

THE GROWING CRISIS IN THE MUNICIPAL BOND MARKET:

DO ANALYSTS AND INVESTORS HAVE THE RIGHT MINDSET AND TOOLS TO HANDLE IT?

By Gregg Bienstock, Principal, Lumesis

THE GROWING CRISIS IN THE MUNICIPAL BOND MARKET:

DO ANALYSTS AND INVESTORS HAVE THE RIGHT MINDSET AND TOOLS TO HANDLE IT?

B

allooning debt, pensions and other obligations; shrinking tax receipts; potentially waning Federal government support; aging infrastructure; and the frustratingly slow economic recovery have made municipal bonds an unfamiliar landscape. The security blanket of rating agencies, bond insurers and the ability to raise funds via taxes and other levies is unraveling quickly. In order to thrive – and take advantage of the opportunities that come with volatility – municipal investors and analysts need to approach the market differently. When it comes to credit selection and risk management, they will need to focus keenly on the underlying credit of the issuer – and, importantly, look beyond stale financials and ratings. The challenge is to enhance the current approach by developing new, more meaningful credit metrics that incorporate the demographic and economic information that may be the best predictors of tax base, tax rolls, tax receipts and the best indicators of government spending. Meeting the challenge successfully will require new tools – and a new frame of mind.

A REALITY NOT TO BE IGNORED

The municipal fixed income market, a once sleepy segment of the global economy, is undergoing a crisis that no longer can be ignored. Municipalities, including the large majority of states, counties, school districts and towns, are facing unprecedented fiscal stress with no relief in sight. Many believe an anemic recovery or worse – a second dip in the economy – could spell doom for component parts of the municipal market. Clearly, those responsible for managing municipal exposures need more and better resources to analyze current economic and demographic data so they can look ahead before the cresting wave comes crashing down. Looking back at stale financial information or relying solely on the work of the rating agencies are no longer viable alternatives for investors and risk managers who need to match or exceed the performance of their peers.

...those responsible for managing municipal exposures need more and better resources to analyze current economic and demographic data so they can look ahead before the cresting wave comes crashing down. Looking back at stale financial information or relying solely on the work of the rating agencies are no longer viable alternatives...

HOW DID WE GET HERE? “THERE’S NO RISK IN THE MUNI MARKET...”

Despite blemishes over the years – for instance New York City GO’s, Orange County, WPPSS, Jefferson County, Florida CDDs, Vallejo and Las Vegas Monorail to name a few – the broader view of risk associated with the municipal market has been that it’s relatively benign, bordering on boring. Some might call this view a true sense of security in the otherwise turbulent global markets; others might call it a false sense of security.

Banks, insurance companies and other market participants have spent considerable sums on people and systems to create complex securities and manage risk or predict performance in the structured credit and equity markets. But in spite of warnings – glaring headlines regarding the fiscal difficulties of municipalities across the United States, and telling remarks by the SEC Chairman¹ and congressional testimony by Warren Buffet² – many in the fixed income municipal market will tell you resources are scarce when it comes to research and managing municipal risk. How did we get here?

There are some very bright people that spend the majority of their time managing municipal risk. If you doubt this, attend an NFMA³ conference for excellent, thoughtful substance and candor regarding the municipal market. But as a whole, when it comes to the municipal market, complacency is the norm. There is a false sense of security that the strong past performance of the municipal bond market will continue in perpetuity. We believe this is about as likely as housing prices always going up. Yet in the municipal market, many believe, as they did with regard to RMBS and the housing market, “it can’t happen in the municipal sector”.

...complacency is the norm. There is a false sense of security that the strong past performance of the municipal bond market will continue in perpetuity. We believe this is about as likely as housing prices always going up.

THE THREE PILLARS WE COUNTED ON: RATING AGENCIES, BOND INSURERS AND REVENUE RAISING CAPABILITIES

Rating Agencies

Here’s how it was supposed to work: The rating agencies do their homework prior to a credit being issued and assign a rating. The market accepts the rating and prices the security accordingly. People seem to feel that the rating alone gives them sufficient comfort.

Bond Insurers

In many cases, that municipal security rated by the agencies was enhanced by a bond insurer. Indeed, at its peak, the bond insurers wrapped more than 60% of all new issues.⁴ The bond insurer, like the rater, also conducted its diligence and did its homework. Since the insurer put its capital behind the credit, they arguably did even more homework to ensure their comfort with the risk and security in the event the economic well-being of the issuer started to deteriorate. The raters and the market welcomed the wrap of the bond insurers – the agencies assigned the coveted triple-A rating to all bonds wrapped by a triple-A bond issuer and the market reaffirmed this, as evidenced by better pricing at the offering. So far, everyone seemed happy – the issuers, the insurer, the raters and the market.

