



**A Future of Child Poverty
in Puerto Rico:
How Much It Costs and
What We Can Do About It**



**YOUTH
DEVELOPMENT
INSTITUTE OF
PUERTO RICO**

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Letter from the Executive Director

When I was little, 2020 seemed far away, a time when all the futuristic visions from sci-fi movies would finally become a reality. For certain, by then, we would have flying cars and robots everywhere, I thought. Later, as a young adult, I had other dreams and expectations for 2020. I participated in many round tables and forums where the vision of Puerto Rico in 2020 was sketched out. We envisioned a place with no poverty, high-quality education systems, and sustainable and robust socio-economic development.

Yet here we are, discussing a reality that has not been changed. In this case, child poverty has persisted over the years. Contrary to what some may think, this issue does not only affect a few families, which tend to be judged by some as responsible for their condition. Poverty is something that affects, in one way or another, the majority of families with children in Puerto Rico. Child poverty is lived every day by mothers, fathers, grandparents, and all those who raise children. It's the struggle to find work, keep it, and be able to provide with what is earned a dignified life and opportunities so that their children can achieve their full potential. Child poverty is a reality that poses obstacles in the lives of hundreds of thousands of children and youth in Puerto Rico, and that threatens any possibility that the island gets closer to the vision we had for this new decade.

2020 might not have brought flying cars or better conditions for Puerto Rico, but it will bring a new way to develop public policy. If we take the Summer of 2019 as a foundation, we can make the most of these elections to demand a new type of governance. We would no longer evaluate candidates and elected officials based on their political party, their caravans, or pictures kissing babies and the elderly, but rather by their commitment towards the issues that affect us individually and collectively. It is time to ask for details from their platforms, and to question whether what they are proposing is based on research, data, and the voices of those affected. Once they are elected, we must continue demanding that they keep their election promises, and ask them to measure the results of those promises.

This study seeks to position the issue of child poverty as one of the most urgent for Puerto Rico in 2020, and to create consensus about its solutions, recognizing that there is no silver bullet. We establish firmly that this is a problem of economic development, and that it is solvable.

Here we propose a series of measures, in this way eliminating any excuse of this being an intractable problem. If these measures are implemented, we project that they can result in significant reduction of child poverty in Puerto Rico over ten years. Some of these solutions will require us to rethink the way we use the resources that we currently have, others will require changes at the federal level, and others point towards the creation of new public policies at the local level. Although they can be complex, these solutions are indispensable if we want to ensure Puerto Rico's survival.

As citizens and civic sector, let us commit to demand that this issue is a priority in the discussions of the 2020 elections that policymakers have the political will to use this map as a starting point to develop and implement solutions that will, once and for all, lead to a future of prosperity for all of our children. As this report shows, eradicating child poverty is costly, but even more costly is doing nothing.

At your service,
Amanda Rivera
Executive Director
Youth Development Institute of Puerto Rico



Summary

The prosperity of Puerto Rico depends on the well-being and healthy development of its children. Child well-being includes many things that are often interrelated, such as brain development, nutrition, health, education, values, recreation, nurturing, role models, and so on. But for too many Puerto Rican children, their well-being and healthy development is threatened by poverty. Poverty creates toxic stress that affects brain development. Children in poverty attend poorer quality schools, are in poorer health, have a higher chance of dropping out of high school, and have higher chances of getting involved in crime, either as a victim or as an offender. Although some children will manage to beat the odds and succeed in the midst of poverty, many will be lost in the way. As adults, a good share of these children will have lower levels of education, lower earnings, lower employment, poorer health outcomes, and more exposure to crime and violence. For Puerto Rico this means lower productivity, lower production of goods and services, misallocation of private resources, less resources for development, and more to mitigate the negative consequences of poverty. Considering lost earnings, poor health, and higher crime, the one-year cost of child poverty is \$4.4 billion, or 4.3% of the Gross Domestic Product in 2017. An aggressive anti-poverty agenda could reduce child poverty from 58% to 49% in three years and to 37% in 10 years. In all the three policy scenarios modeled, the cost of reducing poverty was much lower than the cost of doing nothing.

Introduction

The core idea of this report is that for us to prosper as a country, we need to reduce child poverty. Puerto Rico stands at a critical moment as it carves its future. The economic model that guided development for decades is no longer feasible. Financing alternatives that were available before the crisis are no longer available. The population we count on to support future development is declining and aging. The institutional framework over which development was predicated is bankrupted. As the Boricua Summer 2019¹ showed, the people of Puerto Rico is dissatisfied with its institutions, and feel that the public policy of the country does not respond to the challenges confronted day to day.

Within this dire backdrop live 656,000 children. They carry a heavy load on their shoulders. These boys and girls are the ones who will build the new Puerto Rico. They are full of will, hope, and enthusiasm, but many lack the tools to be the protagonists of the economic future of Puerto Rico. More than half of them, 383,000, live in poverty; 38% live in extreme poverty with incomes of around \$3,950 annually according to data from the Puerto Rico Community Survey 2017. Poverty harms the healthy development of children. Cognitive development, nutrition, health, school attainment, and exposure to crime are all affected by poverty. Certainly, some children growing up in poverty will overcome the obstacles imposed by their limiting circumstances and will succeed. But it is not easy, and a lot of children will be left behind.

The consequences of child poverty go beyond the children themselves and their families. The loss of human potential associated with child poverty is costly for the whole society and threatens Puerto Rico's future prosperity. Today's child poverty affects Puerto Rico's future in four main ways:

- ① children growing up in poverty are less likely to finish high school and less likely to pursue post-secondary education, all of which reduce the country's productivity levels;
- ② children who grow up poor have lower earnings as adults, reducing the level of aggregate consumption in the economy;
- ③ children who grow up poor are in poorer health as adults and are more likely to develop chronic health conditions, which is costly for all and reduces the quality of life of Puerto Ricans; and
- ④ children who grow up poor and in high-poverty areas are more likely to engage in crime and to be themselves victims of crime as youths and adults, augmenting safety expenditures for the government and the private sector and reducing the safety of all.

This report focuses on the consequences of child poverty for Puerto Rico and what we can do about it. Specifically:

- ① it presents evidence about the impacts of poverty on Puerto Rican children;
- ② it quantifies the cost of child poverty; and
- ③ it presents a road map to significantly reduce poverty in ten years;

No study can possibly quantify all the costs associated with poverty. Therefore our figures are a conservative estimate of the overall cost of child poverty. Following studies in other countries, we concentrate on the costs on earnings, health, and crime, but even within these three domains, our accounting is likely to be incomplete. The policies, programs, and practices discussed to move families with children out of poverty are evaluated in terms of costs and potential impacts on poverty reduction. The main conclusions of this report are that:

- 1 growing up in poverty has consequences for health, earnings, educational attainment, and exposure to and involvement in crime;
- 2 the one-year cost of child poverty evaluated in 2017 is \$4.4 billion, or 4.3% of the Gross Domestic Product; the three-year cost is \$13.2 billion; and the ten-year cost is \$44 billion;
- 3 each child living in poverty carries a yearly cost of \$11,536;
- 4 child poverty can be reduced from 58% to 49% in three years and to 37% in 10 years; and
- 5 reducing child poverty by this amount will cost \$6.5 billion in three years and \$21.6 billion in ten years, well below the cost of doing nothing.

This report is organized in two major parts. The first part deals with the estimates of the cost of child poverty and the second part deals with policy solutions, their effectiveness and costs. It starts with an overview of child poverty in Puerto Rico and the conceptual framework.

Child Poverty in Puerto Rico: An Overview

Poverty levels in Puerto Rico are generally measured by the thresholds established by the federal government. These thresholds vary by the number of persons in the household, number of children, and the presence of persons aged 65 and over. They were created in 1963 and are updated annually for inflation. The initial amounts reflect the cost of the Department of Agriculture's economy food plan for a family of its size multiplied by 3, and in the case of two-person families, by 3.7.² Children are defined as poor if they live in a family that is poor.

As shown on **Figure 1.1**, child poverty in Puerto Rico has remained persistently high through the years, with an estimate of 57% for 2018. According to the Profile of Children Living in Poverty of the Youth Development Institute of Puerto Rico (2018), the median income of the households of children living in poverty in 2017 was \$9,400. This compares to \$47,600 for those above the poverty level.

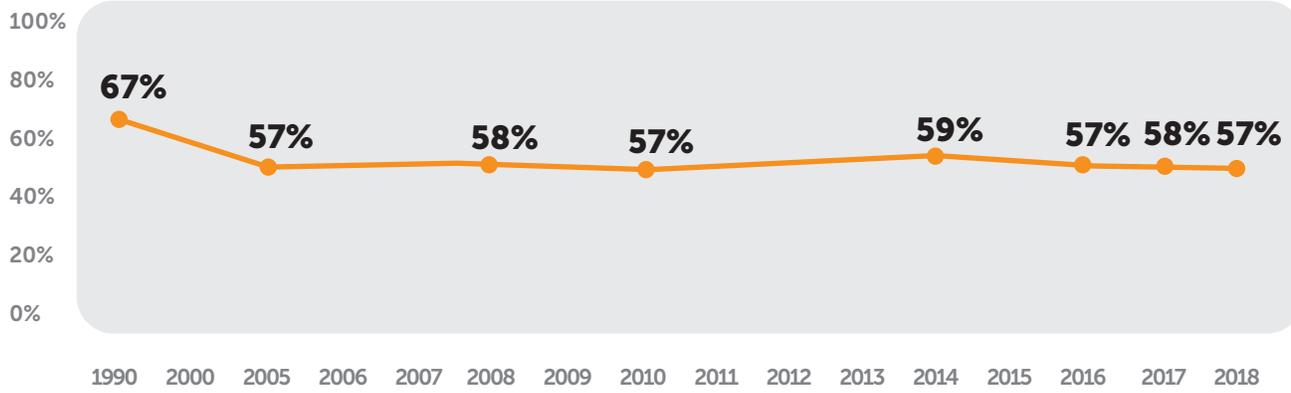
The central mountainous area has the higher percentages of children living in poverty, with up to 84% in Maricao, as seen in **Figure 1.2**. The lowest percentage in poverty is in the metropolitan area of San Juan.

Differences between children living in poverty and those above the poverty level are evident. Single parenthood, lack of employment, and low levels of education are closely related to poverty. The differences in family structure are large (**Figure 1.3**). Three quarters of children in poverty live in single-parent families, in comparison to 36% of the children above the poverty level.

When we look at the parents' employment status (**Figure 1.4**), we see that 37% of the children in poverty live in a home where the head of the household is employed, while the parents of 80% of the children above the poverty level are employed. Similarly, as shown on **Figure 1.5**, only 25% of poor children live in a household where the head has post-secondary education, while among children above the poverty level, 65% do so.

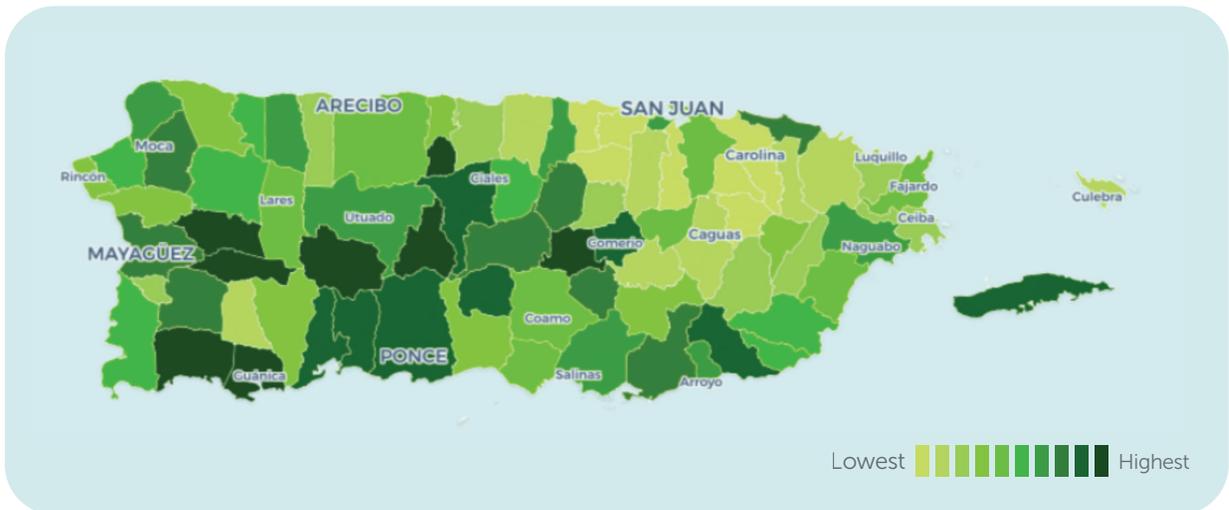


FIGURE 1.1 Children Below the Poverty Level in Puerto Rico (1990-2018)



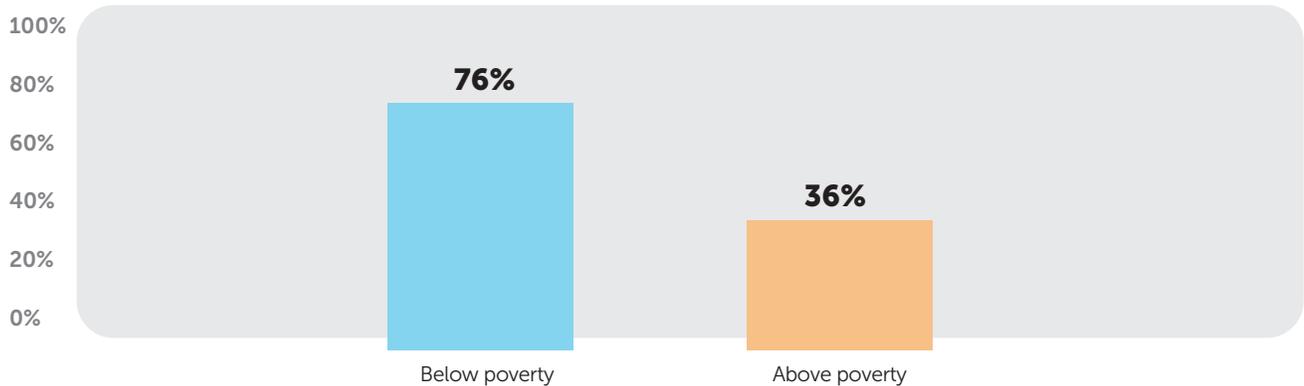
Source: Puerto Rico Census (1990, 2000 and 2010) and Puerto Rico Community Survey (Ruggles et. al. 2018)

FIGURE 1.2 Percentage of Children Living in Poverty: 2017



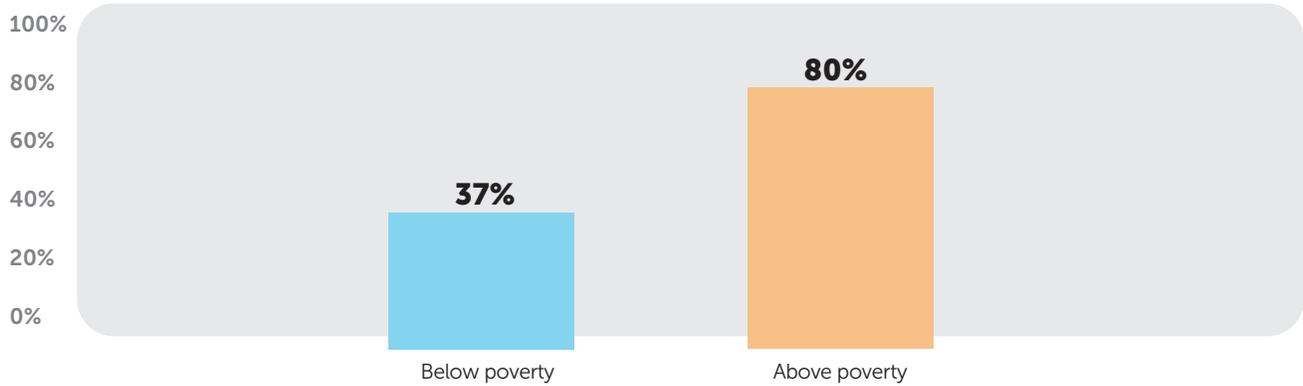
Source: Municipality Index from <http://juventudpr.org/en/data/municipality-index/>

FIGURE 1.3 Children in Single-Parent Homes by Poverty Level: 2017



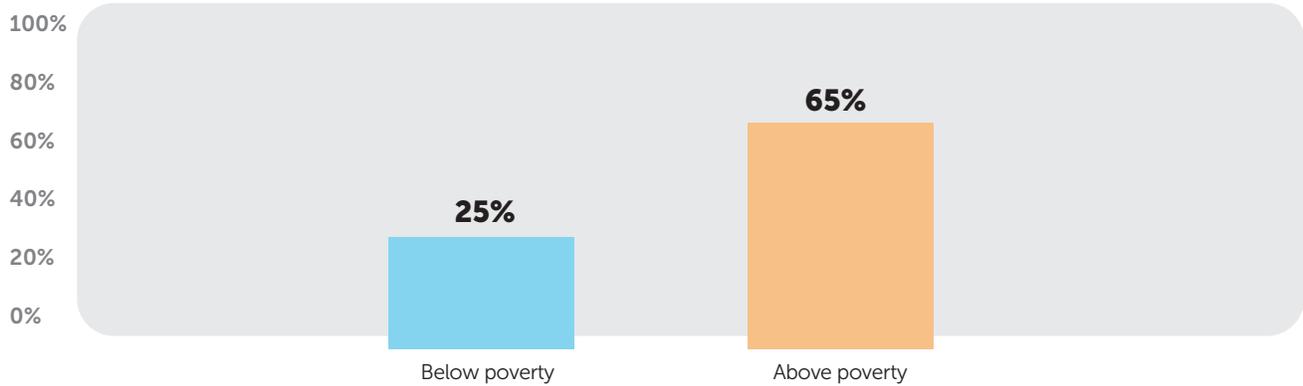
Source: Profile of Children Living in Poverty, Youth Development Institute of Puerto Rico, October 2019

FIGURE 1.4 Children in Homes Where the Head of the Household Is Employed by Poverty Level: 2017



Source: Profile of Children Living in Poverty, Youth Development Institute of Puerto Rico, October 2019

FIGURE 1.5 Children in Homes Where the Head of the Household Has Post-Secondary Education by Poverty Level: 2017



Source: Profile of Children Living in Poverty, Youth Development Institute of Puerto Rico, October 2019

Conceptual Approach

Poverty has consequences for the healthy development of children, and its impact carries over to adulthood. Certainly, poverty is not destiny. Some children who grow up poor will beat the odds and succeed, but many will be lost in the way. For the children growing up in poverty, “there is no turning back in time, they face the harsh reality that goes with poverty” (Figueroa-Rodríguez 2016: 249).

