, so I would say honestly, I have absolutely no complaints. Back down to the ground staff, the supervisors, the assistant supervisor, the care there has been excellent."

Many users did not give public childcare services a perfect score of 10, but they also did not elaborate on how the CCB could improve public childcare services. Instead, they explained that *"nothing is perfect"* and *"there is always room for improvement,"* as reflected in the response of one user who gave a score of eight.

"When I drop her [the child] off, they [nursery staff] do their checks for marks or blemishes. They check the bags . . . everything. If there is a mosquito bite, they say, 'well, mom, there is a mosquito bite here.'. She [the child] is always clean when I pick her up, and I also do my own checks when I pick her up. If I have any questions, I can always ask the auntie or the supervisor. They are very open to answering questions. I am very comfortable with the service they are providing. But there is always room for improvement."

Only three present users identified areas for improvement. One suggested that there should be greater parental engagement in public childcare services. This user explained, *"Perhaps give parents a chance to come to the nursery, like a daycare 'show-off' to see what they do etc. I want to be able to go to the nursery and see what he [the child] is doing. I want to be more involved."* Two other participants explained that while children are generally well cared for, there is some inconsistency in care. One present user explained,

"Everyone is different. I can tell when a particular auntie deals with my son at the nursery. I look in the bag and I can tell he has been wiped off, etc. When that auntie is not there, I can tell, based on what I see in the bag, that someone else dealt with my child. All the aunties should do the same things."

Alternative Childcare Options and Perceived Usefulness of Public Childcare Services

Among FGD participants, one of the key concerns was related to options available to parents if their child does not receive a place at a public childcare centre. Participants on the waitlist were asked about the childcare services they were using while they were waiting for an opening at a public childcare centre. Only one parent on the waitlist indicated that their child was enrolled in a private childcare centre; all other participants reported their child was being cared for by their mother or a family member. The participant who enrolled their child in a private childcare centre indicated that the cost of private childcare was sometimes a burden. She explained, *"Right now, he [her son] is at a private nursery. When I do not have the money to pay, my sister would chip in and help."*

Past and current users were asked about alternative childcare options they would use if they could not access public childcare services. A majority of past and current users (80 per cent) reported they would have enrolled their child in a private childcare centre, as they wanted their child to interact with other children. The other options given were to pay a friend or for they themselves to be the primary caregiver.

FGD participants also shared their views on the usefulness and main benefits of admission to public childcare centres. Some past users identified benefits such as convenience (opening hours and location), enforcement of rules and regulations, and learning opportunities for children that stem from interactions with other children. Prospective users' perceived the benefits of admission to public childcare services as the ability to work freely at home, for the family caregiver to have more free time, to ease financial constraints and improvements in job searches. The discussion among current users was more nuanced and largely focused on the affordability of public childcare services.

Perceptions of Available Spaces in Public Childcare Centres

The was much discussion among FGD participants regarding the number of places available in public care centres. All participants agreed that there was a need for more public childcare centres, as private childcare centres are unaffordable for many parents. They also recognized that parents who live in parishes without public childcare centres are at a disadvantage. Opinions on how to fund an increase in public childcare centres varied. Many users felt that the Government should fund the expansion of public childcare services, whereas others felt that such an endeavour would be costly and they were not sure that the Government could afford the costs at this time. For instance, a past user of public childcare services explained,

"I think persons talk about the Government increasing placements, like building more nurseries, but someone must pay; the money has to come from somewhere. This may mean that taxpayers would have to pay more – like introduce some new tax to fund it. This could be a problem. Persons who do not have kids would want to know why they have to pay more, as the nurseries are not benefiting them."

Some participants believed that the capacity of public childcare services is insufficient because the Government does not prioritise childcare services. For example, a past user explained,

"Early childhood care is important, and is needed. Persons have to leave their job or give up a job because they have to keep [care for] children. In this day and age, that should not happen, and there should be facilities available to help. To me, they focus on primary education, common entrance, etc., but this [early childcare] is where it starts. Greater focus should be placed on having more nurseries around the island and making them more accessible for people."

Other users felt that even if the Government could not fund an expansion of public childcare services, they could seek help from international agencies, such as UNICEF, or partner with the private sector. A current user explained,

"The Government always says they don't have money, but yet still things get done. When they need to get things done, they do. My thing is, even if the Government does not build the nurseries, they can seek help. Seek funds to build other nurseries."

Costs of Childcare Services and Views on a Sliding Pay Scale

Currently, users of public childcare pay 15 per cent of per-child costs. When it comes to expanding public childcare services, this would likely require an increase in the per-child cost for parents. If the increase in fees are deemed fair, then there would likely be a willingness to contribute to the costs of expanding public childcare services.

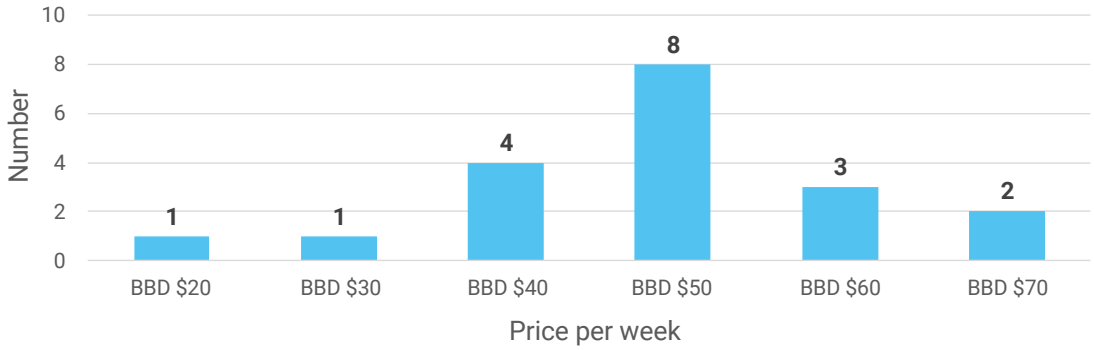
FGD participants were asked about current fees and how much they would be willing to pay to access public childcare services. The aim was to understand what users of public childcare would consider a fair financing model for public childcare services.

When discussing current fees, all FGD participants felt that the price was affordable. One user explained, *"You cannot beat $20 a week."* Some past users, however, expressed concern about the low price, and questioned whether the price was sustainable. One participant stated,

"I think this is the price from long ago and since then, everything [prices of other goods and services] has gone up. Of course, you want your child to get the best, and you don't want that due to the price increases [in Barbados] they [the nurseries] have to provide less . . . so, instead of a biscuit, you get half of one [half a biscuit]."

Chart 8 shows that nearly all participants (12 out of 14) were willing to pay at least 75 per cent more than the current fee, and participants on the waitlist were willing to pay the highest on average. Two participants (one on the waitlist and one a current user) reported that they would be willing to pay BBD 50 to 60, as they felt this was a fair value; at this time, however, they could not afford the additional cost. Most FGD participants thought that the fees could be increased, but they need to remain affordable and should not be higher than that of the private sector. While willing to contribute more for public childcare services, participants were not willing (or perhaps unable) to take on the full cost of public childcare. Most users were unwilling to pay more than BBD 55 per week, which is the lowest price observed for a registered private childcare centre in 2019 (BBD 55 per week). The highest fee suggested was BBD 75, which is on the lower end of the private childcare sector price scale, but well below previous estimates of per user public childcare costs (approximately BBD 144 per week).

