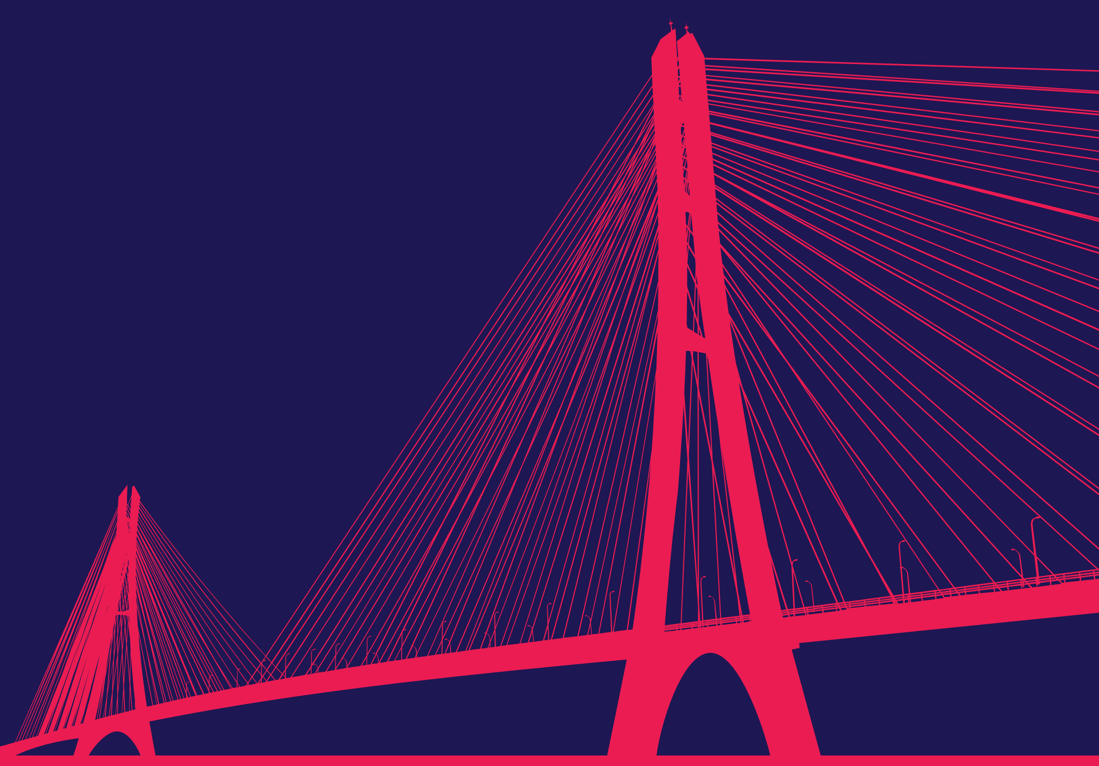
BUILD AMERICA MUTUAL

WHITE PAPER

# UNDERSTANDING THE CREDIT IMPACTS OF U.S. DEMOGRAPHIC SHIFTS:

# THE CASE FOR GRANULAR ANALYSIS



# ABSTRACT

*Understanding how changes in the United States' demographic profile will impact the long-term credit outlook for specific municipal borrowers requires a granular analysis of the individual drivers of those shifts. Examining how each borrower's population is impacted by shifts in population by age group, national and international migration trends, fertility rates, and labor force participation can provide municipal analysts with a deeper understanding of future revenue trends, expenses, and capital needs. The U.S. population is aging, but evidence suggests that the economic and fiscal pressures associated with that shift will not be evenly distributed across regions.*

*Broadly, issuers in the Northeast, Midwest and parts of the South have already started to experience credit pressures, which are likely to persist into the long-term. Urban metropolitan areas will continue to benefit from domestic in-migration driven by job availability, declining fertility rates and increasing cost of living may overtake any gains in the mid-term. Meanwhile, areas in the South and West that are experiencing net population growth will face pressure to manage their capital investment plans to meet demands for new transportation capacity, schools, and water and wastewater utilities while maintaining long-term affordability and environmental sustainability.*


# BACKGROUND

The U.S. Census Bureau estimates that by 2030 there will be more Americans over the age of 65 compared to those under 18 – 78 million versus approximately 76 million[1]. This major shift in the "working-age population"[2] creates a critical mass that will have a profound impact on most sectors of the U.S. economy. This impact translates to growing credit pressures for some states, and the local governments, school districts, hospitals, and higher education institutions within them – limiting their opportunity to generate revenues and driving increased operating costs for services like Medicaid and pension expenses. Some regions of the country will withstand changes better than others, and some individual issuers within a challenged region will also perform better than others. Patterns of in- and out-migration, advances in technology, and changes in public policy all could have positive or negative offsetting effects on credit profiles.