Several studies have shown that children living in poverty have lower earnings as adults (Brooks-Gunn and Duncan 1997; Duncan, Ziol and Kalil 2010), have poorer health (Currie et al. 2010; Guo and Harris 2000; McLeod and Shanahan 1996; Thompson 2014;

Watson et al. 2017), and are more likely to be both victims of crime and offenders (Bjerk 2007; Hay et al. 2007; Mok et al. 2018). It is also known that the effects of poverty are compounded in areas of high poverty concentration (Hay et al. 2007). Possibly, this is due to social exclusion, exposure to violence, and a lack of networks, community resources, and informal sources of control in high-poverty areas (Allen 1996; Calvo and Zenou 2004; Hay 2007; Moore et al. 2014). The effects of poverty on child development are stronger when it takes place at early ages and the longer a child is exposed to poverty (Duncan, et al. 2012; Ratcliffe and McKernan 2012).

The main idea of how poverty affects children, its effect on adult life, and, eventually, in the country is shown in **Figure 1.6**. Research has documented how poverty exposes children to toxic stress that affects their neurobiological development and, consequently, their learning abilities and academic and emotional performance (Brooks-Gunn and Duncan 1997; Harvard Medical School 2011; Kindig 2015; McLeod and Shannahan 1996; Thompson 2014). Stress affects a child's ability to concentrate, remember things, and control and focus their thinking; and is conducive to the development of self-defense mechanisms of swift response, pushing, yelling, and fighting, which can result in violence (Thompson 2014, 14). Children in poverty have fewer resources to buffer the negative impact of traumatic experiences (Brooks-Gunn et al. 1995; Harvard 2011).

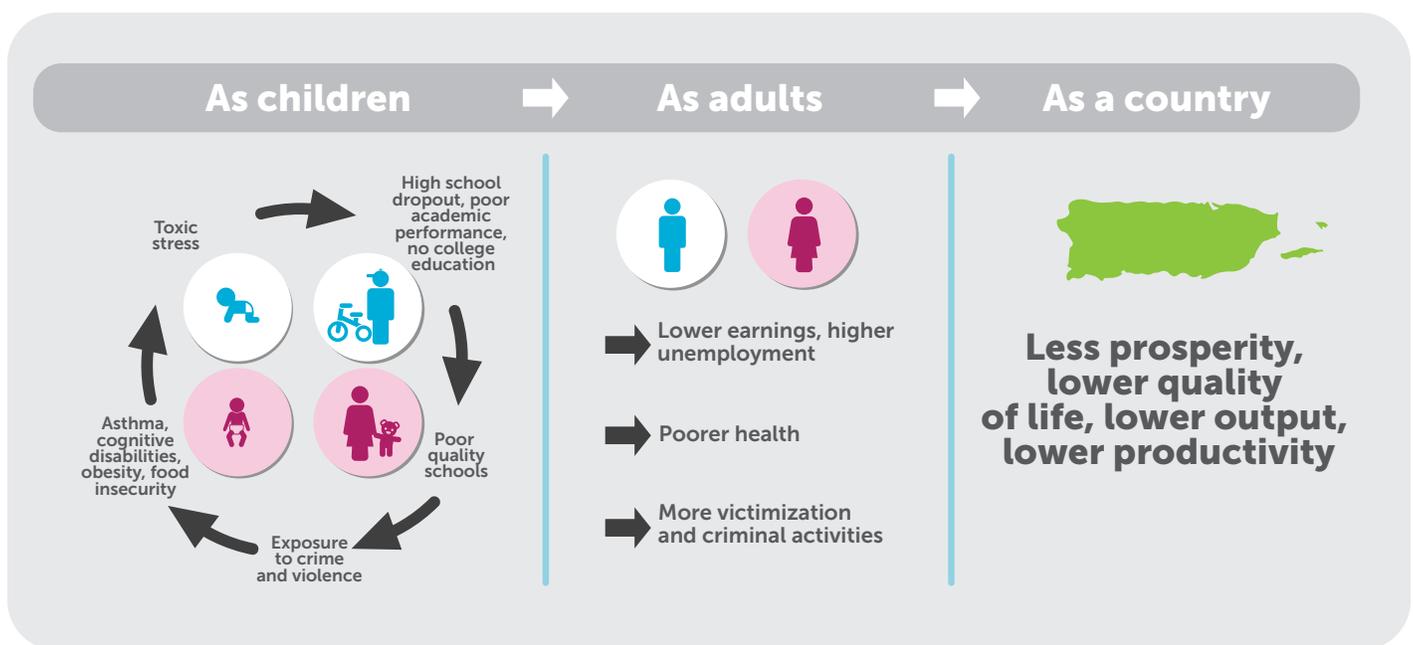
Lack of economic resources is another mechanism by which poverty affects children's outcomes. Lack of money means less access to good-quality schools and to inputs that are accessories to a good education, such as visits to museums, cultural exposure, books, computers, and others. Children living in poverty are less likely to finish high school and to pursue post-secondary education. Economic theory emphasizes that youths growing up in poverty have fewer options and less to lose from crime involvement.

Low educational achievement, high unemployment, and detachment from the formal labor market, current and expected, reduce the cost of engaging in criminal activities (Freeman 1996; Imai 2004; Lochner 2004; Yamada 1985). Low-income families have fewer resources to access quality healthcare (Dickie 2005; Galbraith et al. 2005; Shonkoff and Phillips 2000). A health model used by the Robert Wood Foundation County Health Rankings attributes 40% of the child's health outcomes to income and education, the other 20% to the medical care system, and 30% to health behaviors (Kindig 2015).

Yet another conduit by which poverty reduces the opportunities for the healthy development of children is the environment. Children living in poverty are more likely to live in areas exposed to environmental pollutants such as lead, industrial waste, and environmental chemicals (Etzel 2003; Raunch and Lanphear 2012).

All this combines to constrain the healthy development of children and their opportunities as adults, reducing their earnings and employment chances, compromising their health, and increasing their chances of engaging in crime or being a victim of a crime. The country, in turn, loses human capital needed for development and prosperity.

FIGURE 1.6 Child Poverty and Its Repercussions



Part I: The Cost of Child Poverty in Puerto Rico

Prior Studies of the Cost of Child Poverty

There are three main ways to quantify the cost of poverty: (1) the current cost of poverty from a budget perspective; (2) how much would it cost to cover the poverty gap; (3) and the cost of poverty from a human potential/capabilities approach focusing on the long-term effects of growing in poverty evaluated in adult outcomes.

In the first method, the immediate costs of child poverty are quantified from a budget perspective, considering the cost of programs that serve families with children in poverty, such as social welfare programs, the Department of Education, and others that promote economic mobility. For example, Bramley and Watkins (2008) estimated \$14.2 billion to \$25.4 billion as the annual budget cost related to services due to child poverty in England considering health services, public education, national security, housing, rescue services, and grants, among others. While in Canada, Laurie (2008) estimated an annual cost of \$10.4 billion to \$13.1 billion to mitigate the consequences of living in poverty in Ontario. This budget represents 11% to 17% of the annual budget in the province of Ontario. These costs include health services, the impact on crime, and reduced tax collection, among other entries. Laurie also considered the second approach. In this estimation, people living in poverty are moved out of poverty by receiving the income needed so that their average income equals that of the 40th centile.

The human potential or capabilities approach considers the limitations that poverty imposes on the development of children and its long term consequences (McLaughlin and Rank 2018). In England, the long-term effect of child poverty has been documented using the British Cohort Study. Blanden, Hansen, and Machin (2008) demonstrated that there is a direct relationship between being poor at the age of 16 with lower employability and lower earnings as adults. Earnings are reduced between 15% and 28%, and employment chances are reduced between 4% and 7% at the age of 34 for adults who were poor at age 16. The authors estimated a cost of 4% of England's GDP, considering the lost income of adults who were in poverty

at age 16 (Blanden, Hansen, and Machin 2008). Blanden and colleagues discuss the labor market reaction to the entry of new workers due to poverty eradication, concluding that the market adjusts to increased labor supply without significantly lowering relative wages and employment.

Nonetheless, most studies that quantify the long-term impact of child poverty not only consider earnings and employment but also the effect on criminal activities, poorer health, and disabilities, among other adverse adult outcomes, as a result of being raised in poverty.

The estimates in the literature vary greatly, due to the items that are being quantified and the availability of data. Holzer et al. (2007) estimated that the cost associated with child poverty in the United States is \$500 billion annually, or 3.8% of the GDP, considering the relationship between child poverty and reduced earnings in adulthood, participation in crime, and health. These authors adopted parameters obtained from studies using the Panel Study of Income Dynamics (PSID) and the 1979 cohort of the National Longitudinal Survey of Youth (NLSY79) to demonstrate that if the income of families below the poverty level is doubled, the income of their children will rise between 30% and 40% in adulthood. The authors also used estimates of health and crime costs from prior studies, finding that "low childhood income doubles the likelihood that individuals commit and report costly crimes, relative to children growing up in families with incomes around twice the poverty line" (Holzer et al. 2007, 14). They predicted as well how child poverty affects health expenditures per age group considering the value of health capital, which is the value of quality of life without disease. This study adjusts costs downward by about 40% due to innate ability. Earning losses are also adjusted downward to maintain the ratio of earnings in the national income.

McLaughlin and Rank (2018) evaluated the expenses associated with lost earnings, criminal prosecution, poorer health, child abuse, and homelessness using a methodology similar to Holzer et al. (2007). They reached an estimated cost rooted in child poverty of \$1 trillion annually in the United States, or 5.4% of its GDP. This study concludes that, for every dollar invested in reducing child poverty, the US could save between \$7 and \$12 of the money used to mitigate poverty. This analysis also integrates an innate ability component of 40%, and a hereditary adjustment of 7% in health, as proposed by Jencks and Tach (2005).

Hirsch (2013), using data for England, considered the loss of income, social services, the education department, the justice system, the police, treatment of acute health conditions, and the loss of taxes. He estimated the cost of

child poverty in £25 billion in 2008 and £29 billion in 2013. In conclusion, there is no single way to measure the long-term impact of child poverty, although most studies assess the lost income and the costs associated with crime and health. However, no study can include all the costs associated to child poverty. As we have discussed, most of these studies rely heavily on findings from longitudinal data and parameters imported from other studies. In the end, mostly everything depends on the available data and the statistical relationship between child poverty and the outcomes of interest as adults.

Technical Approach

To estimate the cost of child poverty, this study focuses on three areas of impact: earnings, health, and crime. The selection of these variables is based on the prior research discussed below, and that measurement of its effects can be done with reasonable certainty.

The earnings losses refer to reduced productivity and unrealized consumption that otherwise would increase national production. Health effects also relate to productivity, which is already included in the earnings component. However, it adds the quality of life lost due to illness and the expenditures in health maintenance that could be avoided if it were not for the effects of child poverty. With respect to crime, it represents the cost to society from lives lost, loss of potential earnings of the incarcerated, cost to government agencies, and value of stolen property. With crime as with health, one may think of these expenditures as forgone spending that could be used in more productive alternatives (Ludwig 2010). In addition, only a portion of all these costs can be attributed to child poverty.

The underlying question that our analysis tries to answer is: how do children that grow up poor do when they become adults? The best approach to answer this question is to analyze longitudinal data. Our methodology is based on Holzer et al. (2007) and Blanden, Hansen, and Machin (2008), although due to data limitations, it was not always possible to replicate their methods. Many of the estimates of Holzer et al. (2007) are based on research using the PSID, a data set that has followed families for over five decades or the National Longitudinal Survey of Youth (1979), which still follows youths who were 14 to 22 years old in 1979. Blanden, Hansen, and Machin (2008) use England's British Cohort Study (BCS70), which followed

children for over 20 years. The main limitation in estimating the cost of child poverty for Puerto Rico is the lack of longitudinal data following children and families for a prolonged period.

We are especially careful in not extrapolating from the parameters of other countries, as we believe that some conditions in Puerto Rico are different, and those estimates may not be readily applicable. But such estimates are useful as a comparison and for placing a range of possible values. We assess the child poverty-outcome relationship through the following:

- ① repeated cross-sections of child poverty for the 78 municipalities of Puerto Rico, and the outcome of interest when data are available;
- ② estimates of the literature based on Puerto Rico;
- ③ data scattered across different private organizations, government agencies, and investigative media reports;
- ④ correlations between poverty and child outcomes based on nationally representative cross-sectional data; and
- ⑤ in-depth interviews with low-income mothers with children aged up to 17 in Arecibo, San Juan, and San Lorenzo (see Appendix 1 for a description of the characteristics of interviewees; quotes are translated in to English and the diversity of participants are presented in Appendix 2).

Following research evidence, we assume that poverty has its most significant effect on children who live most of their lives in poverty (Ratcliffe and McKernan 2012; Wagmiller and Adelman 2009). We use a synthetic cohort approach to get an estimate of the percentage of children of Puerto Rico who live in poverty most of their childhood. This method takes a birth cohort and ages it across successive surveys across time to infer their outcomes as they age.

The cost of child poverty is estimated using a poverty differential approach. Depending on the outcome at hand, we ask what the result would be if child poverty is zero or if income is above the poverty level. These estimates were construed as the cost of child poverty, taking eradication of child poverty as the counterfactual. The estimates presented here refer to one year, meaning that these costs could be seen yearly if the problem of child poverty goes unattended.

Our estimates of crime are a lower bound, since we consider only the tangible costs (United States GAO 2017) of a certain type of crime, making reasonable assumptions when data are not available. Following prior studies, we focus on “street crime” (Holzer et al. 2007; Lochner 2004). We concentrate on Type I crimes, which include homicides, and crimes against property. These are the crime types that the literature has linked to the socio-economic conditions of the perpetrator. One might argue that stolen property continues to circulate in the economy and hence it is not lost value. Although that may be true, stolen property results in additional expenditures by the victims to replace it. This additional expenditure represents a transaction costs and a misallocation of resources, as people spend to replace the stolen property and not in additional products or services that would increase their well-being.

Poverty and Children’s Outcomes: Evidence for Puerto Rico

The following sections present evidence about the links between childhood poverty and adult outcomes in Puerto Rico. It is based on research studies, agency reports and tabulations of the Puerto Rico Community Survey, the Behavioral Risk Surveillance Survey for Puerto Rico, and an analysis of in-depth semi-structure interviews of 20 low-income mothers in the municipalities of San Juan, Arecibo, and San Lorenzo.

Evidence on Child poverty and Adult Earnings in Puerto Rico

One way child poverty affects the future income of children is by the constraints it places on accessing resources that enhance their education. As shown in **Table 1.1**, Puerto Rico’s children living in poverty are less likely to attend pre-school, less likely to live in a household with private transportation, and less likely to have Internet or a computer at home. Puerto Rico’s youth aged 16 to 20 living in poverty are 4 percentage points more likely than those not in poverty to be out of school and without a job.



TABLE 1.1 Living Conditions of Children (by Poverty Status)

Conditions	Children Living Below Poverty Line (%)	Children Living Above Poverty Line (%)
16- to 20-year-olds not in school and not working	17	13
Computer at home	44	79
Internet at home	76	90
Car at home	85	99
3- to 4-year-olds attending pre-school	51	69

Source: Profile of Children Living in Poverty, Youth Development Institute of Puerto Rico, October 2019

Research shows that the effects of poverty on future earnings and other outcomes are stronger the longer the child is exposed to poverty (Duncan, Zol, Kalil 2012; Ratcliffe and McKernan 2012). While no data for Puerto Rico track children across time, a synthetic cohort analysis suggests that poverty persists across childhood. Following synthetically the children aged 1 in 1990 that were living in poverty (Table 1.2, Panel A), 83% of them were poor in 2000 when the cohort reached age 11. In 2005, when the cohort is aged 16, 79% were living in poverty. A similar analysis for the cohort of children living in poverty that were aged 5 in 1990 (Panel B) also shows persistently high poverty rates. This pattern is repeated in all age groups. For those born in 1990, Panel C of Table 1.2 shows poverty rates of 66%. As this cohort ages, their poverty rate remained high, since by age 15 in 2005, 54% were still poor. As a point of comparison, among US black children, who have the greatest poverty persistence among the major minority groups, 59% of those that were poor at birth remained poor by age 17 (Ratcliffe and McKernan 2012).

TABLE 1.2 Poverty Rates of Synthetic Cohorts of Children, 1990, 2000, and 2005

	1990	% Poor in 2000	% Poor in 2005
Panel A. Cohort Age 1 in 1990 and Poor			
Age 1, poor	100%		
Age 11		83%	
Age 16			79%
Panel B. Cohort Age 5 in 1990 and Poor			
Age 5, poor	100%		
Age 15		79%	
Age 20			83%
Panel C. Poverty Rates of Children as They Age: Cohort age 0 in 1990			
	1990	2000	2005
Age 0	66%		
Age 10		60%	
Age 15			54%

Source: Ruggles, Steven, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek. IPUMS USA: Version 9.0 [PR Census 1990, 2000, PRCS 2005]. Minneapolis: IPUMS, 2017. <https://doi.org/10.18128/D010.V9.0>

We have no empirical evidence about the earnings of adults who grew up poor in Puerto Rico, but there is a perception that poverty is intergenerational, and that for those in government assistance, deprivation goes from generation to generation, since these programs do not seem to solve the problem of poverty (Colón 2011; Figueroa-Rodríguez 2016).

To gauge intergenerational poverty and the consequences of growing up poor, we analyzed the content of 20 in-depth semi-structured interviews with low-income mothers from San Juan, Arecibo, and San Lorenzo. Information provided by interviewees suggests that poverty has a way to stick around. With few exceptions, interviewed mothers grew up in poverty, they were currently living in poverty, and their children are growing in poverty, and some of them are second-generation public housing residents.

The mothers who were working were in low-wage jobs. These mothers, as well as those who were looking for work, were well aware of the precarious conditions of low-wage jobs, but expressed satisfaction in being able to provide for their children and having some economic independence. One mother expressed it this way:

“Yo sé que no es la misma paga que cuando estaba en Nueva York, pero es tener algo para resolver para mis hijos”

[I know the pay is not the same as when I was in New York, but what counts is having something to make do for my children]

(29-year-old unemployed public housing mother of San Juan).

