



CDIAC

CALIFORNIA
DEBT AND
INVESTMENT
ADVISORY
COMMISSION

14TH Annual Pre-Conference at
The Bond Buyer's 25TH Annual
California Public Finance Conference

Electronic Trading: Market Efficiency and Why It Matters to Issuers

OCTOBER 21, 2015

SAN FRANCISCO, CA



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OPENING STATEMENTS

WHY LIQUIDITY IN THE MUNICIPAL MARKET WILL SOON IMPROVE

LAWRENCE E. HARRIS PH.D

FRED V. KEENAN CHAIR IN FINANCE,
MARSHALL SCHOOL OF BUSINESS,
UNIVERSITY OF SOUTHERN CALIFORNIA,
AND PAST CHIEF ECONOMIST 2002,
SECURITIES AND EXCHANGE COMMISSION



Why Liquidity in the Municipal Market Will Soon Improve

Larry Harris, Ph.D., CFA

Fred Keenan Chair in Finance,
USC Marshall School of Business

CDIAC Pre-Conference

San Francisco, October 21, 2015

The Municipal Securities Market



- Responsible for funding many essential government projects and activities.
 - Schools, hospitals, utilities, roads and more
- About 1.5M securities (many issuers, many of which often must make serial offerings)
- Securities often are complex with sinking funds and various options.
- Disclosure by issuers is limited in comparison to corporate disclosure. (Tower Amendment)



Secondary Trading in Munis

- Munis mostly trade OTC through dealers in a decentralized market.
 - Dealers and some larger institutions have access to various electronic trading platforms collectively known as ATS (Alternative Trading Systems).
- Tax preferences and the huge number of issues fragment the market.
 - Buyers and sellers rarely are at the same place and time.



Transparency

- Issuers have limited financial and risk disclosure requirements at registration and during the life of the issue.
- Essentially no pre-trade transparency.
 - No NBBO and thus no trade through rules
- Many traders cannot readily access or analyze post-trade prices.
 - EMMA Price Discovery Tool helps some.



Secondary Transaction Costs

- Secondary transaction costs are very high, especially for retail traders.
 - OTC market structure
 - Huge number of issues
 - Fragmentation across states
- Roundtrip transaction costs generally consume many months of accrued interest.
- Many retail investors buy funds to partially avoid transaction costs.



Agenda

Provide four suggestions to improve municipal bond market liquidity.

- Remember that liquidity makes bond issues more attractive to investors.
- Increasing bond market liquidity will increase sales prices and thus lower funding costs.



The Four Suggestions

1. Improve pre-trade transparency.
2. Issue simpler bonds.
3. Issue fewer bonds.
4. Improve financial and risk disclosure.



1. Improve Pre-trade Transparency

Disseminate an NBBO for Munis



- Several electronic markets are now aggregating electronic actionable quotes for many municipal securities.
- Most customers do not see these prices.
- **Proposal 1.A**
A National Best Bid or Offer (NBBO) should be aggregated and disseminated to bond customers.



My Corporate Bond Evidence

- Interactive Brokers collects and produces a private NBBO for corporates and munis.
- I compared TRACE trade prices to the NBBO.
 - 46% of trades trade through a better electronic price.
 - About 40% of these trade throughs are riskless principal trades—essentially agency trades.
 - The markups dwarf normal commissions.
 - Transaction costs are huge.



Objections

- Too many munis would make computing and disseminating the NBBO unwieldy.
 - But much less so than the NBBOs that equity options markets currently disseminate.
- Dealers would be harmed if forced to quote continuously.
 - Why force them? Dealers need not quote. But those that do not will probably garner more order flow than those that do.



Order Display Facilities (ODFs)

- **Proposal 1.B:**

The MSRB and SEC should mandate that brokers post all customer limit orders in an electronically accessible order display facility.

- Best execution standards (and the Manning Ruling) will prevent dealers from trading through these prices.