Ability to Raise Revenue

Adding to the sense of security of municipal bond holders was the fundamental obligation of an issuer to raise revenues in order to pay its debts, whether through taxes, levies or other revenue sources. In the past, if you asked those holding municipal debt if they were concerned about an issuer making its interest payments the answer was "no". If the experts, the raters and the insurers are confident in the issuer's ability to find the funds to meet its debt obligations, why should we be concerned?

ALL THREE OF THE MUNICIPAL MARKET'S PILLARS ARE CRUMBLING

Unfortunately, none of the three pillars is performing as expected. *The Wall Street Journal* put it succinctly:

Timely information is important now more than ever. Bonds backed by insurance – often times with lofty ratings – aren't the norm anymore, with the financial crisis seeing the demise of many players in that business. The tough economy has also put pressure on the finances of many municipalities, who are being forced to make tough choices. All this makes the assessment of credit quality – how able municipalities are to repay debts – crucial.⁵

As recently as June 2010, Warren Buffet, referring to state and municipal finance, testified that there "will be a terrible problem" without help from the federal government.⁶ Given the outcome of the November 2010 elections, federal government assistance seems unlikely. Others have noted that the risk of municipal bond defaults is "higher than it's been in quite some time".⁷ These sentiments and concerns were echoed by Meredith Whitney in her report, "The Tragedy of Commons," in which she examined the states' spending, revenues and benefits programs. Whitney wrote, "[t]he states represent the new systemic risk to financial markets... I see a lack of transparency and an abundance of complacency on the part of investors and politicians, just as we saw before the banks imploded."⁸

The SEC has voiced similar concerns, noting that regulators and investors should have the information they need to evaluate municipal investments:

- "Is there too much dependence on ratings, rather than independent analysis, by municipal investors?"
- Does the lack of uniformity of municipal disclosure requirements contribute to lack of investor understanding?"⁹

"...[t]he states represent the new systemic risk to financial markets... I see a lack of transparency and an abundance of complacency on the part of investors and politicians, just as we saw before the banks imploded."

Meredith Whitney

The Agencies

Throughout the financial crisis, the credit rating agencies have come under increasing scrutiny, as have the standards, laws and regulations that require their use. The rating agencies – fairly or not – have been tarnished for "missing" the risks built up in banks and financial firms ahead of the 2007-2009 credit crisis that impacted global financial markets. This has led to the reassessment of the use and impact of credit ratings.

Senior management and boards of institutional investors have a responsibility to ensure that internal assessments of credit and other risk associated with their investments are being made ... and do not mechanistically rely on CRA ratings.¹⁰

The Financial Stability Board (FSB) recently stated that “uses of ratings that encourage reliance on credit rating agency ratings have reduced banks’, institutional investors’ and other market participants’ capacity for credit risk assessment in an undesirable way.”¹¹ There continues to be a call “to end mechanistic reliance by market participants and establish stronger internal credit risk assessment practices.”¹² This sentiment comes on the heels of the June 2010 hearing on the “Credibility of Credit Ratings, the Investment Decisions Made Based on Those Ratings, and the Financial Crisis” conducted by the Financial Crisis Inquiry Commission. At that hearing, Warren Buffet stated that he is a “big advocate of doing your own due diligence” and “in the end, we [Berkshire Hathaway] don’t use ratings.”¹³

[R]atings are no substitute for investment managers’ and institutional investors’ due diligence, including the assessment of credit and other risks.¹⁴

... Warren Buffet stated that he is a “big advocate of doing your own due diligence” and “in the end, we [Berkshire Hathaway] don’t use ratings.”

The sentiments of the FSB and the Financial Crisis Inquiry Commission are echoed by Standard & Poor’s on their website.

Key things you should know about credit ratings:

- **Credit ratings are opinions about relative credit risk.**
- **Credit ratings are not investment advice, or buy, hold or sell recommendations. They are just one factor investors may consider in making investment decisions.**
- **Credit ratings are not indications of the market liquidity of a debt security or its price in the secondary market.**
- **Credit ratings are not guarantees of credit quality or of future credit risk.**¹⁵

While the FSB and Financial Crisis Inquiry Commission each recognize that agencies can play a valuable role as a component of a firm’s credit assessment process, they make clear that ratings do not absolve a party from their responsibility to ensure that their credit exposures are based on sound judgment and assessments.¹⁶

The reality is that many of those that purchase the security never look at the issuer’s Official Statement, continuing disclosure or financials. It seems that a few folks engaged in this behavior when buying RMBS, CMBS, CDOs and other securities rated double or triple A at issuance. Commenting on the mortgage market, the Director of the Illinois Department of Insurance noted, “[a]s we’ve seen over the last two years, unexpected things can happen.”¹⁷ Sadly, we know how that story ends.