Chart 8. Per-child costs public childcare users are willing to pay for public childcare services



Note: Data are based upon the views of 14 FGD participants. Some FGD participants offered a price range (e.g., BBD 40-60 per week) and each of these price points are recorded, so the totals are larger than the 14 FGD participants.

Participants also noted that any increase in fees should be incremental. One current user explained, *"It (fee increase) cannot be immediate; like slowly raise the price over a period of time, so maybe an extra $5 a year. So, ease it in; do it incrementally, so persons could plan."*

As a follow-up, FGD participants were asked about the use of a sliding scale for pricing public childcare services in Barbados. Most participants were open to the concept of a sliding scale based on individual or household income. One current user felt that the CCB should look beyond income and consider a family's expenses.

> *"You can do a means assessment and say, well, based on this family's combined income, persons may be able to pay more than $20, but just because someone has a certain income doesn't mean that they can afford to go private. Cause let's face it, if you can afford a private daycare, if you're working for a certain amount of money and you can afford private care, you (more often than not) would not opt for government care because of the stigma attached to it. You may not be able to pay more than the $20 cause of other expenses."*

Not all FGD participants agreed with implementing a sliding pay scale. One current user explained,

> *"I don't agree with the sliding scale. What more is my child getting? An extra juice? A bigger lunch? And also, you don't want to create some sort of segregation, where a subset of children would be classified as low paying and perhaps not get the same treatment. This would cause problems."*

There was some discussion as to whether the public would agree to a sliding pay scale. Some FGD participants felt that persons would want to *"help others along"*, whereas others thought that many persons would disagree with a sliding pay scale. One user expressed their concern for persons in higher-income categories. They stated, *"Aren't high-income persons already paying more in taxes? The same taxes used to fund the service? It would be like double charging."*

In general, FGD participants were willing to pay more than the current fee at public childcare centres, but they wanted to pay less than the per-user operating costs. These finding suggest that universal childcare in Barbados hinges on public investment.

Macroeconomic Perspectives of Public Childcare Services

This section elaborates on how the GoB can achieve universal childcare and the potential effects of public investment in universal childcare. A simulation is offered to explore the macroeconomic and fiscal implications of universal childcare in Barbados.

Provision of and Costs for Expanding Public Childcare Services

Generally, there are two ways that the GoB can provide more public childcare services. One is through direct intervention in the childcare market by increasing the number of public childcare centres, and the other is indirect intervention in the private childcare market.

Direct Intervention

To increase the number of public childcare centres, the Government can either build new childcare facilities, renovate government-owned buildings or rent space from the private sector. At the time of writing this report, it was unclear how many government-owned buildings were available for renovation or the costs that would be associated with such renovations; therefore, reasonable estimates of the costs of renovating government-owned buildings for childcare provision could not be calculated. Data issues also affected the ability to provide feasible per annum cost-benefit ratios[50] associated with building new childcare centres. Information associated with the costs of renting space, however, was readily available to carry out simulations.

It is important to note that the main differences in the cost of renting and building new childcare centres would be in the timing of cash outlays (i.e., the amount of money that you spend on something). For instance, building new childcare centres would require large immediate cash outlays, while renting space would provide low entry costs to expand public childcare centres. It is expected that differences in the aggregate costs between building new childcare centres and renting space would be marginal in the

50 A benefit-cost ratio is a ratio used in a cost-benefit analysis to summarize the overall relationship between the relative costs and benefits of a propped project. Benefit-cost ratios are most often used in capital budgeting to analyze the overall value for money of undertaking a new project.

long-term. For these reasons, the fiscal costs of direct intervention focus on the Government renting space to expand public childcare services.

The simulations related to direct interventions are based on coverage scenarios, which dictate that an increased number of children can access public childcare services. For each scenario, a per-child cost was generated for the expansion of childcare services; however, the per-child cost is based upon an assumption that the fiscal cost of childcare services (i.e., wages, food and more) would remain unchanged. Estimates are calculated using the latest information available for 2019/2020, which was approximately BBD 652 per month.[51] With respect to the per-child real estate costs of expanding public childcare services, the average price of commercial rental properties in the Barbadian market was used (i.e., BBD 3.36 per square foot per month).[52]

As previously mentioned, the CCB requires a minimum 22 square feet of usable floor space per child. Based on the 1,090 children enrolled in public childcare in 2019/2020, it was estimated that the 15 public childcare centres take up at least 23,980 square feet of space. Accounting for bathroom and kitchen space in each of the 15 public childcare centres, it was estimated that the average bathroom and kitchen space was 40 and 100 square feet respectively.[53] Based upon these estimates, the total implicit cost per child of real estate is estimated to be BBD 80 per month.

Taken together, the cost of increasing public childcare services in a similar manner to what currently exists would cost approximately BBD 732 per child, per month. This total cost falls at the high end of the range of private childcare sector prices. Currently, the Government recoups approximately BBD 87 per month of this cost through user fees.

Indirect Intervention

The Government can also provide increased access to childcare through private childcare centres. Subsidising private childcare services would lower the cost of childcare for parents, without needing to make a large upfront investment in expanding public childcare services or dealing with the administrative burden of doing so. As alluded to earlier, there is much excess capacity in the private childcare sector in Barbados. It is expected that as private childcare becomes more affordable, more persons would opt to use private childcare services.

In other countries, this approach has been implemented in various ways, and in accordance with supply- and demand-side policies. Supply-side policies provide support to private childcare providers to increase private supply and lower private prices. Demand-side policies provide subsidies or tax credits to parents accessing private childcare services to lower the cost of private childcare and increase enrolment in formal childcare services. In this simulation, consideration is given to the Government offering a subsidy to parents which is a proportion to the price of private childcare, up to a certain amount. More specifically,

51 In 2019, government expenditure on childcare was BBD 8,528,254, and enrolment was 1,090 children.
52 Data are drawn from a sample of 165 commercial real estate properties listed on cariblist.com, which were for rent as of 25 July 2021. The median price was BBD 3.36, while the general range of prices was between BBD 2 and $6 per square foot.
53 Based on the average size of commercial kitchens and bathrooms.

the simulation considers if the Government were to offer subsidies that are 20 per cent, 40 per cent, 60 per cent, 80 per cent or 99 per cent of the median price of private childcare services.

Calibrating the Simulations

As discussed in the methodology section, there are expected benefits from expansion; the magnitude of these benefits are presented below.

Labour Supply Effects

To estimate the labour supply effect, we compare labour supply for men and women with children aged 0-3 to labour market outcomes for women with children aged 4-7 using data from the 2016/2017 BSLC. This comparison allows for an examination of the impact of limited childcare options on labour market outcomes.

The decision was made to use persons with children aged 4-7 as a comparison group, as children in this age group are still characterized as 'young children'. A key difference between these age groupings is that parents of children aged 4-7 have much more access to affordable childcare, as primary schooling is provided free of cost by the GoB. Even though children are mandated to be in primary school by the age of 5, children typically begin primary school at 4-years-old.

Looking first at the case of women, data suggests that 56.1 per cent of women with children aged 0-3 were employed, whereas 77.7 per cent of women with children aged 4-7 were employed. Among those who were employed, women with children aged 0-3 worked an average of 33.5 hours per week, whereas women with children aged 4-7 worked an average of 37 hours per week. In total, women with children aged 0-3 worked 37 per cent fewer hours than women with children aged 4-7.