[1] U.S. Census Bureau, Population Division: Demographic Turning Points for the United States: Population Projections for 2020 to 2060
[2] "Working age" defined as those aged 15 to 64

# How Working-age Population Declines Impact Municipal Credits

In regions that experience working-age population declines, different types of governments will have different options for maintaining fiscal balance in the face of those changes. Factors BAM considers when evaluating a specific issuer's capacity to mitigate those demographic changes include:

**STATES** with significantly aging populations will be pressured by declining income and sales tax revenues, as well as maturing pension plans that include more retirees than active workers. States that are proactive in adopting adequate pension funding plans and establishing long-term track records of balanced budgets and healthy reserves will experience more financial flexibility to respond to short-term shocks like recessions or natural disasters, which is a credit positive.

**LOCAL GOVERNMENTS** may face negative pressures from less dynamic economies and lackluster revenue growth. Individual communities can mitigate that by maintaining diverse revenue streams, stable property valuations, and attracting new businesses or developments.

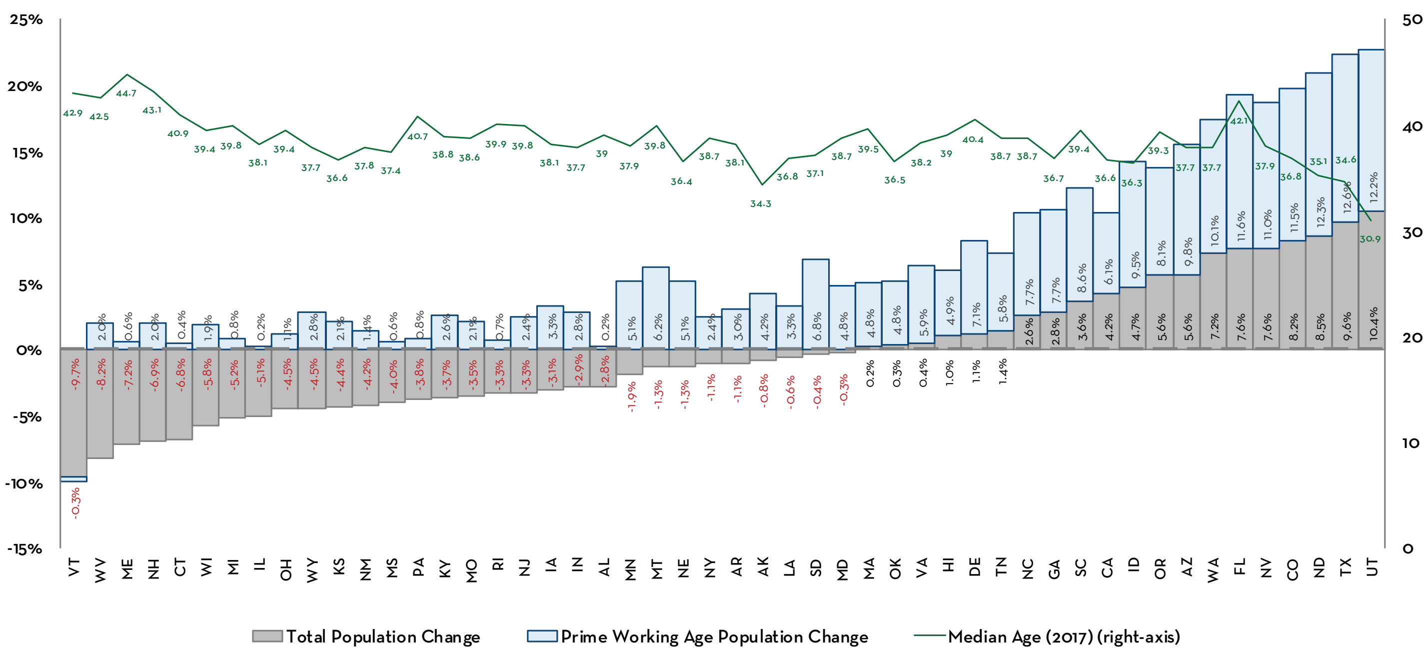
**SCHOOL DISTRICTS** are likely to see enrollment rates decline, especially in rural communities. Key credit indicators include districts' ability to adjust expenditures to match the size of their student populations and the design of state funding formulas.

**HIGHER EDUCATION** revenues will more likely be net neutral on average due to university administrations' ability to be flexible in managing enrollment and additional ancillary revenue streams, even as the population of graduating high school seniors declines.