Confusion because of recalibrations: The major agencies have, in the midst of the worst economic downturn in memory, undertaken a wholesale recalibration (i.e., upgrade) of the municipal sector. This recalibration of ratings in the municipal market, welcomed by some, has significantly reduced differentiation and distinction among municipal issuers.

The major agencies have, in the midst of the worst economic downturn in memory, undertaken a wholesale recalibration (i.e., upgrade) of the municipal sector.

As many have argued for some time, the existence of comparable ratings across sectors allows investors to compare the credit risk of securities across different sectors, allowing them to consider discrepancies in the pricing of credit risk. At the same time, recalibration has caused confusion among some investors, as many municipal issues are “recalibrated” up the ratings scale at a time when the creditworthiness of municipalities is suffering more than it has in decades. The “grade inflation” that the agencies have created means that the historical measures of default risk applied to current ratings may be misleading and dangerous.

...recalibration has caused confusion among some investors, as many municipal issues are “recalibrated” up the ratings scale at a time when the creditworthiness of municipalities is suffering more than it has in decades. The “grade inflation” that the agencies have created means that the historical measures of default risk applied to current ratings may be misleading and dangerous.

According to *The Bond Buyer*, Fitch raised ratings on more than 38,000 municipal issues in April 2009 and raised the ratings on 40 states, DC, the Virgin Islands and Puerto Rico; Moody’s assigned higher ratings to 34 States and Puerto Rico.¹⁸ Both organizations suggested that the market not view these rating changes as upgrades but rather as calibrations to a new scale. Perhaps the alternative would have been to reassess corporate ratings as being too high.

While this recalibration may be welcome in some corners, some market participants, such as Warren Buffet, still don’t seem prepared to rely on the rating agencies:

“How would I rate State and major municipalities? I mean, if the federal government will step in to help them, they are AAA. If the federal government won’t step in to help them, who knows what they are? ...[I]f you’re looking now at something where you could look later on and say, ‘these ratings were crazy’ that would be the area.”¹⁹

With the outcome of the November 2010 elections and the apparent popular resistance to taxes and spending, it seems highly unlikely that the federal government will backstop municipalities.

The question of conflict of interest: The raters have also been subject to criticism because their business model requires that those they are rating pay for the rating. This too was a topic for the June Financial Crisis Inquiry Commission noted above. It was acknowledged by the commission as a potential conflict of interest.²⁰

How Often Do Agencies Revisit the Rating?

Once an issue is rated at the time of issuance, how often do the rating agencies revisit the credit or obligor? Each agency has its own approach: Fitch will review credits every six months (ratings watch, long-term B+ and below and short-term F2 and F3) to 24 months (A, AA and AAA rated issues), Moody’s reviews at least annually or possibly on a new sale or significant credit event and S&P reviews credits annually. Is that frequency sufficient in this economic environment and following the rating recalibration?

Even when (or is it “if”?) a credit or obligor is revisited, there is concern that the information being used is the same set of dated financial disclosures referenced below. As recently as November 2010, state insurance regulators quizzed the rating agencies to ascertain whether ratings reflected up-to-date information.²¹ Clearly, there is a need to better manage exposures and risk.

The Insurers

The first bond insurer, Ambac Assurance Corporation, was formed in 1971. It was joined by MBIA in 1973 and the industry blossomed from there with as many as eight participants at one time. As late as 2007, more than half of new issues were insured by the monoline bond insurers. However, with the financial crisis came the beginning of the demise of the insurers. Starting in late 2007 and culminating October 2010, the insurers all lost their triple-A rating. Now less than 10% of municipal new issuance carries bond insurance.²²

With the financial crisis came the beginning of the demise of the insurers. Starting in late 2007 and culminating October 2010, the insurers all lost their triple-A rating. Now less than 10% of municipal new issuance carries bond insurance.

In addition to insuring the underlying credit, the monolines played an important role in the market. They provided investors and analysts a level of comfort. The monolines, by putting their money where their mouth was, conducted credit analysis prior to wrapping a bond, and all maintained surveillance departments to monitor their insured portfolios. Investors paid for the insurance and accepted less yield in return for the guaranty of payment of principal and interest, as well as the comfort that someone was keeping an eye on the credit. These factors and the AAA ratings also produced enhanced liquidity in the market, particularly for smaller, less well-known issuers.

