October 2017

Mother Nature vs. Credit

Mother Nature has a dark side. Earthquakes, typhoons, floods, droughts, and forest fires have all severely impacted the lives of many. This year's hurricane season wrought significant harm to the U.S. Gulf coast and Caribbean territories. The around-the-clock news coverage brought the suffering into our living rooms. Reporters served double duty as storm chasers, risking their lives to keep us informed. The severity of the storms led to many questions about our credit exposures in the impacted areas.

Natural disasters rarely cause credit impairments and their damage to property and economic activity are often temporary. While every event is different, once the immediate danger and subsequent rescue efforts have ended, reconstruction and growth are next to follow. History has provided recurring lessons with respect to municipal credit.

Credits in affected areas receive a first layer of support through the use of insurance by individuals, businesses, and municipal entities. In the event of damage, insurance proceeds offset a portion of incurred physical and interruption-related damages. Insurers further disperse their risk through the use of reinsurance. These funds permit houses to be rebuilt and businesses to reopen, allowing for the reboot of the economy and continuing imposition of the tax levy or enterprise charges that repay bonds.

A second layer of protection is provided by the Federal Emergency Management Agency (FEMA). Consistent with its purpose, FEMA has stepped in to provide operational and financial support during major disasters, both natural and man-made. While this assistance is not guaranteed for every event, we view the services provided by FEMA as a core function of the federal government and we expect their participation in any sizeable disaster.

Together, insurance and FEMA funds absorb a large share of reconstruction costs and help accelerate recovery. The remaining costs fall to the individual issuer. Stopping short of impairment, history has also taught us that certain types of credits are more susceptible to disaster-related credit deterioration. These include Ports and Airports, Water/Sewer and Stormwater systems, Power Utilities, and Dedicated Tax bonds with narrow and cyclical pledged revenues.

Beyond the direct impacts of a shutdown and physical damage, Ports and Airports face the risk of declines in traffic and cargo. Critical to our understanding of these types of credits are the governing contracts between the system and its clients, namely airlines and shipping firms. There are two predominant contract types: residual and compensatory. A residual contract is one in which the clients agree to cover their proportional share of fixed costs or the core enterprise irrespective of operations. These facilities operate more like tolling utilities than typical businesses. As long as their clients remain solvent, the finances of these facilities should be relatively unaffected.

Most Municipals Positioned to Weather the Storm

Sector	Credit Risks
Ports and Airports	Decline in tourism and cargo traffic
Water, Sewer, Storm Water	Overflow events can lead to consent decrees requiring capital expenditures
Power	Generation plants (especially nuclear) may be forced to temporarily shut down; Transmission and Distribution lines are susceptible to earthquake, wind, and flood damage
Cyclical Dedicated Tax	Decline in sales taxes and tourism taxes, especially in areas with a limited geographic reach

Source: BBH Analysis

In contrast, compensatory contracts allow carriers to simply pay for their direct usage of facilities by passengers and for cargo. Therefore, any decline in such usage, especially unanticipated declines, can more quickly and directly impact the finances of the credit. When we own airport bonds with compensatory contracts, we look for those with strong origination and destination (O&D) travel, which will drive an expedient return of air travel. O&D activity is heaviest in desirable locations. By contrast, hubbing locations are often selected on the basis of their operational efficiencies.

Water/Sewer and Stormwater systems face the risk of significant overflow events that can warrant the issuance of consent decrees against the system by the Environmental Protection Agency. These consent decrees can force meaningful capital expenditure programs to ensure the system does not suffer future overflow and to ensure the safety of the water. There are serious consequences to the interruption of normal water and sewer services and the Environmental Protection Agency (EPA) keeps a close watch. We are careful to review a system's capacity with respect to its peak flow and avoid already highly levered systems. As a result, the obligors we own will typically possess more flexibility in dealing with any consent decrees that an unexpected event may bring.

Power utilities, particularly nuclear units, can be forced into emergency shutdown due to flooding and other natural disasters. These shutdowns have innate costs and may require inspection by the Department of Energy before restarting. This can take a significant amount of time, during which the utility may be subsisting on reduced revenues or burning through reserves. Utilities which enjoy a monopoly position, provide baseload power, and that use our preferred "Take-or-Pay" contract structures have much less variable revenues. In a take-or-pay contract, the customer of the utility must pay even if the utility supplies no power.

Dedicated tax bonds can be among the most affected securities when natural disasters occur, particularly those backed by cyclical revenues in a geographically concentrated area. Bonds backed by New York State income taxes pose significantly less risk than bonds backed by hotel taxes and rental car fees from a specific county with heavy tourist traffic. Sales taxes, in contrast to tourism-related taxes, generally experience bumps afterwards due to reconstruction, and make up their losses in arrears. In addition to assessing their qualitative factors, we stress test all of our dedicated tax bonds to gauge their resiliency to downturns.

We view the credit situation in Puerto Rico as a man-made disaster, with the recent natural disaster simply exacerbating the hardship of its residents. As of this writing, 80% of residents lack power and over 30% lack clean water. Years and years of neglect, poor management, poor operations and excessive borrowing led credits from the Territory into distress. We have little doubt that the extra yield and triple-tax-free status of the U.S. Territory catalyzed investor demand and helped enable their debt crisis. Although Chapter 9 of the Federal Bankruptcy code is not a technical option for the island, the U.S. Government established PROMESA (Puerto Rico Oversight, Management, and Economic Stability Act) to oversee the restructuring of Puerto Rico's obligations.

Puerto Rico Credit	Current Price ($)	$ Change Post-Maria	% Change Post-Maria
GO 8s	30	-28	-48%
Building Authority	27	-25	-48%
PREPA	34	-24	-41%
PRASA	67	-11	-14%
COFINA Senior	42	-20	-32%
COFINA Subordinate	14	-11	-44%
GDB	28	-4	-13%

PREPA = Puerto Rico Electric Power Authority, PRASA = Puerto Rico Aqueduct and Sewer Authority, COFINA = Puerto Rico Urgent Interest Fund Corporation (Corporación del Fondo de Interés Apremiante), GDB= Government Development Bank
Data as of October 20, 2017
Sources: JP Morgan Chase and BBH Analysis

While the yields and availability of the island's bonds have always been enticing, we have never purchased Puerto Rico bonds because of credit-related problems. Investors in the muni market have become gradually more sensitive to these problems since 2013. With this year's hurricane season, the outlook for the island's $74 billion of bonds has gone from bad to worse. In the case of Puerto Rico, the unknown costs of rebuilding will undoubtedly reduce bondholder recoveries relative to pre-Hurricane Maria expectations. The trouble does not end with rebuilding. Migration to the U.S. mainland by students and those in the workforce could present economic headwinds for an extended amount of time. Post-Hurricane Maria, bond prices have fallen by nearly half.

To stay true to our objective of protecting our investor's capital first and generating attractive risk-adjusted returns second, we must make sure our credits are money-good. Through our assessments, our credits must remain durable through a wide range of economic conditions, including events such as hurricanes. We owned a range of credits that were affected by this year's storms including Houston Airport, Fort Lauderdale Airport, and a range of Texas and Florida school districts, among others. We are happy to report that this year's storms did not inflict long-term credit harm on any of our holdings. Just as any family or business can develop an emergency response plan, we look to our credit criteria and research process to keep us safe.

Gregory Steier
Managing Director
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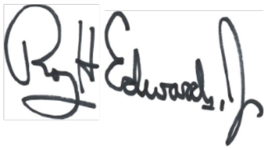

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