For men, there were no significant labour market impacts. For instance, on average, men with children aged 0-3 were only 0.3-percentage points more likely to be employed than men with children aged 4-7. This finding is in keeping with the literature that reveals that mothers spend a disproportionate amount of time on childcare, compared to fathers, and familial responsibilities are more likely to reduce women's job prospects than that of men. As there are no significant labour market impacts for men, the analysis on labour supply effects focused on the benefits accrued from the increase in women's labour supply.

To monetize aggregate female labour supply effects, the difference in total monthly earnings for women with children aged 0-3 and those with children aged 4-7 were estimated using a regression that controls for the impact of work experience and education. This analysis revealed that women with children aged 4-7 earned BBD 820 to 870 per month more than women with children aged 0-3. These figures were used to estimate the increase in women's income if childcare for children aged 0-3 was provided in a similar manner to schooling for children aged 4-7.

The labour supply effect differs slightly when evaluating the case of direct intervention because increasing public childcare services encourages some working parents who are currently paying for private childcare to switch to public childcare; however, this move away from private childcare does not lead to increases in formal enrolment or labour supply. To overcome this challenge, labour supply estimates were adjusted.

To estimate and adjust for the substitution effect, the sample of data collected on parents on the waitlist at public day childcare centres was utilized. As previously noted, many persons on the waitlist opt to use private childcare until they can access a spot in public childcare. The substitution effect is based on the subset of women on the waitlist with incomes greater than BBD 2,000 per month as a percentage of all women on the waitlist. The focus is on women over the BBD 2,000 benchmark, as those with lower incomes are less likely to be able to afford private childcare while on the waitlist for public childcare. The substitution effect is approximately 20 per cent; thus, it is assumed that one in five applicants is already in full-time employment, so allocating them a childcare slot will not have a significant impact on their labour supply.

Domestic Consumption Multiplier Effect

In an open economy, the consumption multiplier must be adjusted to account for the share of total consumption spent on imports. Once a household's marginal propensity to consume is determined, it is adjusted downwards by the share of total consumption that is spent on imports. This gives a measure of the marginal propensity to consume domestic goods and services, which can be used to estimate the multiplier effects on the local economy. Sutherland and Craigwell[54] calculate a marginal propensity to consume of 0.79 for Eastern Caribbean Currency Union (ECCU) countries.[55] Barbados' share of imports to final consumption expenditure[56] in the UN National Accounts Database is 46 per cent; this gives a marginal propensity to consume domestic goods and services of 0.43, and a domestic consumption multiplier of $\frac{1}{1-0.43} = \mathbf{1.74}$.

Indirect Fiscal Benefits

To calculate the indirect fiscal benefits, the share of tax revenue in total GDP is used. In 2019, Barbados' tax revenue represented 33.1 per cent of the total GDP; this suggests one in every three new dollars created accrues to the GoB.

54 Sutherland, R. & R. Craigwell (2011). Private Consumption Expenditure in the Eastern Caribbean Currency Union. Munich Personal RePEc Archive (MPRA) Paper No. 40932. Retrieved from: Determinants_of_Private_Consumption_Expenditure_in_the_ECCU_1_.pdf (uni-muenchen.de)

55 The ECCU include eight nations – Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, Saint Vincent and the Grenadines, Saint Kitts and Nevis, and Saint Lucia – that are all small economies.

56 Final consumption expenditure is the sum of household final consumption expenditure (private consumption) and general government final consumption expenditure.

Long-Term Benefits

As alluded to in the methodology, long-term benefits include benefits to the parent and to the child. Benefits to the parent accrue in the form of increased work experience, which is measured as the expected increase in income from an additional year of experience. A woman's income is expected to increase by BBD 52 per month for each additional year of experience in formal work, controlling for education and age of the youngest child. If childcare lasts for three years, then an average increase in monthly income of BBD 156 is expected for each woman who can access childcare. The average age of women with children aged 0-3 is 30 years, implying approximately 35 additional years in the labour market after their children reach the age of three.[57] Discounting this average annual return to increased experience at the average inflation rate of 6.16 per cent over the period 1967 to 2019[58], the present value of this annual return is BBD 8,440. This benefit only accrues due to an increase in probability of employment, which is estimated to be an 8.7-percentage point increase, conditional on an individual's education and work experience.

There is no research on or estimates of the long-term impacts of public childcare services for children in Barbados. To draw some inference from existing literature, in the United States, there is compelling evidence of the long-term benefits of a high-quality childcare programme for children from disadvantaged backgrounds. This literature shows a very high-cost programme generates long-term benefits.[59]

One can expect that the long-term benefits will be fewer for lower-cost public childcare programmes in Barbados. In the United States, research found that high-quality child care programmes generated USD 6.40 in long-term benefits per every dollar spent; this was expressed as a present value, discounted at a rate of three per cent per year.[60] The amount spent was equivalent to BBD 3,455 per month. The returns per dollar spent is increasing as is the total spent per child, where the total spent per child is a proxy for quality. We can interpolate how much long-term benefits would be generated per dollar spent. At the current implicit cost of BBD 732 per month, we would expect a long-term equivalent to 80 per cent of this cost.

Simulations

Public Investment in Public Childcare Centres

Three scenarios were considered for expanded capacity: 1) increase capacity by roughly 2,000 spaces to cover existing excess demand; 2) increase capacity by 4,660 spaces so that 50 per cent of children up to the age of three can be enrolled in public childcare services; and 3) increase public capacity by 6,400 to ensure a public or private space is available for all children aged 0-3.

57 There is no national retirement age in Barbados; however, 67 is the age at which an individual becomes eligible for a full pension under the National Insurance Scheme. Thus, it has become common for individuals to automatically leave the labour force at 67 years of age.
58 Retrieved from The World Bank Group: https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=BB.
59 García, J.L., J.J. Heckman, D.E Leaf & M.J. Prados (2020), "Quantifying the life-cycle benefits of an influential early-childhood program." *Journal of Political Economy*, Vol. 128, No. 7, pp. 2502–2541.
60 Ibid.

We consider two user charges: the existing rate of BBD 20 per week or a 75 per cent increase to BBD 35 per week, which is based on the willingness to pay estimates from FGD participants.[61] Note that the lowest-price private childcare is still 57 per cent higher than the highest-price public childcare costs of BBD 35 per week or BBD 152 per month.

The results of this simulation are presented in **Table 6**. The data shows that any public investment in childcare will have a positive net benefit to society in the short-term, due in large part to the increase in labour supply. In some cases, the increased labour income is greater than the net direct fiscal cost of increased public childcare to the government (i.e., cost of running minus revenues from user fees). In all cases, the additional increase in aggregate consumption due to the consumption multiplier effect ensures that the short-term benefits always exceed the net direct costs. Considering the expected increases in tax revenue due to this increased income and consumption, the expected net total fiscal cost to the government (direct plus indirect costs) shrinks even further.

The best way to express the total outcomes from different scenarios is using benefit/cost ratios, which tell us what the return is per dollar spent on childcare. Expanding public childcare services in a similar method to what is currently provided is expected to generate BBD 1.4 to 1.7 of benefit per dollar spent in the short-term. In the long-term, this increases to BBD 2.5 to 2.9 of benefit per dollar spent. Should the government consider increasing the user costs to BBD 35 per week, which is still well below the lowest private childcare sector price, the returns per dollar spent increases. Under these settings, we expect similar labour supply effects, but a lower cost to the government for increasing public childcare capacity.

It is notable that the largest benefits are at the margin. In other words, increasing public childcare capacities by 2,000 spaces is expected to generate a higher benefit/cost ratio than increasing capacity by 6,400 spaces. This aligns with findings in existing literature on childcare, where targeted public investment generates better returns than broad expansion.