The decline in the availability and use of bond insurance means investors will have to focus on the underlying credit.²³ “Institutional investors can’t just rely on the bond insurers to provide an opinion.” According to Goldman Sachs Asset Management, “insurance wraps had effectively commoditized the marketplace, and their disappearance has brought volatility back. Volatility brings opportunities, but it also makes credit selection more critical to performance. Meticulous credit research... is going to be even more critical in the years ahead.”²⁴

The Ability to Raise Revenues: Dramatically Reduced

Today the ability of state and local governments to raise revenues is being severely challenged. Issuers who relied on the economic boost of rising property values, increased sales tax revenues and capital gains collections, have seen these revenues evaporate over the last two years. At the same time, budgets have been strained by increased needs for government services, rising public employee costs and high unemployment rates. At best, these factors limit the ability of issuers to easily raise cash; at worst, they have forced some issuers to choose between paying employees and paying debt, as we have seen in Harrisburg.

According to the National Bureau of Economic Research's Business Cycle Dating Committee, the "Great Recession" ended in the second quarter of 2009. While the recession has officially concluded, the data and national mood seem to indicate a severe hangover. Consider that unemployment remains stubbornly high, tax receipts are on the decline (with some suggesting that municipalities may not see pre-recession revenue until fiscal year 2013 or later), the housing market remains severely damaged (prices low and foreclosures high) and GDP growth is much lower than historical norms. Add to that the reality that many states are entering their third straight year of fiscal crisis and most "have used up the easier solutions to their budget problems."²⁵ Not exactly a rosy picture of an economy showing strong signs of recovery.

Now the unpleasant news for municipalities: it is widely accepted that the impact of economic ups and downs on municipalities trail the broader economy by 12-24 months. In other words, if the committee is correct regarding the end of the recession, perhaps the bottom was seen this summer or will be seen sometime soon. The economic hangover impacting the broader economy has the potential to linger at the state and local level for some time.

The November 2010 elections seem to indicate there is little tolerance for more government spending and tax increases. The elections also have shifted the stance of the White House and some Democrats toward favoring an extension of the Bush tax cuts.

The November 2010 elections seem to indicate there is little tolerance for more government spending and tax increases.

While nine states raised personal income taxes last year including California, Connecticut, New York and New Jersey,²⁶ the national mood with regard to spending, deficits and taxation seems to argue strongly against the prospect of tax increases in the near future.

That leaves reductions in spending as the main avenue for balancing state budgets. The raters and some investors recognize the "enormous fiscal stress" but have speculated that the states will make the tough decisions – raise taxes, make adjustments to pension plans for new hires and cut other spending.²⁷ Let's hope they are right and the fiscal smoke and mirrors budgets of years' past are not used to continue to mask the issue. Alternatively, investors may be surprised to see municipalities simply electing to forgo principal and interest payments on their debt in order to preserve cash flow for public service expenditures.

What remains of the security blanket that has provided real comfort to many with exposure to the municipal market? A rating structure that is calibrated higher than before the economic crisis, a lack of third party enhancement and governments handcuffed in their ability to meet debt service and their other obligations. In the face of this new reality, analysts and investors need to rethink the basis for their credit and trading decisions and how to best obtain the timely, accurate information that is critical to those decisions.

SIGNIFICANT PROBLEM: DISCLOSURE RULES

Full disclosure is the foundation of securities regulation in the US – “[i]nvestors may take risks, but the seller has the duty to disclose the facts necessary to analyze those risks.”²⁸ However, municipal securities are exempt from the registration and reporting requirements of the various securities acts. “[D]isclosure requirements in municipal-bond markets are looser than for private lending and the corporate debt markets, regulators say, meaning investors may not have as much information to judge the financial risk of a bond.”²⁹

Full disclosure is the foundation of securities regulation in the US...

However, municipal securities are exempt from the registration and reporting requirements of the various securities acts.