- They will have to match the prices or fill these orders.



More about ODFs

- Access to customer orders will allow any dealer or buy-side trader to fill an order.
- Similar order handling rules in the equity markets vastly improved those markets.
 - Consider the evolution of NASDAQ.

The Dealer Response to ODFs



**Western Civilization as we know it
will end!**



The Dealer Argument

- Dealer profits will fall.
- Dealers will withdraw.
- Liquidity and markets will dry up.
- Municipal funding costs will skyrocket.



The Truth About ODFs

- The existence of one or more ODFs whose prices constrain trades will indeed decrease dealer profits, and they will withdraw.
- But only because buy-side traders will be able to effectively offer liquidity to each other.
- Cutting out the middleman saves costs.
- Volumes will increase as liquidity increases.
- Funding costs will decline.

Can We Live with Fewer Dealers?



- Yes, if they are displaced because other traders provide their services at lower costs.
- What about during market crises?
 - Markets always exist at some price.
 - In extremis, most dealers disappear anyway.
- Electronic dealers who provide better service at lower cost will replace traditional dealers.



2. Issue Simple Bonds



Complexity Hurts Liquidity

- Municipal bonds often have bells and whistles attached that make pricing them difficult.
 - Various options and funding features are common.
- These features favor well-informed traders (investment banks and hedge funds) and hurt retail and most buy-side traders.
- Investment bankers claim that these features lower funding costs, but empirical evidence shows that they increase transaction costs.



Proposals

- **Proposal 2.A**

To the extent that laws permit, issuers should issue simple bonds.

- **Proposal 2.B**

Legislatures should make it easier for municipalities to issue straight bonds.

- The devil is in the detail. Some complexity is due to concerns about the misuse of funds and to a lesser extent taxes.



3. Issue Fewer Bonds



Too Many Securities

- Markets are most liquid when many buyers and sellers are interested in the same bond issue.
- Too many issues divide markets so that buyers and sellers in different issues cannot trade with each other, even when the issues are excellent substitutes for each other.
- Researching small issues is very expensive.



State Bond Banks

- **Proposal 3.A:**
States should form bond banks similar to the Indiana Bond Bank.
 - But with broader scope.
- The Riverside County Mosquito Abatement District should not be going directly to the markets with a \$750,000 bond issue.



Standard Bonds

- **Proposal 3.B**

All issuers should issue just a few standard bonds.

- Short, middle and long-term

- Reissue seasoned bonds to raise new funds.
- Refund maturing bonds by buying them in the open market to prevent liquidity crunches.
- The devil will be in the details, but the benefits are large.



4. Improve Financial and Risk Disclosure



Financial and Risk Disclosure

- Many municipal securities have essentially no credit risk, but some are quite risky.
- Investors must identify which securities are risky, and how risky those securities are.
- Risk averse investors pay less for securities that scare them.
 - They discount risky securities and also securities for which they are uncertain about risk.



Improved Disclosure

- **Proposal 4.A**

Congress should repeal the Tower Amendment.

- **Proposal 4.B**

The MSRB and the SEC should promulgate and enforce disclosure standards that would lower the costs of identifying risk.

- The standards should be uniform across states but could vary by type of issuer.
- Issuing securities through state bond banks would greatly reduce these disclosure costs.



Conclusion



A Telling Observation

- Exchange-listed bond trading was quite liquid in municipal bonds before the late 1920s and in corporate bonds before the mid 1940s.
- Transaction costs then were substantially lower than they are now.
 - See Biais and Green (2007).



Another Telling Observation

- Practitioners recognize that bonds represent interest risk plus some credit risk.
- Pure interest risk trades in highly liquid and transparent Treasury and futures markets.
- Pure corporate credit risk trades in highly liquid and transparent stock markets.
 - Muni credit risks generally are much lower.
- Why should the combination trade in opaque dealer markets?



