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Puerto Rico Update:
PROMESA, Population Trends, Risks to the Fiscal and Economic Plan — and Now Maria

Gregory Makoff and Brad W. Setser

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Addressing limitations in the ways nations tackle shared economic challenges, the Global Economy Program at CIGI strives to inform and guide policy debates through world-leading research and sustained stakeholder engagement.

With experts from academia, national agencies, international institutions and the private sector, the Global Economy Program supports research in the following areas: management of severe sovereign debt crises; central banking and international financial regulation; China's role in the global economy; governance and policies of the Bretton Woods institutions; the Group of Twenty; global, plurilateral and regional trade agreements; and financing sustainable development. Each year, the Global Economy Program hosts, co-hosts and participates in many events worldwide, working with trusted international partners, which allows the program to disseminate policy recommendations to an international audience of policy makers.

Through its research, collaboration and publications, the Global Economy Program informs decision makers, fosters dialogue and debate on policy-relevant ideas and strengthens multilateral responses to the most pressing international governance issues.

Executive Summary

Puerto Rico is in the midst of a deep fiscal, economic and social crisis. Its economy has shrunk by about 15 percent in the last decade and its population has fallen by 11 percent — and is still dropping at a scary rate, about two percent a year. The Puerto Rico Oversight, Management, and Economic Stability Act (PROMESA) provides Puerto Rico with a federally appointed oversight board and the legal basis to adjust its debts through a court-supervised process. The fiscal plan approved by the oversight board requires fiscal cuts and tax increases of about six percent of Puerto Rico's gross national product (GNP), largely as a result of the arrival of long-anticipated "fiscal cliffs" in public pensions and health-care funding. The combination of fiscal cuts and tax measures is projected to allow Puerto Rico to generate a primary surplus of about 1.5 percent of GNP, enough to pay creditors about 25 percent of debt service due over the next 10 years. The fiscal cuts and the economy's downward momentum are projected to result in an additional 12 percent contraction in Puerto Rico's economy over the next 10 years. Yet even with this large projected fall, the analysis in this paper raises significant doubts over the robustness of Puerto Rico's fiscal and economic plan. Outmigration is likely to exceed expectations, and the economy and government finances could easily undershoot the oversight board's forecast. This then creates the risk that Puerto Rico might be unable to pay the new debt just one or two years after a restructuring without resorting to supplier arrears and other damaging emergency measures. The final outcome, however, will be strongly shaped by federal policy decisions, which could make things worse (cuts in federal programs, adverse changes in the tax code), or make things better (if more support is provided). If new federal funding becomes available — as it is hoped — the money should be targeted to help break the economy's steep downward fall and to improve public services, not to increase the cash available for near-term debt service.

The analysis in this paper was carried out prior to Hurricane Maria. The damage from the hurricane may push Puerto Rico into a worst-case scenario of accelerating decline and ever-falling tax revenues if the loss of housing, and a sustained power failure lead to large-scale outmigration. Given the need to alleviate immediate suffering, the potential loss of near-term tax revenues and the risk to medium-term stability, the federal government should assure adequate access to emergency funding and the oversight board, for its part, should be prepared to revisit the fiscal plan.

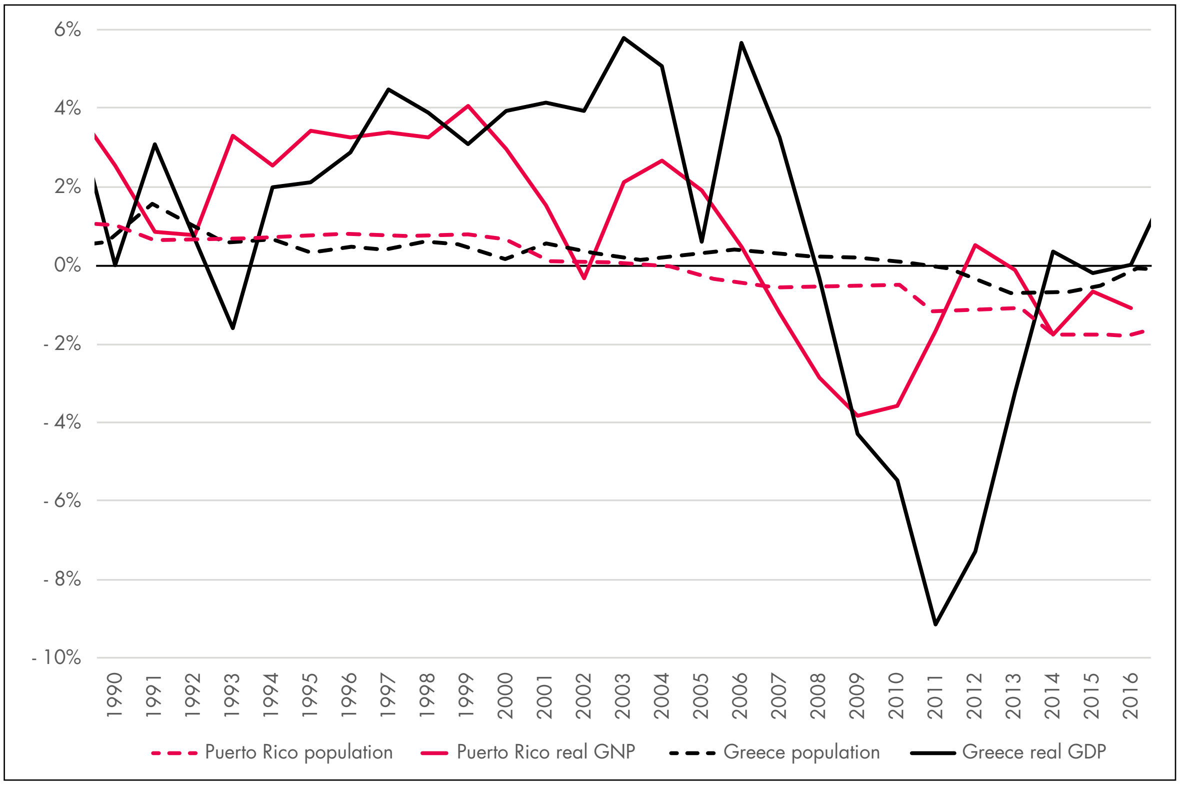
Introduction

International observers are hard pressed to understand the fiscal and economic crisis in Puerto Rico. An international sovereign debt crisis is certainly familiar ground, but it is hard to put this one in a box. It is tempting to compare the situation to that of Greece, but, unfortunately, the analogy is not very helpful — in large part because of the great potential for people and capital to flee Puerto Rico for the 50 states, and in part because the debt is owed largely to public bondholders while Greece's debt is now largely owed to official lenders. Outmigration from Puerto Rico has been quite stunning — running at about two percent a year. In Greece, where the unemployment rate hovers around 20 percent, outmigration rates have been much lower — a bit over 0.5 percent of the population a year, as shown in Figure 1. Detroit's municipal bond restructuring is likely to provide a better guide to Puerto Rico's restructuring than comparisons with sovereign debt restructuring cases, although any analogy has its limits given the complexities created by Puerto Rico's debt stock and its unique relationship with the United States.[1]

This paper provides a critical review of Puerto Rico's fiscal and economic plan. It starts with an overview of the fiscal plan and PROMESA, the federal law put in place in June 2016 to support Puerto Rico's recovery. The second section reviews Puerto Rico's historical population trajectory and economic trends to highlight the depth of the challenges faced by policy makers in trying to fix the territory. The third section highlights the substantial downside risks to Puerto Rico's fiscal and economic plan. Finally, since it is expected that Puerto Rico's recovery will be a work in progress for some time, the paper closes by suggesting that readers carefully track a few selected statistical measures for signs of further trouble.