SEC Chairman Mary Schapiro offered the following remarks at the Investment Company Institute 2010 General Membership Meeting:

- I find it surprising that such an important and omnipresent sector of the capital markets is subject to such limited regulatory oversight.
- ...access to public markets should come with certain obligations and responsibilities. Investors who fund municipal growth and the taxpayers who pay the dividends, deserve disclosure and transparency that produces relevant, timely and accurate information.³⁰

Steps Toward “Full Disclosure”:

The Municipal Securities Rulemaking Board (“MSRB”), a self-regulatory body, was created in 1975. It has no authority over municipal governments and is prohibited from requiring state and local issuers to provide reports or other documentation.³¹

Rule 15c-12 of the Securities Exchange Act of 1934 went into effect in 1990. It does not regulate municipal issuers directly but requires securities dealers to obtain and review an official statement that includes pricing and similar information. Rule 15c-12 was amended in 1994 and again this year to provide for continuing disclosure which includes annual financial information and material event disclosure.³² While the rule was amended to require filing of material event information within 10 days of the event, the rule still does not include a deadline for submission of annual financial statements.

Chairman Schapiro’s speech is telling:

SEC rules require public companies to file audited annual financial statements within 60-90 days after the end of their fiscal year. But **state and local governments generally do not make their annual financial statements available for six or more months after their fiscal year ends**, because there is no requirement to move more rapidly. And **these financial statements are not always prepared according to generally accepted accounting standards.**³³ (Author’s emphasis).

A recent survey by Merrit Research Services found that audited financial statements of municipal bond issuers take about twice as long to reach investors (six months) as corporate borrowers (60 to 90 days).³⁴

“Critics say municipalities are so slow that the information is often stale and sometimes so outdated as to be useless.”³⁵ Even when municipalities do file audited financials, according to survey results published in the *Municipal Finance Journal*, “[t]here appears to be a significant decay curve for audited financial information.”³⁶ Robbins and Simonson surveyed members of the NFMA from April to July 2009 with 269 analysts completing the survey. The survey focused on, amongst other things, the ease of access to important information and how quickly financial statements lose their usefulness.³⁷

While more than 80% of the survey respondents found financial audits to rank in the top three pieces of information analysts need, only 63% said the audits were “always” or “almost always” available for existing bond issues. Those same financial statements were “completely useful” to about one-third of respondents for six months, with more than half of the respondents indicating that financial statements were no longer useful at all within 18 months of the close of the fiscal year.³⁸

A few additional sobering facts drive this point home. According to a DPCDATA study published in 2008:

- Across all bond classes, market sectors and issuer geographies, more than 50% of bonds outstanding for nine or more years have one or more years of disclosure delinquency, and more than 25 percent are in chronic delinquency, missing three or more years of disclosures.
- In 2006, bonds in disclosure delinquency represent[ed] more than \$348 billion in original – par amount.
- The likelihood of delinquency increases with the age of the issue.³⁹

Thus, absent meaningful legislation, Rule 15c-12 is, at best, the back-door mechanism for requiring some form of “full disclosure.”

DEFAULTS COULD BE PART OF THE NEW REALITY

Many view history as a great teacher, while others cast it aside as irrelevant in today’s world. In an era of “it can’t happen again” or “not in this market segment” – expressions heard in the MBS and CDO markets – perhaps history should be embraced.

At the peak of the Great Depression, there were 3,252 municipal bonds in default. Incredibly, roughly 47% of all defaulting issuers were rated AAA in 1929 and 78% were AA or better and more than 94% of the dollar value of the defaulted issues were AA or better.⁴⁰

Some recent data points to consider:

- **\$1.5 billion of municipal bonds (35 borrowers) defaulted in the first six months of 2010;**
- **\$6.9 billion of municipal bonds (194 borrowers) defaulted in 2009;**
- **\$8.2 billion of municipal bonds (162 borrowers) defaulted in 2008.**⁴¹

On the one hand, many have suggested that the worst is behind us or that the risk of municipal default is very low.⁴² The reliance is fueled, in part, by the belief that municipalities are so dependent on the capital markets that they will not default, although recent experience clearly contradicts this assumption. Others have suggested that the risk is diminished due to diverse revenue streams that help balance budgets.⁴³ But as noted above, the ability to tap those revenue streams by raising taxes or rates may be nearly impossible in today's environment.

Conversely, referring to the relative stability of the municipal markets in the years following the Great Depression, there is recognition that "investors are understandably concerned that history may not be the best guide for today's market environment."⁴⁴ This is supported by the reality that in the 1930s, almost all municipal bonds were General Obligation or essential purpose bonds, obligated by law to pay,⁴⁵ whereas today municipal debt includes non-essential purpose and not-for-profit credits. There is the reality that that outstanding debt is approximately \$2.8 trillion today, up from \$1.4 trillion in 2000, and state and local debt as a percentage of the US GDP has risen to an all-time high of 22% in 2010 from 15% with projections that it may well reach 24% by 2012.⁴⁶ Add to that the expectation of continued pressure on municipal revenues (tax receipts, aid from the federal government, etc.), and it's hard to avoid concern. Finally, for those that believe General Obligation bonds are safe, in 2009 there were two defaults on GO debt – Jefferson County, Alabama, and Sierra Kings Health Care District, California.⁴⁷