# Working-Age Population Trends: Regional Impacts

Elevated median age within a state or local community is typically correlated with weak economic vitality, below-average tax base growth, slower revenue growth, above-average spending on public health and emergency services, and limited financial reserves. The Northeast & Mid-Atlantic regions have some of the oldest states in the country and are the most pressured by the decline in the working-age population. The Southern region has a mix of demographic impacts, with Texas, Georgia, and Florida continuing strong growth while West Virginia, Kentucky, Louisiana, Mississippi, Arkansas and Alabama are experiencing moderate declines in their working-age populations. The Midwest states share similar demographic characteristics with the second group of Southern states, and the region's long-term economic outlook is limited by the decline of working-age population. In contrast, Western states exhibit relatively robust growth in working-age population and economic output.

***Demographic Changes for All States (2010 - 2017)*[3]**



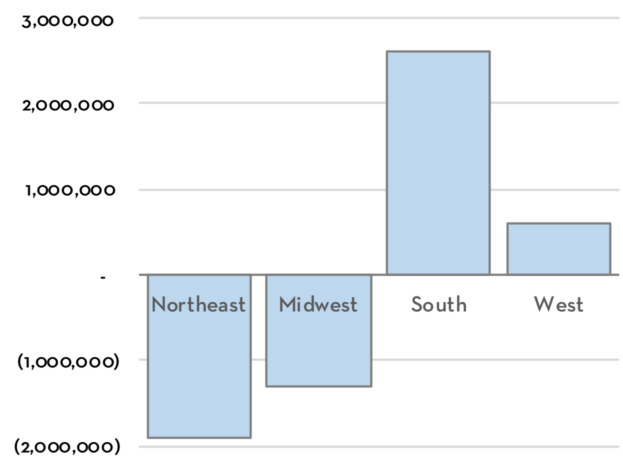

[3]Source: U.S. Census Bureau, Population Division

# Demographic Drivers of Individual Credit Quality

## DOMESTIC MIGRATION

Approximately 40 million Americans, or roughly 14 percent of the entire population move within the country every year. The general trend of migration is from colder Northern states to warmer regions, with states like Florida, Texas, North Carolina, South Carolina, and Arizona seeing large increases. Migration from rural areas to urban areas continues, and more than 80 percent of Americans now live in urban areas. Although intra-regional migration itself is not the driver for the significant shift in demographics, it serves as an indirect indicator for trends in the median age and regional working-age population makeup.

*U.S. Net Domestic Migration[4]*
*(2010 - 2017)*

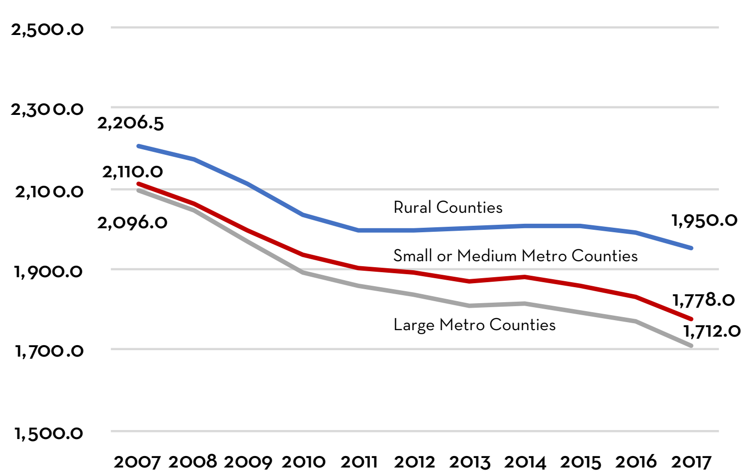



## FERTILITY RATES

Fertility rates continue to decline across the entire U.S. with only minor exceptions. The decline is not due to a single cause, but rather a combination of factors, including changing economics, delayed childbirth and a decline in teen pregnancies. The 2008 recession contributed significantly to fertility rate declines as people put off having children due to economic uncertainty.

States with highest fertility rates (above 2,000 births/1,000 women) include Utah, South Dakota, North Dakota, Idaho and Alaska. Utah is the only state with a fertility rate above the replacement rate. The Centers for Disease Control (CDC) indicates that a rate of 2,100 is considered necessary to replace a population over time. Declining birthrates have a negative spillover effect on the long-term economic factors such as school enrollment and graduation rates. This will significantly impact K-12 school districts and higher education institutions. The negative working-age population trends are reinforced by diminishing fertility rates across a majority of the states already experiencing declines.

