

Puerto Rico Economic Challenges and Alternatives: A Review of Recent Literature

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ABSTRACT

The decline of Puerto Rico's economy has been linked inextricably to the federal government's phasing out, and ultimate elimination, of tax benefits that strongly incentivized U.S. companies to establish manufacturing and operating subsidiaries on the island. One unsurprising result of these tax policies was the substantial increase in the local economy's dependence on both U.S. fiscal policies and the profit-maximizing decisions of U.S. companies' corporate boards and senior management. Consequently, when the federal government repealed the tax benefits granted to U.S. companies located on the island, including the well-known Section 936 of the Tax Code, a major economic decline on the island was virtually inevitable and entirely foreseeable, particularly because no programs or policies were developed or implemented to ameliorate the devastating consequences of the shift in fiscal policies and the resulting departure of U.S. firms. The consequences are multifaceted and include crippling public debt, sky-rocketing unemployment, and the reversal of years of economic growth.

The historical problems with Puerto Rico's fragile and outdated energy sector and power grid -- which are heavily dependent on expensive, imported fossil fuels, have been exacerbated by the economic decline. One viable solution in this critical sector of the economy is to convert this challenge into an opportunity -- to develop and execute a major structural shift to clean renewable energy, which would spur economic growth, increase employment and generate revenues to facilitate reduction of the debt. Execution of such a strategic option, however, is compromised by Puerto Rico's status as a Commonwealth rather than a U.S. state or independent sovereign state. Any long-term, meaningful reforms or programs for economic development are thus largely dependent on resolution of the status issue, which requires a decision by the people of Puerto Rico on the statehood issue and legislative action by the U.S. Congress. Continuation of the current Commonwealth status will simply relegate Puerto Rico to continued stagnation, suffering, and deprivation. Recent developments -- including the confluence of the recent vote on the island of a majority in favor of statehood, the election of a President who favors statehood if supported by the people, and a Democratic Senate and House of Representatives -- presents the most propitious time in generations to effectuate the structural change essential in the island's political status.

Introduction

Hurricanes Maria and Irma inflicted great damage on Puerto Rico's energy sector, infrastructure, and economy. But even before the hurricane, Puerto Rico was struggling with a steep economic decline, a fragile and vulnerable energy grid, and an enormous debt burden. Some analysts and observers (e.g., Sullivan, 2018) claim that the island's economic decline was attributable solely to mismanagement and political corruption. Empirical evidence, however, demonstrates that the genesis of the economic decline is directly linked to the phaseout of a critical 1976 tax subsidy for U.S. corporations, codified in Section 936 of the U.S. tax code, which exempted Puerto Rico-based corporate earnings of U.S. companies from federal taxation.

The decline of Puerto Rico's economy is directly linked to the loss of this tax subsidy, which was completely outside the control of the island's elected representatives and entirely dictated by the U.S. Congress, which exercises plenary power and control over major and structural economic decisions. Pro-active action is essential to develop the

strategies and resources necessary to enable Puerto Rico to address and resolve its current dismal condition. The current government of Puerto Rico, however, lacks the institutional power to undertake such actions.

Decisions by the U.S. Congress -- whose members are elected by the people of Puerto Rico -- have devastated economic growth by reducing employment and investments, have led to deep and unsustainable cuts to social programs, healthcare, and education, all of which have led to -- and will continue to result in -- widespread suffering. Some of the main priorities in addressing the crisis in Puerto Rico are resolving the issue of the status of the island to ensure that it functions as a truly representative democracy, and developing the energy system and infrastructure in a way that promotes sustainable and renewable energy and does not contribute to global warming.

Brief Political History and Resolutions

The current weak and declining economy, and crippling debt burden, are generally attributable to U.S. policies over the island stretching back more than one-hundred years. In 1898, the U.S. took possession of Puerto Rico as a form of booty after the U.S. defeat of Spain in the Spanish-American War. The island was not granted sovereignty but instead annexed as an “unincorporated territory” of the U.S. Puerto Rico initially was ruled by a colonial government.

The island’s status was determined, at least in part, by the infamous U.S. Supreme Court Insular Cases, which were premised on a racist ideology. In one of those cases decided in 1901, *Downes v. Bidwell*, Justice Henry Billings Brown explicitly articulated his concerns about whether Puerto Ricans were “savage or civilized” (Weiss & Setser, 2019) and whether they should be granted the rights and privileges of American citizens.

