

November 2015

Puerto Rico Looks Into the Abyss

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Abstract

Puerto Rico threatens to fall into an economic abyss. Odds are high and rising that in a few weeks the territory will default on some of the \$70 billion in debt it owes. If U.S. lawmakers do not act to address this problem, Puerto Rico may very well suffer an economic depression.

Puerto Rico Looks Into the Abyss

BY MARK ZANDI, DAN WHITE AND BENARD YAROS

Puerto Rico threatens to fall into an economic abyss. Odds are high and rising that in a few weeks the territory will default on some of the \$70 billion in debt it owes. If U.S. lawmakers do not act to address this problem, Puerto Rico may very well suffer an economic depression.

The territory's economy is already in a decade-long slide. The island's real gross product has declined by a stunning 9% since its peak in late 2003, and employment has fallen by close to 14%. For context, during the Great Recession, the U.S. economy experienced losses that were less than half as severe, and the downturn ended 6½ years ago.

Puerto Rico is trapped in a vicious cycle. As the island's residents lose jobs, they are leaving for the U.S. mainland. The population is rapidly declining and those who remain are less skilled and older. The loss of jobs and people is undermining the tax base, and combined with poor fiscal management, has resulted in a fiscal disaster. The government can no longer borrow, and has exhausted its options for raising more cash. It faces the Hobson's choice of defaulting on its debt or severely slashing government services and jobs. Either choice will cause the economy to sink deeper and force even more people to leave.

The developing crisis can unfold along many paths. In this analysis, we consider two scenarios—one pessimistic, one optimistic—that we believe bookend the possibilities. Under the pessimistic scenario, U.S. lawmakers do nothing to address the crisis, and Puerto Rico defaults on its debt, beginning with a missed payment due in December. Since the territory, like U.S. states, is not permitted to file for bankruptcy, bond holders haul the territory, the various public corpora-

tions it backstops, and the island's financially troubled municipalities to court.

After more than a year of messy wrangling, the courts ultimately require that Puerto Rico pay on its general obligation and sales tax revenue bonds, but only 50 cents on the dollar for the debt owed by the other public corporations, which is about what these bonds are currently trading for. The territory's distressed municipalities are assumed to restructure their debt via Chapter 9 of the bankruptcy code.

This scenario is devastating for Puerto Rico's economy and residents. The downturn that began a decade ago rages on into the next decade. By 2020, the end of the scenario, the island's employment declines by an additional 13% and the unemployment rate increases to more than 14%. Unemployment would be even higher if not for the mass out-migration of disenfranchised workers to the mainland. The island's population is expected to fall to 3.3 million by 2020, compared with its peak of well over 3.8 million in 2004.

Under the optimistic scenario, U.S. lawmakers act quickly to address Puerto Rico's problems by adopting policies such as those recently proposed by the Obama administration.¹ Most importantly, the territory is permitted to use the bankruptcy courts to restructure its debt via a new chapter in the bankruptcy code for use solely by U.S. territories. The court sets debt payments such that they account for a high, but sustainable 20% of government revenues. This is nearly

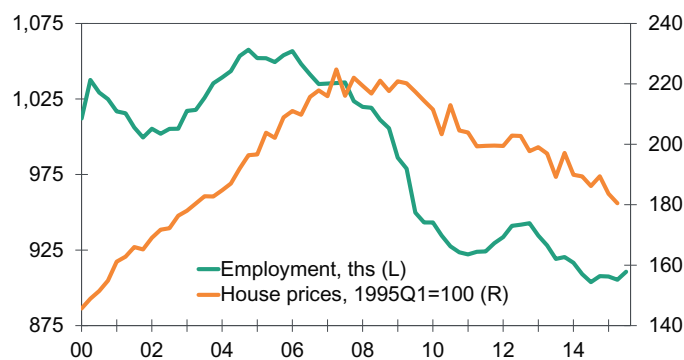
half the debt service burden the island is currently struggling to shoulder. The island also benefits from increased Medicaid funding, and the adoption of an earned income tax credit that would incent more work by low-income Puerto Ricans.