*U.S. Total Fertility Rate by Urbanization Level[5]*
*(2007 - 2017)*

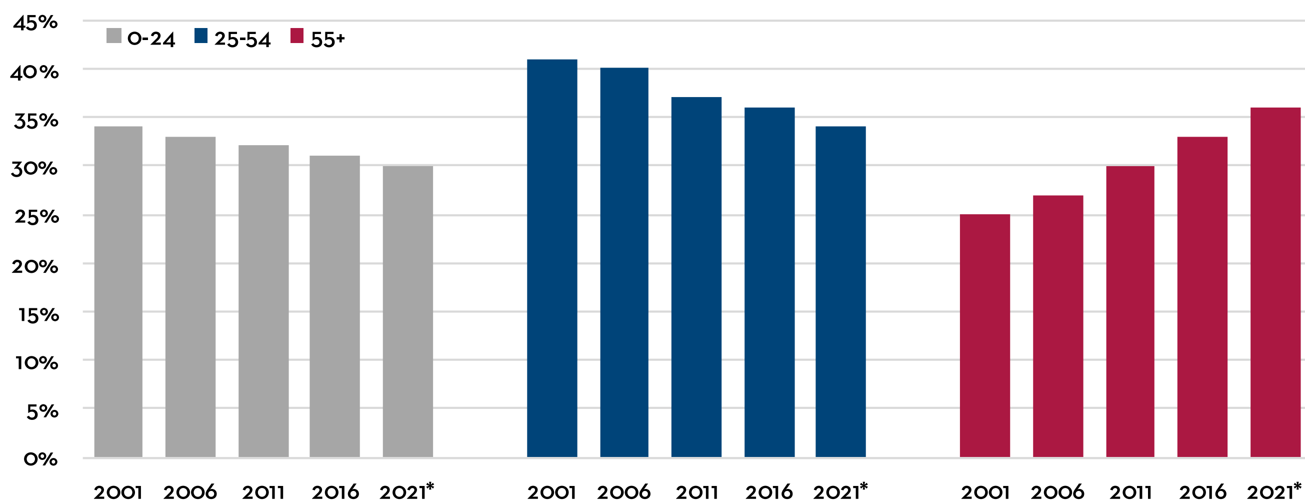



[4]Source: U.S. Census Bureau, Population Division
[5]Source: NCHS, National Vital Statistics System, 2007–2017

# MIGRATION FROM RURAL TO URBAN COMMUNITITIES

## *Rural America Ages as Younger Residents Move Away*

*Percent of Rural Population by Age*




**represents Moody's estimate based on current 5-year compound annual rate of change.*
*Sources: U.S. Census Bureau, Moody's Investor Service*

Already slow to recover following the 2008 recession, rural communities increasingly exhibit less dynamic economies and face some of the most immediate fiscal impacts from demographic change. Weaker employment drives lower sales, income and property taxes, and prolonged declines can squeeze local budgets. Shrinking rural population is typically accelerated by migration to urban centers by people in pursuit of economic opportunities. Rural population fell by 0.5 percent, while urban population grew by over 6 percent between 2010 to 2017, and the working age population shrunk by 6.4 percent. Rural communities with weaker economies and aging populations have seen an increase in spending on public health services, public safety, and emergency services.

# Conclusion

Information about demographics can add important qualitative perspective to a quantitative assessment of a municipal borrower's underlying economy – but an effective assessment has to be done at the individual issuer level.

To understand how demographics drive economies, BAM analysts consider trends in population, employment, personal income, retail sales, and real estate values in their analysis. The proximity to transportation networks, the development of infrastructure following a sustainable and affordable capital plan, and the track record of growth in local industry are also important factors as part of BAM's credit review process.

As the working-age population declines in many states, maintaining the tax base is vital, as a smaller economy has fewer financial resources and may have less financial flexibility than a municipality with a larger, more dynamic economy.

The demographic analysis is also necessary to inform a detailed review of each issuer's pension liabilities and funding status. A low active-to-retiree ratio within a pension plan can be problematic because it limits an issuer's flexibility to adopt balanced solutions to correct pension underfunding with a mix of funding policy changes and benefit adjustments, placing the focus primarily on increased contributions.

# ABOUT THE AUTHOR

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Vlad Pucheck primarily focuses on reviewing New York, Massachusetts, Connecticut, Michigan and Florida local government and higher education credits for the surveillance department at Build America Mutual. He joined BAM from Moody's Investors Service, where was the lead analyst on credits in the Northeast region with a focus on New York school districts. He holds a B.S. in Finance and an MBA from Touro College New York.

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