Another mother articulated how work gave her a sense of freedom when saying that work is:

“Sustento propio, libertad, porque puedes hacer lo que quieres. Es respirar, de verdad, y darle ese ejemplo a mi hija... Cuando trabajaba yo me quedaba con 10 pesos, pero esos 10 pesos eran míos, me los gané yo.”

[My own sustenance, freedom, because you can do what you want. It's breathing, really, and giving that example to my daughter... When I worked I had ten bucks, but those ten bucks were mine, I earned them].

(45-year-old unemployed mother of San Juan).

For a 40-year-old mother from one of Arecibo's public housing projects, being able to work meant independence:

“Es que yo no puedo, a mí me gusta tener mi dinero, ser independizada”

[I just can't, I like having my own money, be independent].

Work allows some of these mothers to enjoy some basic things like going to the movies or buying ice cream for their children, things that higher-income mothers possibly take for granted:

“Cuando no tenía trabajo me sentía depresiva, porque no tenía dinero. Ahora les puedo decir que vayamos al cine, a comer mantecado, eso no lo podía hacer antes.”

[When I didn't have a job, I felt depressed, because I had no money. Now I can tell them we're going to the movies, we're going out for ice cream. I couldn't do that before]

(45-year-old public housing mother of San Juan).

The main factor limiting their work and earnings capacity was their low educational attainment. For some, having a child before graduating from high school was an impediment to completing high school. College education was not part of their life goals, possibly because most of them came from families with similarly low levels of education. One young mother from a public housing project in

San Juan told us that she had a grade point average of 4.00 in high school, but when asked if she thought about going to the university, she said not really, that her friends in high school were not thinking about that. She became pregnant soon after.

These mothers are hoping for the best for their children, and sometimes their aspirations are quite modest. When asked about their children's future, going to college and becoming a professional was not out of sight. Others closed their eyes and after a sigh said that they could see them doing well. A 20-year-old mother from a public housing project in Arecibo hopes to see her 1-year-old daughter living outside of the housing project:

“Tal vez la vea viviendo aquí los primeros años, pues conmigo. Pero luego la veo fuera de aquí.”

[Maybe I can see her living her first years here, with me, but afterwards I see her leaving this place].

Graduating from high school was also expressed as a hope for their children, as shown by this custodial grandmother from a public housing apartment in Arecibo:

“Yo quiero que mis nenes estudien hasta tener cuarto año por lo menos, después, si ellos quieren algo mejor, que sigan hacia adelante.”

[I want my kids to study up to at least high school. Afterwards, if they want something better, they should move forward].

She said that her grandson could follow his young uncle's steps, who graduated from high school and works in a retail store.

A mother from Santurce saw her daughter's future in a more holistic way by relating that she wants her to be free and down-to-earth at the same time, saying that she wishes her daughter gets a driver's license:

“Espero que le vaya bien, que estudie, que disfrute, que aprenda a guiar, que pueda tener su libertad. Le digo a mi hija “tú puedes ser lo que tú quieras.”

[I hope she does well, that she studies, that she has fun, that she learns to drive, that she is able to be free. I tell my daughter, you can be whatever you want].

Indeed, many external factors come into play in determining the income prospects of children who grow up in poverty, like the conditions of the low-wage market and job availability. But this qualitative analysis suggests that children who grow up poor face many limitations for upward mobility.

Evidence About Child Poverty and Health in Puerto Rico

Although studies about Puerto Rico are not abundant, and the ones available mainly show correlations instead of causalities, a pattern of adverse health outcomes for children in low-income families emerges.

Studies show that the quality of prenatal care for low-income mothers in Puerto Rico is inferior to those of higher-income mothers (Martin et al. 2013; Oropesa, Landale, and Dávila 2001). Another study found that unwed mothers—who have high poverty rates—show the lowest percentage of adequate prenatal care (Vázquez Calzada 1993). Also, Puerto Rico’s low-income mothers are more likely to have a pre-term birth (Ferguson et al. 2019).

Uncontrolled asthma is one of the culprits of school absenteeism among children (Diette et al. 2000; Hsu et al. 2016). The prevalence of asthma among Puerto Rican boys and girls for the years 2008-2010 in households with incomes under \$15,000 was 13.5% in comparison to 9.5% among children in households with incomes between \$25,000 and \$35,000 (Commonwealth of Puerto Rico Department of Health 2013). In 2014, the difference was more marked among those with low income and those with incomes above \$50,000 (Commonwealth Department of Health 2016).

Overweight is a strong predictor of their future health and is a risk factor for diabetes and hypertension (Aboderin et al. 2002; CDC Diabetes 2019). Puerto Rico’s youth aged 10 to 19 living in households with incomes up to \$6,000 were twice as likely to be overweight and obese as children living in households with incomes higher than \$25,000 (Garza et al. 2011; Rivera, Figueroa and Calderón 2008).

The oral health of Puerto Rico’s children in public schools,

of whom the majority are poor, is below that of children in private schools. For example, 48% of the children in public schools have decayed teeth, in comparison with 33% of children in private schools (Commonwealth of Puerto Rico Department of Health 2008).

Among public school students, 27% had a disability during the academic year 2013-2014. In 2016, the percentage of children in special education programs in public schools (including Head Start) was 32%, while only 11% of those in private schools were in special education (Commonwealth of Puerto Rico Institute of Statistics 2019). Another study of school characteristics found a positive correlation between the percentage of students living below the poverty level and their participation in special education (Therriault et al. 2017).

Disability rates are higher among lower-income children. **Table 1.3** shows the percentage of children with a disability by poverty rate. Poor children have higher rates of disabilities, especially cognitive difficulties.

Table 1.4 shows the prevalence of major diseases in Puerto Rico by income level for the population between ages 20 to 35. Outcomes for this age group captures better the possible effects of growing up poor. Lower-income people are less likely to report being in excellent health than those in higher-income brackets. Although the relationship is not always linear, asthma, hypertension, and obesity are more prevalent among people with incomes under \$35,000.

The in-depth interviews with low-income mothers gave further insights into how poverty compromises health. The interviews painted a portrait of poor health, physical and mental, and of income limitations to meet health needs. Diabetes and mental illnesses were common among interviewees. Also, many of the children had asthma and were in special education programs due to attention deficit disorders or speech problems.

TABLE 1.3 Children’s Health Outcomes by Poverty Rate: 2017

Disability	Poor (%)	Not Poor (%)
Cognitive difficulty	8.82	7.11
Vision difficulty	2.14	1.51
Hearing difficulty	0.69	0.47
At least one disability	10.61	8.16

Source: Authors’ calculations using IPUMS-USA Puerto Rico Community Survey 2017

TABLE 1.4 Diseases and General Self-Health Perception by Income in Population Aged 20 to 35 Years: 2017

Household Income	Diabetes (%)	Asthma (%)	Hypertension (%)	Obesity (%)	General Health Status: Very Good or Excellent (%)
<\$15,000	2.90	23.40	17.19	28.83	37.58
<\$25,000	0.96	27.36	18.83	18.91	50.68
<\$35,000	1.02	5.85	11.42	13.65	52.80
≥\$35,000	4.35	15.80	9.31	13.94	64.46

Source: Authors' calculations using the Behavioral Risk Factor Surveillance System (BRFSS) of Puerto Rico: 2017.

Having government health insurance did not guarantee access to healthcare for these mothers. Diabetes treatment required several products that were not covered by the insurance, putting pressure on poor parents' already limited budget. Blood strips, some of which can cost around \$20 biweekly, nor injection needles were covered. There was no government assistance for special diets neither. One interviewee from Santurce narrated her struggle to pay for the blood strips she needs for her daily tests:

"Muchas veces no tengo para comprar las tiritas de la sangre, estuve dos meses que no me las podía comprar y son \$20 cada pote. Yo me la tengo que tomar 4 veces al día, lo que me dura son 15 días. Ahora mismito mi amiga me las compró."

[Many times I do not have enough to buy the blood strips. I could not buy them for two months and each supply costs \$20. I have to take it 4 times a day, and it lasts 15 days. Right now my friend bought it for me].

For one mother of San Juan with sight limitations, the lack of coverage for eyeglasses was a disincentive to finish high school:

"Aquí las trabajadoras sociales se pasan molestándome para que coja el 4to año, pero yo no puedo porque tengo problemas de la vista. Y el plan médico me cubre el examen, pero no los espejuelos. Entonces ¿Para qué yo me voy a hacer un examen si no me puedo comprar los espejuelos?"

[Here the social workers keep nagging me to finish high school, but I can't because I have vision problems. And the health insurance covers the exam, but not the eyeglasses. So why am I going to get an exam if I can't buy the glasses?]

A 35-year-old mother from a public housing project in San Juan pays \$64 monthly in medications for her diabetes when adding the blood strips:

"Con Vital (el plan médico del gobierno) no da para los medicamentos, yo pago medicamentos. La insulina, las jeringuillas; yo bebo pastillas para el colesterol, para botar el agua (diuréticos), yo pago \$44 de deducible, todos los meses. Y las tiritas son aparte, y eso depende del precio al que las pongan: cada paquete trae 50 o 25."

[With Vital (the government-provided health insurance) I don't have enough for the medication. I pay for the medication. Insulin, syringes; I take cholesterol pills, diuretics. I pay a \$44 deductible every month. And the strips are separate, and that depends on their price: each package has 50 or 25].

The mother of a hypoglycemic child who requires a special diet has high demands on an already limited budget:

"El nene menor es hipoglicémico, eso es que le baja el azúcar. Él no requiere insulina, ni medicamentos, yo solo lo llevo a la nutricionista y él tiene que hacer todas sus comidas y meriendas."

[The youngest is hypoglycemic, that means his sugar drops. He does not require insulin or medication; I just take him to the nutritionist and he has to take all his meals and snacks].

Mental health problems were common among the interviewees. These problems were often the sequel of violence, revealing the high cost that violence imposes on the healthcare system. One interviewee suffers intense headaches due to a head injury caused by her partner. A 31-year-old mother from San Lorenzo tells that her child stopped talking at age three because of the abuse from his father. She puts it this way:

"El nene dejó de hablar por el maltrato de su papá. El nene no me quería hablar y yo creo que era por el maltrato físico del padre, el nene se quedó en silencio, solamente señalaba, no hablaba. Él tenía como 3 años. Hoy tiene 14 años, está en depresión, coge terapia psicológica, es bien silencioso, no habla nada. Tiene 14 años y no tiene amigos."

[My son stopped talking because of the abuse from his father. He did not want to talk to me and I think it was because of the physical abuse from his father. He fell silent, just pointed at things, did not speak. He was about 3 years old. Today he is 14 years old, he has depression, takes psychological therapy, is very silent, doesn't speak at all. He is 14 years old and has no friends].

A grandmother from Santurce told us that her grandchild, who is in special education, was abandoned by his birth mother; he receives psychological help because "él extraña a su mamá" [he misses his mom].

A mother from San Juan who was abused as a child and receives mental health treatment told us about the consequences that abuse has had in her health as an adult:

"Yo padezco de los nervios, de ansiedad, de depresión. Yo lloro cada vez que hablo y no es que rompo ni agredo a nadie. Porque eso sería seguir el patrón que estaban siguiendo conmigo, pues no, tiene que ser al revés."

[I suffer from nervousness, anxiety, depression. I cry every time I speak. And I don't even break anything or harm anyone, because that would be following the same pattern I went through, nope, it has to be the other way around].

The stress of poverty is spelled out by a grandmother from a public housing project in San Juan who holds the legal custody of her grandchildren. She told us about her anxiety caused by not being able to work and, therefore, not having enough money:

"Siempre estoy ansiosa, trato de relajarme, pero a veces es imposible. El diario vivir, la economía... ¿sabes?... el uno no estar trabajando, uno solo recibir cupones... ¿sabes?... es difícil."

[I'm always anxious, I try to relax, but sometimes it's impossible. The day-to-day, the economy... you know... not having a job, only getting by with food stamps... you know... it's difficult].

Poor health reinforces poverty. For instance, a 34-year-old mom from a public housing project in San Juan who was in special education while growing up narrated the difficulties she had in high school because of the continuous drop of her sugar levels and the apparent recommendation of the school's administrators to drop out:

"Para ese tiempo educación especial era sin grado, sin diploma. Cuando yo salí de la escuela elemental, me fui a otra escuela que daban talleres; yo cogí el taller de cosmetología, yo tenía como 15 años. No lo pude terminar porque como yo soy diabética, me daban muchos bajones y ellos mismos (la escuela) me sacaron."

[At that time, special education didn't lead to a degree, you didn't get a diploma. When I left elementary school, I went to another school that offered workshops; I took the cosmetology workshop; I was about 15 years old. I could not finish it because since I'm diabetic, I suffered a lot of sugar level drops and they [the school] took me out].

Mothers of children in special education find it hard to work due to the many medical appointments they have, as this 34-years-old mother from San Juan states:

"No puedo trabajar porque mi nene mayor es de educación especial, yo lo llevo a las evaluaciones y lo espero, yo soy la que brego con mis hijos. Con el nene chiquito yo tengo muchas citas, muchas cosas... ¡muchacha!"

[I can't work because my oldest is a special education child. I take him to the evaluations and I wait for him. I'm the one who deals with my children. With the little one, I have many appointments, many things... you wouldn't imagine!].

For others, their poor health is an impediment to work, as explained by this 47 year-old grandmother from San Juan:

"Quisiera trabajar pero la doctora dice que no puedo trabajar, pero yo quiero trabajar. ¿Porque quién me va a mantener? La doctora no me va a mantener. Y es como yo digo, si en mi casa yo tengo que limpiar, tengo que cocinar, tengo que hacer todo; pues me puedo ir a trabajar 4 horas. Porque como quiera los dolores están ahí. Tengo artritis, tengo 21 espuelones en la espina dorsal, tengo diabetes, o sea, tengo muchas condiciones."

[I would like to work, but the doctor says can't, but I want to work. Who is going to support me if I don't? The doctor is not going to support me. And as I say, if I am the one who cleans, cooks, and does everything in my house, I can definitely go to work for 4 hours. The pain is there anyway. I have arthritis, I have 21 rods in the spine, I have diabetes, I mean, I have many conditions].

In conclusion, research and data on Puerto Rico suggest a correlation between low income and poor health status: the lower the income, the more likely it is for a child to have health problems that they will likely carry into adulthood and pose a risk for serious conditions in adulthood.



Evidence About Crime and Child Poverty in Puerto Rico

Crime is one of the most concerning problems in Puerto Rico⁵. But too often the crime problem is seen as separate from economic and social factors. Crime has become a way of survival in poor communities (Colón Reyes 2005). Little is known about its relationship to income and poverty in Puerto Rico. Early studies by Alameda and González (1991 and 1997) found a negative relationship between property crime and police budget, while unemployment and national income had a positive effect on crime. A study by Hernández Pol and Silvestrini (2004) found that crimes against property were the most affected by national economic conditions, but it did not include measures of poverty. More recently, Carballo (2015) found that the percentage of female headship and joblessness were positively related to the homicide rate. There are also studies on youth that have ascertained their involvement in criminal activity, but paid no attention to the role of income (Maldonado-Molina et al. 2009; Nevaes Muñoz, Wolfgang, and Tracy 1990; Reyes Pulliza 2013).

A study from the early 1990s showed that convicts tend to come from poor and working-class areas, and violent activities are more frequent in poor urban zones and public housing areas (Colón Reyes 2005). The profile of youth in juvenile facilities of Puerto Rico and of adults in the correctional system paint a picture of poverty and disadvantage: 81% of the juveniles in the correctional system come from families with incomes under \$20,000 (Correction and Rehabilitation Department 2016). The profile of the adult population in Puerto Rico's prisons is also consistent with poverty and disadvantage: 56% of the correctional population of Puerto Rico was unemployed before entering prison, and 51% did not have a high school diploma (Commonwealth of Puerto Rico Correction and Rehabilitation Department 2016).

In-depth interviews with low-income mothers shed light on the relationship between crime exposure and poverty, particularly in areas of high poverty concentration. The mothers we interviewed were exposed to multiple manifestations of violence, and the children had high exposure to violence. Mothers expressed their high exposure to crime by saying that in their neighborhoods it had always been like that:

"Esto siempre ha sido así, es por tiempo que esto está tranquilo. Los nenes a veces se asustan, ellos me dicen "Mamá están tirando tiros" y yo les digo "sí, tírate al piso", si no los meto en el closet. Ellos se quedan asustados, pero después se les pasa."

[This has always been like this; this is calm only at times. The kids sometimes get scared, they say, 'Mom, there's a shooting outside,' and I say, 'Yes, lie on the ground,' or I get them in the closet. They get scared, but they get over it]

(34-year-old low-income mother from a public housing project in San Juan).

Death by violence was a constant source of worry for the interviewed mothers:

"Las cosas están malas en la calle, uno no puede estar bachatiando en la calle, porque cuando menos tú lo piensas, vienen y te arrebatan la vida."

[The streets are rough, one cannot hang out in the streets, because when you least expect it, someone comes and rips your life away].

Or take this simple, but deep statement from this 30-year-old mother from San Juan saying that she does not want her child to be killed:

“No quiero que mi hijo pise la calle y sabes..., que me lo maten”.

[I don't want my son to set foot in the street and, you know, for him to get killed].

Another young mother from San Juan tried to defy what appears to be the normality of violence exposure saying that she does not get used to it:

“No me acostumbro al alboroto, al tiroteo al “mira, mataron a aquél”.

[I can't get used to the noise, the gunfights, the people saying some guy was killed].

Another grandmother from San Juan told us that it is quite common to hear shootings at night, but that her grandson is not affected too much by it, because he goes to bed early and visits his grandparents on weekends:

“Es bastante común escuchar tiros aquí, antenoche mismo tiraron de la avenida para acá. Gracias a Dios que el nene casi no los escucha, porque como él se acuesta temprano y los fines de semana está allá con los abuelos, pues escuchar así un tiroteo fuerte, como yo lo he escuchado, él no los ha escuchado.”

[It is quite common to hear gunshots here. Last night, gunshots came all the way here from the avenue. Thank God that the kid barely hears them, since he goes to bed early and on weekends he goes to the grandparents', he hasn't heard the strong gunfights that I have heard].