The Puerto Rican economy performs much better under this scenario. While the island suffers more job losses over the year, they are modest, and employment growth resumes in earnest by the end of the decade. Unemployment declines, and by 2020 it is back to where it was prior to the start of the recession. While net out-migration continues, it occurs at a much more modest pace.

While the administration's plan breaks the vicious cycle plaguing Puerto Rico's economy and budget, the island's economy continues to struggle. Stronger growth is possible only if additional policy steps to lower its high business costs are adopted. Allowing Puerto Rico to freeze its minimum wage, which is very high compared with the productivity of island workers, would be beneficial in the long run. Flexibility with the implementation of the Jones Act would help to reduce shipping costs.² And pension reform, the consolidation of municipalities, and reforms to public-sector corporations, including privatization, would also be helpful.³

Under the administration's plan, a quid pro quo for allowing the territory to use the bankruptcy court to restructure its debt is the establishment of an oversight board to improve government accounting, enhance

Chart 1: Puerto Rico's Decade-Long Recession



Sources: BLS, FHFA, Moody's Analytics

transparency, and impose fiscal discipline. Such a board can be effective only if it is independent and remains in place until such time as it feels that the territory is back to fiscal health and has fully implemented any required fiscal controls and governance structures.

While the administration's efforts to rescue Puerto Rico are laudable, odds are long that its plan will become law. In particular, the adoption of a new chapter to the bankruptcy code for U.S. territories appears to be a political stretch. Some opponents worry that hardpressed state governments will want the same relief, pushing up interest rates for all municipal borrowers.⁴

Therefore, the most likely scenario is that Puerto Rico will fail to make all its upcoming debt payments and its battle with debt holders will end up in the courts. It will be messy, uncertain and very costly. Hopefully, the territory and its creditors recognize that it is better for all involved to come to terms before the island's economy sinks into the abyss.⁵

Never-ending recession

The Puerto Rican economy has been engulfed in a recession for the past decade. By most measures, the economy peaked in the mid-2000s, slid sharply during the financial crisis of 2008-2009, and has continued to slump ever since.

Employment, which hit an all-time high of well over 1 million in 2005, has steadily declined to near 900,000 currently (see Chart 1). Jobs have been lost in a range of in-

dustries, including in construction, manufacturing, financial services, and most notably at state and local governments, where employment is down a stunning more than 25%.

Unemployment remains extraordinarily high at near 12%, but

even this masks the economic suffering, as many of those losing their jobs are leaving the workforce and the island. Puerto Rico's labor force has contracted by 300,000 workers since peaking in the mid-2000s, a decline of 20%. The island's labor force is as small as it has been in more than a quarter century.

The depopulation of Puerto Rico has intensified. On net, each year over 50,000 more people give up their Puerto Rican residence than take up residency. Those who are leaving are more highly skilled and educated. Only 24% of Puerto Ricans have earned at least a college degree, compared with more than 30% nationally.

Declining population is hitting the housing market hard. Approximately 6,000 new homes are being constructed each year, down from 16,000 before the recession.

House prices also continue to slide, declining by almost 20% since the peak during the housing boom. Foreclosures also remain among the highest in the country, with 6.5% of mortgage loans somewhere in the foreclosure process. This compares with only 2% nationally.

Puerto Rico has far and away the weakest economy of any state in the country. By many measures, including the loss of output, GDP and wealth, it is already suffering an economic depression. Even more disconcerting, there is no prospect of the economic slide ending any time soon.

The island's important tourism industry is barely holding its own, as competition is intense and the strong U.S. dollar is not helping. The cost of doing business on the island is high, and since a lucrative tax break provided to American businesses operating on the island expired a decade ago, business investment has flagged. In the mid-2000s, businesses invested some \$9 billion a year, in 2014 investment had fallen to \$7 billion. Not surprisingly, public investment has declined even more sharply.

