

**Exhibit 1: Migration from Detroit, MI**

Source: Internal Revenue Service Tax Stats; Forbes; 2016

In the world of public finance, default rates have had a historically low occurrence with only approximately 660 municipal bankruptcies since Congress passed the Municipal Bankruptcy Act in 1937<sup>1</sup>. That is, until now. After two record breaking defaults in Detroit and Puerto Rico, municipal default rates are climbing quickly, more than tripling their historical rate over the past several years<sup>2</sup>. Media reports of the troubles consuming Puerto Rico, Detroit and Connecticut tend to focus on their worsening financial conditions, but the underlying factors leading to their financial troubles may include the broader negative impacts of migration, wealth levels, and crime rates which we examine more closely in this research paper.

According to U.S. Internal Revenue Service tax statistics, nearly 38 million Americans move every year. A mixture of opportunistic residents seeking economic improvement via lower taxes, housing costs, and unemployment or relocation after retirement determine the net migration and ultimately, the tax base of a municipality. The 2008/2009 financial crisis caused an out migration of higher-income earners from New York as the financial sector contracted. However, a simultaneous influx of residents with a lower earnings capacity contributed to a net positive revenue for the year. At the same time, Detroit exported higher income residents and experienced an influx of a greater number of poor migrants, as shown in exhibit 1. While an individual’s decision to move can be driven by any number of factors specific to the state, county or city, the overall direction of this migration and its impact on tax revenues can have a significant affect on a municipality’s budgetary planning and ability to service debt in the future.

### Millionaire Tax Flight

Connecticut is another state in which we have seen the potential negative impact of migration. Often considered the wealthiest state in the U.S., Connecticut relies heavily on residents with adjusted gross incomes greater than \$1 million per year. Taxpayers in this income bracket paid approximately 40% of all federal taxes from the state of Connecticut in 2013, which was 67% higher than the national average<sup>3</sup>. Concentration of revenue may cause concern among investors, especially when revenue trends are in decline, however many states have successfully levied income taxes over the past half-century without spurring a significant migration. Most states, however, do not have the concentration of millionaire taxpayers that Connecticut has come to rely on. The question is, at what point do higher taxes at the top marginal rates lead to millionaire migration? Coomes and Hoyt 2007 found that tax– motivated migration only occurred if the difference between state tax rates was sufficiently large<sup>4</sup>. Connecticut’s relatively high-income tax and tax increases in recent years have contributed to a trend of out-migration and declining tax revenues, highlighted by the loss of several billionaire taxpayers in 2016.



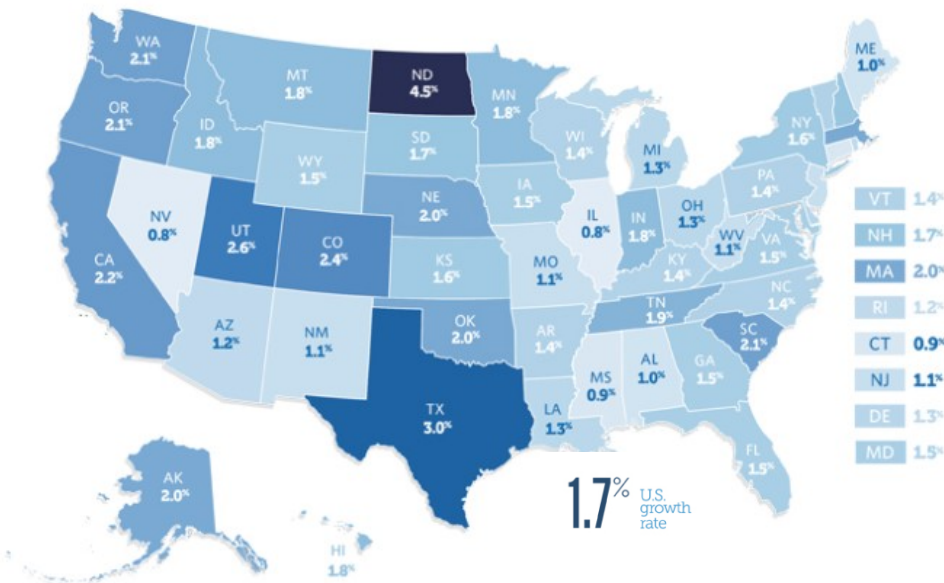
As reported by the Associated Press, tax revenue from Connecticut's top 100 highest paying taxpayers declined 45% from 2015 to 2016, resulting in approximately \$200 million revenue loss for the state<sup>5</sup>. Generally, top earners are more likely to be affected by tax hikes and have a higher propensity to migrate in response to higher taxes. Often influencing other aspects of in-state revenue, top earners may choose to relocate their businesses, personal luxury spending through vendors within the state and local charitable giving. Corporate relocation may further impact tax revenue received by the state, not only in the loss of corporate tax revenue but also the revenue derived from personal income taxes of the employees of the firm. The importance of this corporate presence is evident in recent public statements by both Florida's and Connecticut's governors, both vying for Connecticut businesses to relocate or stay, and offering considerations for the benefits of operating in their respective states.