Children are doubly impacted by crime: firstly, because they are exposed to violence and secondly because they must deal with the consequences of the violence experienced by their mothers. The mothers we talked to grew up in poverty, and were victims of violence such as (a) physical abuse from their partners, (b) child abuse and neglect while growing up, (c) sexual abuse in childhood, (d) having been a passerby in the midst of a gunfight, (e) the assassination of close relatives, (f) imprisonment of close relatives, and (g) break-ins into their homes and cars.

A young mother from San Juan describes having gone into a panic episode one night as she heard a shooting

while at the same time thanking God that her children were not at home that night:

“Eso fue horrible, a mí me dio un ataque de pánico, yo tuve que llamar a mi mamá y mi mamá tuvo que calmarme y darme pastillas para poder dormir. Gracias a Dios que mis nenes no estaban allí, porque yo no sabía qué hacer, eso fue horrible”.

[That was horrible. I had a panic attack. I had to call my mother and my mother had to calm me down and give me pills so I could sleep. Thank God my kids were not there, because I didn't know what to do, that was horrible].

A 30-year-old mother from a public housing complex told us how she has been affected by the incarceration of her younger brother:

“Y yo vi esto porque mi hermano, yo no lo vi crecer, pero en su juventud el cayó preso, y a mí me afectó porque es mi hermano menor, mi hermano pequeño.”

[And I saw this because of my brother. I did not see him grow up, but he was jailed in his youth, and that affected me because he is my younger brother, my little brother].

The difficult upbringing of their parents has implications for the children in terms of the limited support networks available. One mother told us that she comes from the lowest, that growing up from one foster home to another left her with no close relatives to rely upon:

“Estuve en el Departamento de la Familia. Yo vengo de lo más bajo...Te recogen en una casa, pero el muerto apesta a los tres días, no tengo prácticamente ningún familiar”.

[I was in the Department of the Family [foster home system]. I come from the lowest... They pick you up at a house, but the corpse stinks by the third day, I have virtually no family].

Violence disarticulates communities and rips mothers and children from much needed community support and from spaces for children to play and socialize. One of the most repeated phrases throughout our interview was “aquí no se puede confiar en nadie” [here you can't trust no one]

This dislocation from discipline and order was clearly stated by a 29-year-old mother from one of the public housing projects visited:

“Antes había reglas, había normas. Ahora... no piensan, no le importan los adultos, no le importan los niños, no le importan los ancianos. Antes había como ese respeto... ahora no hay respeto.”

[before there were rules, there were norms. Now... they don't think, they don't listen to adults, they don't care about the children, they don't care about the elderly. Before there was some sort of respect... now there is no respect].

The lack of a safe space for their children to play was noted by several moms:

“Bueno, mientras mis hijos estén arriba en mi casa, están seguros. Porque yo apenas los dejo bajar; a menos que vayan a casa de mi mamá, que ellos van conmigo, que yo los monitoree... pero de que estén por ahí, dando vueltas por el mismo caserío, no; yo no se lo permito a ellos. Como esto está así malo, no los dejo bajar casi.”

[Well, as long as my children are at home, they are safe. Because I barely let them out, except to my mother's house, where they go with me, where I can monitor them... But having them out and about, circling the project, no; I do not allow it. This is so bad I barely let them out].

(34-year-old low-income mother from a public housing project in San Juan).

They fear for their children's safety, so they keep them inside their apartments. Specifically, they fear for a gunfight they'll be unable protect them from.

“Pues la comunidad ayuda bastante, te avisan las cosas que están pasando y eso... pero me da miedo mandarlos al parque y que vaya a haber un tiroteo y no me dé tiempo a bajar.”

[Well, the community helps a lot, they let you know what is going on and so forth... but I am afraid to send them to the park and that a shooting starts suddenly and that I won't get there in time]

(25-year-old low-income mother from San Juan).

Exposure to violence, community dislocation, and the ripple effects of long-term exposure to violence are some of the mechanisms by which poverty has a long-term effect on children.

Costs Attributed to Child Poverty

The following sections estimate the cost of child poverty through its effects on earnings, health, and crime.

Lost Earnings

In our calculations of lost earnings, we combine the methodology of Holzer et al. (2007) with that of Blanden, Hansen, and Machin (2008). Through this method, we take into account unemployment, which is important considering its historically high levels in Puerto Rico. To obtain the earnings lost due to child poverty, we estimated a regression of child poverty on median earnings by municipality combining three years of data: 2007-2009, 2013-2015, and 2016-2017. The effect of child poverty was statistically significant and positive (see Appendix 3). Based on this regression, we find that if poverty were to be cut from the actual mean of 60% in the data to 0, median annual earnings would increase by \$8,395. These are the lost median earnings of those who are working. The lost mean earnings would be \$12,345, since the ratio of median to mean earnings is .68, according to calculations based on the Puerto Rico Community Survey for 2017.

Lost mean earnings of the unemployed are estimated at \$23,500. This estimate refers to the earnings of those without a high school diploma and those with a high school diploma weighted by their representation in the working population. A total of 24.5% of workers do not have a high school diploma and have earnings of \$12,987, and those with a high school diploma or more are 75.5% of the working population and have earnings of \$26,913. Half of the population aged 25 to 64 are working, and half are not working. The average worker loses $.5 * \$12,345 + .5 * \$23,500$ or \$17,922 due to child poverty.



These losses apply to children who were living in poverty most of their childhood, since the adverse effects of poverty are most likely to be felt by them. Due to a lack of longitudinal data to track children as they become adults, we use synthetic cohorts. A child that was born in 1990 had a chance of poverty of 68%. The synthetic cohort analysis, part of which is shown in **Table 1.2**, revealed that at least 75% of all age groups remained poor by 2007. Considering that this is a synthetic cohort, we take a conservative approach and assume that 70% of children in poverty are poor most of their childhood, equivalent to 268,000 children in 2017.

Total earning losses in 2017 amount to \$4,803,096,000 (\$17922*268000). Earnings represent 41% of the Gross National Income of Puerto Rico. Calibrating these potential earning losses to this percentage to preserve the distribution between wages, capital, and transfers, earning losses would be \$1,969,269,360. These earning losses translate into unrealized consumption that can move the GDP by 1.9%. Holzer et al. (2007) adjust the figures downward by 40% for innate ability, but Blanden, Hansen, and Machin (2008) do not. Given how ingrained poverty appears to be in Puerto Rico and the lack of empirical evidence on innate ability and earnings, no adjustment was made for this concept.

Health Costs

To calculate the health costs associated with child poverty, we gathered information on:

- 1 health expenditures;
- 2 expenditures on special education;
- 3 value of health capital;
- 4 relationship between child poverty and mortality for four causes of death (diabetes, heart disease, cerebrovascular disease, and suicide); and
- 5 ratio of mean earnings of the United States to Puerto Rico.

The healthcare needs of children living in poverty cannot be attributed entirely to the causal effects of poverty on health. Therefore, we estimated the poverty differential on health outcomes and used that differential to determine the overall cost of healthcare attributed to child poverty.

The per capita expenditures on health in 2017 was \$4,385 (Commonwealth of Puerto Rico Department of Health, 2016; Commonwealth of Puerto Rico Planning Board National Accounts, 2018). Based on regression analyses of child poverty and mortality rates by municipalities (**Appendix 3**), we assume that the child poverty penalty in per capita health expenditures is 58%. This corresponds to the average of the effects of eliminating child poverty on the three causes of mortality that were statistically significant.

This means that per capita expenditures on health would be 58% lower if it were not for child poverty. The per capita health cost attributed to child poverty was estimated at \$2,543 in 2017. Applying this cost to the 268,000 children that grew up in poverty most of their childhood, the total health expenditures attributed to child poverty amounts to \$681,524,000.

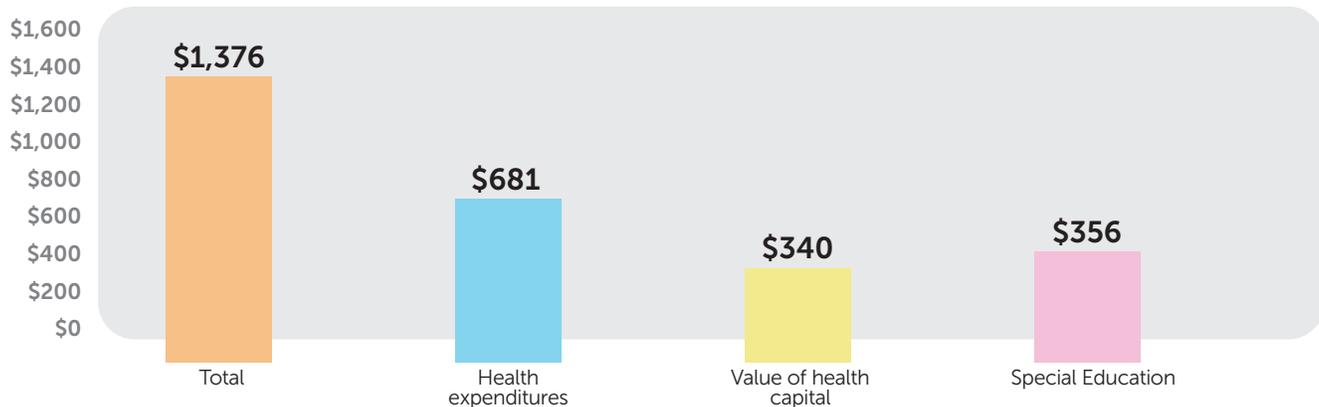
The value of health capital refers to the present value of quality of life gained in the absence of disease. It can be measured by the willingness to pay for additional years of life (Holzer et al. 2007). It considers quality of life only and does not include earnings. We used Cutler and Richardson's parameter discussed by Holzer and coauthors (2007) adjusted to the income differentials between United States and Puerto Rico, and annualized the figure. The ratio of earnings of workers of the United States to Puerto Rico was 1.85 in 2017, life expectancy of Puerto Rico was 79 years, and the mean age of children in 2017 was 10. We estimated that the present value of health capital is \$88,970, for an annual average of \$1,271. The annualized value of health per capita for the children that live most of their lives in poverty is \$340,628,000.

Based on the 2015 profile of public and private school students in special education, the poverty differential in special education is 21 percentage points. To estimate the cost of special needs education attributed to child poverty, we start the analysis with the budget allocated to the program. According to Rosa (2019), the budget allocated to the special needs program in the Department of Education was \$487 million in calendar year 2017. Since we have no estimates for the Head Start program, we assigned their budget to special needs children in proportion to the percentage of children in the program with special needs, which is 22%, according to information in the Head Start page of Puerto Rico's New York Foundling. The total budget for special needs children is calculated at \$552 million and the per capita cost is \$4,374. According to data from the Anuario Estadístico del Sistema Educativo 2015-2016, (Commonwealth of Puerto Rico Institute of

Statistics 2019) the percentage of children with special needs (including Head Start) was 32% in public schools and 11% in private schools. It represented a differential of 21 percentage points. After using this percentage differential, the number of children in public education with special needs in 2017 was estimated at 126,176. Based on these figures, we estimate that the cost of serving special needs children in the public schools and Head Start due to child poverty is \$356 million. This is the cost differential of special education imposed by poverty, representing the difference in costs if the proportion of special needs children were 11% instead of the current 32%.

Total health costs attributed to the effect of child poverty amount to \$1,376 million. **Figure 1.7** shows the distribution of these costs.

FIGURE 1.7 Health Costs Attributed to Child Poverty: 2017 (in millions)



Note: Figures may not sum to total due rounding.

Costs of Crime

There is no prescribed way to calculate the costs of crime, and doing so has many challenges (United States GAO). Given a lack of information about the costs of crime in Puerto Rico, we developed an estimate that is at least a lower bound of the costs, as many components of the costs of crime are difficult to estimate. Our estimates of crime consider only the tangible costs (GAO, Cost of Crime 2017) of a certain type of crimes, making reasonable assumptions when data are not available. Following prior studies, we focus on “street crime.” We concentrate on Type I crimes. In our analysis, we considered government expenditures to reduce and fight crime, the lost earnings of inmates, the lost earnings of victims of crime (considering only the number of homicides), the funeral costs of persons killed, and the value of stolen property.

Direct Cost Due to Government Expenditures

At the central government level, we considered the budgets for agencies and programs associated with fighting, preventing, solving, and prosecuting crime and operating the correctional system. The figures for the

Judicial Branch and the Department of Justice consider only those items that could be linked to criminal procedures. The total government expenditures are \$1,257,181,514. These agencies and programs had the following budgets in 2017:

- Judicial Branch: \$87,357,514 out of the overall budget of \$324 million
- Department of Correction and Rehabilitation: \$442,654,000
- Department of Justice: \$111,565,000 out of an overall budget of \$179 million
- Department of Education - School Safety Program: \$17,386,000
- Puerto Rico Police Department: \$598,309,000

Lost Earnings Due to Incarceration and Lost Lives

A study about the profile of inmates shows that in 2015 there were 12,381 prisoners (Commonwealth of Puerto Rico Correction and Rehabilitation, 2015). We couldn't find official data for 2017, but a press report sets the inmate population at 10,500 in September 2017 (Maldonado and Ramaciotti 2017). The profile of the inmate population reports earnings before prison in intervals, and 22% did not provide information. Information was provided in wide intervals, making it difficult to ascertain mean earnings. Since the Profile of the Incarcerated Population stated that 57% of the prison population did not have a job prior to entering, we used the mean earnings of the overall population (\$24,945) and weighted it by the probability of having a job (43%). Then we aggregated it to the total prison population for an estimate of \$112,623,675 $((.57*0+.43*\$24945)*10500)$.

According to police reports, the number of homicides in 2017 was 679 (Commonwealth of Puerto Rico Police Statistics Division 2016 and 2017). The average annual earnings in 2017 was \$24,945. If the people who were murdered in 2017 were distributed by the same proportion of working and not working as the overall population, the result is \$12,472 $(.5*0+.5*24945)$. Since a life is lost, we take the present value of earnings. We assume that earnings grow at a rate of 1% per year, and an average age of 27 based on the age distribution of the persons killed, and a working life up to age 64.⁹ This would be the present value of potential earnings, where no consideration is made for pain and suffering, which would increase the value of the lost life. The present value of earnings for each person murdered is \$337,419, for an aggregate of \$229,107,501.

Based on press accounts, we estimate the average value of a funeral to be \$3,500, a figure we multiplied by 679 homicides to reach a value of \$2,376,500 as the lost earnings due to incarceration and lost lives (Fragoso-Quiñones 2016; Otero 2012).

Cost of Stolen Property

We were unable to locate official estimates of the value of stolen property. Puerto Rico police statistics show that in 2017 there were a total of 34,231 property crimes, which included car thefts, other thefts, robberies, and burglaries. To gauge the value of stolen property, we made some assumptions regarding its value and assumed that each incident implied three hours of transactional costs.

According to the Police Statistics Division, 3,594 vehicles were stolen in 2017. Based on the list of the top eight most stolen cars in 2017 (Rosario, 2017) and the quantity of cars stolen by model, and assuming that the average stolen car was two years old, we estimated the average value of a stolen car in 2017 to be \$12,918. The total value of all stolen cars amounted to \$52,428,624.⁹ We also assumed that reporting a stolen car to the police requires three hours, which we valued at the mean wage of \$9.76, according to data from the Occupational Employment Survey. The total transaction cost of all cars stolen was estimated at \$105,232. The total cost of all stolen cars in Puerto Rico in 2017 is estimated at \$52,533,856.

In 2017, there were 30,637 reported events involving stolen property (excluding vehicles), including 7,949 burglaries. Assuming each incident took three hours in reporting time, this amounts to \$897,051 in transactional costs. The value of the stolen property is assumed to be \$300 for robberies and thefts and \$3,000 for burglaries.¹⁰ Therefore, the aggregate dollar amount in stolen property, excluding cars, would be \$31,550,451. It is important to note that this likely understates the cost of property crimes because it does not consider the costs of pain and suffering.

A high rate of property crimes also implies expenditures on protection. In this type of expenditures, we were able to quantify only expenses for private security guards. In 2017, there were 25,100 private security guards in Puerto Rico. The aggregate annual salaries paid to these guards totaled \$460,334,000.¹¹

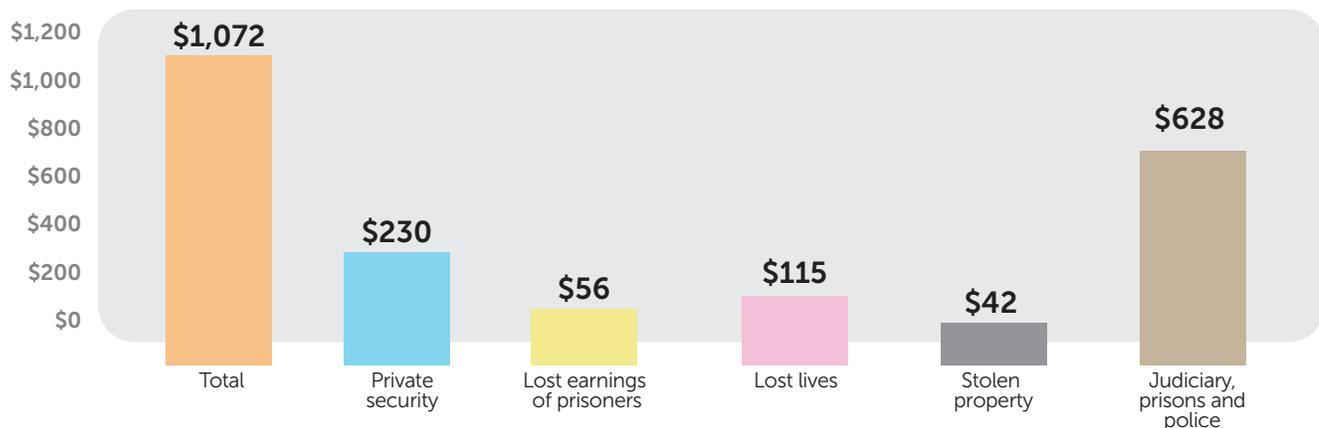
Cost of Crime Attributed to Poverty

The combined cost of crime totaled \$2,145,707,497, but not all crime can be attributed to child poverty. The percentage attributed to child poverty would be the probability that a child growing up poor engages in criminal activity. Unfortunately, such information is not available for Puerto Rico. Holzer et al. (2007), using estimates of this parameter for the United States, assumed that 40% of the total cost of crime is attributed to child poverty and made a further adjustment for innate factors.