61 Based on the focus group discussions. Specifically, most persons were willing and able to pay at least BBD 35 a week for public childcare.

Table 6. Annual impact of expanding public childcare services at current cost

Expanding at current costs	Scenario 1	Scenario 2	Scenario 3
Direct fiscal cost			
Cost per child per month (BBD)	732	732	732
Cost per child (BBD)	8,784	8,784	8,784
Increase in childcare spaces	2,000	4,660	6,400
Direct fiscal cost (BBD million)	17.57	40.93	56.22
Revenue from childcare (BBD million)	2.08	4.85	6.66
Net direct fiscal cost (BBD million)	15.49	36.09	49.56
Labour supply			
Increased labour income (BBD million)	15.76	33.05	42.37
Consumption multiplier			
Increased consumption (BBD million)	6.78	14.21	18.22
Indirect fiscal costs			
Increased tax revenue (BBD million)	2.24	4.69	6.01
Net total fiscal cost (BBD million)	13.25	31.40	43.55
Long-term benefits			
Increased parental income (BBD million)	1.47	3.43	4.70
Benefits to children (BBD million)	13.98	32.58	44.74
Total long-term benefit (BBD million)	15.45	36.01	49.45
Benefit/cost ratios			
Short-term benefit/net direct cost	1.46	1.31	1.22
Short-term benefit/net total cost	1.70	1.51	1.39
Total benefit/net direct cost	2.45	2.31	2.22
Total benefit/net total cost	2.87	2.65	2.53
Benefit/cost ratios with increasing the price to users by 75 per cent (from BBD 20 to BBD 35 per week)			
Short-term benefit/net direct cost	1.62	1.46	1.36
Short-term benefit/net total cost	1.93	1.70	1.57
Total benefit/net direct cost	2.73	2.57	2.47
Total benefit/net total cost	3.25	3.00	2.85

Note: Scenario 1 is to increase capacity by roughly 2,000 spaces to cover existing excess demand. Scenario 2 is to increase capacity by 4,660 spaces so that 50 per cent of children up to the age of 3 can be enrolled in public childcare services. Scenario 3 is to increase public capacity by 6,400 to ensure a public or private space is available for every child aged 3 and under.

Public Subsidy of Private Childcare Centres

Data was analysed to consider the case where the government offers subsidies that are 20 per cent, 40 per cent, 60 per cent, 80 per cent or 99 per cent of the median price of childcare. The results of this simulation are presented in **Table 7**. Programme costs range from BBD 2.4 million to 26.5 million. After considering the indirect increase in government tax revenue due to increased labour supply and the consumption multiplier effect, the government's net burden is expected to shrink to between BBD 1.4 million and 21 million.

Compared to expanding public childcare services, the cost of increasing take-up of formal childcare is much lower when it is done by subsidising private childcare. This happens because the private childcare sector provides childcare at a much lower cost and offers more varied types of childcare services. The result is that the long-term benefits to children are expected to be smaller under a subsidy; however, the benefits of the subsidy far outweigh the cost of the subsidy, at any level of subsidy. The short-term benefits are BBD 2.6 to 7.6 for each net dollar spent, and when long-term benefits are included it rises to between BBD 2.9 to 9.5 for each net dollar spent. Once again, these benefit/cost ratios are especially large at the lower end of the subsidy range, and the largest benefits are on the margin.

Table 7. The impact of expanding childcare through subsidies

Direct fiscal cost	**Scenarios**				
Subsidy	20%	40%	60%	80%	99%
Weighted average price change	-17%	-34%	-51%	-68%	-84%
Increase in childcare demand	880	1,813	2,746	3,679	4,565
Expected fiscal cost (BBD million)	2.41	6.31	11.69	18.55	26.45
Labour supply					
Increased labour income (BBD million)	7.28	15.00	22.72	30.44	37.78
Consumption multiplier					
Increased consumption (BBD million)	3.13	6.45	9.77	13.09	16.24
Indirect fiscal cost					
Increased tax revenue (BBD million)	1.03	2.13	3.22	4.32	5.36
Net total fiscal cost (BBD million)	1.38	4.18	8.46	14.23	21.09
Long-term benefits					
Increased parental income (BBD million)	0.65	1.33	2.02	2.70	3.36
Benefits to children (BBD million)	2.09	2.53	2.96	3.40	3.81
Total long-term benefit (BBD million)	2.74	3.86	4.98	6.10	7.17
Benefit/cost ratios					
Short-term benefit/net direct cost	4.32	3.40	2.78	2.35	2.04
Short-term benefit/net total cost	7.55	5.13	3.84	3.06	2.56
Total benefit/net direct cost	5.45	4.01	3.21	2.68	2.31
Total benefit/net total cost	9.53	6.06	4.43	3.49	2.90

Impact of Universal Childcare on Poverty and Gender Equality

Barbados' gender equality challenges are those which might be considered 'second-generation'. In other words, rather than more direct issues of access to education, healthcare or employment, Barbados' gender equality challenges are more nuanced. For instance, the dominance of female-headed households in Barbados stems from a history of slavery.[62] In addition, Barbados' problems relate primarily to an overreliance on women for unpaid care work.

The importance of unpaid care work in creating and exacerbating gender inequalities is highlighted by the fact that women in Barbados have higher rates of educational attainment at all levels, than do men, regardless of age. For example, the 2016/2017 BSLC found that 44 per cent of boys aged 15-18 had passed five or more CSEC examinations[63], whereas 56 per cent of girls aged 15-18 passed 5 or more CSEC examinations. This attainment gap is similar at the tertiary level, where 29 per cent of women in their prime working-age (25-54) reported completing a tertiary education, whereas only 16 per cent of men in the same category completed a tertiary education. One would assume that women's higher levels of education would translate into higher rates of employment and higher earnings for women; however, according to the 2016/2017 BSLC, on average, men in their prime working-age earn 20 per cent more than women, despite women having higher rates of educational attainment. Given this gender wage gap, it is not surprising that women (26.8 per cent) are more likely than men (24.7 per cent) to live below the poverty line.

This section aims to characterize the expected impact of universal childcare on poverty and gender equality.

62 Massiah, J. (1983), *Women as Heads of Households in the Caribbean: Family Structure and Feminine Status.* United Nations Educational Scientific and Cultural Organization (UNESCO): Esssex, United Kingdom.
63 CSEC examinations are administered by the Caribbean Examination Council (CXC).

Expected Impact of Universal Childcare on Gender Equality

Table 8. Expected impact of universal childcare policy on Gender equality

Variable	Impact
Employment rates for women with children aged 0 to 3	Increase by 8.7 percentage points
Wages for women with children aged 0 to 3	Increase by BBD 820 to 870 per month
Raw gender wage gap	Decline by 2.9 percentage points

For women, universal childcare is expected to have two direct impacts on their income.[64] For one, greater access to low-cost childcare implies that more women will be able to take on paid employment while their children are aged 0-3. More specifically, the analysis suggests that women's probability of employment could increase by 8.7 percentage points because of access to universal low-cost childcare. Combined with an increase in hours worked, this is expected to increase women's income, on average, by BBD 820 to 870 per month; this would be a boost to earnings for mothers with young children. Bear in mind, the impact of universal childcare is not limited to the time during which children are in formal childcare. Given a higher probability of employment during this time, women are expected to gain up to three years of additional work experience; the present value of that additional experience is calculated to be more than BBD 8,000.