Fiscal crisis

The crushing economic downturn combined with poor fiscal management has resulted in a fiscal crisis. The territory's government, other public corporations it backstops, and municipalities collectively owe \$70 billion in debt (see Table 1).⁶ This is equal to approximately 100% of the ter-

Table 1: Commonwealth of Puerto Rico Public Sector Debt

	Commonwealth	Municipalities	Public Corporations	Total*
2009	9,939	2,997	40,044	52,980
2010	10,303	3,231	43,289	56,823
2011	10,363	3,537	45,284	59,184
2012	11,844	3,872	49,045	64,760
2013	12,329	3,882	48,746	64,957
2014	14,336	4,193	48,744	67,273
2015	14,077	4,126	47,980	66,183
2016**	13,771	3,907	47,305	64,983

*Excludes \$2.9 billion in Senior Pension Funding Bonds issued by the Employees Retirement System, \$1.2 billion in Children's Trust bonds, and approximately \$1 billion in numerous other small bonds.

**First three months only of fiscal 2016

Sources: Government Development Bank, Moody's Analytics

Table 2: Moody's Investors Service Ratings of Puerto Rican Bonds

Puerto Rican Government Bonds	Ratings	Outlook
General obligation and guaranteed	Caa3	Negative
Puerto Rico Industrial Development Co.	Caa3	Negative
Puerto Rico Aqueduct and Sewer Authority	Caa3	Negative
Sales Tax Financing Corp. (COFINA) Senior	Caa3	Negative
Puerto Rico Electric Power Authority	Caa3	Negative
Sales Tax Financing Corp. (COFINA) Junior	Ca	Negative
Government Development Bank for Puerto Rico	Ca	Negative
Municipal Finance Authority	Ca	Negative
Appropriation debt of the commonwealth	Ca	Negative
University of Puerto Rico (system and facilities)	Ca	Negative
Highways and Transportation Authority	Ca	Negative
Infrastructure Finance Authority	Ca	No Outlook
Pension funding bonds	Ca	Negative
Convention Center District Authority	Ca	Negative

Sources: Moody's Investors Service, Moody's Analytics

territory's gross national product—the island's financial resources to pay on that debt.⁷

The principal and interest payments on these debts require the government to devote a high and rising share of its tax and other revenues to meet them. In fiscal 2015, the debt service of the territory and agencies amounted to almost 40% of the revenues available to the government for these payments. For context, average debt payments as a share of revenues across U.S. states is closer to 5%.

Puerto Rico struggled mightily to make its debt payments last year. It was able to raise some more money from investors in early 2014, at a very high interest rate, and it stopped paying on many of its other bills. This will not work any longer. Creditors are no longer willing to extend any additional cash to the government, at any interest rate. Puerto Rico is locked out of capital markets.

The budget arithmetic is overwhelming. In the current fiscal year, which started in July, the government must make \$4.1 billion in debt payments to remain current on that debt. This amounts to more than 40% of the \$10.2 billion in expected available revenue. Over the next five years, the debt payments total \$18.2 billion, equal to a crushing 35% of projected revenues.

The government now must either slash spending on government services and jobs or make its debt payments on time. Odds are

high that the government will not make its debt payments, the next one coming in just a few weeks, at the start of December. The rating agencies concur, as Moody's Investors Service has put a Caa rating—consistent with a very high probability of default—on most of the island's debt (see Table 2). Bond investors also recognize this reality, with Puerto Rican debt trading on average less than 50 cents on the dollar.

Adding to the fiscal mess are the numerous parties involved, including 18 debt issuers and 20 creditor committees, and the government's opaque accounting and record keeping. Simply getting the information needed to assess how bad Puerto Rico's fiscal situation has become is a significant challenge. However, even with the poor information, it is clear that the territory's finances are in tatters.