Nearly two decades after that decision, in 1917, Congress passed the Jones Act, which granted U.S. citizenship to Puerto Ricans and allowed for the formation of a Puerto Rican Senate. This seemingly magnanimous legislation may have been driven largely by the federal government’s interest in facilitating the draft of Puerto Ricans to fight in World War I. Since 1917, Puerto Rican residents have been under the jurisdiction of federal laws, were eligible to be and were drafted, have the right to vote in the primaries but not in general elections, have no electoral votes in U.S. federal elections, and only have one non-voting member in the House of Representatives.

Thirty years later and nearly half a century after the occupation of the island, in 1947, Congress enacted legislation allowing Puerto Ricans to elect their governor. In subsequent years, Puerto Rico, in an exercise of rich irony, was “allowed” to draft its own constitution.

The U.S. has long exercised control not only over Puerto Rico’s government but also its economy. Puerto Rico’s currency is the US dollar, its banks are supervised by the U.S., and all commerce must comply with U.S. laws. Since 1977, the federal minimum wage also has been applicable in Puerto Rico.

Reversal of Puerto Rico’s current economic decline and unsustainable debt obligation requires major government reform. Drastic action is essential for Puerto Rico to resolve its issues but such action will remain elusive because of the current status of the island and the policies of Congress, which typically are unilaterally imposed on the island with little or no consultation with Puerto Rican leaders.

Many agree that the island needs to change its political status. One option, maintaining but modifying the current commonwealth system, could bring about some changes to the island’s economic model. The federal government would need to provide additional funds for Puerto Rico’s health-care system. Companies benefiting from tax incentives would need to have some alternative incentives to create jobs on the island. Greater autonomy could be provided in lieu of the current system, where the U.S. Congress exercises substantial control overall foreign and many domestic decisions. Puerto Rican residents should be accorded equal status as American citizens, with the same rights of self-government, strong voting rights, and equal treatment under federal programs.

The second option is independence. This would allow Puerto Rico to have full governmental autonomy and allow for the island to restructure the economy without any Congressional constraints. Puerto Rico nonetheless would remain in a region where the U.S. historically has exercised strong geostrategic, economic and political influence and control. One major downside to this option would be the loss of the large economic transfers provided by the federal

government to Puerto Rico. To mitigate this harm, the U.S. would need to agree to a transition phase and to negotiate trade agreements beneficial for both Puerto Rico and the U.S.

A third option is statehood. In the most recent plebiscite, a majority of those who voted selected this option (Weiss & Setser, 2019). This would resolve the issue of partial federal taxation and partial federal benefits in Puerto Rico. Statehood would result in representation in the U.S. as a member of the Union, would enable Puerto Rico to compete with other states to attract private companies and investment, would guarantee Puerto Ricans equal protection under the U.S. Constitution and all federal laws, would allow the island to exercise the dual sovereignty extant among other states in our federal system, and would grant full access to its residents for federal benefits such as EITC, Medicaid, and Medicare. Placing Puerto Rico on an equal footing with all other states would allow the local and federal government to work cooperatively to reduce the extremely high poverty rate, and would disincentivize lower-income workers from migrating to the U.S. in search of employment opportunities. One of the downsides of statehood is that Puerto Ricans would be required, for the first time, to pay federal income taxes, which may require additional assistance from the local government.

Brief Economic History of Puerto Rico

Puerto Rico transitioned into a modern economy primarily as a result of the large tax incentives granted to U.S. corporations by the federal government. This strategy, known as “industrialization by invitation” or “Operation Bootstrap” (Caraballo-Cueto & Lara, 2017, pp.2), attracted many U.S. companies, including large pharmaceutical firms, to establish manufacturing plants on the island. The program allowed for the local Puerto Rican government to invest in power, transportation, municipal infrastructure, education, and healthcare. But Puerto Rico was not fully integrated into the federal tax system. Residents of Puerto Rico were entirely exempt from federal income taxes. As a result, residents do not receive the same level of federal benefits as U.S. citizens on the mainland.

In 1976, Congress enacted Section 936 to the U.S. Tax Code, which allowed firms to repatriate income earned in Puerto Rico to the U.S. without paying federal corporate income taxes. This resulted in the influx of large U.S. manufacturing companies, including in the electronics, pharmaceuticals, and medical devices industries. During the early phase of this period, manufacturing was responsible for 42% of Puerto Rico's GDP and more than 30% of deposits in the banking system, and a 17% increase in total employment (Caraballo-Cueto & Lara, 2017, pp.2).