While some have expressed confidence that states will do what they need to balance their budgets and make debt payments, those same people are skeptical about bonds backed by enterprise projects that qualify and are viewed as municipal debt.⁴⁸ Without the homogeneity provided by insurers, it has become clear that each municipal bond is not like the others, with revenue pledges that run the gamut from golf course revenues to property tax increments generated by the rising values of airport landing fees, all of which may behave differently in the future. The question becomes: Which one of these investors will be left without a chair when the music stops?

We are suggesting that there are reasons to contemplate the reality of defaults – existing debt, pension and other post-employment benefit obligations, shrinking tax receipts and federal government support, aged infrastructure and an economy that is, at best, sputtering.

...reasons to contemplate the reality of defaults – existing debt, pension and other post-employment benefit obligations, shrinking tax receipts and federal government support, aged infrastructure and an economy that is, at best, sputtering.

WHAT'S A MUNICIPAL BOND INVESTOR OR RISK MANAGER TO DO? KNOW EVERYTHING – AND THEN SOME – ABOUT THE UNDERLYING CREDIT OF THE ISSUER

The bottom line – those with risk to public finance credits, including "[i]nvestors in municipal securities need to engage in a thorough evaluation of those securities' risk, credit, and relative value – from the securities' issuance until their maturity."⁴⁹

Since the security blanket is not what it once was, we argue that investors have to significantly increase their focus on the underlying credit of the issuer. Even if new regulation or authoritative guidance were to be established, requiring reporting and timely disclosure of financial information (think standardized official statements and reporting based on mandated uniform accounting standards), the reality is that we must look beyond financials and ratings. Instead, we must turn to economic and demographic data that can help foretell critical drivers of credit health and augment financial disclosures even when timely. We agree with Goldman Sachs Asset Management, that fastidious “credit research... is going to be even more critical in the years ahead.”⁵⁰

...we must look beyond financials and ratings. Instead, we must turn to economic and demographic data that can help foretell critical drivers of credit health and augment financial disclosures even when timely.

We believe **credit research needs to incorporate meaningful demographic and economic information that may be the best predictors of tax base, tax rolls, tax receipts and the best indicators of government spending. This requires enhancing existing approaches and developing new, more meaningful, credit metrics.** Moreover, we argue that a comprehensive and timely review of meaningful data (when it is released) is critical to any ongoing credit and risk management process. This will provide a better way to assess credit risk and understand and monitor concentrations – a critical need for both credit and event risk evaluation.

Broadly speaking, the categories of potentially relevant data are: Commerce, Crime, Education, Housing, Income, Pension, Politics, Population, Tax Rates/Receipts and Unemployment or Employment. Relevant data points (numerous within each group) need to be meaningfully assessed on a frequent basis. Of course, the amount of this economic and demographic data is voluminous, and the data points are almost too numerous to count. The data come from a multitude of sources at varying intervals (weekly, monthly, quarterly and annually). Reports are, at times, not terribly user friendly. Accordingly, the person responsible for assessing credit risk needs resources to manage these many data points.

The use of this kind of data will allow the analyst and the market to make better and more timely relative value determinations, based on current information that the analyst or investor believes is essential in assessing credit, tax receipts, liabilities and spending – the factors that ultimately drive the economic well-being of a municipality. **Measuring and managing these credit metrics and risk concentrations against relevant indices to evaluate performance and market risk measures is critical: This is the next evolutionary step in municipal portfolio management.** It will allow those responsible for managing the portfolios, credits or other municipal exposures to understand the credit of the issuer at every step along the way (credit selection, credit monitoring and sell vs. hold decisions), to capitalize on hidden opportunities in the market, and to demonstrate to investors and risk managers the value provided by their robust and timely analysis.

About Gregg Bienstock

Gregg L. Bienstock is one of the founding Members of Lumesis LLC. Immediately prior to co-founding Lumesis, Mr. Bienstock was the Chief Operating Officer and General Counsel of RangeMark Financial Services. Prior to joining RangeMark, he spent more than thirteen years with Ambac Financial Group. For most of his last two years, he was responsible for Strategic Initiatives where he led efforts to evaluate new business opportunities and co-led acquisition and joint venture teams. During his Ambac tenure, Mr. Bienstock rose to the level of Senior Vice President, Chief Administrative Officer and Employment Counsel and was responsible for the management of the global Technology, Employment Law, Corporate Governance and Compliance, ERISA, Human Resources, Marketing and Administration functions. Prior to joining Ambac, he served as a Director of Human Resources for Bristol-Myers Squibb. From 1993 through February 1996, he was an associate in the Labor and Employment Law Department of Proskauer Rose, LLP and from 1992 through September 1993 he was an Assistant Deputy General Counsel for the Mayor's Office of Labor Relations for the City of New York.