We estimated regression equations for child poverty rate on measures of Type I crimes for three years with municipality data, while controlling for distance and population (see **Appendix 3**). These regression show that if child poverty were reduced from the average

of 60% to 0, the number of crimes would be cut by half. Based on this estimate, we attributed 50% of the cost of crime to child poverty, for a total of \$1,072,853,749. **Figure 1.8** shows the total cost of crime attributed to child poverty and its components.

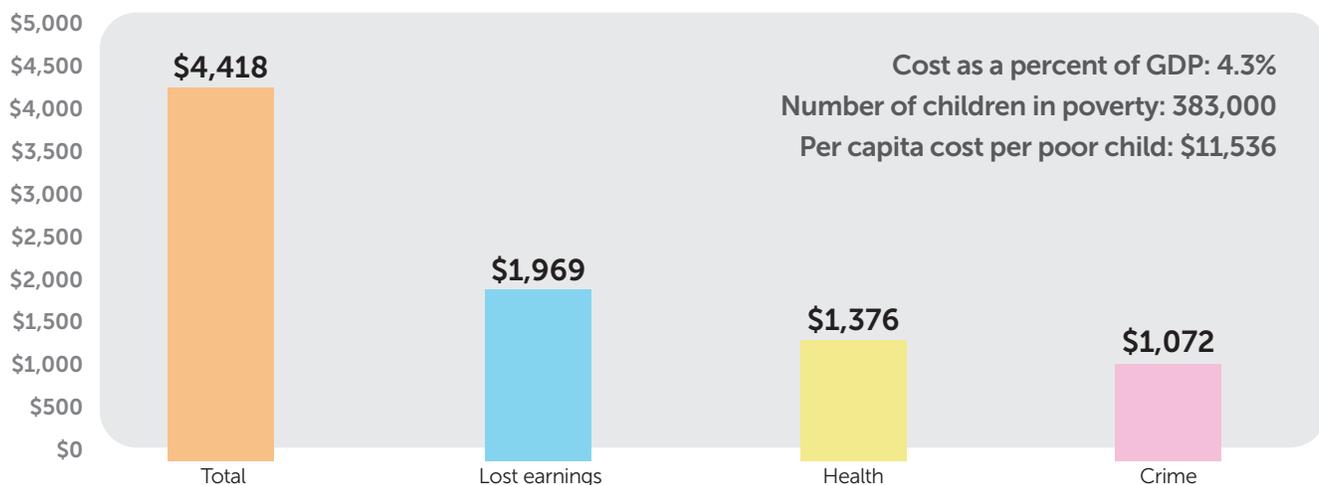
FIGURE 1.8 Cost of Crime Attributed to Child Poverty: 2017 (in millions)



Total Cost of Child Poverty

Figure 1.9 presents the estimates for each one of the categories and the total cost. The total cost of child poverty in 2017 was estimated at \$4.4 billion. It represents 4.3% of the Gross Domestic Product in that year and \$11,536 per child in poverty. Holzer et al. (2007) estimated the cost of poverty for the United States at 3.8% of the GDP, and McLaughlin and Rank (2018) estimated it at 5.4%. Blanden, Hansen, and Machin (2008) estimated the cost for the UK to be between 1.8% to 4% (considering only earnings and employment), and Laurie (2008) estimated the cost of poverty between 5.5% and 6.6% for Ontario, Canada. We must consider that these are an annual cost that would be incurred yearly if the problem of poverty goes unresolved.

FIGURE 1.9 Cost of Child Poverty, 2017 (in millions)





Part II: The Policy Road Map to Reducing Child Poverty

In part I of this report we presented evidence that child poverty in Puerto Rico is a critical policy problem that needs to be addressed to achieve long-term economic growth. However, long-term solutions require that actions be taken today. In Part 2 we examine a variety of anti-poverty policies to estimate their ability to reduce Puerto Rico's child poverty rate significantly over the next ten years.

We will first outline some of the best policies supported by research to address this issue and then discuss the estimated impact of those policies on child poverty in Puerto Rico. Lastly, we discuss the policy implications of these recommendations as we approach a new decade.

Technical Approach for Determining the Policy Road Map

We used five criteria to determine whether the proposed policy could effectively address child poverty. These were:

- 1 how much money will go directly to the pockets of poor families with children after the policy is implemented;
- 2 how many poor children would be reached by this particular policy;
- 3 what would be the impact of this policy on reducing the childhood poverty rate;
- 4 how much would this policy cost; and
- 5 is there rigorous evidence that supports implementing this particular policy, given Puerto Rico's economic outlook.

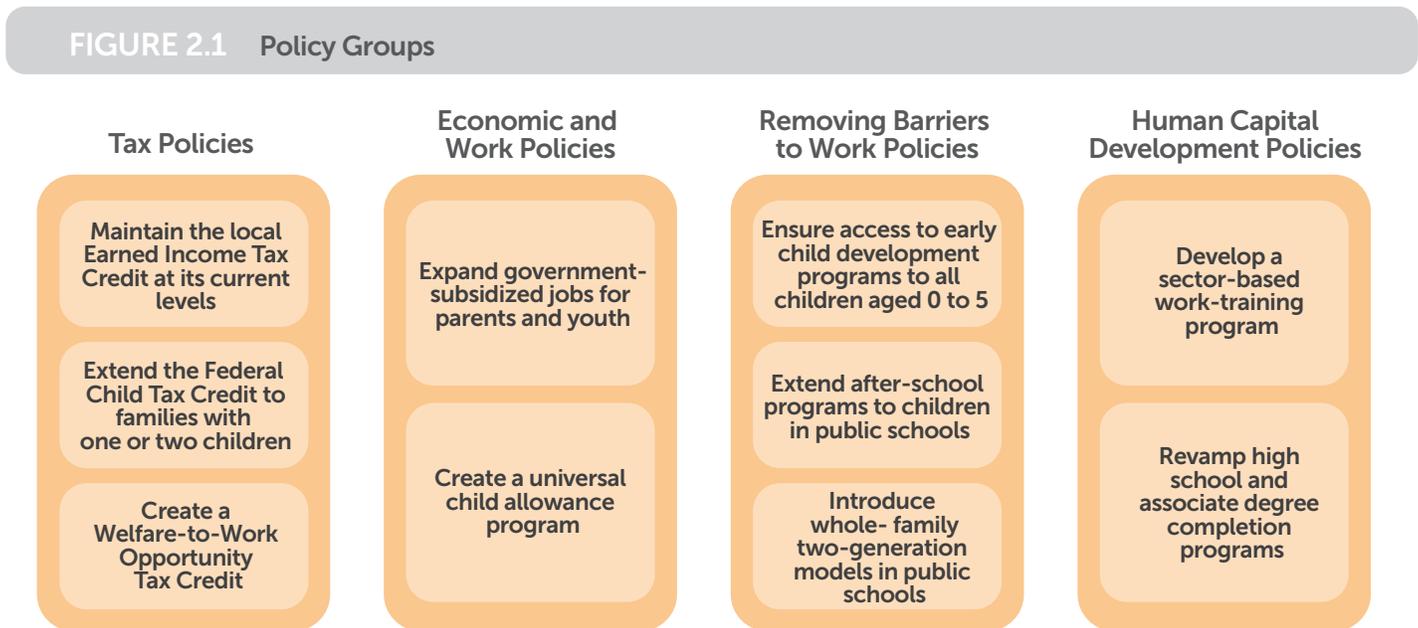
Based on these criteria, we determined which policies should be part of a ten-year policy agenda for Puerto Rico. Policies that did not measure up to this evaluation framework are listed afterwards. This second group could have a positive impact on reducing child poverty, but at this time, there isn't enough evidence in the literature or a reliable data set that would allow us to test their effect on child poverty. Furthermore, we measured the short, medium, and long-term impacts of these policies, recognizing that some of them will start reducing poverty at different points in time within the ten-year window.

Assumptions had to be made to model the effects of these policies. First, we assumed an annual increase in GDP of 2% from 2020 to 2030. Given the delay in federal recovery funding, the already committed \$42.5 billion might have a more sustained impact over the next ten years on Puerto Rico’s economy (Marxuach and Torres 2019). We accounted for population decline in our impact estimates, although we think that some of the proposed policies may help, even if in a small way, in reversing this trend. Third, the occurrence of a natural disaster like Hurricane Maria is a possibility over the next decade. However, we did not consider the economic implications of a natural disaster in our model. Fourth, we assumed that these policies would be enacted at the beginning of the ten-year period regardless of the political landscape of Puerto Rico. Fifth, the unit used to measure child poverty is the federal poverty line. Unfortunately, other measurements, like the Supplemental Poverty Measure (SPM), are not available for Puerto Rico. Lastly, at the time of the study, we only had 2017 data available from the Puerto Rico Community Survey. This is an important limitation, since some indicators have changed significantly due to events like Hurricane Maria and the disbursement of billions of dollars from federal and private sources into the economy. Furthermore, when considering policies, we adjusted for the following:

- 1 the effects of a declining child population;
- 2 the possibility of program participants to dip back into poverty or require re-entry into one of the programs within the ten-year period, with an understanding that the yearly effects of these programs and policies may impact the same families consecutively over time; and
- 3 program success by year of implementation, meaning that on year one the impacts of a particular policy would not be at a 100% level of execution.

Policies to Reduce Poverty Significantly Between 3 and 10 Years

We focused on ten policies that can have the most impact over the next ten years. Policies are grouped into four bundles as shown in **Figure 2.1**.



Tax Policies

The policies considered in this bundle are those that have implications on the tax code both at the local and federal levels. Most of these policies have extensive support from evidence (Crandall-Hollick, Falk, and Carter 2019) and policymakers in general. Tax policies can be an essential tool for reducing child poverty. We considered three tax policies: (1) Puerto Rico's Earned Income Tax Credit; (2) Federal Child Tax Credit; and (3) Welfare-to-Work Opportunity Tax Credit.

Our proposals in the tax policy bundles are:

- **Policy Proposal 1:** Maintain Puerto Rico EITC at current levels for the next ten years
- **Policy Proposal 2:** Extend the Federal Child Tax Credit to families with one or two children in Puerto Rico
- **Policy Proposal 3:** Create a Welfare-to-Work Opportunity Tax Credit for businesses

Puerto Rico Earned Income Tax Credit

In 2018, Puerto Rico passed a new tax reform bill, P.C. 1544. Section 1052.01 of the law included the Puerto Rico Earned Income Tax Credit (EITC) (Commonwealth of Puerto Rico Department of the Treasury 2018). The work credit implemented in the past was not generous enough to create a significant impact on child poverty, nor did it have a stable structure or design, making it hard to evaluate it (Enchautegui 2014). Thus, we propose for the Puerto Rico Earned Income Tax Credit to be maintained at current levels for the next decade.

Tax credits such as the EITC have proven to lift working families with children out of poverty in the United States. An analysis of the new Census supplemental poverty measure, designed to include the effects of transfer programs on families' disposable income, indicates that income from refundable tax credits (primarily, but not exclusively the EITC) reduces the number of people in poverty by over 15% (Center on Budget and Policy Priorities 2017).

The credit itself can lift many families out of poverty, but has other important benefits to the economy of Puerto Rico. The empirical research over the last decade

provides robust evidence that the EITC increases the work effort of its recipients, especially among single-parent households (Neumark and Shirley 2018), which represents about 62% of households with children in Puerto Rico, according to the Child Well-Being Index of the Youth Development Institute of Puerto Rico. Tax credits reduce poverty in two ways: (1) by encouraging work and (2) by supplementing the wages of low-paid poor or near-poor workers with a refundable credit. Moreover, studies have found that the size of the EITC has a statistically significant relationship with the improvement of student test scores in math and reading. In other words, the EITC has been found to also have a positive effect on children living in households that receive the benefit (Chetty, Friedman, and Sáez 2012). Twenty-five states, the District of Columbia, and New York City have a local EITC (Congressional Research Service 2018a).

Federal Child Tax Credit

The Federal Child Tax Credit was enacted in 1997 and expanded with bipartisan support since 2001. It helps working families offset the cost of raising children. In 2017, the CTC lifted approximately 2.8 million people out of poverty, including about 1.6 million children. Moreover, it lowers poverty to over 13.1 million individuals, of which 6.7 million are children (Center on Budget and Policy Priorities 2019). Thus, we propose to extend the CTC to families with one or two children in Puerto Rico.

The extension of the CTC for families with one or two children in Puerto Rico can help low-income working families recover from the economic losses of the hurricane, supplement unexpected expenses, and serve as an incentive to stay on the island. Currently, in Puerto Rico, families with three or more children are the only ones that have access to this credit, which represents 11% of all families with children in Puerto Rico. At the federal level, the extension of the CTC has been



part of over ten bills in Congress from legislators throughout the political spectrum, which shows that the measure has broad support (Rosa Rodríguez 2018). In addition, the Congressional Task Force on Economic Growth in Puerto Rico recommended in its 2016 final report to Congress to extend the CTC to all families in Puerto Rico. Back then, the report estimated that 355,000 new eligible families and 404,000 newly eligible children would be able to access the credit. The report also estimated an average credit of \$770 for all Puerto Rico families (United States Congress 2016). Using the Congressional Task Force approach, we used the alternative payroll calculation method to estimate the possible impact of expanding the CTC in Puerto Rico. Additionally, to keep up with changes in the law, we used the updated income thresholds, the phase-in caps, the maximum credit, and the income cap by household introduced in the 2017 Tax Revision (P.L. 115-97). With these changes, the CTC would include most families with children in Puerto Rico (Congressional Research Service 2018a).

Welfare-to-Work Opportunity Tax Credit

The single most important policy that will help reduce child poverty in Puerto Rico is increasing employment of parents. Although a version of the Welfare-to-Work Opportunity Tax Credit (WWOTC) is available for Puerto Rico at the federal level (Congressional Research Service 2018b), a local credit could better assist parents in becoming viable candidates for a job interview. Thus, we propose a welfare-to-work tax credit for businesses.

The WWOTC would require the creation of a provision in the local tax code to allow employers who hire individuals with certain characteristics to claim a tax credit equal to a portion of the wages paid to those individuals throughout a natural year. The literature suggests that, if designed correctly, this credit could accelerate job creation by 4%, meaning that for every 100 jobs created by the economy, 4 of them would have been created by employers to access this credit and maximize production (Bartik 2006). For these results, we suggest that the following populations become eligible to be claimed as part of the credit, especially those that are parents: 1) participants of the Nutritional Assistance Program–NAP; 2) TANF participants; 3) public housing residents; 4) ex-felons; and 5) WIOA training program participants.

This tax credit would pay employers who hire individuals within the outlined populations if they worked a

minimum of 160 hours a year for up to 40% of their salary or \$6,000, whatever is lower. This allows for employers to access this credit if they need a seasonal worker. Additionally, this makes the credit attractive to small and medium businesses as they build up their revenue while providing a much-needed economic boost to families with children. An evaluation of the Michigan MEGA Tax Credit concluded that even with modest success, the net fiscal cost per job created by MEGA averaged less than \$4,000 per job-year, which is less than the labor market benefits of job creation (Bartik and Erickcek 2010). A credit like this one could have an important impact on child poverty. However, this policy should be revised at the ten-year mark since some research has shown potential minimally positive or negative effects on the TANF population that could be offset by investing in subsidized work instead of a tax credit (Lowe-Basch 2011).

Economic and Work Policies

These policies are designed to tackle economy-wide limitations and address the problem of low workforce participation among families with children. Job creation is perhaps the most challenging and recurring problem the Puerto Rican economy has faced over the years (Commonwealth of Puerto Rico Financial Oversight and Management Board 2019). It is important to create jobs with a strategy designed for economic growth where children and their families are at the center of the effort, and opportunities for economic mobility are generated. We consider two economic and work policies: (1) two types of universal child allowance and (2) expansion of government-subsidized jobs.

Our policy proposals in this bundle are:

- **Policy Proposal 4a:** Create a monthly child allowance benefit of \$100 per child for all children in Puerto Rico
- **Policy Proposal 4b:** Create a monthly child allowance benefit of \$150 per child for all children in Puerto Rico
- **Policy Proposal 5a:** Expand government-subsidized jobs to cover 30% of non-employed and out of school youths aged 16 to 24
- **Policy Proposal 5b:** Expand to 100,000 government-subsidized job slots over the next ten years (10,000 annually) paid at 50% salary for parents aged 25 to 55 who are unemployed or out of the labor force

Universal Child Allowance Program

In general terms, the literature around cash transfers supports the implementation of a child allowance policy as an effective way to reduce child poverty. Moreover, if conditioned by compliance to activities tied up to children development such as school enrollment, vaccines, and others, it could lead to improvement in health and education outcomes (Rith, Bongestabs, and Nimeh 2016). We propose either a universal child allowance of \$100 per child or \$150 per child.

There is extensive and potentially generalizable evidence that cash transfers have reduced the depth and severity of poverty. At least 17 rich nations have some form of child allowances. Latin American countries like Brazil and Mexico also have developed child allowance programs that reduced poverty levels gradually (Cirkovic 2019; Lie_ 2010). The trade-off this policy is how costly it could be. In the US, experts have proposed this policy in substitution of the Child Tax Credit based on principles of universality and accessibility for all (National Academies of Science, Engineering, and Medicine 2019). Thus, we proposed the same for Puerto Rico, but instead, it would be in substitution of the local Earned Income Tax Credit (EITC), the WWOTC, and government-subsidized jobs. When offered to all families with children, child allowances do not stigmatize low-income beneficiaries, but instead have the potential to integrate them into the social mainstream (Garfinkel and Smeeding 2010).

The balance between requirements and bureaucratic procedures needs to be assessed to make sure the gains for reducing poverty can be achieved through this policy (Cecchini and Madariaga 2011). In determining the appropriate level of the child allowance, it is essential to balance poverty reduction and expected cost. In our analysis, we considered the possible impact of a \$100 or \$150 targeted monthly child allowance for all children in Puerto Rico. We found that the main difference between these two alternatives are cost and their impact on child poverty.

Expand Government-Subsidized Job Programs for Parents and Youth

According to the literature, work subsidies have been viewed as more successful at creating jobs and increasing incomes of low-income families than targeted hiring credits (Couch, Besharov, and Neumark 2013). Puerto Rico has used subsidized jobs in the past through the

Department of Labor, Law 52, the Workforce Innovation Opportunity Act (WIOA), and other initiatives like Juvempleo (Commonwealth of Puerto Rico Department of Economic Development and Commerce 2018). We recommend a version of these policies that targets youths and parents who are currently disconnected from the workforce. Thus, we recommend a combination of the creation of subsidized jobs and work experience slots.