1 While one could analyze Puerto Rico's crisis in the Caribbean context – a neighbourhood of many small states suffering from high debt, low growth and repeated debt restructuring – the explanatory power of this approach is low given Puerto Rico is part of the United States (International Monetary Fund [IMF] 2013).

Figure 1: Puerto Rico vs. Greece — Growth and Outmigration, Year-over-Year Percent Change



Data sources: IMF; Government of Puerto Rico.

Note: This paper presents Puerto Rico data in terms of GNP instead of GDP as further explained in Annex 1. See Annex 2 for a related discussion of Microsoft's international tax planning.

Fixing Puerto Rico with PROMESA

PROMESA, or "promise," in Spanish, is the short name for the Puerto Rico Oversight, Management, and Economic Stability Act passed by the US Congress and signed into law by President Barack Obama in June 2016. The law provides three essential tools to help resolve the crisis: the establishment of a seven-member Financial Oversight and Management Board, which retains broad authority over fiscal matters on the island, albeit in coordination with the territory's elected officials; a stay on litigation by creditors, which protected Puerto Rico from litigation for eight months while the oversight board was set up; and the authority to seek additional extended court protection and the ability to adjust debts in the federal court system, in a process similar to the Chapter 9 mechanism recently used by Detroit to restructure its debts,[2] although it introduces a powerful role for the oversight board in determining the structure of the deal.[3] PROMESA also created an innovative out-of-court restructuring mechanism (similar to a collective action clause, or CAC) but, since most of the major issuers have opted for a court-supervised restructuring, these provisions will not be used to restructure more than a small fraction of Puerto Rico's debt.[4]

2 Chapter 9 of the US bankruptcy code provides a mechanism for municipal borrowers (but not states) in the United States to adjust debts. However, Puerto Rico, its instrumentalities and its municipalities have not been eligible to use Chapter 9 since 1984, hence the need for the PROMESA statute.

3 For a reorganization plan to be confirmed by the court, the oversight board needs to certify that the plan meets 14 tests, including the protection of essential services, adequate funding of pensions, independent revenue forecasts and respect for the priority of creditors.

4 Title VI of PROMESA created a CAC-like aggregated voting mechanism to facilitate a voluntary restructuring. The vote would be supervised by the courts, and any offer would require support from the oversight board. The use of Title VI is still under consideration for the restructuring of the bonds of the Government Development Bank.

Table 1: A Timeline of the PROMESA Process

Date	Event
October 2015	The Obama administration proposes a four-part plan for Puerto Rico, incorporating federal oversight, debt restructuring authority, funds for health care and funds for growth (EITC).
May 2016	The US House of Representatives passes PROMESA, which incorporates two parts of the Obama administration's plan — federal oversight and debt restructuring authority — but no new money.
June 2016	PROMESA passes the Senate and is signed into law. An eight-month stay of litigation goes into effect and Puerto Rico goes into default on most of its debts.
September 2016	The Puerto Rico Financial Oversight and Management Board is appointed.
October 2016	Governor Alejandro García Padilla submits a fiscal plan that is not accepted by the oversight board.
January 2017	Governor Ricardo Roselló takes power in Puerto Rico, the Donald Trump administration in Washington, DC.
February 2017	The stay of litigation is extended by three months, as permitted.
March, 2017	The oversight board confirms a fiscal plan for Puerto Rico.
April 2017	Ongoing discussions with creditors about an out-of-court Title VI debt restructuring.
May 2017	Puerto Rico files in the federal courts for Title III restructuring for most relevant borrowers.
June 2017	Puerto Rico approves a budget consistent with the fiscal plan.
July 2017	Puerto Rico begins implementation of the new budget.*

Note: Both authors of this paper were members of the Puerto Rico team of the US Treasury at the time of the introduction of the proposed legislation in October 2015. Brad W. Setser left the Treasury in December 2015, while Gregory Makoff left in November 2016

* Puerto Rico is already not in full compliance with the plan; the oversight board has recently sued the governor in Federal Court in relation to his refusal to carry out worker furloughs (Coto 2017).

PROMESA was the result of a compromise between the Obama administration and a Republican-controlled Congress. Table 1 sets out a summary timeline of key events. The Obama administration proposed a four-part legislative program to help Puerto Rico: an oversight board; a debt restructuring authority; additional funding for health care; and access for Puerto Rican workers to the Federal Earned Income Tax Credit (EITC), an anti-poverty program available to workers in the 50 states that serves to boost employment and take-home pay at the low end of the wage scale. The final plan negotiated with Congress, however, only included the first two elements: the oversight board and the debt restructuring authority. While excluding health care and the EITC credit[5] eased the way to passage — the Congressional Budget Office scored the budget cost of the bill at zero, a result made possible because the bill also forces Puerto Rico to foot the operating costs of the oversight board — it leaves the oversight board with the unenviable task of finding ways for Puerto Rico to make ends meet in the context of a rapidly falling economy.

The commonwealth's fiscal and economic plan, which was confirmed by the oversight board in March 2017, is based on the following "headline" terms and projections[6]:

→ A standstill on most debt payments, backed by PROMESA's standstill on litigation and the protection provided by the court-supervised restructuring process.

→ A multi-year fiscal adjustment of roughly six percent of GNP starting in 2018; this includes a four–five percent of GNP cut in commonwealth spending relative to its baseline run rate.

5 PROMESA provided for a Congressional Task Force on Economic Growth in Puerto Rico, which released a report in December 2016, although no consensus has formed in support of legislation to increase federal transfers to the island (Congressional Task Force 2016).

6 This plan was developed with input from both local economists and international experts who formerly worked at the IMF.

- The bulk of the fiscal adjustment occurs in the first three years; cuts are concentrated in headcount reductions, school closings, higher university fees, reduced support for Puerto Rico's municipalities and cuts in health benefits. New increases in taxes and fees are modest, in part because Puerto Rico raised its sales tax substantially in 2015.

- Once complete, the adjustment program is projected to give rise to a primary fiscal surplus (i.e., revenues, net of expenditures on items other than debt service) of about 1.5 percent of GNP. This means that the oversight board believes that Puerto Rico can afford to pay about US$800 million a year in debt service — a significant amount, yet a small fraction of the approximately US$3.35 billion a year owed on average over the next 10 years[7] under current bond contracts.[8]

- The real economy is projected to drop by 12 percent in the next six years and then stabilize at roughly that level through 2027.[9]

- The baseline pace of economic decline (i.e., the decline that would occur absent new economic reforms) was estimated to be around 1.5 percent of GNP, a pace of decline 0.5 percent more pessimistic than that estimated by a team led by former IMF official Anne Krueger in 2015 prior to the country's default (Krueger, Teja and Wolfe 2015). The new fiscal consolidation is projected to pull output somewhat below that trend, but then, after a period of reform and adjustment, Puerto Rico's economy would stabilize on a low growth trajectory.

- The outmigration of the population is projected to slow from its current run rate of two percent a year to a pace of 0.2 percent a year.

It is a harsh package: the population will be hit hard by the cuts, and even if Puerto Rico delivers on the planned fiscal adjustment, creditors are set up for unprecedented losses. Puerto Rico's economy is projected to remain on a decidedly negative trajectory; as such, its own numbers show that the plan is less a road map to recovery than a way to manage the ongoing implosion of the Puerto Rican economy. Moreover, there is a substantial risk that outcomes will be worse than projected and outmigration will be significantly faster than projected — factors that will be analyzed in the next two sections.