Default (pessimistic) scenario

Puerto Rico's economic and fiscal crisis can unfold in many different ways. To gauge the possible outcomes, we consider two scenarios that we believe provide bookends to the possibilities. The Moody's Analytics econometric model of the Puerto Rico economy is simulated under pessimistic and optimistic fiscal assumptions to determine their impact on the island's economy.⁸

In the pessimistic scenario, we assume that the territory defaults on all its debts,

beginning with the payment due in December. Bond holders sue the government for payment, setting off a messy litigation process that takes more than a year to work through. The courts ultimately require the government to make good on its general obligation and COFINA (a government-owned corporation that uses sales tax revenues to finance government spending) debts, and to pay 50 cents on the dollar on debts owed by the agencies. Troubled Puerto Rican municipalities would use Chapter 9 of the bankruptcy code to restructure their debts.

It is further assumed in this scenario that current federal funding for Medicaid payments under the Affordable Care Act is scaled back as currently legislated beginning in 2017. Puerto Rico must either increase its Medicaid spending to replace the lost federal funding or opt out of the program's expansion under the ACA. It is expected to increase its Medicaid spending, forcing additional further cuts to other government spending.

This default scenario would be very costly for the commonwealth. The island would ultimately need to make \$14.1 billion in debt payments over the next five years. While much less than the \$18.2 billion in payments the commonwealth is currently scheduled to make, the debt payments still gobble up an onerous nearly 35% of the government's revenues (see Table 3).

The government would have no choice but to severely cut spending and jobs, pushing the economy deeper into recession, and further undermining revenues and the government's fiscal situation. This vicious cycle currently plaguing Puerto Rico will only intensify. Moreover, the territory's standing in capital markets would be irreparably harmed.

Puerto Rico's creditors would also pay a heavy price in the default scenario. There would be extraordinary legal costs and delays in reaching an eventual settlement and the resumption of regular debt payments. There would also be considerable uncertainty around all of this.

The default scenario would be devastating for Puerto Rico's economy. The territory's decade-long downturn would continue at

Table 3: Puerto Rico Budget Assumptions Under the Default Scenario
\$ mil, Jul-Jun fiscal yrs

	2015	2016	2017	2018	2019	2020	2016-2020 Total
Government nondebt, nonfederal outlays	9,272	10,246	6,994	6,814	5,817	5,828	35,700
<i>% change</i>		10.5	-31.7	-2.6	-14.6	0.2	
Total nonfederal revenue	10,025	10,246	10,399	10,098	9,714	9,355	49,811
<i>% change</i>	2.3%	2.2%	1.5%	-2.9%	-3.8%	-3.7%	
Net borrowing	-753	0	-3,405	-3,283	-3,897	-3,526	-14,111
Debt issuance	2,700	0	0	0	0	0	-
Change in accounts payable	447	0	0	0	0	0	-
Debt service	3,900	0	3,405	3,283	3,897	3,526	14,111
<i>% of revenue</i>	38.9%	0.0%	32.7%	32.5%	40.1%	37.7%	28.3%

Source: Moody's Analytics

Table 4: Puerto Rico Economic Outlook Under the Default Scenario

	2015	2016	2017	2018	2019	2020	Avg Annual Growth 2015-2020
Nonfarm employment (ths)	910	906	885	851	817	788	-2.8
<i>% change</i>	0.1	-0.4	-2.3	-3.9	-4.0	-3.6	
Gross state product (2009\$ bil)	95.8	94.4	91.8	88.1	84.6	81.8	-3.1
<i>% change</i>	-0.0	-1.5	-2.8	-4.1	-4.0	-3.3	
Unemployment rate	12.0	12.1	12.5	13.0	13.6	14.1	
Civilian labor force (ths)	1,131	1,120	1,110	1,098	1,086	1,075	-1.0
<i>% change</i>	-1.2	-1.0	-0.9	-1.1	-1.1	-1.0	
Population (ths)	3,511	3,483	3,448	3,410	3,372	3,335	-1.0
<i>% change</i>	-0.9	-0.8		-1.1	-1.1	-1.1	
Net migration (ths)	-38.4	-41.7	-47.2	-49.4	-48.6	-46.9	
Disposable personal income (2009\$ mil)	56,688	55,239	53,001	50,939	49,255	47,797	-3.4
<i>% change</i>	1.0	-2.6	-4.1	-3.9	-3.3	-3.0	
Wages and salaries (\$ mil)	26,694	27,865	28,552	28,613	28,370	28,110	1.0
<i>% change</i>	3.9	4.4	2.5	0.2	-0.9	-0.9	

Sources: BLS, BEA, Census Bureau, FHFA, Moody's Analytics

least through the end of the current decade (see Table 4). By 2020, employment will have declined by an additional 125,000 jobs on top of the 150,000 jobs already lost since the downturn began. Unemployment will rise back over 14%, despite a large decline in the labor force; labor force participation falls below 40%, the lowest by far across all states.