The 2016/2017 BSLC was used to calculate the expected effect of universal childcare on gender equality. Measures of gender inequality were calculated using individual-level data. A simple thought experiment was conducted where women's earnings were adjusted upward depending on the age of their youngest child. Measures of gender inequality were recalculated using the predicted values of earnings. The difference between these two measures provide an estimate of how a universal childcare policy is expected to quantitatively affect gender inequality.

The thought experiment is done first by adjusting women's incomes upward by BBD 820 per month if they have a child aged 0-3; this is the labour supply impact of universal childcare. Second, the impact of increased experience is accounted for by adjusting women's incomes upward by BBD 12.16 per month if their youngest child is older than three years of age. This is the expected impact of increased experience for women who have already gone through the period during which children are in formal childcare.

64 Childcare had no impact on men's labour market outcomes.

First, recall that the raw difference between men's and women's average incomes are large; men in their prime working-age earn around 20 per cent more than women in the same category. In the experiment, universal childcare is expected to lower that raw difference in average earnings between men and women to approximately 17 per cent. This raw difference accounts for differences in the probability of employment and hours worked. Second, the simple average difference in earnings between men and women who are in work was 5.1 per cent. Under universal childcare, the thought experiment suggests this difference will decline to 2.2 per cent. This change in the difference accounts for adjustments in both hours worked and wage rates. Finally, the difference in earnings between men and women is estimated controlling for their experience and educational attainment.

Before adjusting for the impact of universal childcare, it was found that men, on average, make BBD 835 more than women per month, conditional on having the same level of experience and education. In the thought experiment, women's income and years of experience are adjusted upward by the age of their youngest child, up to 3 years. Re-estimating the earnings differential, it was found that men would earn BBD 165 less than women per month; that is conditional on education and experience. Universal childcare might be expected to reduce the conditional earnings gap between men and women.

These quantitative results suggest that the effect of universal childcare on gender equality could potentially be considerable, and qualitatively, the results could be significant. First, women with greater attachment to the labour force and greater work experience might be expected to rise higher and faster through the ranks in both public and private sectors. One result of this might be a more family-friendly work environment and less gender discrimination, although the evidence on this is mixed.[65] Second, by empowering women through greater income-earning capacity, universal childcare can work to limit gender-based violence, particularly intimate partner violence.[66]

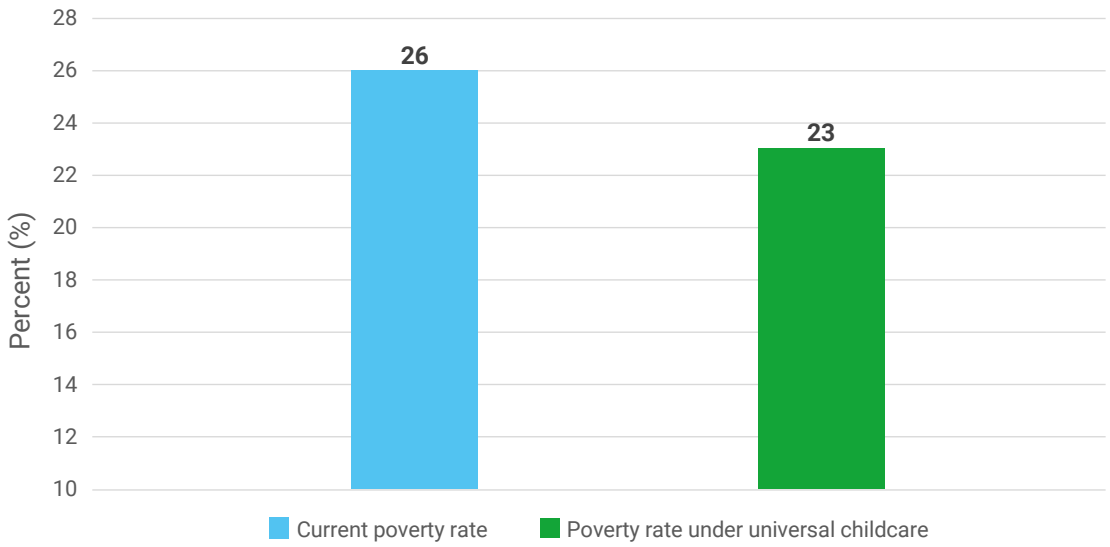
To calculate the expected impact of universal childcare on poverty, a similar experiment was conducted. This experiment requires one additional assumption about individuals living below the poverty line.

65 Bednar, S. & D. Gicheva (2014). Are female supervisors more female-friendly? *American Economic Review*, Vol. 104, No. 5, pp. 370–75; Kunze, A. & A.R. Miller (2017). Women helping women? Evidence from private sector data on workplace hierarchies. *Review of Economics and Statistics*, Vol. 99, No. 5, pp. 769–775; Matsa, D.A. & A.R. Miller (2013). A female style in corporate leadership? Evidence from quotas. *American Economic Journal: Applied Economics*, Vol. 5, No. 3, pp. 136–69.

66 Abramsky, T., S. Lees, H, Stöckl, S. Harvey, I. Kapinga, M. Ranganathan, G. Mshana et al. (2019). Women's income and risk of intimate partner violence: secondary findings from the MAISHA cluster randomised trial in North-Western Tanzania. *BMC Public Health*, Vol. 19, No. 1, pp. 1–15; Buller, A.M., A. Peterman, M. Ranganathan, A. Bleile, M. Hidrobo & L. Heise, L. (2018). A mixed-method review of cash transfers and intimate partner violence in low-and middle-income countries. *The World Bank Research Observer*, Vol. 33, No. 2, pp. 218–258.

Expected Impact of Universal Childcare on Poverty

Chart 9. Expected impact of Universal Childcare on Poverty



Poverty is typically measured by consumption per capita, rather than income, which is the measure discussed thus far. Increases in income are converted to increases in consumption per capita; this is done by assuming that women living below the consumption poverty line will consume any marginal increases in their incomes. The 2016/2017 BSLC measure of consumption per capita was used and consumption was adjusted upward by BBD 820 for women with children aged 0-3, and by BBD 12.50 for women with children ages 4 and up. Bear in mind, however, that the total increase in income does not accrue directly to woman's consumption alone; rather, the increase in consumption accrues to the household, where it is assumed that consumption is shared equally across the household, as assumed in the 2016/2017 BSLC. Before the experiment, the overall poverty rate suggested by the 2016/2017 BSLC was 26 per cent. Under universal childcare, this poverty rate is expected to fall to around 23 per cent. It is expected that universal childcare might work to reduce poverty even further than this suggests.

While the analysis assumes that the benefits accrue broadly across the population, evidence suggests that women at the lower end of the income scale are those who benefit the most from increased childcare policies. This expected impact increases even further if the government's childcare policies are targeted to ensure the benefit accrues firstly to those at lower income levels. In addition, if there are long-term benefits which accrue to children from the provision of high-quality childcare targeted to children from disadvantaged households, this is expected to limit the cycle of intergenerational poverty. This would further reduce the incidence of poverty since much of the highest returns on investment for the government occur early in a child's life. In addition, increases in national output due to consumption multiplier effects might partially accrue to households who remain below the poverty line; this might lower the poverty rate even further.

Policy Recommendations

Findings presented in this document suggest that there are notable benefits to increasing public investment in childcare services. Based upon the findings, the following evidence-based recommendations are offered.

Recommendation 1: In the absence of sufficient funds, partial and targeted expansion of childcare services should be considered.