Puerto Rico's Population and Economic Trends

In this section, Puerto Rico's population trajectory from 1950 to today is examined with a focus on three periods, as shown in Figure 2: the period of steady population growth from 1950 to 2000; the period of stabilization from 2000 to 2005 and initial decline from 2006 to 2010; and a period of rapid decline since 2011.

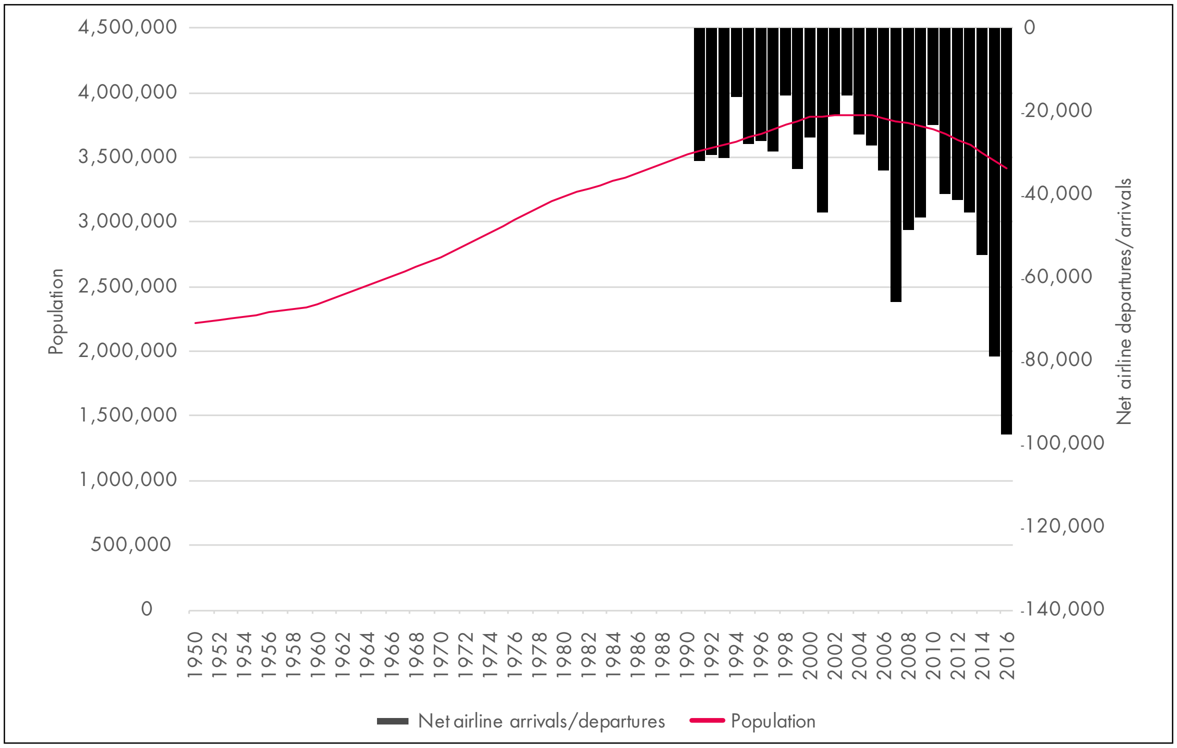
Puerto Rico's population grew steadily from 1950 through 2000. Demographically, the population had a tendency toward rapid growth thanks to high birth rates. Strong natural growth allowed the population to grow even with substantial outmigration in the 1950s, in part because the death rate fell as a result of steady improvements in public health after World War II. Economically, Puerto Rico's transition from an impoverished agrarian society into a modern industrial and service-based economy was driven by strong local and federal policy support, especially after Fidel Castro took power in Cuba. Locally, government borrowing and spending increased substantially in the early 1960s following a change in federal law and the commonwealth's constitution that raised the debt limit (Joffe and Martinez 2016, 12). Tax policy was also strongly supportive. Businesses and households already benefited from an exemption from federal income taxation legislated earlier in the century and the local government provided additional tax incentives to stimulate industry. Puerto Rico's economy

7 Average projected cash flow available for debt service of US$787.3 million a year; average projected contracted debt service of US$3.344 billion (Government of Puerto Rico 2017, 29).

8 A full economic analysis of Puerto Rico's debt restructuring is not possible at this time, as detailed restructuring terms — including the coupon, tenor, ranking and security of the new bonds, the structure of any "growth" warrant of other contingent payment, the allocation of new debt among different creditors and the design of the restructuring provisions in the new bonds — consistent with the confirmed fiscal plan have not been put forward.

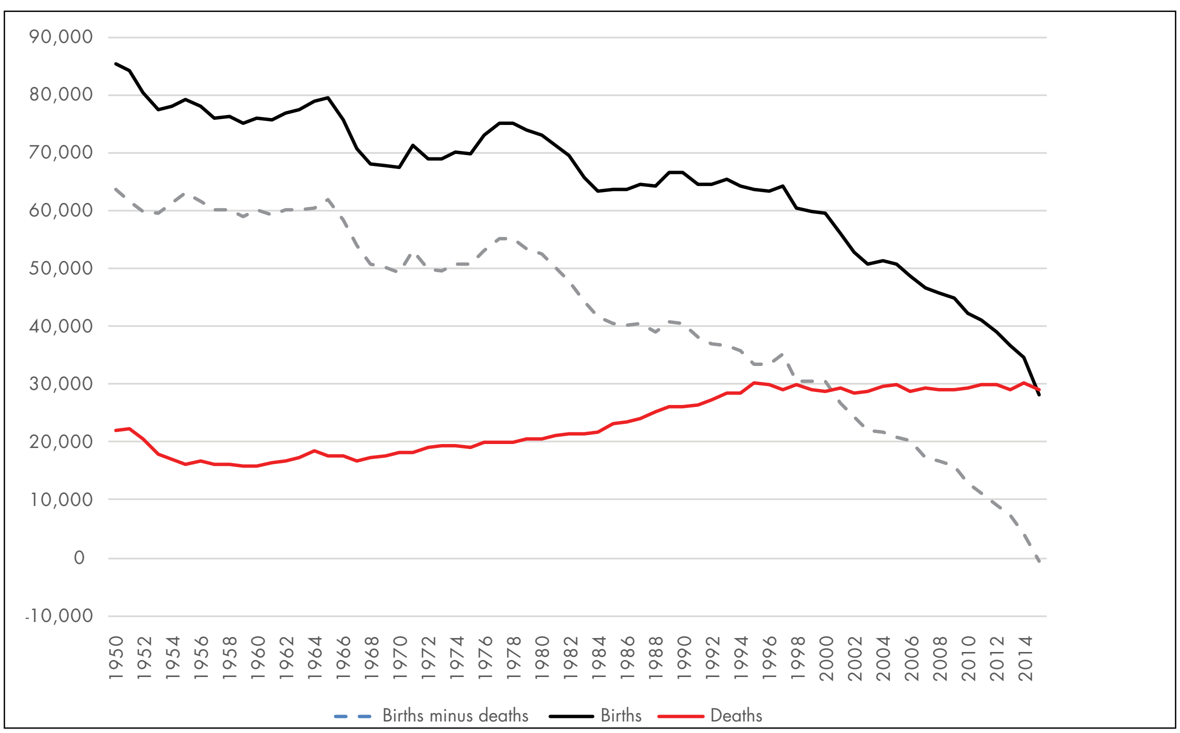
9 This would imply an aggregate projected fall in GNP of more than 25 percent since 2006.