By 1978, 97% of Puerto Rico's GDP was generated by U.S. corporate investments on the island. This stimulated a 30-year period of growth in Puerto Rico's economy with an average yearly growth of 3.5% between 1976 and 2006 (Page-Hoongrajok et al., 2017, pp. 546-547). However, the economy became heavily dependent on the Section 936 tax subsidy.

Congress, in 1996, began to phase out and ultimately eliminated those tax subsidies, which had been resulting in a loss to the federal government of \$2.5 billion in tax revenues. The resulting exodus of U.S. firms from the island was mercilessly rapid. The 3,000 manufacturing plants on the island in 2007 declined to 2,000 in 2012 (Page-Hoongrajok et al., 2017, pp. 547-548). Dramatic increases in unemployment and a severe decline in the economy were the inevitable and entirely predictable consequences. Between 2004 and 2017, economic output declined 14%. The population has fallen from 3.8 million in 2006 to 3.2 million in 2019. Puerto Rico's poverty rate escalated to 45%, with 56% of children living below the poverty line (Weiss & Setser, 2019).

Between 2007 and 2016, Puerto Rico experienced negative average yearly GDP growth of -1.1% (Page-Hoongrajok et al., 2017, pp.548). During the growth years of the Puerto Rican economy, the Puerto Rican government and state-owned companies created a program to modernize the economy. This ensured that Puerto Rico had a stable debt-to-GNP ratio which resulted in growth in the economy. The deficits generated after the repeal of Section 936 led to an increased debt-to-GNP ratio. In 2014, the central government bonds and state-owned corporate bonds were downgraded to “below-investment-grade” (Caraballo-Cueto & Lara, 2017, pp.3). This confluence of events inexorably led to the commencement of a long and sustained period of economic decline for Puerto Rico and the current debt

crisis of more than \$70 billion (e.g., Sullivan, 2018). The 2008 real estate bubble exacerbated Puerto Rico's rapid economic decline.

Economic Solutions

To attempt to address this economic calamity, a wide array of solutions has been proposed by the Puerto Rican government, its creditors, and the Financial Oversight Board, which was created by the federal government in response to the debt crisis. While supposedly well-intentioned, many of these proposals are misguided and will negatively impact the Puerto Rican economy.

The U.S. government has supported a program of austerity -- reducing government spending in health care, education, and reducing the number of government employees and the wages and salaries of workers. This policy is strongly opposed by many Puerto Rican citizens. Currently, 20% of Puerto Ricans hold government employment (Page-Hoongrajok et al., 2017, pp. 547), which means that austerity would lead to substantial job losses, leading to declining incomes, reduced private spending and business investments, all of which would lower the tax base, worsening the debt and economic crises.

Another proposal entails hybrid structural reform -- a three-year plan, which involves a \$5 billion program of public/private partnership investment: 43% energy, 22% transportation, 20% waste management, 8% water management, 7% social infrastructure. This plan is premised on the reality that Puerto Rico's energy sector is a principal contributor to the inhibition of growth in the economy. Electricity on the island is three times more expensive than in the U.S. because of the high import costs of energy, which takes a 4-6% toll on Puerto Rico's GDP (Page-Hoongrajok et al., 2017, pp. 544-545). But the plan is inherently flawed. The Puerto Rican economy has been on a 13-year downward spiral, as a result of an earlier series of mistaken austerity policies, that inhibited growth and disincentivized investments. This plan is complex and challenging but the plan lacks details as to its proposed implementation. The plan needs to implement measures to encourage endogenous growth on the island, which will allow less reliance on unreliable fiscal decisions and tax policies that transform Puerto Rico into a tax haven for U.S. companies. Many are concerned that history simply will be repeated and the plan will result in increased debt and a steeper decline in Puerto Rico's economy.

A creative solution -- the Green Growth Plan, which is based on investment in energy efficiency and clean renewable energy -- seems promising and avoids the risks and flaws of the other two plans. This plan envisions dramatically reducing and ultimately eliminating, the island's reliance on fossil fuels. This plan can be effectuated through an intensive focus on the formulation and implementation of concrete measures designed to attract major investments to develop the infrastructure, technological expertise, capital projects, and labor force essential to shift to renewable energy, capitalizing on the island's abundant natural resources (Page-Hoongrajok et al., 2017, pp. 545). The plan for reducing the use of fossil fuels can be accelerated through the imposition of a carbon tax, which will fund the development of cleaner energy and sustainable infrastructure in Puerto Rico (Page-Hoongrajok et al., 2017, pp. 546). Some aspects of the sustainable infrastructure include a transit system involving hybrid and electric cars, hydro-power projects, waste management converted into bioenergy, and also climate adaptation and resilience policies (Page-Hoongrajok et al., 2017, pp. 545-546, 552).