As Puerto Ricans lose jobs, they leave the island for work in the rest of the U.S. The draw of the mainland will only grow stronger as the national economy returns to full employment and wage growth picks up. An average of more than 45,000 net migrants leave Puerto Rico each year over the next five years in the default scenario. Population slides from 3.5 million currently to 3.3 million by 2020.

Puerto Rico faces a range of economic headwinds that blow much harder in the default scenario. Most obvious are the cuts in government spending and jobs, which decline from \$9.2 billion in fiscal 2015 to only \$5.8 billion in 2020. This fiscal austerity amounts to approximately 5% of the island's GNP. Nonfederal government employment falls to one-fifth of all jobs, down from one-fourth of jobs currently, and close to one-third of jobs in the early 1990s.

The political and legal uncertainty created by the crisis is also sure to further undermine outside business investment in the island's economy. The cost of doing business in Puerto Rico is already high, and will only

increase with the government looking to raise revenues and cutting back on services and much-needed infrastructure investment. Less investment in travel and other basic infrastructure, police and other security services, and healthcare facilities will also hamper tourism.

Investors in Puerto Rican debt, which also include Puerto Rico's pension funds, banks and individuals, will also suffer in the default scenario. Contributions to government pension funds have already been severely curtailed, and the funds are selling assets to meet their obligations to beneficiaries. They will run out of funds by the end of the decade unless the government soon resumes its pension contributions.

Table 5: Puerto Rico Budget Assumptions Under the Treasury Scenario

\$ mil, Jul-Jun fiscal yrs

	2015	2016	2017	2018	2019	2020	2016-2020 Total
Government nondebt, nonfederal outlays	9,272	8,417	8,613	8,909	8,530	8,554	43,023
% change		-9.2	2.3	3.4	-4.2	0.3	
Total nonfederal revenue	10,025	10,226	10,450	10,712	11,022	11,397	53,807
% change	2.3%	2.0%	2.2%	2.5%	2.9%	3.4%	
Net borrowing	-753	-1,809	-1,837	-1,803	-2,492	-2,843	-10,784
Debt issuance	2,700	0	0	0	0	0	-
Change in accounts payable	447	0	0	0	0	0	-
Debt service	3,900	1,809	1,837	1,803	2,492	2,843	10,784
% of revenue	38.9%	17.7%	17.6%	16.8%	22.6%	24.9%	20.0%

Source: Moody's Analytics

Puerto Rico banks also have meaningful exposure to government debt. Two of the island's large banks, Banco Popular and FirstBank, have direct exposures through loans and securities of the commonwealth that are more than one-fifth of their total common tangible equity capital.⁹ Fortunately, the banks are well-capitalized and should be able to reasonably manage any write-downs on their exposures. Nonetheless, they are also likely to turn more cautious in extending credit to the island's businesses and households, further exacerbating the downturn.

The default scenario presents a very stark economic future for Puerto Rico, and while the government and its creditors may not push their impasse as far as the scenario envisages, it is conceivable that they will.

Treasury (optimistic) scenario

To ensure that Puerto Rico does not go down such a dark path, U.S. lawmakers must act quickly. Treasury officials in the Obama administration recently put forward a set of proposals to Congress in hopes that lawmakers would pass legislation that would lead to a much more orderly restructuring of the territory's debts.