Figure 2: Puerto Rico Population 1950–2016 and Net Airline Departures 1990–2016



Data sources: Government of Puerto Rico; www.indicadores.pr/en/Business/Numero-de-vuelos-pasajeros-a-reos-y-carga-con-orig/chx2-fpcf.

Figure 3: Puerto Rico Demographics, Births Minus Deaths 1950–2015



Data source: Government of Puerto Rico.

grew rapidly — by five percent on average in the 1950s and by seven percent in the 1960s.[10]

However, growth flagged in the 1970s and new measures were required to stabilize the economy and demographics. In 1975, US Congress put in place a new set of powerful tax incentives under section 936 of the Federal Tax Code (Collins, Bosworth and Soto-Class 2006, 21) to stimulate investment on the island, a measure that was particularly effective in attracting investment from the pharmaceutical industry, as any profits on intellectual property transferred to Puerto Rico could be brought back "onshore" with little tax and few restrictions. In the same time period, Washington substantially increased social transfers to Puerto Rico by making Puerto Ricans eligible for the federal food stamps program. In all, Puerto Rico enjoyed steady, albeit slowing, population and economic growth from World War II to 2000, supported by an active and positive federal policy stance justified by Puerto Rico's geopolitical role as a "beacon of democracy" to counter Cuba's influence in the region. Yet, under the surface, all was not well. Economic growth slowed to four percent in the 1970s and two percent in the 1980s, and a closer look at the data shows Puerto Rico continued to shed a substantial amount of its population each year — millions migrated north, in particular to the New York metropolitan region — until the food stamps program kicked in during the mid-1970s. As documented in a 1975 report from a commission led by well-known economist James Tobin, the island has a long history of growth challenges and dependence on outside support (Tobin et al. 1975).

Puerto Rico's population and economy enjoyed a brief period of health and stability in the early 2000s. The economy started the new century on an upswing, building off a strong performance in the 1990s (a period during which Puerto Rico's economy grew at a rate of 3.7 percent). Like many other parts of the United States, Puerto Rico enjoyed a construction boom in the first part of the decade, albeit one funded more heavily than most by the local banking system (whose liquidity was boosted by section 936-related and other tax-incentivized deposits) and less through subprime bond issuance. But boom turned to bust in 2006, as shown in Figure 4.

It is common for observers to blame Puerto Rico's economic decline on the expiration of section 936 tax incentives, as the downturn started the same year that 936 was fully phased out.[11] However, this attribution is overly simplistic. Output in the pharmaceutical and software segments have held up better than the rest of the economy, and multinationals operating in Puerto Rico still enjoy substantial tax benefits (Puerto Rico remains outside of the United States for income tax purposes).[12] Puerto Rico, in reality, experienced an intensified version of the shocks that hit other manufacturing-heavy regions in the United States: technology has raised the productivity of the pharmaceutical sector (so it supports fewer jobs per unit of output), competition from Mexico increased after the passage of the North American Free Trade Agreement, and China's entry into the World Trade Organization only added to the pressure on traditional labour-intensive sectors such as clothing and electronic components. Since 2000, manufacturing employment in Puerto Rico has fallen by about 50 percent compared to a fall of 33 percent in the broader US economy. The structural pressure on manufacturing employment was augmented by a strong boom-bust cycle in housing. The fall in construction — both public and private — lowered GNP by several percentage points: it is the main reason why investment has never recovered from the crisis. Banking problems also hit the island harder than the mainland, as bank assets have now fallen 40 percent from their peak. If this were not enough, Puerto Rico was also hurt by high oil prices (as it still depends on imported fuel oil for electricity production), competition for the tourist dollar from other weak economies in the region and the closing of military bases — altogether a perfect storm. As a result, Puerto Rico's economy grew a measly 0.4 percent on average over the decade, and ended the decade in free fall.

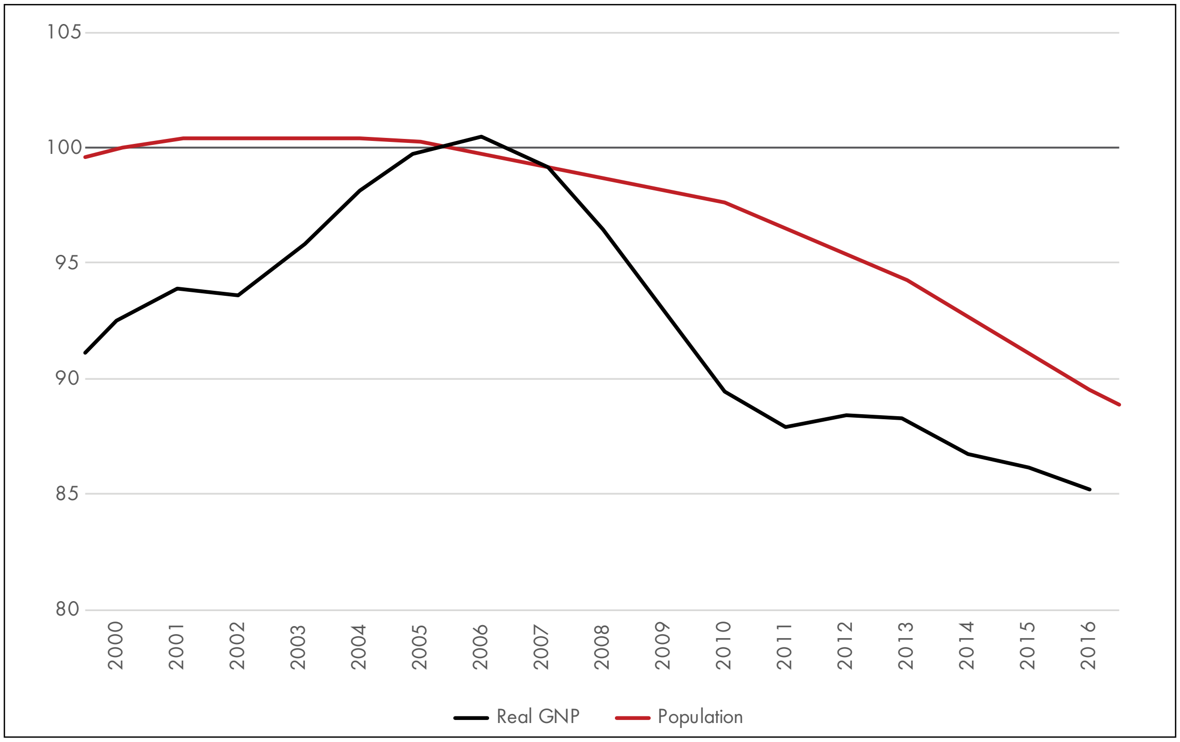
Outmigration picked up during the recession, and then accelerated around 2011, when the US job market started to recover while Puerto Rico remained in recession. To understand what was — and is still — happening, it is useful to look at both the push and pull forces operating at the household

10 This and subsequent GNP growth data provided to the authors by Estudios Tecnicos.

11 A 10-year phase-out of section 936 tax incentives was enacted by the Clinton administration in 1996 in a package of measures to increase tax fairness and raise the US minimum wage.

12 Puerto Rico is offshore for tax purposes, US firms operate through offshore subsidiaries. See Annex 2 for a detailed discussion of Microsoft's tax savings from booking domestic sales through Puerto Rico.