The GoB is significantly fiscally constrained due to: its deteriorating fiscal position over the past 12 years; its debt restructuring and subsequent Barbados Economic Recovery and Transformation Programme: and a significant large shock to its tax revenues due to the COVID-19 pandemic. Frequently, it is observed that if a programme or project cannot be funded in its entirety it should be shelved, since it cannot generate the full benefits; however, even moderate public investment in childcare will have significant long-term effects if targeted at lower-income families. In the absence of sufficient funds, expansion in childcare ought to be targeted and stem from two key principles: 1) that childcare should be affordable for all; and 2) the heterogeneity of the benefits from having access to affordable childcare services.

Affordability depends on household income; this implies that the current market price of childcare is affordable for all households, including the poorest households. Therefore, making childcare affordable means first targeting low-income households.

Second, the weight of evidence suggests that the benefits from government intervention in childcare accrues mostly to women and children in low-income households. For example, "subsample analyses indicate that girls and children with low educated mothers benefit the most from childcare"[67] and "children of low-income parents seem to be the primary beneficiaries," while "the benefits of providing subsidised childcare to middle- and upper-income children are unlikely to exceed the costs."[68] For instance, in Korea, reforms to offer full subsidies for childcare to all children aged 0-2 were found to benefit mainly low-

67 Havnes, T. & M. Mogstad (2011). No child left behind: Subsidised child care and children's long-run outcomes. *American Economic Journal: Economic Policy*, Vol. 3, No. 2, pp. 97–129.
68 Havnes, T. & M. Mogstad (2015). Is universal child care leveling the playing field? *Journal of Public Economics*, Vol. 127, pp. 100–114.

income households and less educated mothers.[69] In the United States, childcare subsidies were linked to increased employment among low-income parents.[70] Whereas, in Canada, the lasting benefits to parents for expanded subsidies for childcare were found to be "driven by changes in the labour supply of less educated mothers."[71] Thus, there is strong evidence that suggests the benefits per dollar spent on childcare services are expected to be highest for low-income households.

Given these findings, it is important to understand that untargeted expansion of childcare services might have regressive effects. In this study, the sample of applications to the CCB revealed that there is a tendency for women with higher incomes to have higher acceptance rates to public childcare services in Barbados. This finding is grounded in existing research that has found that when there is rationing of public childcare spaces, more educated families are likely to be better informed that there are only few spaces available and are more likely to join the waiting list earlier.[72] As expected, education is positively correlated with income; thus, an expansion of childcare services that does not specifically target low-income households could end up being a regressive policy that benefits higher-income households more than low-income households. In this study, interviews with representatives from the CCB confirmed that under the current framework – the first come, first served model – there is a tendency for more educated parents to join the waitlist earlier.

Targeting takes different forms under different types of childcare provision. For expansions in public childcare services, targeting would be achieved by allocating a subset of childcare spaces for low- to middle-income households. In terms of subsidising private childcare services, targeting would be achieved by phasing out subsidy levels as incomes increase. For example, the Government might choose to provide an 80 per cent subsidy up to an income level of BBD 25,000 per year (i.e., the income up to which individuals are eligible for a Reverse Tax Credit of BBD 1,300); this subsidy level might decrease with income level up to a pre-defined cut-off point where persons of higher income are not eligible for a subsidy. For example, the GoB might choose to let the subsidy decrease linearly to 20 per cent in income up to BBD 50,000 per year (i.e., the top income tax rate band); such an approach ensures that those for whom childcare services are least affordable receive the greatest level of assistance. Targeted approaches, however, might be constrained by the high level of informality in the Barbadian economy; the informal economy is estimated at 30 to 40 per cent of the economy in Barbados.[73]

Taken together, there is space for even a fiscally constrained government to have a significant impact on gender equality and poverty reduction by investing moderately in childcare services through a targeted approach.

69 Lee, Y. (2016). Effects of a universal childcare subsidy on mothers' time allocation. *KDI Journal of Economic Policy*, Vol. 38, No. 1, pp. 1–22.
70 Tekin, E. (2014). Childcare subsidy policy: What it can and cannot accomplish. *IZA World of Labor*.
71 Lefebvre, P., P. Merrigan & M. Verstraete (2009). Dynamic labour supply effects of childcare subsidies: Evidence from a Canadian natural experiment on low-fee universal child care. *Labour Economics*, Elsevier, Vol. 16, No. 5, pp. 490–502.
72 Farfan-Portet, M.I., V. Lorant & F. Petrella (2011). Access to childcare services: The role of demand and supply-side policies. *Population Research and Policy Review*, Vol. 30 No. 2, pp. 165–183.
73 Peters, A. (2017). Estimating the size of the informal economy in Caribbean States. Inter-American Development Bank: Washington, DC, USA.

Recommendation 2: Consideration should be given to a moderate increase in the price of public childcare services.

A moderate increase in the price of public childcare services will increase the Government's ability to invest in childcare. In this study, most parents were comfortable with moderate increases in the price of childcare from BBD 20 to 35 per week. An increase in the price will reduce the long-term net fiscal cost to the GoB by 11 to 12 per cent; however, there would be a small subset of persons who would not be able to afford such a price increase. Consideration could be given to a progressive fee structure.

Recommendation 3: There is no one model that fits all.

Flexibility is needed to address the needs of various types of families, such as parents/guardians with non-standard working hours.

Recommendation 4: Consideration should be given to a mix of investment in increased public childcare services and/or subsidies for private childcare services.

The two policy options – mix of investment in increased public childcare services and subsidies for private childcare services – are not mutually exclusive. It is possible to choose to expand public childcare services in areas which need it most, while also providing a subsidy more broadly targeted to low-income families. If a subsidy is chosen to expand childcare services, it is highly recommended that the public childcare system continues to operate in an increasingly targeted manner. The reason is that the effects of high-quality public childcare services are critical for long-term outcomes for children from low-income families. High-quality childcare can have the impact of increasing long-term equality.

It is worthwhile noting that each of the two approaches has its own set of costs and benefits. Increasing public childcare requires administrative capacity, but can rely on the existing system of the CCB. In contrast, new subsidies might need to be administered via the existing income tax system and/or welfare system, and through the national insurance system or via a new structure.

Recommendation 5: Should the Government choose to subsidise private childcare services, there must be a focus on quality.

The long-term benefits of high-quality childcare services for children, such as that currently provided by the CCB, can be very high. The long-term benefits to children can be up to 40 per cent of total benefits. In fact, the long-term benefits of high-quality childcare for children will fully offset the long-term net fiscal cost of childcare. While expanding public childcare services is the best way for the GoB to ensure the provision of high-quality childcare, the Government can also consider regulatory or incentive-based approaches to improve the quality of private childcare services, particularly if the Government chooses to subsidise private childcare. Bear in mind, however, improving the quality of childcare services should

not be mistaken for increased heterogeneity, since a diversity of childcare services are likely necessary to meet the diverse needs and goals of parents.

Recommendation 6: Subsidies might lead to increased private sector childcare prices; thus, private childcare centres must be monitored and regulated.

Economic theory suggests that the provision of a subsidy might lead to increased demand for childcare services and an increase in the price of childcare. At face value, one would assume that it is unlikely that there would be a significant increase in the price of childcare given the high number of private childcare providers (more than 100), coupled with the fact that many private childcare centres currently have excess capacity. Theoretically, the price as a competitive force should keep prices for childcare stable, however, collusion in the market or a dominant player could offset this assumption. Anticompetitive behaviour could be monitored by the Fair Trading Commission, the government's fair competition authority.