The carbon tax is expected to raise \$900 million. This \$900 million will provide \$300 million for each of three different sectors. The first, private and public investment, will be used to incentivize private investment for the Green Growth Plan. The second portion will fund a tax rebate for the lower-income residents of Puerto Rico. Because the predicted, median per capita energy [cost] is \$1,333 and the carbon tax is predicted to increase this by 10%, this would increase energy spending for lower-income residents by \$133. The rebate would provide \$176 million to the lower-income segment of the population. The third \$300 million -- or \$3 billion over ten years -- would be used to service the island's debt. This aspect of the plan would achieve the government's goal of a \$7.9 billion or 40% reduction of the debt by 2026 (Page-Hoongrajok et al., 2017, pp. 545, 557-559).

Developing the energy sector through investment in Puerto Rico is the highest priority. After Hurricane Maria struck Puerto Rico, the outdated, fragile, and unreliable power grid was essentially destroyed. Any new energy system would need to be protected by buffer zones in coastal areas and on major rivers, which would divert water surge. Retrofits would need to be feasible and new land zoning policies must be developed and enacted to reduce the vulnerability of new energy infrastructure to major future hurricanes and other environmental disasters. The principal sources for the new sustainable energy would be onshore wind, solar, and geotherm, all of which are abundant on the island. The current prices (kWh) are 5.6 cents for onshore wind, 7.4 cents for solar, and 4.4 cents for geothermal, which is three to four times lower than Puerto Rico's current fossil-fuel-based electricity prices. The plan assumes investment shares of 40% (wind and solar energy), 7% (geothermal and bioenergy), and 6% (small scale hydro) (Page-Hoongrajok et al., 2017, pp. 550).

Transitioning from fossil fuels to renewable energy sources will lead to growth in employment and in the economy, and a reduction in the government's outstanding debt. While a loss of certain fossil-fuel-dependent jobs would be expected, employment in new energy projects will result in an overall net increase in the number of high-paying employment opportunities. The total expected increase in employment positions from clean energy investments and energy import substitution is approximately 25,000 in 2020, 50,000 in 2035, and 80,000 in 2050. Puerto Ricans also would benefit in the transition to privatized community-based companies from reliance on major energy conglomerates. Publicly-owned foreign companies -- Saudi Aramco, Russia's Gazprom, China National Petroleum Corporation, National Iranian Oil Company, Petróleos de Venezuela, Brazil's Petrobras, Malaysia's Petronas -- currently control 90% of the world's oil reserves, 75% of production, and substantial portions of the oil and gas infrastructure system (Page-Hoongrajok et al., 2017, pp. 556, 563). These companies already have wreaked havoc on communities all over the world through their irresponsible pursuit of profits at all costs. Moreover, they have succeeded in creating major environmental destruction and crises in, among other countries, Nigeria and Venezuela.

In contrast, the clean energy system will be based on smaller-scale companies with community-based structures and incentives. Empirical studies show that such structures perform better than traditional company structures. They allow for companies to be part of the community. This allows for public support for the companies, acceptance of relatively lower rates of profits, lower transmission costs (they are close or within the community), and also energy price stability because they are independent from the public market.

Puerto Rico has been one of the places most severely impacted by climate change and the fossil fuel industry. Even the hurricanes that already have wreaked havoc on communities in Puerto Rico will only become even more powerful as a result of the changing climate. This plan would be able to improve the island's economy, debt management, sustainability and environment, and most importantly the livelihood of the people.

Comparison to Other Caribbean Economies: The Case of Jamaica

Many countries have been shifting to renewable energy for purposes of promoting economic growth and development and contributing to a healthier and cleaner environment. According to the International Energy Agency's (the "IEA") Renewables 2018 report, many countries have been motivated to shift policy support towards growth in the renewable sector due to the sharp cost reductions that are being experienced in this new emerging technology. This shift toward renewable energy is occurring in many Caribbean islands and countries which have faced substantial challenges in the energy sector during the past few years. The Caribbean energy sector receives 87% of its energy from fossil fuels and a large majority of the islands in this region lack energy independence. The majority of Caribbean countries are net importers of fossil fuels; Trinidad and Tobago are the only net oil exporter. Throughout the Caribbean, because energy is imported, electricity is more than 4 times the cost of electricity in the US (Timmons, 2017). This high cost of energy strains the government budget and also exposes many Caribbean countries to the volatile fluctuations of the natural gas and oil markets. This absence of energy independence has resulted in high costs and has taken a toll on many economies, diverting substantial government spending towards imported energy. An economy developed with

renewable energy as one of its core components will empower governments to be able to exercise greater and more efficacious fiscal policies that can redound to the great benefit of its citizens.