Figure 4: Puerto Rico — Growth vs. Population, Indexed (2005 = 100)



Data source: Government of Puerto Rico; IMF.

level. On the push side, Puerto Rico's ongoing economic stagnation and the deteriorating quality of Puerto Rican social services (health, education and public safety) mean that many Puerto Ricans have given up hope of living a decent life on the island. On the pull side, as the US economy has recovered, employers across the country have found it very attractive to recruit in Puerto Rico for unskilled workers (such as hotel staff) and skilled labour (including construction workers, and bilingual social service providers such as doctors, teachers and police officers); and the pull is strong as they can offer higher salaries and may also cover relocation costs for workers and their families. In effect, the large gap between economic and labour market conditions in Puerto Rico and those in the 50 states is driving outmigration — especially to Florida, which is now the most significant destination for Puerto Rican migrants. Remember, it only costs US$90 to fly to Orlando from Puerto Rico.

Finally, there is also a substantial social dynamic at play: an important component of the population leaving Puerto Rico are of child-bearing age or are leaving to join family members, which bodes poorly for Puerto Rico's economic dynamism (from the aging population left behind) or a quick reversal of the downward population trend (it will be hard to get people to move back after they have put down roots).[13] This trend is particularly disturbing when viewed in light of the data in Figure 3 that shows that, while natural demographic factors (births minus deaths) added 60,000 per year to the population in the 1950s and about 35,000 per year in the 1990s, the net natural annual addition is now near zero, if not slightly negative.

A good way to isolate trends in outmigration is to look at net airline departure data, as shown in Figure 2 (the data series whose scale is provided on the right vertical axis).[14] This data shows that annual population loss is in the range of 50,000 to

13 Studies have shown that departures are occurring across the education and skills spectrum, although there is an outsized representation of adults of child-bearing age. While there is no convincing statistical data to prove that a "brain drain" is under way, the wholesale loss of medical specialists has proven that the loss of valuable human capital is already significant.

14 This data is reported with a six-month lag. The next report that will capture 2017's seasonal spring bump in net departures will be released in December 2017, although it will take until mid-next year to start to see the net departures related to Hurricane Maria.

100,000[15] a year, which, by itself, presents a terrible challenge to Puerto Rico's government. How do you stabilize government finances and attract investment when a critical mass of the population is running out the door or looking to leave? Unfortunately, Puerto Rico's fiscal plan pays scant attention to the outmigration problem and Washington, for its part, has done nothing to look at the problem in a holistic fashion.

Risks to the Fiscal Plan

As in any sovereign debt crisis, the way forward in Puerto Rico involves the design of a robust fiscal and economic plan and a resizing of the debt. The fiscal math involves projecting revenues and expenses to determine the "primary surplus" available to pay debt service going forward. Puerto Rico's fiscal plan is based on a severe contraction of spending and a moderate increase in taxes and fees in order to generate a surplus of about 1.5 percent of GNP, thereby creating the fiscal space to pay about US$800 million a year in debt service going forward — about 25 percent of what is coming due. This is a substantial reduction in debt service — one that implies a large reduction in the debt stock of the kind observed in Greece and Argentina.[16] But even with a large reduction in debt service, Puerto Rico is not assured of a return to economic stability. There is a significant risk that the current program would not meet the IMF's new threshold for approving a large loan to a country, namely that the country's debts need to be sustainable with a "high probability." To be sure, Puerto Rico's fiscal and economic plan is a tremendous improvement over what preceded it. Past budgets were based on inflated revenue estimates and required constant juggling of cash flows to pay the government's bills. The oversight board wisely took a more conservative approach to forecasting future GNP growth than the Krueger plan of 2015. But even before Puerto Rico took a direct hit from Maria, there were a number of reasons to doubt the robustness of the plan, as Puerto Rico faces unusually large demographic, economic, fiscal and operational downside risks.

First, there are doubts about the population projection embedded in the fiscal plan. Table 2 sets out the fiscal plan's assumptions for population and GDP growth. Something is off here. How does the economy drop by 12 percent over 10 years and the population by only two percent? How does the rate of net migration improve from its current run rate of –2 percent a year to only –0.2 percent a year at the same time that the island is being hit by a significant cut in jobs and services? Absent a miraculous shift in household sentiment, Puerto Rico's population will certainly fall by more than the plan projects.[17] A smaller population, in turn, could lead long-term growth and tax collection to underperform expectations.

Second, there are concerns that the baseline trend of Puerto Rico's economy may be worse than projected. Here is the problem with the baseline: while the oversight board's economists project a continued fall of the economy on its historic trend (about 1.5 percent a year since 2005) this proportionality gives false comfort because the territory's historic downward trajectory likely would have been *much worse* if it were not for the billions of dollars injected into the economy through emergency federal transfers (Obamacare, the American Recovery Act stimulus and the backdoor transfer provided by the federal tax treatment of Act 154),[18] the commonwealth's aggressive debt financings (primarily general obligation, "GO," and sales tax backed, "COFINA," bonds), and the depletion of Puerto Rico's public pension plan assets to pay benefits. The lack of transparency in the government's finances makes

15 The exact rate of outmigration is difficult to pin down precisely because of differences in timing and measurement techniques: while from June 2015 to June 2016 Puerto Rico experienced a –62,000 change in population based on the household survey approach (US Census Bureau), net airline departure data showed a –86,000 change from November 2015 to November 2016 (Government of Puerto Rico).

16 Unfortunately, it is hard to make a quantitative comparison of the haircut coming to Puerto Rico's creditors to those suffered by creditors to Greece and Argentine bonds due to a number of important differences, including: the lack of transparency in Puerto Rico's fiscal position makes it difficult to obtain truly comparable fiscal data; and nearly all of Puerto Rico's tax-supported debt is in the form of bonds and subject to restructuring, while in the case of Argentina and Greece, large parts of the debt were subject to low or no restructuring (the bonds held by the banks in the case of Argentina, and official creditors in the case of Greece).

17 On September 17, 2017, the Puerto Rico Institute of Statistics reported that the new Census Bureau outmigration projection for the next 10 years is 1.4 percent annually, which would bring the population below 3 million people by 2025 (*El Nuevo Dia* 2017).

18 Such transfers add up over time. Aggregate Obamacare transfers are estimated to be approximately US$6.4 billion (Congressional Research Service 2016); aggregate American Recovery Act transfers are estimated to be approximately US$7.1 billion (Government of Puerto Rico 2012) and the aggregate Act 154-related federal tax expenditures are likely to be US$10 billion (Sullivan 2014 and authors' calculations).

Table 2: Fiscal Plan Assumptions — Macroeconomic Factors (Annual % Change)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Population growth	−0.2	−0.2	−0.2	−0.2	−0.2	−0.2	−0.2	−0.2	−0.2	−0.2
Nominal growth	−2.2	−2.8	−2.4	−0.5	−0.4	0.3	1.0	1.6	2.1	2.6
Inflation	−0.2	1.2	1.0	1.0	1.1	1.3	1.5	1.5	1.6	1.6
Real growth (nominal growth less inflation)	−2.0	−4.0	−3.4	−1.5	−1.5	−1.0	−0.5	0.1	0.5	1.0
Cumulative real growth	−2.0	−6.0	−9.4	−10.9	−12.4	−13.4	−13.9	−13.8	−13.3	−12.3

Data source: Government of Puerto Rico (2017, 16); real growth and (uncompounded) cumulative figures, authors' calculation.

assessing the past fiscal impulse and the scale of the feedback loop from fiscal austerity difficult,[19] as policy included an evolving mix of local cost cutting (including large payroll cuts from 2010 to 2012) and fiscal stimulus (from federal transfers and the significant income tax cut passed in 2011). A reasonable estimate, though, is that Puerto Rico effectively benefitted from an increase in federal support of around five percentage points of its GDP thanks to both the increase in health-care funding and the ability to credit Act 154 taxes against firms' federal corporate income tax payments. That is why it is guess work, at best, to use econometric models to predict Puerto Rico's baseline economic trajectory and its reaction function to new fiscal austerity.