Finally, policies which increase the ease of entry into the childcare services market could ensure that increased demand can be met by increased supply. Two ways to increase the ease of entry are to: 1) speed up the process of approving new childcare centres, which currently takes over a year according to representatives of the CCB; and 2) broaden the range of commercial buildings that are allowed to house childcare centres, particularly commercial buildings that are closer to workers.

Recommendation 7: Increases in childcare services should be accessible without costly bureaucracy.

Significant bureaucratic costs of accessing public childcare or subsidised childcare can cause expanded childcare not to have the expected benefits. This is particularly important given the previously mentioned high share of informal workers in the Barbadian economy. Access to public childcare services or to subsidies should not only be available to only formal workers.

Recommendation 8: Consideration could be given to providing incentives for employer-supported childcare.

The burden of expanding childcare services does not have to lie solely on the Government. More can be done through a collaboration between the government and businesses to provide employer-supported childcare services. There are several benefits for employers who offer childcare services to employees, including improved recruitment, retention, productivity, diversity and access to markets.[74]

74 International Financial Corporation (2017*). Tackling Childcare: The Business Case for Employer-Supported Childcare. International Finance Corporation.* IFC: Washington, DC, USA.

Recommendation 9: The Government should implement a planning, monitoring and evaluation framework for expansions in childcare services.

Any expansion in childcare services will generate behavioural responses by parents, childcare providers and employers. Given the variety of ways in which childcare services can be provided and expanded, the GoB should identify what outcomes are of critical importance and what methods of providing childcare services would generate the greatest benefits and achieve the desired outcomes (i.e., improving the livelihoods of parents and children alike). As the Government learns what works best for Barbados, revising the approach to providing childcare services is one way to ensure that fiscal expenditure is used efficiently (best practices).

References

Abramsky, T., S. Lees, H. Stöckl, S. Harvey, I. Kapinga, M. Ranganathan, G. Mshana et al. (2019). Women's income and risk of intimate partner violence: secondary findings from the MAISHA cluster randomised trial in North-Western Tanzania. *BMC Public Health*, Vol. 19, No. 1, pp. 1–15.

Addati, L., U. Cattaneo, V. Esquivel & I. Valarino (2018). *Care Work and Care Jobs for the Future of Decent Work.* International Labour Office: Geneva, Switzerland.

Baker, M., J. Gruber & K. Milligan (2008). Universal child care, maternal labor supply, and family well-being. *Journal of Political Economy*, Vol. 116, No. 4, pp. 709–745.

Baker, M., J. Gruber & K. Milligan (2019). The long-run impacts of a universal child care program. *American Economic Journal: Economic Policy*, Vol. 11, No. 3, pp. 1–26.

Barbados Statistical Service (2013). *2010 Population and Housing Census Volume 1.* Barbados Statistical Service: Bridgetown, Barbados.

Bednar, S. & D. Gicheva (2014). Are female supervisors more female-friendly? *American Economic Review*, Vol. 104, No. 5, pp. 370–75.

Bellony, A., A. Hoyos & H. Ñopo (2011). *Gender Earnings Gaps in the Caribbean: Evidence from Barbados and Jamaica.* Inter-American Development Bank: Washington, DC, USA.

Bennett, J. (2008), *Early Childhood Services in the OECD Countries: Review of the Literature and Current Policy in the Early Childhood Field.* UNICEF: New York, NY, USA.

Blau, D.M. & A.P. Hagy (1998). The demand for quality in child care. *Journal of Political Economy*, Vol. 106, No. 1, pp. 104–146.

Briguglio, L. (1995). Small island developing states and their economic vulnerabilities. *World Development*, Vol. 23, No. 9, pp. 1615–1632.

Buller, A.M., A. Peterman, M. Ranganathan, A. Bleile, M. Hidrobo & L. Heise (2018). A mixed-method review of cash transfers and intimate partner violence in low-and middle-income countries. *The World Bank Research Observer*, Vol. 33, No. 2, pp. 218–258.

Çağatay, N., I. İlkkaracan & B. Sadasivam (2017). *Investing in Social Care for Gender Equality and Inclusive Growth in Europe and Central Asia*, Policy Brief No. 2017/01. UN Women Europe and Central Asia Regional Office: Istanbul, Turkey.

Connelly, R. & J. Kimmel (2003). Marital status and full–time/part–time work status in child care choices. *Applied Economics*, Vol. 35, No. 7, pp. 761–777.

Coppin, A. (1996). Male and female earnings in the Caribbean economy of Barbados: A human capital perspective. *The Review of Black Political Economy*, Vol. 25, No. 2, pp. 61–75.

De Henau, J. (2019). *Employment and Fiscal Effects of Investing in Universal Childcare: A Macro-Micro Simulation Analysis for the UK*, IKD Working Paper No. 83. The Open University.

Dearing, E., H.D. Zachrisson & A. Nærde (2015). Age of entry into early childhood education and care as a predictor of aggression: faint and fading associations for young Norwegian children. *Psychological Science*, Vol. 26, No. 10, pp. 1595–1607.

Downes, A.S. (2001). *An Analysis of Economic and Social Development in Barbados: A Model for Small Island Developing States.* UN Economic Commission for Latin America and the Caribbean: Santiago, Chile.

Edmonds, J. & C. Girvan (1973). Child care and family services in Barbados", *Social and Economic Studies.* Vol. 22, No. 2, pp. 229–248.

Farfan-Portet, M.I., V. Lorant & F. Petrella (2011). Access to childcare services: The role of demand and supply-side policies. *Population Research and Policy Review*, Vol. 30, No. 2, pp. 165–183.

Friese, S., V.K. Lin, N. Forry & K. Tout (2017). *Defining and Measuring Access to High-Quality Early Care and Education (ECE): A Guidebook for Policymakers and Researchers,* No. 2017–08. Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services: Washington, DC, USA.

García, J.L., J.J. Heckman, D.E. Leaf & M.J. Prados (2020). Quantifying the life-cycle benefits of an influential early-childhood program. *Journal of Political Economy*, Vol. 128, No. 7, pp. 2502–2541.

Gathmann, C. & B. Sass (2018). Taxing childcare: Effects on childcare choices, family labor supply, and children. *Journal of Labor Economics*, Vol. 36, No. 3, pp. 665–709.

Gromada, A., D. Richardson & G. Rees (2020). *Childcare in a Global Crisis: The Impact of COVID-19 on Work and Family Life.* Innocent Research Brief No. 2020–18. UNICEF: Florence, Italy.

Havnes, T. & M. Mogstad (2011). No child left behind: Subsidised child care and children's long-run outcomes. *American Economic Journal: Economic Policy*, Vol. 3, No. 2, pp. 97–129.

Havnes, T. & M. Mogstad (2015). Is universal child care leveling the playing field? *Journal of Public Economics*, Vol. 127, pp. 100–114.

İlkkaracan, I., K. Kim & T. Kaya (2015). *The Impact of Public Investment in Social Care Services on Employment, Gender Equality, and Poverty: The Turkish Case.* Istanbul Technical University, Women's Studies Center in Science, Engineering and Technology and The Levy Economics Institute: Istanbul, Turkey.

International Financial Corporation (2017*). Tackling Childcare: The Business Case for Employer-Supported Childcare. International Finance Corporation.* IFC: Washington, DC, USA.

International Monetary Fund (2018). *IMF Country Report No. 18 /290 Barbados*. International Monetary Fund: Washington, DC, USA.