Increasing the labor force participation rate is singled out as the most important indicator to change in the fiscal plan for Puerto Rico, certified by the Fiscal Oversight and Management Board on May 9, 2019 (Commonwealth of Puerto Rico Financial Oversight and Management Board 2019), given Puerto Rico's low labor force participation rate, which currently is set at around 40%, according to data available at the Department of Labor website. Designing strategies to increase it, especially among parents, is one of the most effective ways to reduce child poverty.

We propose implementing two subsidized work policies. First, a Work Experience program for 30% of youths who are unemployed and out of the labor force that provides paid employment and integrates educational components. Although the evidence on work experience programs for youths is inconclusive, other studies show a strong impact on education as well as other outcomes (Sattar 2010). More specifically, work experience programs that include some level of academic and vocational training, job search, and placement assistance, and other supports have been shown to have substantial impact on school attendance and educational outcomes. Preparing the younger workforce with valuable work experience can address competitiveness and can also prevent workforce drop-out in the long term.

The second policy we recommend is work subsidies for 10,000 parents every year from 2020 to 2030. The rationale behind hiring subsidies for parents is simple: if parents work, there is more income in the household, and therefore it is less likely for the children to live in poverty. Moreover, subsidies can act as a countercyclical policy tool to stabilize the labor market and are an important device for supporting economic recovery (Brown 2015). Evidence of what works when it comes to work subsidies suggests: 1) creating the job opportunities in the private sector; 2) complement hiring subsidies for the unemployed with more comprehensive active labor market measures, especially counselling support; and 3) combining hiring subsidies with training, with the objective to address skill needs (European Commission 2014).

Removing Barriers to Workforce Participation

Before accepting a job offer, many parents need to answer a fundamental question: who would take care of my children if I start working tomorrow? There are virtually no empirical studies about child care and employment in Puerto Rico. But studies elsewhere have found that one of the most critical barriers to jobs is the lack of childcare (Enchautegui, Johnson, and Gelatt 2015), transportation (Fletcher et al. 2010), and other issues around employability and educational attainment (Zedlewski, Holcomb and Loprest 2007). Removing these and other barriers that parents may encounter when trying to enter the workforce is an essential component of a child poverty reduction strategy. As we have seen, it is not enough to simply spur job creation in the economy; Puerto Rico needs to create pathways for parents to benefit from these jobs.

We consider three policies that remove barriers to work: 1) early childhood development programs, 2) after-school programs; and 3) two-generation whole-family models in public schools. Our specific policy proposals are:

- **Policy Proposal 6:** Ensure access to early childhood development programs to all children aged 0 to 5
- **Policy Proposal 7:** Extend after-school programs to children in public schools
- **Policy Proposal 8:** Introduce whole-family two-generation models to public schools

Universal Early Childhood Development Access

In Puerto Rico, the early childhood development landscape includes, among others, private childcare providers, Early Head Start and Head Start, the WIC program, and Pre-K providers. There are positive initiatives already being led by stakeholders in this area. However, there is room for further program collaboration with a focus on removing barriers to employment. Another way to start bringing down these barriers is increasing access to early childhood care programs.

There is robust research about the pivotal role played by early childhood development programs experiences in determining later-life outcomes (Center for High Impact Philanthropy 2015). High-quality early childhood development programs have been demonstrated to reduce crime, increase employment, and improve health

and high school graduation rates (Bauer and Schanzenbach 2016). In addition to this, other studies have shown that the benefits of these types of programs can spill over to the next generation, as Head Start participation increased positive parenting practices for a wide variety of demographic groups (Garcés, Duncan, and Currie 2002). Only by looking at the research for early childhood development programs, the case for investment in these programs proves to be beneficial, and expanding access is crucial for long-term healthy development of children.

Unfortunately, since our study looks at policies that would reduce poverty over the next ten years, those estimated economic impacts are not included here. However, we include this policy because, on the short term, it can have a significant economic impact by removing barriers to employment for parents. We estimated the impact of available hours to work for parents if their children are enrolled in an early childhood program. We also accounted for how parents may decide to use their available hours to either work or enroll in college or a training program. Moreover, the best way to enact this policy is through a fund-braiding strategy that can position service providers of high-quality programs to serve more families regardless of their poverty and job status (Haseltine, Ling, and Posner 2014).



Extending After-School Programming for Children Aged 5 to 17

As with early childhood development, afterschool programs also can help remove barriers to employment for parents who worry about where their kids would go after school is over in the afternoon. Current estimates say that these programs could save at least three tax dollars for every one spent by reducing the need for remedial education and grade repetition, as well as keeping kids safe and out of trouble in after-school hours (After School Alliance 2016). Thus, we propose that all school children have access to after-school programs.

Several program evaluations show that after-school programs could also have significant long-term effects, such as increasing high school graduation rates, higher college enrollment rates, and better academic performance (After School Alliance 2014). Students attending LA's BEST after-school programs improved their regular school day attendance and reported higher aspirations regarding finishing school and going to college. Participants were also 20% less likely to drop out of school compared to matched non-participants (Huang et al. 2000). Moreover, high school students participating in Chicago's After School Matters program have higher class attendance, lower course failures, and higher graduation rates than similar students who do not participate in the program (Kresnak 2002).

Hence, many students in Puerto Rico do not have access to after-school programs. The demand for after-school programs in communities of concentrated poverty is much higher than the national average. In these areas, 56% of children who are not in an after-school program say that they would be enrolled in one if it were available to them, compared to the national average of 41% (United States Department of Education 2009). Moreover, places like Korea, Japan, Hong Kong, and Singapore, which are well-known for their high academic achievements in SIPA scores, all have after-school programs as a standard educational option (Baker, 2013). Also, after-school programs could be used to address re-skilling for future workforce demands, like in Singapore. Singapore announced that all upper primary students grades 4 to 6 would attend compulsory coding enrichment classes from next year onwards (Choo 2019). Considering this evidence, it would seem that the case for more and better access to after-school programs in Puerto Rico is obvious.

Hence, for this study, we estimated the short-term impact of rolling out a guaranteed after-school program for all students over the next ten years. Again, we used the impact of additional work hours of parents if their children were enrolled in after-school programs, and accounted for whether the parent decided to either work or pursue training or higher education.

Extending Two-Generation Models to Public Schools

In general terms, a two-generational approach focusses on creating opportunities for, and addressing the need of, both children and the adults in their lives. They articulate and track outcomes for both children and adults simultaneously (ASCEND 2016). According to ASCEND, from the Aspen Institute online resources, the Two-Generation Approach usually includes five key components: 1) post-secondary education and employment pathways, 2) early childhood education and development, 3) economic assets, 4) health and well-being, and 5) social capital. Evidence of the effectiveness of two-generation models is still forthcoming, as these models are just recently starting to be rigorously evaluated, but the early evidence is promising (Chase-Landale and Brooks-Gunn 2014). We propose to implement two-generation models in all elementary and middle public schools in Puerto Rico.

When implemented by the government, two-generation initiatives may vary by state and in the nature of the programs involved. But the overarching characteristics of each intervention are the combination of services to children and their families through fund braiding. This allows for services that were previously offered through agencies and personnel, often in a duplicative fashion, to be offered in a more targeted and efficient way. For example, TANF and WIOA funds have been braided to provide a wide range of services through one point of entry for participants.

The benefits of using a two-generation approach are many, but for this study we estimated the effects on employment of parents. For example, MOMS Partnership is an education and future earnings program for mothers and young children living in economically challenged urban neighborhoods. The program increased the percentage of women working at least 15 hours a week from 15% to 39% (Yale School of Medicine 2019). Another example is Vimenti Integrated Services at the Ernesto Ramos Antonini public housing project in Puerto Rico. Throughout its first year, 40% of parents

participating in the project were employed or had a job offer after one year in the program (Pereira 2019). Two-generation approaches are impactful on the short term, and can have long-term effects on children's health, education, and future earnings (Cheng, Johnson, and Goodman 2016; ASCEND 2016).

We modeled the implementation of a two-generation approach through all the public elementary and middle schools in Puerto Rico over the next ten years. Using the lower end of estimated impacts on parents' employment when a two-generation program is implemented, we calculated the effects and costs of a rollout of this approach island-wide.

Human Capital Development

In conjunction with removing barriers to employment and job creation strategies, there must be a component of human capital development, since, as shown on Part I, 75% of parents of children living in poverty do not have post-secondary education in comparison to 35% of the children not living in poverty. The skills required to enter the current workforce will change over the next decade. In fact, according to the World Economic Forum's (WEF) report on re-skilling, 1.37 US workers are projected to be displaced fully out of their roles in the next decade (World Economic Forum 2019). Another WEF report stated that, given the changes on jobs skills, when determining a new job location, companies overwhelmingly prioritized the availability of skilled local talent as their foremost consideration, with 74% of respondents providing this factor as their key consideration. Hence human capital development is imperative, given that by 2022, no less than 54% of all employees will require significant re- and up-skilling (World Economic Forum 2018). Parents need to be able to participate in the new workforce landscape, and for that to happen, a significant investment on human capital development is necessary in Puerto Rico.

The two human capital policies considered are (1) work training programs and (2) increasing educational attainment. Specifically, we propose:

- **Policy Proposal 9:** Develop a sector-based approach training program to serve up to 30% of unemployed and out of the labor force parents aged 21 to 55
- **Policy Proposal 10:** Revamp high school and associate degree completion programs to target parents aged 19 to 55

Sector-Based Work Training Program

Research around work training showed that a sector-based strategy is most effective, especially in programs where management and staff members also seek to fully understand the skill requirements and other needs of employers in the targeted sectors (Schaberg 2017). Another component of effective training programs is employer engagement. A program that has shown promising effects at a national level in the US is WorkAdvance. In brief, the two-year WorkAdvance effectiveness findings showed that sectoral programs can increase earnings among low-income individuals. Specifically, the program showed positive effects among men living under 200% poverty level and with an education level higher than high school in most cases (Hendra et al. 2016). Generation is another sector-based training program. This program is being applied in 13 countries around the world, including Puerto Rico by Vimenti, with a proven record of positive employment and earnings outcomes.¹⁴

In estimating the effects of a work training program that uses a sector approach, we made available slots to 30% of eligible participants over the next ten years. Moreover, to further adjust for plausible program success, we estimated that the program would have been able to successfully employ 25% of participants annually. We used the same sectors included in the WorkAdvance evaluation, given that most of those sectors are also growing in Puerto Rico, and identified others with growth in Puerto Rico using data from the Bureau of Labor Statistics. Finally, we took the average medium wage in each sector and applied it to a full-time job position to the randomly selected sample.



High School and Associate Degree Completion Program

An important component of a human capital development strategy is increasing the educational attainment of workers. A cross-sectional model from many different countries and time periods consistently confirms that more education, as traditionally measured by years of schooling, is associated with higher earnings (Patrinos and Psacharopoulos 2004). In Puerto Rico, as elsewhere, the correlation between educational levels and labor market outcomes is strong (Enchautegui 2007; Ladd and Rivera-Batiz 2006). According to data from 2017 Puerto Rico Community Survey, on average, the difference in earnings between full-time workers with less than a high school diploma and workers with a high school diploma is \$3,600 in Puerto Rico. Furthermore, the difference between full-time workers who completed high school and the ones who hold an associate degree is \$1,000. According to a study presented by Lumina Foundation (2019) that explored educational attainment in Puerto Rico, the island has fairly good educational attainment, with 47.1% having post-secondary education compared to the 47.6% nation-wide rate. In addition, parental education trickles down to children. Ever-poor children whose parents have a high school education or more than a high school education are 11% and 30% more likely to complete high school, respectively (Ratcliffe 2016).

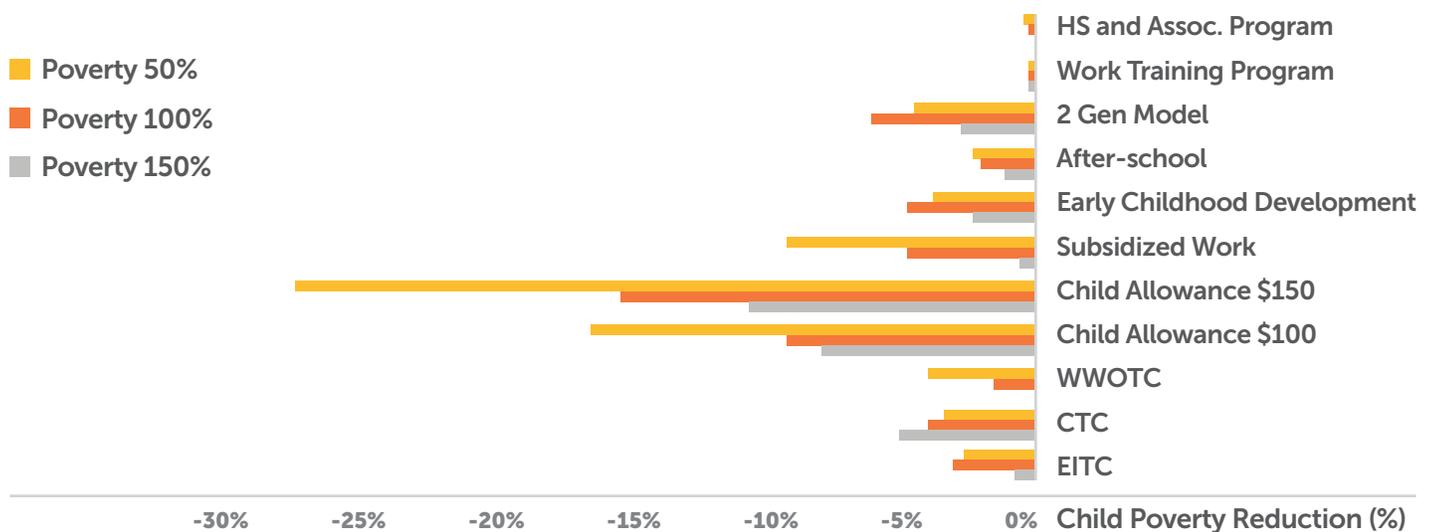
To estimate the impact of this program on child poverty, we applied an increase in earnings to those enrolled in

the program after completing three years. The reason for using a three-year leap is to account for the time spent in completing the degree and finding a job. We modeled estimates for this program with the goal of reducing the number of parents who have not completed a high school diploma by half and increase parents with an associate degree by 15% over the next ten years.

In this section we explain the effects on child poverty of the policies described above over the next 10 years. We used the federal poverty line (FPL) at 100% FPL (Poverty), 50% FPL (Deep Poverty), and 150% FPL (Near Poor) to understand the impact in various groups. Additionally, we created three policy combinations to assess the relationship between costs and benefits, as well as the impacts on child poverty over ten years.

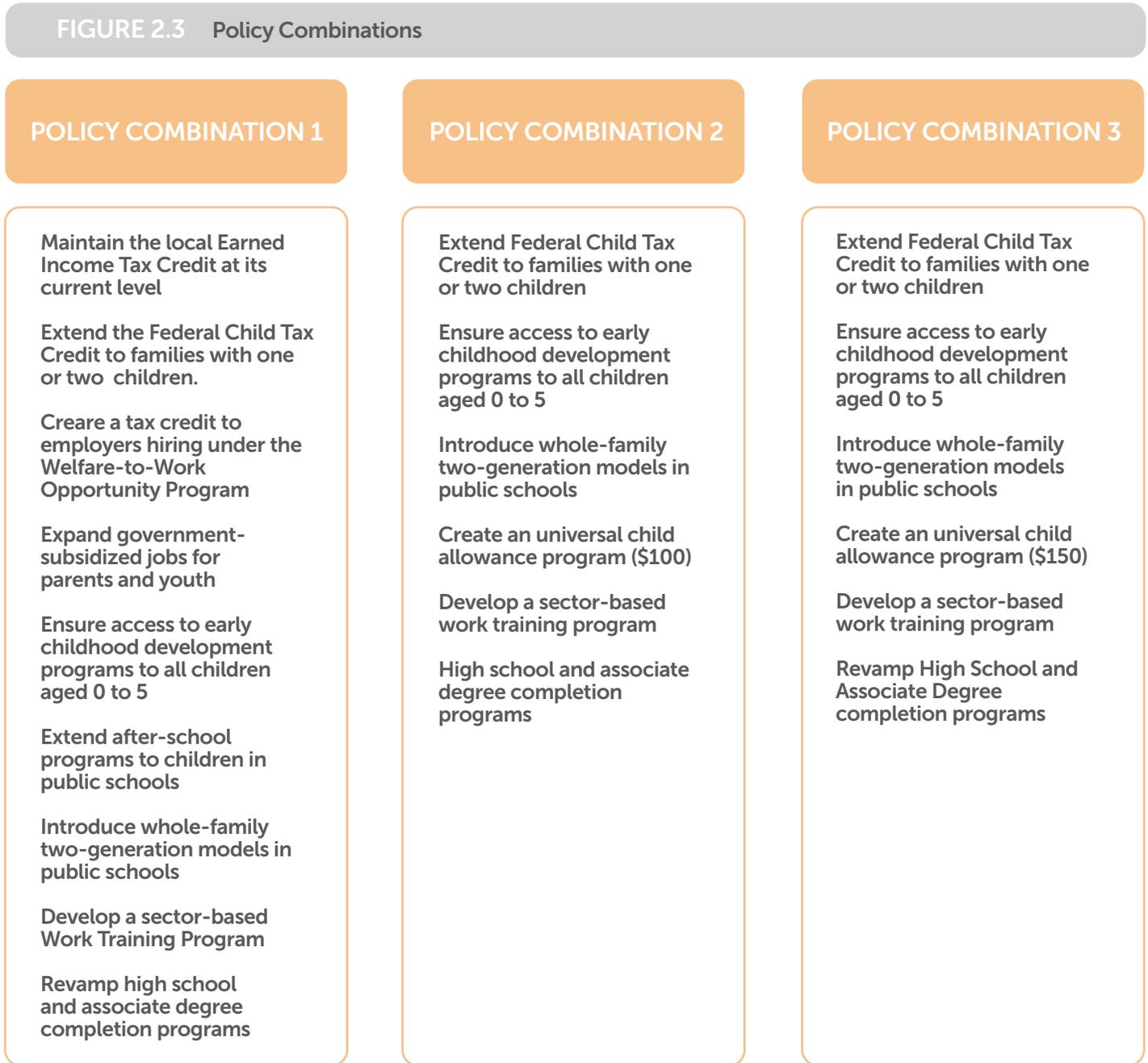
We simulated these policies at the ten-year mark to understand their impact on child poverty. As shown in **Figure 2.2**, the most effective policy for reducing child poverty over the next ten years is the Child Allowance Program of \$150 (Child Allowance 2) and the one with the smallest impact is the High School and Associate Degree Completion program. The policies also present a variance in their impact depending on the level of poverty of the population. For example, while the child allowance program has a higher impact on children living in deep poverty, the Federal CTC has a greater impact on children living near poverty. Some programs do a better job at lifting families out of poverty at 100% than on the ones living in deep poverty or near poor, as is the case of the two-generation programs and the Puerto Rico EITC.