This would be accomplished by allowing the Puerto Rican government to use Chapter 9 of the bankruptcy code. Under current law, Puerto Rico, like all U.S. states, is not permitted to file for bankruptcy. The administration is proposing that Congress change the law to allow U.S. territories such as Puerto Rico to use Chapter 9.

We assume that if Puerto Rico's debts were restructured in bankruptcy court, the government would still need to pay on its general obligation and COFINA bonds, and about 25 cents on the dollar of the debt owed by other public corporations. Over the next five years, the territory would make \$10.8 billion in debt payments, equal to 20% of its revenues (see Table 5). This is still a very heavy debt load to carry, but it is manageable, and thus sustainable.

The administration's proposal also includes normalization of Medicaid reimbursement rates, in line with current rates for U.S. states, to the island's residents beginning in 2017. Currently, Puerto Rico is reimbursed at a much lower rate for its Medicaid expenditures than U.S. states. The commonwealth's Federal Medical Assistance Percentage, which for states is determined based on the amount of residents living in poverty within a range of 50% to 83%, is capped at approximately 57%. Given the island's poorer than average population, Puerto Rico would qualify for the maximum reimbursement rate of 83% if it were a state. This is especially important to the island because nearly one-half of its residents rely on Medicaid for their healthcare benefits.

Puerto Rico would also benefit under Treasury's proposal from the implementation of an earned income tax credit. The EITC is a very effective way to provide income support to low-income workers. The credit is available only to those who work, which incentivizes labor force participa-

tion, something that is much needed to restart Puerto Rican economic growth. By requiring recipients to file a tax return, the EITC has the added benefit of drawing workers out of the island's large underground economy.

Of course, the expansion of the Medicaid program and introduction of the EITC is not free, and would need to be covered by U.S. taxpayers. While Treasury has not provided cost estimates, we would expect the cost of these proposals when fully operational to be close to \$2 billion per annum in today's dollars.

If adopted in its entirety, the Treasury's proposal would provide a substantial boost to the Puerto Rican economy. The employment declines would end sometime next year, and job growth would begin in earnest toward the end of the decade (see Table 6). Unemployment would stabilize next year, and then drift lower, ending at close to 11% by 2020. Net out-migration remains substantial, but does abate, allowing the population declines to moderate.

The economic benefits of the EITC take time to develop, and are not meaningful until after 2020. Nonetheless, even if the Treasury's proposals are fully adopted, they are not enough to jump-start a robust Puerto Rican economy. It is clear that a long and arduous road lies ahead for the island's residents under any scenario, particularly if Puerto Rico is unable to find the political will to implement the substantive economic reforms needed to make the island an attractive place to do business.

Table 6: Puerto Rico Economic Outlook Under the Treasury Scenario

	2015	2016	2017	2018	2019	2020	Avg Annual Growth 2015-2020
Nonfarm employment (ths)	909	906	907	913	922	931	0.5
% change	-0.0	-0.3	0.2	0.6	1.0	1.0	
Gross state product (2009\$ bil)	95.7	94.3	93.7	93.8	94.3	95.0	-0.1
% change	-0.1	-1.5	-0.6	0.1	0.6	0.8	
Unemployment rate	12.0	11.8	11.7	11.5	11.3	11.1	
Civilian labor force (ths)	1,131	1,120	1,115	1,111	1,109	1,108	-0.4
% change	-1.3	-1.0	-0.5	-0.3	-0.2	-0.1	
Population (ths)	3,511	3,483	3,452	3,421	3,394	3,370	-0.8
% change	-0.9	-0.8	-0.9	-0.9	-0.8	-0.7	
Net migration (ths)	-38.4	-40.1	-42.4	-41.0	-36.9	-33.6	
Disposable personal income (2009\$ mil)	56,703	55,577	54,427	54,170	54,288	54,741	-0.7
% change	1.0	-2.0	-2.1	-0.5	0.2	0.8	
Wages and salaries (\$ mil)	26,666	27,835	29,185	30,547	31,776	32,890	4.3
% change	3.8	4.4	4.9	4.7	4.0	3.5	

Sources: BLS, BEA, Census Bureau, FHFA, Moody's Analytics

Two paths diverge

What U.S. lawmakers decide to do or not do to help Puerto Rico out of its fiscal bind in the coming weeks will determine the island's economic path for years to come. Under almost any scenario, doing nothing will ensure that the territory's decade-long recession will continue on through the remainder of this decade. Adopting the measures proposed by Treasury will break the economic downturn and provide a basis for a more stable fiscal situation (see Chart 2).