Mr. Bienstock is a 1991 graduate of Brooklyn Law School. He received his B.S. in Business and Economics from the University of Maryland. Mr. Bienstock serves as a member of the Board of Directors of The Children's Village, leads a fund-raising initiative ("Tri-ing for CV") for the Children's Village and is an amateur triathlete.

About Lumesis

Lumesis (<http://www.lumesis.com>) is an analytical software firm dedicated to analyzing demographic and economic data in the United States and its territories. Lumesis currently provides Demographic Information Visualization for Economic Research (DIVER), an off-the-shelf analytical platform primarily for investors in municipal debt. Lumesis is dedicated to delivering timely data and robust analytical tools for domestic entities with analytical needs. Lumesis provides relevant and timely data and analytical tools that enrich analysis and decision-making. Lumesis' analytic tools are used by analysts, portfolio managers, risk managers, investment bankers, government stakeholders, academics and other professionals.

About DIVER

Lumesis has developed a proprietary credit analytical tool, Demographic Information Visualization for Economic Research (DIVER), for the fixed income municipal market. The DIVER platform encourages a new approach to municipal credit evaluation which uses demographic and economic information as leading indicators of tax rolls, receipts and expenditures in order to evaluate a municipal issuer's ability to meet its capital markets obligations. DIVER brings together more than 90 data sets (ever-expanding) and allows the user to utilize various tools to analyze municipalities. DIVER also allows portfolio managers to evaluate issuer and regional risk concentrations as well as a portfolio's exposure to areas with favorable or unfavorable demographic and economic characteristics. DIVER, as a new technology, has used state of the art, open source tools to create its platform.

Footnotes:

1. Shapiro, *Speech by SEC Chairman: Remarks at Investment Company Institute 2010 General Membership Meeting*, 5/7/10, Washington, D.C.
2. Financial Crisis Inquiry Commission, *Hearing on "Credibility of Credit Ratings, the Investment Decisions Made Based on Those Ratings, and the Financial Crisis,"* New York, NY, 6/2/10.
3. The NFMA is the National Federation of Municipal Analysts, a nonprofit organization chartered in 1983. The NFMA goals include "promoting professionalism in municipal credit analysis and furthering the skill level of [its] members ... through educational programs and industry communication, providing an informed perspective on legal and regulatory matters relating to the municipal finance industry, and by facilitating the flow of information between investors and issuing entities.
4. Neumann, *Ratings Questions Raised by Stale Data*, The Wall Street Journal, 11/18/10.
5. Neumann, *Bond Insurers Lose Last AAA-Rated Player*, The Wall Street Journal, 10/26/10.
6. Pope. *Making Good Disclosure: The Role and Responsibilities of State and Local Officials Under Federal Securities Laws*, Chicago, Ill.; Government Finance Officers Association, 2001.
7. *When Muni Bonds Go Private*, The Wall Street Journal, 10/25/10.
8. Schapiro, *Speech by SEC Chairman: Remarks at Investment Company Institute 2010 General Membership Meeting*, 5/7/10, Washington, D.C.
9. U.S. Securities and Exchange Commission, Division of Market Regulation. *Staff Report on the Municipal Securities Market*. September 1993.
10. The list of 14 material events are set forth in 17 CFR Part 240. Amendments approved by the SEC on May 26, 2010 are effective December 1, 2010 and applicable to bonds issued on and after that date (with some exceptions).
11. Shapiro, *Speech by SEC Chairman: Remarks at Investment Company Institute 2010 General Membership Meeting*, 5/7/10, Washington, D.C.
12. Nolan, *Muni Issuers Are Slow on Audits, Study Finds*, The Wall Street Journal, 11/1/10.
13. Ibid.
14. Robbins and Simonson, *Quality and Relevance of Municipal Bond Disclosure*. Municipal Finance Journal, Volume 31, No. 01, Spring 2010.
15. Ibid.
16. Ibid.
17. Schmidt, *Estimating Municipal Securities Continuing Disclosure Compliance: A Litmus Test Approach*, DPCDATA, Fort Lee, NJ, 2008.
18. Nolan, *Muni Issuers Are Slow on Audits, Study Finds*, The Wall Street Journal, 11/1/10.
19. Financial Crisis Inquiry Commission, *Hearing on "Credibility of Credit Ratings, the Investment Decisions Made Based on Those Ratings, and the Financial Crisis,"* New York, NY, 6/2/10.
20. Collins, *Defaults Signal Bursting Muni Junk Bubble After Surge*, Bloomberg.com, 3/10/10. Quoting Gary Pollack, Managing Director of Fixed Income for Deutsche Bank AG's Private Wealth Management unit in New York.