It is important, therefore, to gather insights from the full range of data available on the performance of Puerto Rico's economy, not just the aggregate trend. Table 3 and Figures 5 and 6 provide a survey of available data on employment, investment and consumption. Here it can be seen that consumption has dropped only modestly (probably due to the high proportion of transfers and the impact of the 2011 income tax cut) while investment and private sector employment have cratered. There is not strong evidence of a large drag from austerity prior to 2015, as the fall in government consumption is modest and local taxes are falling, offsetting a portion of the fall in public investment. And the economic impact of austerity in 2015 — when the proceeds of the 2014 bond issue ran out and there clearly was a cut in government consumption and a rise in the sales taxes — was likely offset in part by the positive shock from the fall in oil prices and resulting reduction in gasoline and electricity bills. What is most worrying, looking forward, is the absence of drivers to slow the outmigration or stimulate new investment.

A bit of fiscal background is helpful here. Two big "fiscal cliffs" explain why Puerto Rico's fiscal math is so difficult: on-budget pension expenses immediately go up by about US$1 billion a year[20] now that Puerto Rico has depleted all the pension system's assets and will have to make benefit payments out of current revenues (with the needed supplementary contribution rising to US$1.25 billion annually in the absence of reform) and a US$1.5–$2 billion gap (Government of Puerto Rico 2017) is opening in health-care funding because costs are escalating while revenues from the federal government will go down once Puerto Rico's Affordable Care Act (Obamacare) trust fund is depleted. Most of the harsh fiscal cuts in the oversight board's plan would be needed to be able to balance the budget going forward even if Puerto Rico did not make any payments on its debt, as primary expenditure — counting

19 The general fund does not capture a large portion of the government's activities so the general fund's budget does not provide an accurate snapshot of the government's overall fiscal position, and estimating the underlying primary balance is further complicated by the difficulty of stripping out debt service payments from the budget — as Puerto Rico intentionally kept borrowing off budget to skirt the constitutional limit on debt service.

20 Total current payments to retirees and other beneficiaries under Puerto Rico's three major systems (Government Employee Retirement System, Teachers Retirement System and Judicial Retirement System) are about US$2.5 billion a year. These benefit liabilities will be met (or lowered) via multiple mechanisms: use of residual cash remaining in the pension systems; the commonwealth's US$1–$1.25 billion in "additional annual pension payments" outlined in the fiscal plan; payments by public sector employers (including municipalities) of contributions of over 20 percent of current payroll; and a prospective restructuring of pension benefits to reduce payments by 10 percent, or about US$250 million a year, which (confusingly) is presented separately from the US$70 million savings from pension reform that are broken out in the fiscal plan (Puerto Rico Government Employees Retirement System 2015, 23; Puerto Rico Teachers Employee Retirement System 2014, 19; Financial Oversight and Management Board for Puerto Rico 2017, 3 and 7).

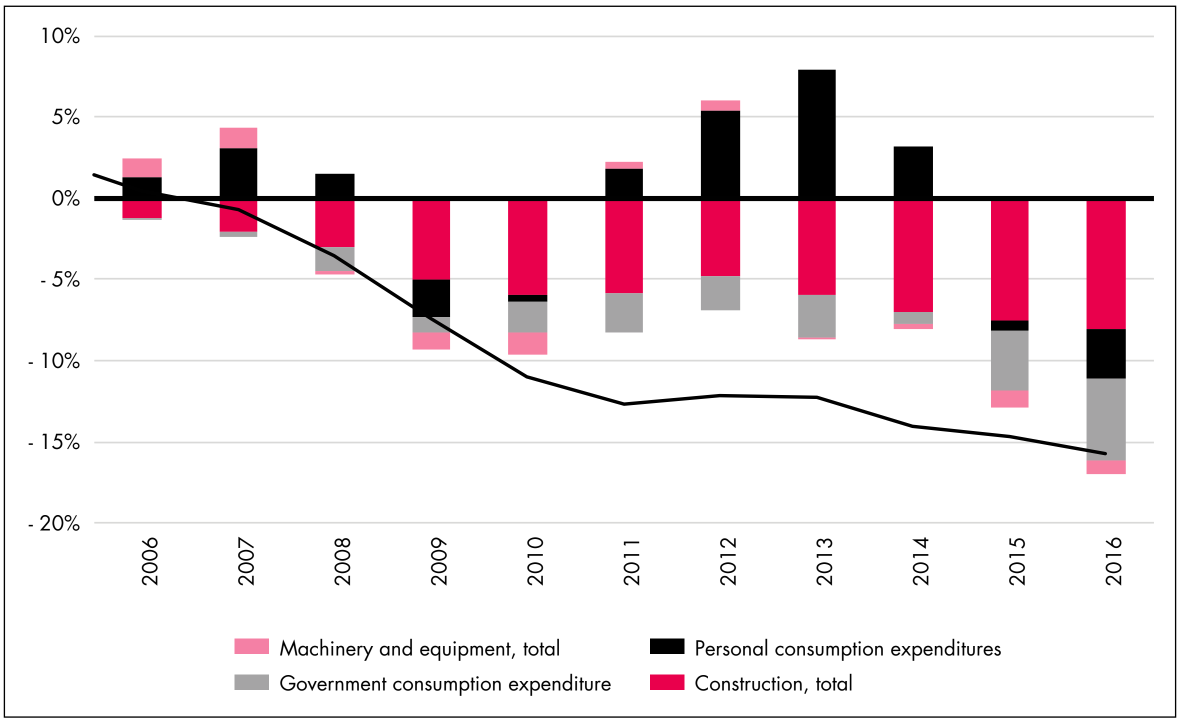
Table 3: Employment by Segment in Puerto Rico, 2007–2016 (1,000s)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Loss (1,000s)	Loss (%)
Total	1,264	1,203	1,144	1,075	1,043	1,024	1,012	988	979	992	–272	–22%
Services	363	354	344	325	332	338	343	337	331	348	–15	–4%
Government	290	269	259	256	229	223	212	203	197	189	–101	–35%
Trade	262	256	242	238	234	228	225	230	238	236	–26	–10%
Manufacturing	137	128	111	101	97	94	94	85	82	84	–53	–39%
Construction	98	84	70	54	48	50	47	41	36	33	–65	–66%
Other	114	112	118	101	103	91	91	92	95	102	–12	–11%

Data source: Government of Puerto Rico.