FIGURE 2.2 Simulated Child Poverty Reduction in Ten Years by Policy



The idea we want to convey is that any of these policies individually can reduce child poverty in Puerto Rico. However, none of them could reduce poverty below 29% over the next decade. Furthermore, these policies when implemented in conjunction could have a more substantial impact on poverty.

We estimated the effects on child poverty in ten years using three policy combinations as shown in **Figure 2.3**.

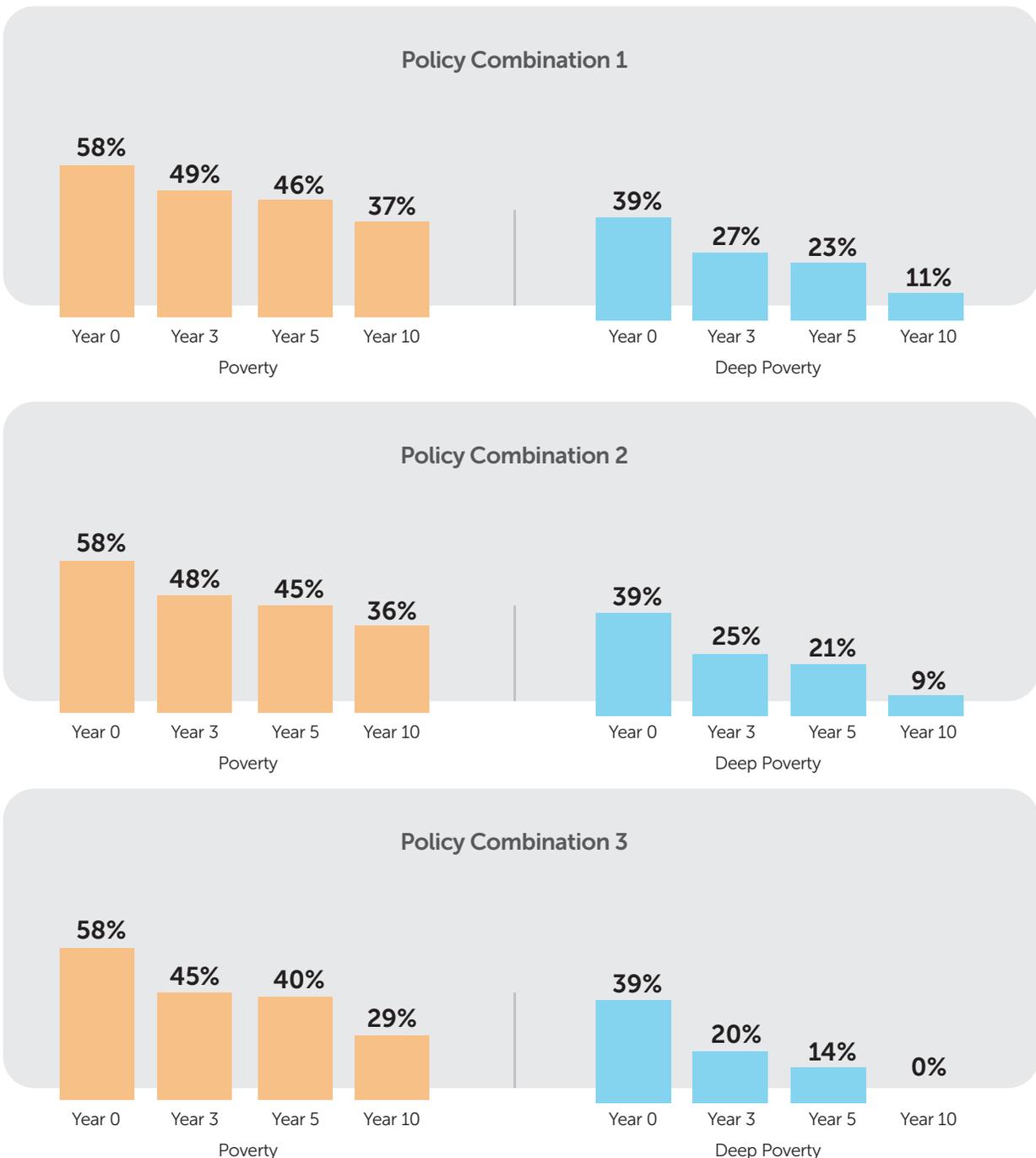


The rationale behind these policy combinations is the relationship between the cost of the programs and policies and their effectiveness in reducing child poverty. It is important to highlight that when compared to doing nothing, all three policy combinations are less expensive than the cost of child poverty estimated at \$4.4 billion annually. Moreover, some of the policies when estimated in conjunction increase their impact in reducing child poverty. For example, subsidized work can increase the amount of earned income in a household, increasing the Earned Income Tax Credit and the Child Tax Credit with a larger reduction in poverty. In the same way, ensuring access to early childhood development programs would allow time for parents willing to enter a work training program or a high school and associate degree education program.

Impacts on Child Poverty

Figure 2.4 shows the cumulative impact of the policy combinations on child poverty at 3, 5, and 10 years. If any of these policy combinations are implemented by 2020, Puerto Rico can significantly reduce child poverty from a baseline of 58% to 45% in three years under Policy Combination 3. In Policy Combination 1, the most comprehensive of the policy combinations proposed, child poverty could decline to 49% in three years. Within ten years, poverty could be cut to around 36% in Policy Combinations 1 and 2. Child poverty could be cut by half in ten years under Policy Combination 3. Deep poverty could be wiped out in ten years under Policy Combination 3, and virtually eliminated under the other policy scenarios.

FIGURE 2.4 Child Poverty Reduction under Different Policy Scenarios



We do not discuss how each policy was simulated, for it would be too extensive. However, **Box 1** shows two examples of the simulations to offer a glance on how these effects were estimated.

Box 1 Example of Policy Estimation: Federal Child Tax Credit

To estimate the impact on child poverty of the Federal Tax Credit, we used the Puerto Rico Community Survey data set for 2017. We created a variable that calculated the CTC using the federal payment schedule, and the alternative calculation using payroll taxes. The equation looks like this:

(Family Earned Income – \$2,500) x .0765, later adjusted by number of children in the household (up to \$1,400 refundable per child)

We proceeded to create a new family income variable that would be the sum of the CTC estimates and the original family income. After this, we calculated a new child poverty rate before and after the CTC. For costs, we used the CTC estimates per household, and added an additional 1% of that total as administrative cost. We calculated an annual CTC cost of at least \$1.5 billion. First-year effects were extrapolated into the future, adjusting for population change, increments in policy effectiveness across time, and entries and exits into poverty.

Box 2 Example of Policy Estimation: Subsidized Work

We used the Puerto Rico Community Survey data set for 2017 to estimate the impact on child poverty if we subsidize two types of work: youth summer jobs and adult low-skill jobs. First, we randomly assigned either a part-time or full-time summer job paid at \$7.25 per hour for 30% of youths aged 16 to 24 who were unemployed or out of the labor force and lived up to 150% FPL. Then, we randomly assigned full-time subsidized minimum wage jobs for 10,000 parents aged 25 to 55 who were unemployed or out of the labor force, paid 50% by the government and 50% by the employer. We then added these salaries to the family income and calculated poverty before and after the subsidized work. For costs, we used the total amount of the subsidies for summer jobs and 50% of the salaries for adult subsidized work, and added a 1% administrative cost to the total. Lastly, we subtracted the sales tax, assuming a 64% salary consumption, since this is money that the government will receive in return. We estimated the annual cost of this subsidized work policy at about \$125 million. First-year effects were extrapolated into the future, adjusting for population change, increments in policy effectiveness across time, and entries and exits into poverty.



Cost of Policy Solutions

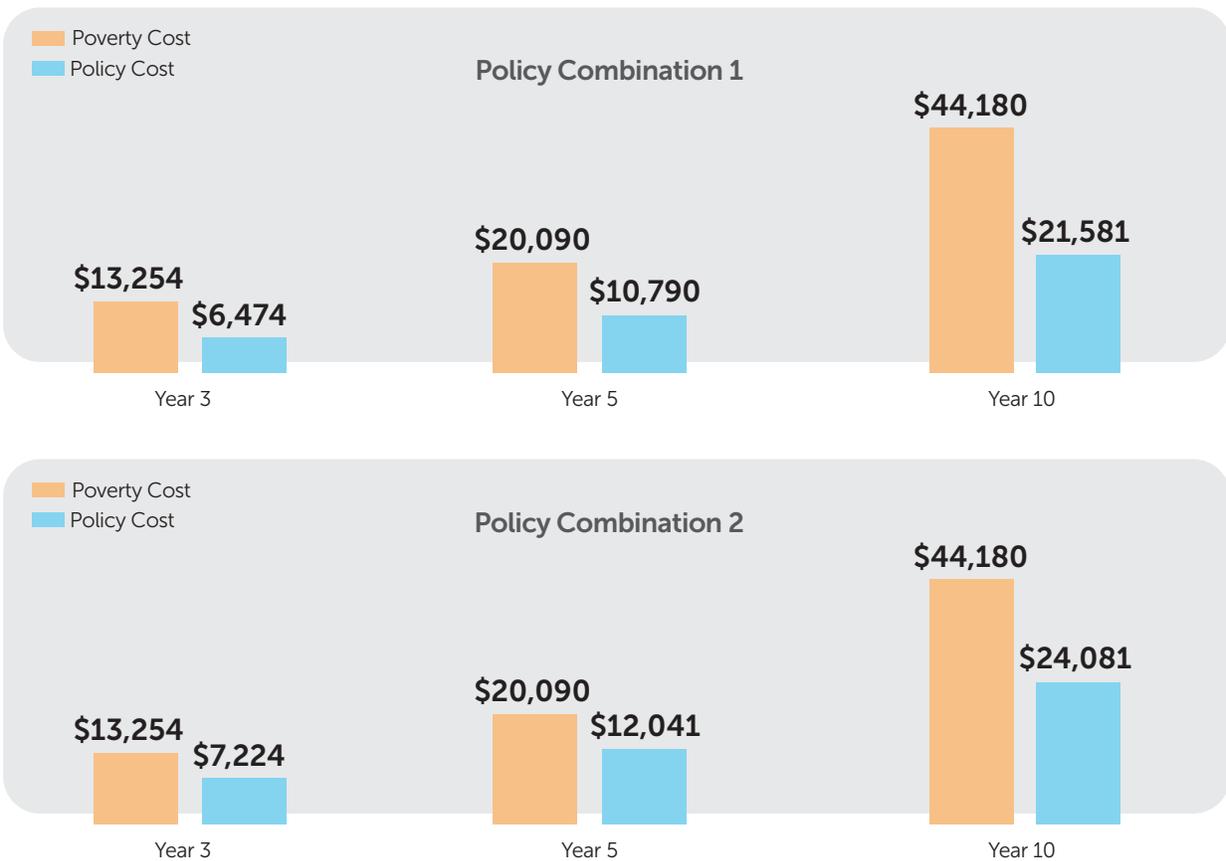
The cost of programs and policies included in the study were calculated using various references based on the type of program. For example, when looking at tax credits, we included the credit itself and added administrative cost to the total. We further adjusted the cost by subtracting the amount of income that would be taxed and returned to the government through the sales tax. For other policies like ensuring early childhood development access, we calculated the number of early childhood spaces required to host the estimated number of kids who would benefit from the policies and monetize them using the average cost as reported by programs like Head Start and Child Care. All policies have the most accurate cost estimates based on existing similar programs.

Figure 2.5 shows the relationship between the cost of doing nothing from Part I of this report (Poverty Cost)

and the cost of implementing the ten simulated policies (Policy Cost). We used the sum of the estimated annual cost of child poverty presented in Part 1 and the sum of the estimated policy combinations costs to compare the cost-effectiveness of the alternatives. An important aspect of the policy cost is the fact that not all of it will have to be new investment. A combination of existing funding streams and new revenues from local and Federal funding may be suffice to match the cost.

In conclusion, it is best to address the problem of child poverty through any of the policy combinations than doing nothing. If the Policy Combination 2 were to be adapted, its cost in three years would be \$7,224 million, while the cost of doing nothing would be \$13,254 million, for a net gain of \$6,030 million. A similar net gain is observed in all policy combinations for all the years simulated. All policy combinations are, therefore, cost effective, showing a dividend to the eradication of poverty.

FIGURE 2.5 Cost of Child Poverty and Cost of Solutions (in millions)





Policy Tools

Reducing child poverty significantly in the next ten years is not an unattainable goal. The road for implementing a robust child poverty agenda for Puerto Rico does not start from scratch. Existing policy tools can be used to expand impact. There are government structures, legal framings, and sources of local and federal funding that can be leveraged when implementing the road map to reduce child poverty significantly in ten years. There are also nonprofit organizations which provide services related to these policies whose experience can enhance the effectiveness of the proposed policy solutions and whose services could be strengthened in the goal of reducing child poverty. Some of the proposed policies do not require new funding, part or all of their costs could be covered by improving government efficiencies and by making a better use of available funds. Figure 2.6 shows for each proposed policy the key stakeholders available policy tools and funds that could be leverage. Examples of tools and funds that are available are: 1) WIOA training programs; 2) Law 52- Law for the Promotion of Work Opportunities; 3) One Stop Centers; 4) Department of Education Adult Education Program; 5) grants de the US Department of Labor; and 6) Department of Housing programs for communal and residential services.

FIGURE 2.6 Policy Tools to Reduce Child Poverty

Policy Recommendation	Key Players	Policy and Program Tools	Funds to Leverage
Maintain Puerto Rico's Earned Income Tax Credit at its current levels	Puerto Rico Department of the Treasury (Hacienda), Puerto Rico Legislature-Finance Commission	Amendments to the P.C. 1544. "New Puerto Rico Internal Revenue Code Bill" to make the EITC permanent for at least ten years	Puerto Rico local government revenues
Extend the Federal Child Tax Credit to families with one or two children	Ways and Means Committee, US House of Representatives, US Senate Finance Committee, Puerto Rico Resident Commissioner, Puerto Rico Federal Affairs Office	Amendments to tax bills such as the "Tax Codes and Jobs Act" (P.L. 115-97), 12 bills that introduced the CTC extension for Puerto Rico over the 114th and 115th Congress with bipartisan support	US Congress appropriations, payroll taxes

FIGURE 2.6 Policy Tools to Reduce Child Poverty

Policy Recommendation	Key Players	Policy and Program Tools	Funds to Leverage
Create a Welfare-to-Work Opportunity Tax Credit	Puerto Rico Department of the Treasury, Puerto Rico Department of Economic Development and Commerce, Puerto Rico Department of Family, Puerto Rico Legislature Finance Commission	Amendments to Puerto Rico Law 60-2019	Increased revenues from sales and income taxes due to increase work, efficiencies from government incentives programs
Create a universal child allowance program	Puerto Rico Department of Family, Puerto Rico Department of the Treasury, Puerto Rico Fiscal Oversight and Management Board	Amendments to Puerto Rico Tax Reform Law 257-2018. Child Trust Fund Law 173-1999 with amendments	Puerto Rico Child Trust Fund, tax exemption for children in the tax code, substitution of other benefits
Expand government subsidized job programs for parents and youth	Puerto Rico Department of Labor and Human Resources, WIOA Office, Puerto Rico Department of Family, municipal governments, private sector partners, non-profit partners	One Stop Centers from the WIOA office, Juvempleo program, Private partnerships, Vocational Rehabilitation Services, Employment Services for Students program, Vocational and Technical Education Centers	Puerto Rico Department of Labor Law 52, WIOA Funds, US Department of Labor grants, Disaster Recovery Funds for Economic Development like CDBG-DR, the Social Impact Partnerships to Pay for Results Act (SIPPR) funds at the US Department of Treasury, TANF
Ensure access to early child development programs to all aged 0 to 5	Puerto Rico Department of Family, US Department of Health and Human Services, Child Care Program, Head Start/Early Head Start Program, Child Care providers Association, non-profits, Puerto Rico Children and Youth Task Force	Head Start and Child Care Partnership Initiative, Department of Education pre-K program	Head Start and Early Head Start Funds, Child Care Block Grant Funds, TANF, Puerto Rico Department of Education funds, Federal Preschool Development Grant B-5 grant, Puerto Rico Child Trust Fund, government efficiencies savings

FIGURE 2.6 Policy Tools to Reduce Child Poverty

Policy Recommendation	Key Players	Policy and Program Tools	Funds to Leverage
Extend after-school programs to children in public schools	Puerto Rico Department of Education, Puerto Rico Department of Housing, US Department of Education, private and non-profit providers of after-school programming, Department of Housing-Administration of Public Housing	Puerto Rico Alliance for an Alternative Education, Law 213 – 2012 for The Development of Alternative Education, proposals from the Department of Education, partnerships with Puerto Rico Department of Housing	21st Century Community Learning Centers Funds, Legislative Discretionary Funds, Puerto Rico Child Trust Fund, private sector funds, Department of Housing Program for Communal and Residential Services
Introduce whole-family two-generation models in public schools	Puerto Rico Department of Education, Puerto Rico Department of the Family, Puerto Rico Department of Labor and Human Resources, US Department of Health and Human Resources, WIOA office	Ascend by Aspen program, local non-profit examples like Proyecto Nacer and Nuestra Escuela	Family First Initiative Act, SIPPRA, TANF, Puerto Rico Child Trust Fund, Department of Education funds, government efficiencies, private sector funds
Develop a sector-based work-training program	Puerto Rico Department of Labor and Human Resources, Puerto Rico Department of Economic Development and Commerce, US Department of Labor, Workforce Innovation Opportunity Act Office, Workforce Program Providers, non-profit workforce providers	One Stop Centers from the WIOA office	WIOA funds, US Department of Labor Grants, Disaster Recovery Funds for Economic Development like: CDBG-DR, SIPPRA, TANF, Wagner-Payser funds
Revamp high school and associate degree completion programs	University of Puerto Rico, Department of Education, Private providers	Adult Education Program,	WIOA Funds, US Department of Education funds, Puerto Rico Scholarship funds, Student Aid - Federal Pell Grants, TANF, government efficiencies, private sector funds

Other Policies to Explore

Box 3 Minimum Wage

We estimated the potential impact on child poverty of increasing the minimum wage (MW) to \$8.25 and \$10.00 per hour. Among seven minimum wage studies in Puerto Rico, five found negative employment effects (Castillo and Freeman 1992; Hernández, Valdez, and González 2018; Lastra 1964, Reynolds, and Gregory 1965; Santiago 1994). The early studies found large negative employment effects and the most recent ones found declines between 7.2% and 14.4%. One study argues that the early findings of Reynolds and Gregory and Castillo-Freeman are statistically sensitive (Krueger 1994), and one found increases in employment (Caraballo 2016). The finding of employment increases was not considered in the simulation because most studies for total employment either found negative effects or failed to find effects.