### Trends in Personal Income

States with a high reliance on one source for annual revenue tend to be most vulnerable, as in oil and mineral-dependent states where depressed oil prices continue to be a significant drag, or those with a high reliance on revenue from capital gains which may be impacted by increased volatility in the stock market. North Dakota for instance had the fastest annualized growth of any state since the 2008/2009 financial crisis, but over the past year depressed oil prices have led to a decrease in personal income, representing the third-sharpest drop of any state<sup>6</sup>.

#### Exhibit 3: Personal Income Growth by State Since the Great Recession

Data Source: US Bureau of Economic Analysis; The PEW Charitable Trusts; Q4 2007-Q4 2016



Trends in personal income and therefore projected tax revenue help determine states' budget planning and estimates for costs of state provided public service. Akin to an earnings report indicating potential profitability for a publicly traded company, trends in personal income can potentially reflect weakness or strength for a municipality's economy that other economic data points may fail to reflect.

Similarly, cities with negative personal income trends and a high rate of out migration have also experienced a high or increasing crime rate, shown in the chart above. San Juan, the largest city in Puerto Rico, has simultaneously seen a decrease in personal income, a growing rate of unemployment, crime and poverty among its residents and as such, a significant out migration of 12.0% since 2010.

While various social, economic and political factors can play a role in the rate of crime, some researchers theorize that reduced opportunity to earn legal personal income may increase the need for illegal sources of income. Negative trends including tax-flight, out migration, lower revenues, strained municipal budgets and increase in crime rates tend to make it even more difficult for cities and states to attract new residents and businesses.

#### Exhibit 2: Cities With Declining Economic Trends

Data Source: US Census Bureau, Bureau of Labor Statistics, Merritt Research, Sperlings; 2016

City	Net Direct Debt per capita	Net Migration	Crime Index	Poverty Rate	Unemployment Rate	Gini Index
San Juan	\$ 2,140	-12.0%	*	45.8%	8.1%	0.460
Chicago	\$ 3,561	-6.60%	58.9	22.3%	5.9%	0.525
Detroit	\$ 2,699	-29.30%	95.5	40.3%	9.8%	0.507
Hartford	\$ 4,703	-0.91%	91.3	33.4%	10.4%	0.503
Medians/National Average	\$ 1,089		31.1	15.5%	4.7%	0.416

\*2016 Crime Index unavailable

Asset Preservation Advisors believes that the best way to mitigate risks for our investors is to carefully review all bond holdings on an ongoing basis, considering trends and current financial conditions but also broader credit fundamentals, such as local economy, tax base size, migration effects, impact on wealth levels, financial operations and debt levels of the issuer.

For more information about Asset Preservation Advisors customized portfolio management, please contact:

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<sup>1</sup> MuniNet Guide; muninetguide.com, accessed June 26, 2017

<sup>2</sup> Municipal Market Analytics, Matt Fabian; Barron's, Puerto Rico's Bankruptcy a 'Dramatic Reshaping' of Muni Risk May 5, 2017 <http://www.barrons.com/articles/puerto-ricos-bankruptcy-a-dramatic-reshaping-of-muni-risk-1494017386>, accessed June 26, 2017

<sup>3</sup> Internal Revenue Service data, 2013; Forbes, May 23, 2016; 25 Years, \$13 Billion Lost: Connecticut Income Tax Continues to Fail, <https://www.forbes.com/sites/rexsinquefield/2016/05/23/25-years-13-billion-lost-connecticut-income-tax-continues-to-fail/#4aaff52d54bd>, accessed June 26, 2017

<sup>4</sup> Coomes, P., & Hoyt, W. income taxes and the destination of movers to multistate MSAs. *Journal of Urban Economics* 63(3), 920-937

<sup>5</sup> Associated Press; Connecticut Feels Effect of Drop in Super-Rich Tax Payments, Susan Haigh May 7, 2017, <https://www.usnews.com/news/best-states/connecticut/articles/2017-05-07/connecticut-feels-effect-of-drop-in-super-rich-tax-payments>, accessed June 26, 2017

<sup>6</sup> CNN Money; North Dakota grows five times faster than nation, Steve Hargreaves, June 6, 2013; <http://money.cnn.com/2013/06/06/news/economy/north-dakota-economy/index.html>, accessed June 26, 2017

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