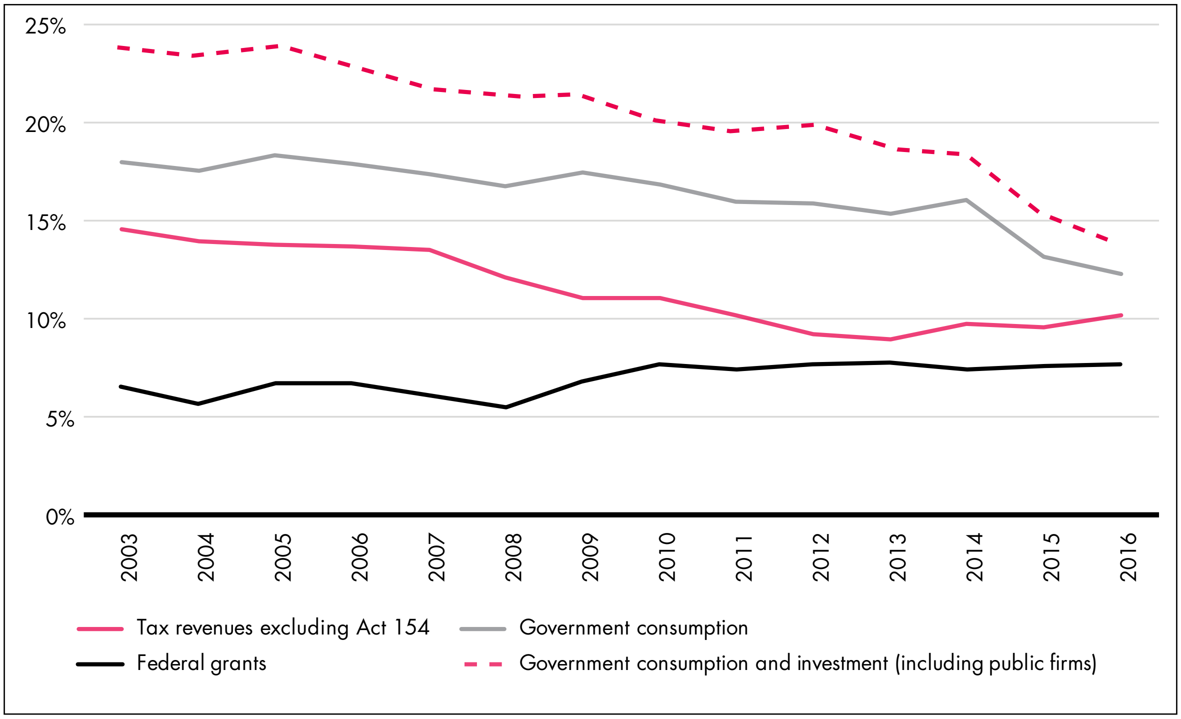
Note: Government includes workers in public administration, excluding employees of public corporations or medical service.

Figure 5: Real GNP Components, Cumulative Contribution to Percent Change in GNP since 2005



Data source: Government of Puerto Rico.

Figure 6: Puerto Rico — Revenues and Expenditures, Annual Share of GNP (%)



Data sources: Government of Puerto Rico.

the full pension burden — now exceeds local tax revenue and federal support is projected to fall. The problem, as the oversight board is learning, is that it is hard to implement deep fiscal cuts in an economy that is suffering from depression-like conditions and where the quality of education, health care and safety are already near the bottom of the rung — especially as there is an ongoing risk that the future tax base will walk out the door.

A third area of concern are the "known unknowns." On the local side, Puerto Rico has probably not done a good job modelling the impact of financial troubles in its 78 municipalities on the commonwealth budget, while it is also exposed to a contingent liability from its locally regulated cooperative banking segment, which has about US$8 billion dollars of deposits — counting "participations" as deposits. On the federal side, Trump's budget proposes cuts to both the federal food stamps and housing aid programs, both of which are big revenue items for Puerto Rico. There is also a risk that any corporate tax reform will reduce the incentive for multinational corporations to invest in Puerto Rico. To be sure, any federal tax legislation could build in provisions to neutralize the impact of any reform on Puerto Rico, but — without further guidance — one is left to worry that Puerto Rico will come up short. As currently structured, the federal corporate tax system provides an incentive for firms to locate in offshore jurisdictions like Puerto Rico so as to be able to defer US corporate income tax (in the hope of a tax holiday on repatriation). It also indirectly allows Puerto Rico to generate about US$2 billion a year in tax revenue (about 20 percent of the budget of Puerto Rico's general fund) from an excise tax levied on multinational corporations operating in Puerto Rico). This last point is addressed in more detail in Annex 3, "Decoding Puerto Rico's Act 154 Revenue and Its Impact on Fiscal Plan Revenue Projections."

Finally, there are plenty of execution risks to worry about. The oversight board and the Government of Puerto Rico have a lot of nuts-and-bolts work to do to clean up financial reporting, spending procedures, tax administration and the organizational structure of the public sector — all of which will now have to be done while rebuilding from a devastating hurricane.

Conclusion

Puerto Rico's workout is now under way. PROMESA has provided Puerto Rico with the oversight needed to instill discipline in Puerto Rico's sprawling public sector and a court-supervised process to help it tackle its debts. The current process, for all its faults and uncertainties, represents an important shift in federal policy toward Puerto Rico. The "benign neglect" following the fall of the Berlin Wall, has been replaced by an active stance, albeit not a particularly generous one given the current plan's "tough love" mix of mandated spending cuts and debt relief.

Yet Puerto Rico faced deep trouble even before it was struck by Hurricane Maria. The oversight board has outlined a set of fiscal cuts that are projected to balance the budget and allow a marginal recovery to creditors, if the economy ultimately recovers after an initial downturn. But the plan does not spell out what happens if the economy does worse than projected. Ideally, Puerto Rico would gain more federal resources to attack the root causes of the crisis — weakness in the provision of certain public services (notably health care), underinvestment and population flight.

Near-term forecasts will be influenced by aftershocks of Maria — both the immediate disruption and the short-run impact of an influx of federal disaster aid. The long-term outlook, though, still depends heavily on the impact of future austerity as the oversight board forces Puerto Rico to balance its books.

In this context, policy makers and other stakeholders should keep a close eye out for danger signals in the high frequency economic and population data coming out of Puerto Rico — particularly the population ticker published by the Puerto Rico Institute of Statistics[21] and the subcomponents of the Government Development Bank's indicator of economic activity. Watch electricity output for evidence of the immediate impact of the hurricane on output, cement sales for evidence of the pace of reconstruction, retail sales for signs that austerity is biting and airline flight data for evidence that Maria has led to an increase in the already rapid pace of outmigration.

Acknowledgements

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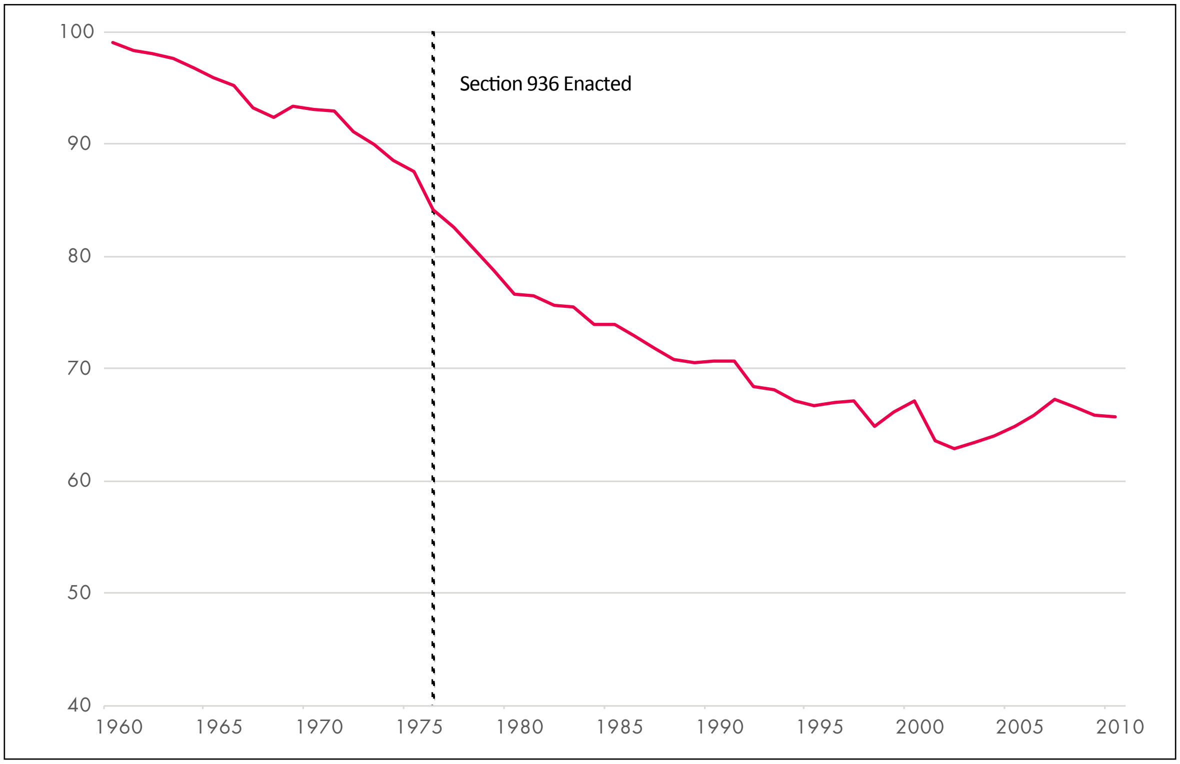
21 See https://censo.estadisticas.pr.