One of the leaders in renewable energy in the Caribbean has been Jamaica, which has drastically shifted its energy industry in the past few years. Previously, like Puerto Rico and the majority of Caribbean countries, Jamaica, with few domestic petroleum resources, was heavily reliant on the petroleum imports and had been energy dependent with high energy costs -- in 2008, 94% of its energy was imported ("Jamaica's Energy Sector," 2019). But in 2009, Jamaica's lawmakers adopted the ambitious National Energy Policy, which set a target of 30% renewable energy by 2030 (Killeen, 2015). As a result, the Jamaican government has enacted and implemented policies, including tax exemptions and other incentives to encourage companies to use renewable resources, such as solar, wind, hydroelectric, and biomass energy.

Wigton Wind Farm, one of the largest energy projects in the Caribbean, exemplifies the tremendous strides that the country has made towards renewable energy. Wigton Wind Farm provides the country with 42 MW of energy and plans on expanding to increase capacity by another 36.3 MW (Killeen, 2015).

In addition to building more commercial wind farms, Jamaica also has strived to become more energy efficient. Jamaica, like Puerto Rico, has an old power grid, which is both unreliable and inefficient -- 20% of distributed energy is lost through the grid (Killeen, 2015). But with the new goals by the Jamaican government to become 71% more energy-efficient, Jamaica is predicted to see a 69% reduction in imports, 31% reduction in electricity costs, and a 14% GDP increase (Timmons, 2017). If Puerto Rico sets similar energy efficiency goals, the long-term economic outcomes will be highly beneficial. As indicated above, energy imports and distribution impose an enormous cost on the Puerto Rican government, which further exacerbates the debt crisis. The expected reductions in electricity costs and GDP increases associated with renewable energy will lift this enormous economic burden that has been undermining economic growth and impairing the lives of Puerto Ricans.

Overall, the switch to renewable energy in many Caribbean economies is the most optimal solution to address many issues. They would be able to avoid the devastating impacts of climate change by reducing carbon emissions. In addition to the critical environmental dividends, the switching to renewables will stimulate the economies of Puerto Rico and its Caribbean neighbors by lowering costs of imported energy, increasing energy independence, and reducing the current strain on government budgets. Reduced vulnerability to the volatile fluctuations of oil prices is another major benefit. The whole Caribbean is primed to switch to renewable energy in light of its geographical location and abundant renewable natural resources. The Caribbean's location is optimal for solar and wind energy with annual solar irradiation ranging from 1,700 to 2,300 kWh/m² and average wind velocities from 5-9 m/s (Timmons, 2017).

Conclusion

While the devastation wreaked by Hurricane Maria exposed the decrepit and outdated energy infrastructure in Puerto Rico, it also created a unique opportunity to convert this catastrophe into a strong program of energy reform. Energy is at the center of a reformed economy. Changing the outdated energy system into a green energy system is critical for the Puerto Rican economy. Many of the costs burdening Puerto Rican citizens and exacerbating the current debt crisis are attributable to the exorbitant costs of generating and distributing energy throughout the island. Phasing out an energy system based on fossil fuel and introducing and implementing a system based on renewable energy that capitalizes on the island's enormous resources -- solar and wind -- will result in a dramatic reduction in the currently enormous energy costs, will contribute to the growth in employment in a sector of the economy that will be premised on cutting-edge technology, and will establish a strong foundation for continued economic development and the attraction of investments to the island. Such a program will be critical to ensuring the island the prosperity that will only come from economic development, mitigation of the debt crisis, and restoration of social programs, health and education. But this plan is not feasible if the current proposed austerity plan is adopted and implemented. As long as the U.S. government continues to foist austerity upon Puerto Rico, the great and creative promise of this plan will

never be realized -- the island will be doomed to continued economic contraction and the continued exodus of residents, which will lead to even further declines, deprivation and human suffering.

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