Jackman, M. & M. Moore (2021). Does it pay to be green? An exploratory analysis of wage differentials between green and non-green industries. *Journal of Economics and Development*, Vol. 23, No. 3, pp. 284-298

Kunze, A. & A.R. Miller (2017). Women helping women? Evidence from private sector data on workplace hierarchies. *Review of Economics and Statistics*, Vol. 99, No. 5, pp. 769–775.

Lee, Y. (2016). Effects of a universal childcare subsidy on mothers' time allocation. *KDI Journal of Economic Policy*, Vol. 38, No. 1, pp. 1–22.

Lefebvre, P., P. Merrigan & M. Verstraete (2009). Dynamic labour supply effects of childcare subsidies: Evidence from a Canadian natural experiment on low-fee universal child care. *Labour Economics*, Vol. 16, No. 5, pp. 490–502.

Massiah, J. (1983). *Women as Heads of Households in the Caribbean: Family Structure and Feminine Status.* United Nations Educational Scientific and Cultural Organization (UNESCO): Esssex, United Kingdom.

Mateo Díaz, M. & L. Rodriguez-Chamussy (2016). *Cashing in on Education: Women, Childcare, and Prosperity in Latin America and the Caribbean.* The World Bank: Washington, DC, USA.

Matsa, D.A. & A.R. Miller (2013). A female style in corporate leadership? Evidence from quotas. *American Economic Journal: Applied Economics*, Vol. 5, No. 3, pp. 136–69.

Ministry of Education, Science, Technology and Innovation (2017). *2015-2016 Statisitcs on Education in Barbados at a Glance.* Ministry of Education, Science, Technology and Innovation: Saint Michael, Barbados.

Partika, A. (2017). Providing access to child care means more than providing enough slots. *Child Trends*. Retrieved on 19 December 2020 from: https://www.childtrends.org/blog/providing-access-child-care-means-providing-enough-slots.

Peters, A. (2017). Estimating the size of the informal economy in Caribbean States. Inter-American Development Bank: Washington, DC, USA.

Powell, L.M. (2002). Joint labor supply and childcare choice decisions of married mothers. *Journal of Human Resources*, pp. 106–128.

Samman, E., E. Presler-Marshall, N. Jones, T. Bhatkal, C. Melamed, M. Stavropoulou & J. Wallace. (2016). *Women's Work: Mothers, Children and the Global Childcare Crisis*. Overseas Development Institute: London, UK.

Stoffle, R. (1977). Industrial impact on family formation in Barbados, West Indies. *Ethnology*, Vol. 16, No. 3, pp. 253–267.

Sutherland, R. & R. Craigwell (2011). Private Consumption Expenditure in the Eastern Caribbean Currency Union. Munich Personal RePEc Archive. Retrieved on 5 December 2021 from: Determinants_of_Private_Consumption_Expenditure_in_the_ECCU_1_.pdf (uni-muenchen.de)

Tekin, E. (2014). Childcare subsidy policy: What it can and cannot accomplish. *IZA World of Labor*.

United Nations Development Programme (2020). *Human Development Report 2020. The Next Frontier - Human Development and the Anthropocene.* United Nations Development Programme (UNDP): New York, NY, USA.

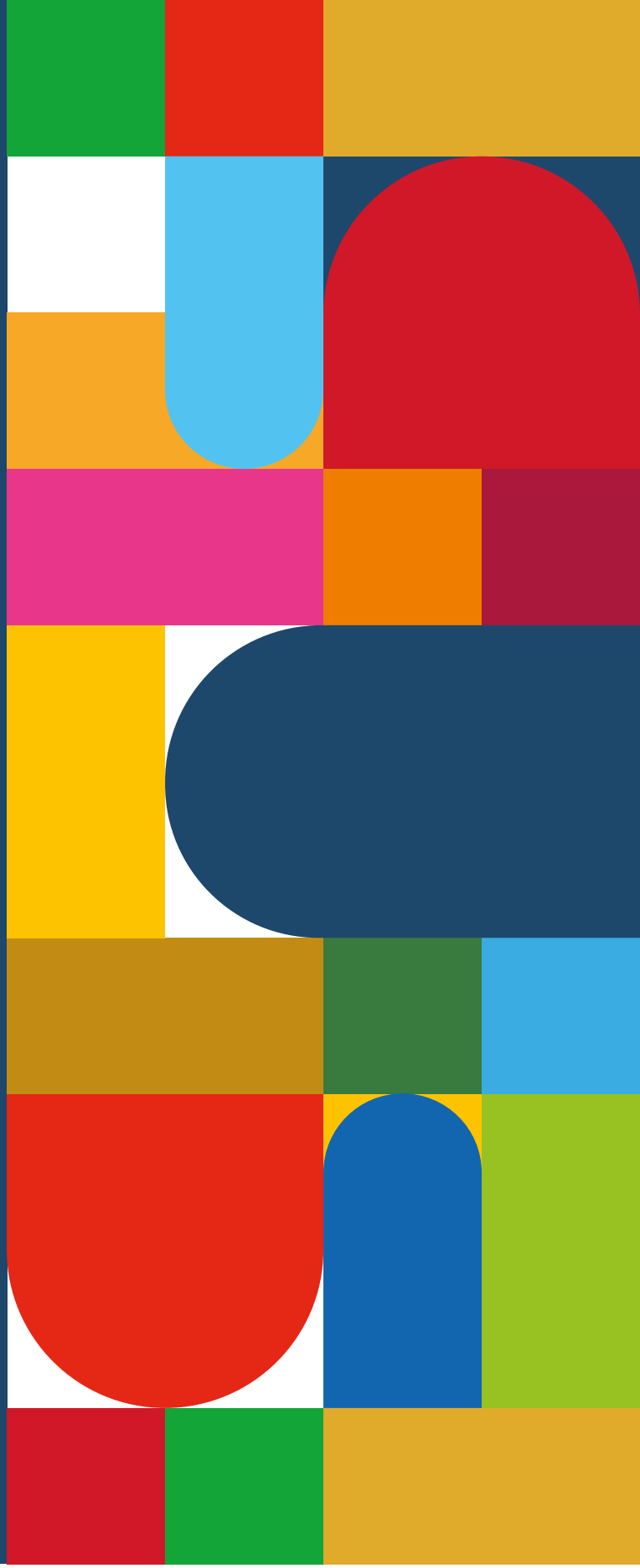
Worrell, D. (2012). *Policies for Stabilization and Growth in Small Very Open Economies.* Group of 30: Washington, DC, USA.

Worrell, D. & S. Lowe (2013). Growth Forecasts for Foreign Exchange Constrained Economies. *Journal of Business, Finance and Economics in Emerging Economies*, Vol. 8, No. 1, pp. 1–25.

Worrell, D. (2020). An alternative policy approach to growth and stabilization in small open economies. In *Handbook of Caribbean Economies* (pp. 11-20), Routledge: New York, NY, USA.

Worrell, D. (2020). Why and how to use fiscal policy to target the exchange rate. In *Handbook of Caribbean Economies* (pp. 161-179). Routledge: New York, NY, USA

Worrell, D. (2020). An alternative policy approach to growth and stabilization in small open economies. In *Handbook of Caribbean Economies* (pp. 11-20). Routledge: New York, NY, USA.



UNITED NATIONS
Barbados & the Eastern Caribbean
Anguilla • Antigua and Barbuda • British Virgin Islands • Commonwealth of Dominica • Grenada • Montserrat • Saint Lucia • Saint Kitts and Nevis • Saint Vincent and the Grenadines • OECS

JOINT SDG FUND

UN WOMEN