Annex 1: Why It Is Essential to Use GNP rather than GDP When Analyzing Puerto Rico

While international economists conventionally scale flow and stock variables in an economy versus the GDP of a country, in the case of Puerto Rico, GNP is a more appropriate measure. The reason for this is that contributions to GDP from the multinational segment of production are largely artificial — they are driven by transfer pricing and are not reflective of the value-added generated within the economy or the capacity of the government to tax production. Figure 7 shows how the ratio of Puerto Rico GNP to GDP has evolved over time.

Please see Annex 2 for a case study of why the transfer pricing issue persists notwithstanding the expiration of section 936 tax incentives.

Figure 7: Puerto Rico GNP/GDP Ratio



Data source: https://fred.stlouisfed.org/series/GNPGDPPRA156NUPN.

Annex 2: Microsoft's Puerto Rico Tax Strategy

Public disclosures about Microsoft's international tax strategy provide an unusually clear window into the rationale and mechanics of how multinational corporations that manufacture products with high research and development costs (pharma, high-tech devices and software) can use Puerto Rico to lower tax bills even after the expiration of section 936 tax incentives.

Microsoft's overall tax strategy is disclosed in its 2016 annual report: "Our effective tax rate for fiscal years 2016 and 2015 was 15% and 34% respectively. Our effective tax rate was lower than the U.S. federal statutory rate primarily due to earnings taxed at lower rates in foreign jurisdictions resulting from producing and distributing our products and services through our foreign regional operations centers in Ireland, Singapore, and Puerto Rico" (Microsoft 2016, 37).[22]

The corporate mechanics Microsoft uses to implement its tax strategy in Puerto Rico are discussed in frank detail in a 2012 congressional study:

→ "Microsoft's Puerto Rican regional operating center is run by a legal entity called Microsoft Operations Puerto Rico (MOPR). MOPR is a wholly owned Microsoft controlled foreign corporation (CFC) which maintains a production facility in Puerto Rico and is responsible for manufacturing and replication of retail software. Microsoft products are primarily developed in the United States" (United States Senate 2012, 20).

→ "The rights to sell Microsoft retail products in the United States and the rest of North and South America are then transferred to MOPR by means of a cost sharing agreement. MOPR then makes digital and physical copies of the Microsoft products and sells the products to American consumers. Through this process, Microsoft is able to greatly reduce its U.S. tax bill" (ibid. 21).

→ "The U.S. entities retain 53% of the gross profits and sends the remaining 47% to MOPR in Puerto Rico where it is taxed at a pre-negotiated rate of around 2%" (ibid.).

→ "In 2011, MOPR paid Microsoft US $1.9 billion as part of MOPR's cost sharing obligations. MOPR then reported US$4 billion in profits in 2011, which was taxed at 1.02%. The 177 employees of the Puerto Rico entity, therefore earned MOPR about $22.5 million per person. At the same time, MOPR employees made an average salary of US$44,000 a year, commensurate with the skills they contributed rather than with the accumulated profits stockpiled in what served as a low tax jurisdiction for Microsoft. By routing its manufacturing through a tiny factory in Puerto Rico, Microsoft saved over US$4.5 billion in taxes on goods sold in the United States during the three years surveyed by the Subcommittee" (ibid., 21-22).

22 Under the US tax code, income in Puerto Rico is treated as if offshore.

Annex 3: Decoding Puerto Rico's Act 154 Revenue and Its Impact on Fiscal Plan Revenue Projections

Under Act 154 of 2010, Puerto Rico imposed a four percent excise tax on multinational sales from the island (primarily pharmaceuticals, medical equipment and software), which increased Puerto Rico's revenues by about US$2 billion a year. The Internal Revenue Service (IRS) ruled that these tax payments would be fully creditable against the companies' federal income tax payments while the matter was under study by the IRS (Sullivan 2014). The IRS has yet to make a final ruling on the "creditability" of Act 154; the United States generally allows credits for corporate income tax paid abroad, but Act 154 is not structured as an income tax.

Puerto Rico's new fiscal plan projects that Act 154 will eventually be replaced by a set of taxes that maintain current levels of revenue over the next 10 years.[23] How Puerto Rico will do so is a great mystery: nobody has explained how Puerto Rico will continue to collect the same amount of revenue from the tax-allergic multinational corporations if federal forbearance on credibility lapses. All the fiscal plan offers in this regard is the following vague and unfulfilling statement: "The Government will use the breathing room provided by the extension of Act 154 to seek a more stable, consistent corporate tax policy that implements a broad-based regime with fewer exemptions by no later than January 2019" (Government of Puerto Rico 2017).

23 On page 11 of the fiscal plan, the "Net Act 154" revenue in the baseline trajectory is shown to fall from US$2.075 billion to US$1.038 billion in 2026, although in the revenue enhancement measures on page 18 new revenue of US$1.038 billion is estimated to come from "corporate tax reform" by 2028 — bringing the total line item up to the current revenue level in nominal terms, as if there were never a cut.

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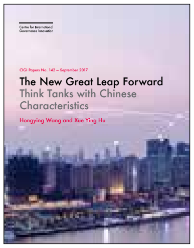

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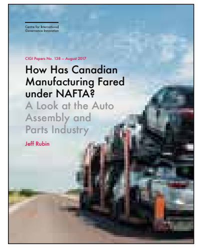

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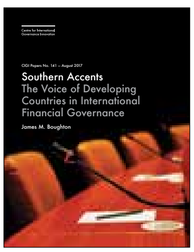

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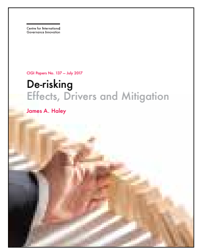

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Miranda Xafa

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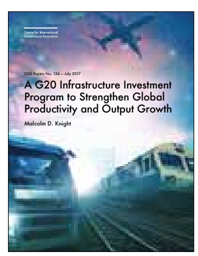

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In addition to the weak growth of domestic demand that has persisted in many countries since the onset of the global financial crisis, another crucial macroeconomic policy issue is the need to modernize and expand the international network of basic infrastructure to foster stronger long-term global growth of productivity and output capacity. This paper describes the nature of the supply-side issue and outlines the key policy elements that are needed in each G20 country to design and implement a successful National Infrastructure Investment Program (NIIP) and describes how these NIIPs could be integrated into an internationally coordinated program.

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