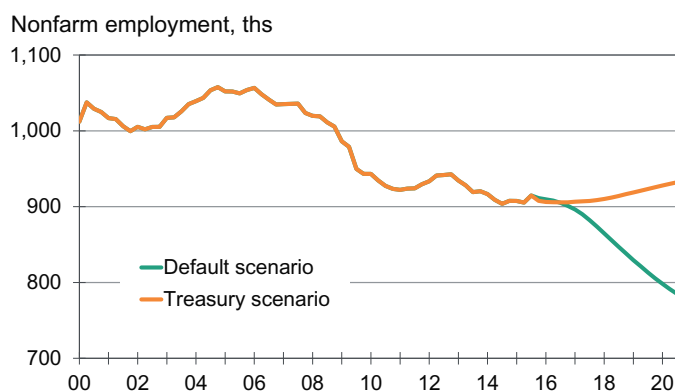
The Treasury proposal does come with costs. In addition to the costs to taxpayers of providing islanders with expanded Medicaid benefits and an EITC, changing bankruptcy law to allow territories such as Puerto Rico to use Chapter 9 raises the possibility that other fiscally pressed states will want to do the same thing. This would significantly disrupt the municipal bond market, increasing borrowing costs for all public entities. Bond holders in Puerto Rican debt also have the complaint that the rules on which they based their investment decisions are being changed. Future investors will require a higher interest rate to compensate them for the risk that the rules get changed again. There is also the moral hazard con-

cern: If Puerto Rico is given a break on its debts, it might then turn around and leverage back up again, thinking that another bailout will be forthcoming.

While these costs cannot be dismissed, they can be significantly mitigated. Puerto Rico's finances should be managed by an independent oversight board, tasked with ensuring that the island puts its finances in order and adopts sound fiscal management practices. This board should determine when it is appropriate to hand back fiscal management to the territory, and should reserve the right to intervene again if the island appears to be going off the fiscal rails once more. Of course, the implementation of such a board would face substantial political hurdles in Puerto Rico, as it would represent a very significant concession by an otherwise sovereign government.

It seems like a stretch to argue that allowing Puerto Rico into Chapter 9 bank-

Chart 2: Puerto Rico's Two Paths



Sources: BLS, Moody's Analytics

ruptcy will cause other states to demand the same relief and the borrowing costs for all municipal borrowers will increase. Puerto Rico is clearly an outlier and has taken a fiscal course that other states will not want to go down. Puerto Rico's story is a very sobering one.

Puerto Rico is looking into an economic abyss that is, in part, of its own making. But its problems are also due to the long dark shadow of the Great Recession that much of the world is still struggling with. Letting the island's economy fall into the abyss would be a serious error. U.S. lawmakers should act.