21. Tully, *Meredith Whitney's new target: The States*, Fortune.com, 9/28/10
22. Shapiro, *Speech by SEC Chairman: Remarks at Investment Company Institute 2010 General Membership Meeting*, 5/7/10, Washington, D.C.
23. Financial Stability Board, *Principles for Reducing Reliance on CRA Ratings*, 10/27/10.
24. Ibid.
25. Ibid.
26. Financial Crisis Inquiry Commission, *Hearing on "Credibility of Credit Ratings, the Investment Decisions Made Based on Those Ratings, and the Financial Crisis,"* New York, NY, 6/2/10.
27. Financial Stability Board, *Principles for Reducing Reliance on CRA Ratings*, 10/27/10.
28. *Guide to Credit Rating Essentials*, Standard & Poor's, www.standardandpoors.com, 2009.
29. Financial Crisis Inquiry Commission, *Hearing on "Credibility of Credit Ratings, the Investment Decisions Made Based on Those Ratings, and the Financial Crisis,"* New York, NY, 6/2/10; Financial Stability Board, *Principles for Reducing Reliance on CRA Ratings*, 10/27/10.
30. Seymore, *Fitch Recalibrates 38,000-Plus Ratings*, The Bond Buyer, 4/6/10. *Moody's Lifts Up 34 States*, The Bond Buyer, 4/20/10.
31. Financial Crisis Inquiry Commission, *Hearing on "Credibility of Credit Ratings, the Investment Decisions Made Based on Those Ratings, and the Financial Crisis,"* New York, NY, 6/2/10.
32. Ibid.
33. Neumann, *Ratings Questions Raised by Stale Data*, The Wall Street Journal, 11/18/10.
34. Neumann, *Bond Insurers Lose Last AAA-Rated Player*, The Wall Street Journal, 10/26/10.
35. Ibid, quoting Bill Bonawitz, Senior Municipal Bond Analyst at PNC Capital Advisors.
36. Alter and Barber, *Municipal Bonds Outlook for 2010*, Global Fixed Income Market Insights, Goldman Sachs Asset Management, February 2010.
37. Simon and Woo, *Fiscal Reality to Hit Quickly for New Governors*, The Wall Street Journal, 11/4/10.
38. The Tax Foundation, www.taxfoundation.org
39. Rosenberg, Neumann, Aneiro, *Heat Stays on California \$10 Billion Note Offering*, The Wall Street Journal
40. Ciccarone, *"Been There, Done That" Municipal Bond Ratings and the Move to Restructure the Rating Scale*, Fixed Income Insight, 4/14/08 citing Hempel, *The Postwar Quality of Municipal Bonds* (unpublished dissertation) Ann Arbor, Michigan, University of Michigan, 1964.
41. Preston, *Municipal Bond Defaults at Triple the Typical Rate, Lehman Says*, Bloomberg, citing Distressed Debt Securities Newsletter, 7/16/10.
42. *Municipal Industry Professionals Expect Long Road to Recovery for State and Local Government Revenues: RBC Study*, Royal Bank of Canada, 10/29/10.
43. Alter and Barber, *Municipal Bonds Outlook for 2010*, Global Fixed Income Market Insights, Goldman Sachs Asset Management, February 2010.
44. Ibid.
45. Lebenthal, *Lebenthal on Munis*, Morgan Publishing, 2009.
46. Malanga, *America's Municipal Debt Racket*, The Wall Street Journal, 6/14/10.
47. Moody's, *U.S. Municipal Bond Defaults and Recoveries 1970-2009*, 2/2010.
48. Rosenberg, Neumann, Aneiro, *Heat Stays on California \$10 Billion Note Offering*, The Wall Street Journal
49. Schapiro, *Speech by SEC Chairman: Remarks at Investment Company Institute 2010 General Membership Meeting*, 5/7/10, Washington, D.C.
50. Alter and Barber, *Municipal Bonds Outlook for 2010*, Global Fixed Income Market Insights, Goldman Sachs Asset Management, February 2010.