The newest evidence on the United States is summarized by the Congressional Budget Office (CBO) in their 2019 analysis. CBO assumed a decline of employment of .21% for every 1% increase in MW, considering directly impacted workers whose impacts are higher than overall workers'.

We simulated the effects in Puerto Rico generally following the methodology used by Acs et al. (2015), assuming (1) no employment decline; (2) using the 7.2% effect found by Hernández, Valdez and González; (3) using the 10.8% average effect found by Hernández; (4) assuming a decline similar to CBO's; (5) using the effects of CBO, but increasing them by 25%; and (6) using the effects of CBO, but increasing them by 50%. The rationale for increasing CBO's effects is that, theoretically, the MW should have a stronger negative effect in economies with higher unemployment and where the ratio of MW to median wages is higher. Simulations are done with the 2017 Puerto Rico Community Survey data. Hourly wage in this data set are estimated with error because there is no precise information on weeks worked.

If MW were to increase to \$8.25 and there were no negative employment effects, the poverty rate of families with children could decline from 58% to 55%. Once unemployment effects are factored in, the gains in poverty are smaller. The largest poverty reduction is 1.7 percentage points. If the MW increases to \$10.00 and there are no negative employment effects, the poverty rate could decline 7 percentage points, but with employment effects, it declines up to 4 percentage points.

Although not the focus of this study, we found that the overall poverty rate would decline by 3 percentage points with no employment effects and up to 1.5 percentage point when considering unemployment affects in the case of \$8.25.

The benefits of a rise in minimum wage are uncertain, as they depend on the possible effects it could have on employment, and these cannot be ruled out. The relatively small effects on poverty are due to the large number of poor families without work or with low hours, for which minimum wage increases won't be able to put them above the poverty level. MW brings benefits and maybe wage justice to those who keep their jobs, but it can also bring some pains, making it harder for some to get or maintain a job. A higher MW, if adapted, should consider ways to minimize the possible effects of unemployment.

Box 4 Making Work Pay

The policies we suggest make work pay by putting money in people's pocket. Maintaining the local work credit-EITC effectively increases the wages of workers. Expanding the Puerto Rico Federal Child Tax Credit to parents with one or two children, which brings additional income to families, is also a mechanism through which families can increase their wages. Increases in child care subsidies for parents with preschoolers mean that families do not have to spend a high share of their wages in child care. Lastly, with reductions in the benefit cliffs of government assistance programs, families can maintain some of the nutritional and housing assistance to help make ends meet.

Redesigning the Major Safety Net Programs to reduce benefit Cliffs

Recent research has shown that children's access to better neighborhoods (Chetty Hendren and Katz 2016), health insurance, and food stamps and cash welfare (Hoynes, Schanzenbach, and Almond 2016) is related to improvements in adulthood. The primary safety net program in Puerto Rico is the Nutritional Assistance Program (NAP), which is funded through a block grant. This funding system leaves little room to react quickly to changes in conditions that increase the number of participants, like, for instance, being affected by a major natural disaster such as Hurricane Maria. The block grant also must be distributed in benefits, leaving no funds for interventions that put participants on a path to economic mobility. Furthermore, the NAP program and the housing benefits program working in tandem present benefit cliffs that make work unattractive. Our recommendation is to examine the income-benefits structure of the programs to reduce the benefit cliffs, making them friendlier to working families, and for these programs to change from a welfare approach to a human capital approach.

Extending Section 8 Housing Vouchers Available to Puerto Rico

Another policy that could potentially have an impact on child poverty is housing vouchers. Using data from the Puerto Rico Community Survey for 2017, we calculated the share of total family income that goes into paying rent in Puerto Rico. A quarter of all poor families pay rent, and those who pay dedicate 40% of their income to rent (Ruggles et al. 2017).

Child Support Assurance Program

According to the Child Well-being Index of the Youth Development Institute of Puerto Rico, 62% of households with children are single-parent households. Among children in poverty, the figure is higher: 75%. Frequently, these households face financial stress due to the non-resident parents' inability to provide financial resources, which oftentimes is an important source of income for custodial parents. A government-subsidized child support payment in between the times the non-resident parent is unable to provide payments might be an important source of income for poor families. Unfortunately, there is not enough information on this issue to include a formal recommendation.

Epilogue

Child poverty is costly for the children, their families and the country. But Puerto Rico's child poverty is not an intractable problem. It can be reduced substantially over the next ten years if key stakeholders harness enough political will. It is possible to address child poverty and significantly reduce its impact on children and the economy. This is an effort that will require participation from government, non-profits, companies, and the federal government. The three policy alternatives argued are a guide for eradicating child poverty and set Puerto Rico into a path to economic growth and prosperity. We know why and we have the how; it is just a matter of when we want to start. Eradicating child poverty is costly, but it is more costly doing nothing.

Appendix 1

Descriptive Statistics of Participants of In-depth Interviews

Average Age (20-61)	39
Marital Status	
% with partner	30%
% family leader (single)	70%
Teen Moms (up to age 19)	65%
Average Children	3
Percentage Working	25%
Percentage with Child Support	53%
Government Assistance	
PAN	95%
TANF	20%
Vital Health Plan	95%
Upbringing (Adoptive Families)	
Parents	65%
Grandparents	15%
Foster	20%
Housing	
Public	65%
Section 8	15%
Private	20%
Household Size Average	3
Percentage of Grandmothers	25%
Completed High School	70%
GED	55%
Percentage with Technical Degrees	
T.G. not completed	45%
T.G. completed	30%
BA	5%

Appendix 2

Interviewed ID	Spanish Quotes
Earnings	
Site 5, I 1	"Yo sé que no es la misma paga [que cuando estaba en Nueva York], pero es tener algo para resolver para mis hijos."
Site 3, I 1	"sustento propio, libertad, porque puedes hacer lo que quieres. Es respirar, de verdad, y darle ese ejemplo a mi hija... Cuando trabajaba yo me quedaba con 10 pesos, pero esos 10 pesos eran míos, me los gané yo."
Site 1, I 1	"Es que yo no puedo, a mí me gusta tener mi dinero, ser independizada"
Site 3, I 2	"Cuando no tenía trabajo me sentía depresiva, porque no tenía dinero. Ahora les puedo decir que vayamos al cine, a comer mantecado, eso no lo podía hacer antes."
Site 5, I 3	Madre que dice que tenía un promedio de 4.00 pero no fue a la Universidad.
Site 1, I 2	"Tal vez la vea viviendo aquí los primeros años, pues conmigo. Pero luego la veo fuera de aquí."
Site 1, I 4	"Yo quiero que mis nenes estudien hasta tener cuarto año por lo menos; después, si ellos quieren algo mejor, que sigan hacia delante."
Site 3, I 1	"Espero que le vaya bien, que estudie, que disfrute, que aprenda a guiar, que pueda tener su libertad. Le digo a mi hija: 'Tú puedes ser lo que tú quieras.'"
Health	
Site 3, I	"Muchas veces no tengo para comprar las tiritas de la sangre. Estuve dos meses que no me las podía comprar y son \$20 cada pote. Yo me la tengo que tomar 4 veces al día; lo que me duran son 15 días." "Ahora mismito mi amiga me las compró. "
Site 4, I 2	"Aquí las trabajadoras sociales se pasan molestándome para que coja el cuarto año, pero yo no puedo porque tengo problemas de la vista. Y el plan médico me cubre el examen, pero no los espejuelos. Entonces ¿para qué yo me voy a hacer un examen si no me puedo comprar los espejuelos?"

Site 5, I 4	"Con Vital no da para los medicamentos, yo pago medicamentos. La insulina, las jeringuillas; yo bebo pastillas para el colesterol, para botar el agua [diuréticos], yo pago \$44 de deducible todos los meses." "Y las tiritas son aparte, y eso depende del precio al que las pongan: cada paquete trae 50 o 25."
Site 5, I 4	"El nene menor es hipoglicémico, eso es que le baja el azúcar. Él no requiere insulina, ni medicamentos, yo solo lo llevo a la nutricionista y él tiene que hacer todas sus comidas y meriendas."
Site 2, I 4	One interviewee suffers intense headaches due to a head injury caused by her partner.
Site 2, I 3	"El nene dejó de hablar por el maltrato de su papá. El nene no me quería hablar y yo creo que era por el maltrato físico del padre. El nene se quedó en silencio, solamente señalaba, no hablaba. Él tenía como 3 años. Hoy tiene 14 años, está en depresión, coge terapia psicológica, es bien silencioso, no habla nada. Tiene 14 años y no tiene amigos."
Site 4, I 2	Echa de menos a su mama.
Site 4, I 4	"Yo padezco de los nervios, de ansiedad, de depresión. Yo lloro cada vez que hablo, y no es que rompo ni agredo a nadie. Porque eso sería seguir el patrón que estaban siguiendo conmigo, pues no, tiene que ser al revés."
Site 4, I 2	"Siempre estoy ansiosa, trato de relajarme, pero a veces es imposible. El diario vivir, la economía... ¿sabes?... el uno no estar trabajando, uno solo recibir cupones... ¿sabes?... es difícil."
Site 5, I 4	"Para ese tiempo educación especial era sin grado, sin diploma. Cuando yo salí de la escuela elemental, me fui a otra escuela que daban talleres; yo cogí el taller de cosmetología, yo tenía como 15 años. No lo pude terminar porque como yo soy diabética, me daban muchos bajones y ellos mismos [la escuela] me sacaron."
Site 5, I 4	"No puedo trabajar porque mi nene mayor es de educación especial. Yo lo llevo a las evaluaciones y los espero. Yo soy la que brego con mis hijos. Con el nene chiquito yo tengo muchas citas, muchas cosas... muchacha."
Site 4, I 2	"Quisiera trabajar, pero la doctora dice que no puedo trabajar, pero yo quiero trabajar. ¿Porque quién me va a mantener? La doctora no me va a mantener. Y es como yo digo: si en mi casa yo tengo que limpiar, tengo que cocinar, tengo que hacer todo, pues me puedo ir a trabajar 4 horas. Porque como quiera los dolores están ahí. Tengo artritis, tengo 21 espuelones en la espina dorsal, tengo diabetes, o sea, tengo muchas condiciones."

Earnings

Site 5, I 4	"Esto siempre ha sido así, es por tiempo que esto está tranquilo. Los nenes a veces se asustan, ellos me dicen: 'Mamá, están tirando tiros', y yo les digo 'Sí, tírate al piso'. Si no, los meto en el clóset. Ellos se quedan asustados, pero después se les pasa."
Site 5, I 4	"Las cosas están malas en la calle. Uno no puede estar bachateando en la calle, porque cuando menos tú lo piensas, vienen y te arrebatan la vida."
Site 3, I 2	"No quiero que mi hijo pise la calle y ¿sabes?, que me lo maten."
Site 5, I 2	"No me acostumbro al alboroto, al tiroteo al 'Mira, mataron a aquel.'"
Site 4, I 2	"Es bastante común escuchar tiros aquí. Antenoche mismo tiraron de la avenida para acá. Gracias a Dios que el nene casi no los escucha, porque como él se acuesta temprano y los fines de semana está allá con los abuelos, pues escuchar así un tiroteo fuerte, como yo lo he escuchado, él no los ha escuchado."
Site 5, I 2	"Eso fue horrible. A mí me dio un ataque de pánico. Yo tuve que llamar a mi mamá, y mi mamá tuvo calmarme y darme pastillas para poder dormir. Gracias a Dios que mis nenes no estaban allí, porque yo no sabía qué hacer. Eso fue horrible."
Site 3, I 2	"Y yo vi esto porque mi hermano, yo no lo vi crecer, pero en su juventud el cayó preso, y a mí me afectó porque es mi hermano menor, mi hermano pequeño."
Site 3, I 2	"Estuve en el departamento de la familia [foster home]. Yo vengo de lo más bajo... Te recogen en una casa, pero el muerto apesta a los tres días. No tengo prácticamente ningún familiar."
Many	"aquí no se puede confiar en nadie"
Site 5, I 1	"Antes había reglas, había normas. Ahora... no piensan, no les importan los adultos, no les importan los niños, no les importan los ancianos. Antes había como ese respeto... ahora no hay respeto." (p.30)
Site 5, I 4	"Bueno, mientras mis hijos estén arriba en mi casa, están seguros. Porque yo apenas los dejo bajar, a menos que vayan a casa de mi mamá, que ellos van conmigo, que yo los monitoree... Pero de que estén por ahí, dando vueltas por el mismo caserío, no; yo no se lo permito a ellos. Como esto está así malo, no los dejo bajar casi."
Site 5, I 2	"Pues la comunidad ayuda bastante, te avisan las cosas que están pasando y eso... Pero me da miedo mandarlos al parque y que vaya a haber un tiroteo y no me dé tiempo a bajar."

Appendix 3

Regression Coefficient of Child Poverty Rate on Health Outcomes

Health Outcome	Coefficient	P value
Mortality Rates^{1,2}		
Heart disease	. 677	0. 008***
Diabetes ³	. 246	0. 054*
Cerebrovascular disease	. 048	0. 614
Suicides	. 120	0. 003***
Crime⁴		
All Type-I crimes	6. 230	0. 079*
Property crimes	6. 169	0. 080*
Any disability ⁵	. 212	0. 000***
Earnings	-139.92	0.000***

Source: Based on 3 years' data (2009, 2012, 2017) for the 78 municipalities of Puerto Rico.

*** $p \leq 0.01$

** $p > 0.01$ & $p \leq 0.05$

* $p \geq 0.06$ & $p \leq 0.10$

Notes:

1 Other variables on the equation are distance to closest largest town, a dummy variable for year 2009, and a dummy variable for year 2012.

2 Data from the Puerto Rico Department of Health.

3 Natural logarithms.

4 Data from the Puerto Rico Police Department. Another variable in the equation is population.

5 Child poverty variable refers to whether the child lives in a poor household (Yes/No). Regressions based on public use microdata from the Puerto Rico Community Survey, 2017.



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Endnotes

¹During the last two weeks of July of 2019, Puerto Ricans of all walks of life went out to the streets daily to demand the resignation of the then Governor Ricardo Rosselló. On July 24th, over half a million people marched, making it the largest march in Puerto Rico's history. The governor resigned on the evening of July 25th. Although the organizing claim was the resignation of the governor, many other claims were aired: corruption, austerity policies, the auditing of the debt, the reopening of closed schools, the end of the Federal Oversight Board, and the deaths due to Hurricane Maria, to name a few.

²U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation. January 1 1997. History of Poverty Thresholds. <https://aspe.hhs.gov/history-poverty-thresholds>

³Commonwealth of Puerto Rico, Department of Education. Perfil del Departamento de Educación de Puerto Rico, Años Académicos 2016-2017. Retrieved September 17, 2019.

https://www.estadisticas.pr/files/Inventario/publicaciones/DE_Perfil_Estata_AA_2016_17_0.pdf

⁴Anuario Estadístico del Sistema Educativo, Instituto de Estadística de Puerto Rico. <https://estadisticas.pr/files/Inventario/publicaciones/Anuario%20Estadistico%20del%20Sistema%20Educativo%202015-2016.pdf>

⁵La Encuesta de El Nuevo Día. "La criminalidad es la principal preocupación de los puertorriqueños." El Nuevo Día, May 10, 2019. <https://www.elnuevodia.com/noticias/locales/nota/lacriminalidadeslaprincipalpreocupaciondelospuertorriquenos-2493062/>

⁶Instituto de Estadísticas de Puerto Rico. Anuario Estadístico del Sistema Educativo: Año escolar 2015-2016.

⁷Taking the average of fiscal years 2017 and 2018 of figures on page 24 for Servicios Educativos para Personas con Impedimentos.

⁸As prior research, we assume a discount rate of 3%.

⁹In 2017, the make and model of stolen cars was unknown for 914 cars. For these cars, we assumed a Ford Escape. The 2-year car depreciation was assumed to be .34 based on the Black Book of Car Values. .

¹⁰We examined incidents of thefts reported in the four major newspapers in 2017. These press accounts often reported the value of stolen property. Break-ins to commercial properties, buildings, schools, and homes reported stolen values often well above \$2,000. Examples are: 1) the Federal Communications Board reported in 2018 that over \$60 million had been stolen in copper lines in the last 8 years; 2) a break-in to a house in the West had stolen property valued at \$10,000; 3) A house in the East reported a stolen value of \$2,400; 4) A house in the South of \$5,000; 5) a credit card was stolen and \$2,447 were charged to it; 6) \$70,000 in merchandise was stolen in a commercial property in San Juan; and 7) \$400 were stolen in cash in a gas station.

¹¹Mean annual wage: \$18,340. United States Bureau of Labor Statistics. (2017, March). Occupational Employment Statistics. Retrieved from: <https://www.bls.gov/oes/2017/may/oes339032.htm>. Data from Occupational Employment Survey del Bureau Labor of Statistics, May 2017.

¹²Regressions controlling for distance to the closest large town did not show a statistically significant relationship between child poverty and crime rate.

¹³ASCEND The Aspen Institute. "What Is 2Gen?" <https://ascend.aspeninstitute.org/two-generation/what-is-2gen/>

¹⁴Generation.org