Endnotes

- 1 The Obama administration's proposals are presented in [testimony by Antonio Weiss](#), counselor to the U.S. Treasury secretary to the Senate Committee on Energy and Natural Resources on October 22, 2015.
- 2 The Merchant Marine Act of 1920, also known as the Jones Act, regulates maritime commerce in U.S. waters and between U.S. ports. The law requires that all transport between U.S. ports is done on U.S.-built ships. This significantly raises the costs of shipping between the U.S. mainland and Puerto Rico.
- 3 Various potential structural reforms that if implemented would increase the island's long-term growth are presented in "[Puerto Rico Fiscal and Economic Growth Plan](#)," September 9, 2015. The plan was prepared by a working group appointed by Puerto Rico's governor.
- 4 This view is expressed in "[The Budget and Economic Outlook for Puerto Rico](#)," testimony before the Senate Finance Committee by Douglas Holtz-Eakins, September 29, 2015.
- 5 The Moody's Analytics baseline (most likely) outlook for Puerto Rico is that it will default on its debt and that its dispute with creditors is adjudicated in the courts. After a lengthy legal battle, the government is required to pay on its general obligation and COFINA bonds in full, and 35 cents on the dollar on the debt owed by the public corporations. Puerto Rico's economy does not suffer as much as under the pessimistic default scenario, but its recession continues on through the remainder of the decade.
- 6 This is as of September 2015, according to the [Commonwealth's Financial Information and Operating Data Report](#), November 6, 2015.
- 7 Gross national product differs from gross domestic product by the difference between net income that flows into an economy and net income that flows out. Puerto Rico GNP is about 25% smaller than GDP, as the island experiences significant net outflows of income, primarily because of income earned at multinational pharmaceutical and tourism-related companies operating on the island.
- 8 A description of the Moody's Analytics regional econometric models is available upon request.
- 9 See "Banks Can Absorb Puerto Rico Default, but Vulnerable to Its Economic Woes," Moody's Investors Service report, September, 28, 2015.

About the Authors

Mark Zandi

Mark M. Zandi is chief economist of Moody's Analytics, where he directs economic research. Moody's Analytics, a subsidiary of Moody's Corp., is a leading provider of economic research, data and analytical tools. Dr. Zandi is a cofounder of Economy.com, which Moody's purchased in 2005.

Dr. Zandi's broad research interests encompass macroeconomics, financial markets and public policy. His recent research has focused on mortgage finance reform and the determinants of mortgage foreclosure and personal bankruptcy. He has analyzed the economic impact of various tax and government spending policies and assessed the appropriate monetary policy response to bubbles in asset markets.

A trusted adviser to policymakers and an influential source of economic analysis for businesses, journalists and the public, Dr. Zandi frequently testifies before Congress on topics including the economic outlook, the nation's daunting fiscal challenges, the merits of fiscal stimulus, financial regulatory reform, and foreclosure mitigation.

Dr. Zandi conducts regular briefings on the economy for corporate boards, trade associations and policymakers at all levels. He is on the board of directors of MGIC, the nation's largest private mortgage insurance company, and The Reinvestment Fund, a large CDFI that makes investments in disadvantaged neighborhoods. He is often quoted in national and global publications and interviewed by major news media outlets, and is a frequent guest on CNBC, NPR, Meet the Press, CNN, and various other national networks and news programs.

Dr. Zandi is the author of *Paying the Price: Ending the Great Recession and Beginning a New American Century*, which provides an assessment of the monetary and fiscal policy response to the Great Recession. His other book, *Financial Shock: A 360° Look at the Subprime Mortgage Implosion, and How to Avoid the Next Financial Crisis*, is described by the New York Times as the "clearest guide" to the financial crisis.

Dr. Zandi earned his BS from the Wharton School at the University of Pennsylvania and his PhD at the University of Pennsylvania. He lives with his wife and three children in the suburbs of Philadelphia.

Dan White

Dan White is a senior economist at Moody's Analytics, responsible for coordinating government consulting and regional economic research with an emphasis on fiscal policy. He regularly presents to clients and conferences, and has been featured in a number of print, radio and televised media outlets, ranging from the Wall Street Journal to National Public Radio. He also has the pleasure of working closely with a number of governments in a consulting role. Before joining Moody's Analytics, Dan worked as a financial economist for the New Mexico State Legislative Finance Committee in Santa Fe, where he forecast revenues and analyzed a wide range of policy issues concentrated around economic development, public investment and debt management. Dan holds an MA in economics as well as undergraduate degrees in finance and international business from New Mexico State University.

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Bernard Yaros is an associate economist at Moody's Analytics. He covers Indiana and Puerto Rico and contributes analysis on U.S. federal fiscal policy. Bernard also develops forecasts for Switzerland's economy and works on the global subnational forecasting team. He holds an MSc in international trade, finance and development from the Barcelona Graduate School of Economics and a BA in political economy from Williams College.

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