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Bumpers To Basis Points: Technology, Highway Transportation And Muni Bonds

This article is the third in a series of four describing the positive effects of the rise of technology as both an infrastructure sector and credit factor in the municipal bond market (the introductory article is The Rise Of The Technology Infrastructure Sector In The Municipal Bond Market).

Those states, cities, counties and towns applying technology to assess and deliver services more efficiently and effectively are positioning themselves to be future-ready. Internet connectivity is both future-now and future-ready. The second article is From Megabits to Basis Points: Connecting Fiber Optic Broadband and Municipal Credit. This third article delves into the technologies changing highway transportation and the effect on credit in that sector.

Driving Into Traffic

Running late this morning, I missed my commuter train into Boston, and decided (foolishly) to drive instead to "save time." Why I persist in this delusion in the face of abundant abject experience to the contrary was something I was contemplating while sitting at a dead stop on Interstate 93 North. Part of the "Big Dig" here in Boston about two decades ago, I-93 improvements, including adding lanes, were a solution for a number of transportation ills, not the least of which was to be clearing traffic congestion on this very roadway.

The "adding lanes to solve traffic" solution failed miserably for Robert Moses in New York back in the 1950s and 1960s and isn't faring much better here in Boston these many years later. Expensive to build and maintain, roads don't solve transportation problems—they complicate and compound them. More roads only encourages more people to drive, exactly the thing causing the problem in the first place.

Road Technology

Ohio has another approach. With 1,573 miles of highways crossing the state, it is the fourth largest interstate system in the country. Forward-looking as to how technology might address the issues of managing that system, the Governor of Ohio formed DriveOhio in 2018. A collaboration of dozens of public and private entities dedicated to finding tech solutions, Ohio is positioning itself to be a leader in smart mobility.

The long-term goal is nothing short of creating a fully technologically integrated highway system. From DriveOhio's perspective, transportation infrastructure has to be able to constantly transmit, receive, monitor and respond to signals about road conditions, traffic flow, accidents, bad weather and other driving hazards. That means sensors to capture data, high speed broadband connectivity to transmit the data, and statistical analytics, machine learning and artificial intelligence to develop evidence-based solutions both in real time and over time.

Part of that infrastructure are vehicles and actually driving on the roads. A large component of smart mobility is technologically connected vehicles. This type of vehicle-to-vehicle (V2V) and vehicle-t-

-infrastructure (V2I) data sharing helps drivers avoid dangerous situations and allows traffic monitors to make better decisions about traffic management.

Sounds very future-techy, but what how does this help drivers behind the wheel in real life? It means, in real time, a driver can be notified when there is an accident, heavy traffic or bad weather with a suggested (or required) alternative route. With this advance notice filling the transportation-information vacuum, drivers can be safer, have less stress, use less gas, lower carbon emissions and make better time.

It also means first-responders can get help in the event of an accident. Accidents are a big issue in Ohio. On those main roads and local ones, there were over 300,000 car accidents in 2018. The overwhelming majority were driver error. Research showed that fully 80 percent of those crashes could have been avoided or mitigated with connected vehicle technologies.

The Case of the Ohio Turnpike and Infrastructure Commission

Stretching across the state, from the Pennsylvania border in the East to Indiana in the West, the 241 miles of the Ohio Turnpike and Infrastructure Commission (Aa2/AA-/AA) has more than 56 million commercial and individual vehicles drive on its six lanes through the state during the year. It is widely acknowledged as a critical corridor in the national highway system. Getting prepared to be future-ready with internet connectivity for whatever the internet of things may bring, it is “fibered” end to end—the full length of the turnpike is run with fiber optic cable.

Corresponding, the Ohio Turnpike is one of the nation’s leaders in testing and applying transportation technology. For example, to assure this critical corridor stays open in winter storm conditions—the average snowfall along the Turnpike was about 45 inches last year—it needs a fast response from snow-plows and deicers. So the Ohio Turnpike turned their snow-plows into data-gathering test vehicles. With sensors installed, in addition to vehicle speed, direction and location, there is data on when plows are up or down, when the salt spreaders are on and the rate of salt spread, and ambient temperature. The next step is capturing vehicle traction. That’s more than just seeing if the snowplow operator is enjoying a comfortable ride. Lack of traction is an indicator of black ice, suggesting there is water pooling on the road—a physical problem with the highway that will require a civil engineering fix to avoid adding to the accident count.

Bumpers to Basis Points

Traditionally, municipal bond analysts and investors focus on fundamental analysis, looking at income statements and balance sheets that show year-old numbers. In transportation, a “deep-dive” analysis usually means linking those dollars on the page to vehicle counts, tolls collected and fuel tax rates assessed, perhaps even doing some debt service stress-test modeling using these revenue components.

The problem is that this only shows the trend after it happened, meaning any subsequent investment decision occurs after the fact. It’s like buying a used car with 500,000 miles on the odometer because that proves the car works. Not to push the vehicle analogy too hard here, but trying to drive forward while looking in the rear view mirror doesn’t usually work too well.

That traditional, numbers-focused analysis misses opportunities in municipal borrowers getting future-ready. The indicators here are easy to identify. They are those municipalities and authorities building out technological infrastructure and creating public-private collaborations to test new technologies. These borrowers are more likely to have stable-to-improving financial performance and, by extension, their bonds potentially generating better investment performance.

Municipal bond investors holding debt of communities and agencies not building and applying technology to get future-ready are going to find themselves in the breakdown lane, the performance of others passing them by.

(Sorry. Couldn’t resist that last one.)

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Next In The Series

As advances in technology make delivering municipal services more effective and efficient, public administrators, appointed officials, and elected representatives are getting trained in these new tools. The fourth and final article in this series shows not only how these “next-gen” government leaders are going to use technology, but also how “next-gen” technology is restructuring government overall.

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