The Long-View Perspective

- Bond markets are increasingly electronic, but the benefits primarily are going to dealers.
- Small changes by the MSRB and SEC can push bond markets into the 21st Century.
 - Dealers won't support pre-trade transparency—
They make more money in opaque markets.
 - Brokers won't support ODFs unless required—
They get too much payment for order flow.
 - But investors will benefit, and they will pay more for their bonds when first issued.



What You Can Do

- Nudge the MSRB and SEC to promote pre-trade transparency.
- Help your states and municipalities to
 1. Form state bond banks
 2. Issue (and reissue) just a few simple straight bonds.
- Encourage Congress to repeal or relax the Tower Amendment.



The Pre-conference Agenda

Five Sessions Explore Electronic
Trading



The Five Sessions

1. How do the muni markets trade today?
2. What potential benefits can electronic trading produce?
3. How do current regulations impede electronic trading?

Luncheon address by Honorable John Chiang,
California State Treasurer

4. What are ATSs now doing?
5. What can issuers do?



Some Further Reading

- “The Structure of Trading in Bond Markets”
 - Financial Economists Roundtable, May 2015.
- “Secondary Trading Costs in the Municipal Bond Market”
 - Lawrence Harris, and Michael Piwowar, *Journal of Finance* 61(3), June 2006.
- “Financial Intermediation and the Costs of Trading in an Opaque Market”
 - Richard Green, Burton Hollifield, and Norman Schürhoff, *Review of Financial Studies* 20 (2), 2007.



More Reading

- “Transaction Costs, Trade Throughs, and Riskless Principal Trades in Corporate Bond Markets”
 - Larry Harris, USC working paper, October 2015.
- “The Microstructure of the Bond Market in the 20th Century”
 - Bruno Biais and Richard Green, Carnegie Mellon University working paper, August 2007.



Q and A, time permitting

SESSION ONE

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EXAMINING BOND TRADING TODAY: ADDRESSING TRANSPARENCY, EFFICIENCY AND FAIRNESS

B.J (JOHAN) ROSENBERG

CHAIRMAN AND FOUNDER,
BLUE ROSE CAPITAL ADVISORS

BENJAMIN E. STERN

MANAGING DIRECTOR, PUBLIC FINANCE,
STIFEL, NICOLAUS & COMPANY, INC.

HOWARD SALEND

SENIOR VICE PRESIDENT,
MUNICIPAL BOND TRADING,
FIDELITY CAPITAL MARKETS

NICK GOETZE

MANAGING DIRECTOR,
HEAD OF FIXED INCOME SERVICES GROUP,
RAYMOND JAMES

MORNING BREAK

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WE WILL RECONVENE FOR SESSION TWO AT 10:15 AM

UPCOMING CDIAC WEBINAR:

**POST-MUNICIPALITIES CONTINUING DISCLOSURE COOPERATION (MCDC)
INITIATIVE: WHAT DID WE LEARN AS ISSUERS?**

DECEMBER 9, 2015

10:00 AM – 11:45 AM PT

MORE INFORMATION: WWW.TREASURER.CA.GOV/CDIAC

SESSION TWO

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**CALIFORNIA
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COMMISSION**

THE POTENTIAL BENEFITS OF AN EXCHANGE PLATFORM

ANANTH MADHAVAN, PH.D.

MANAGING DIRECTOR,
GLOBAL HEAD OF RESEARCH,
ISHARES BY BLACKROCK

PINKY KOTTOOR

DIRECTOR, MUNICIPAL SECURITIES CAPITAL
MARKETS DIVISION,
CITI

JUSTIN MARLOWE PH.D.

ENDOWED PROFESSOR OF PUBLIC FINANCE,
EVANS SCHOOL OF PUBLIC POLICY AND
GOVERNANCE,
UNIVERSITY OF WASHINGTON



Presentation to CDIAC Pre-Conference: Fixed Income Market Structure

**Ananth Madhavan
Managing Director, BlackRock**

October 21, 2015

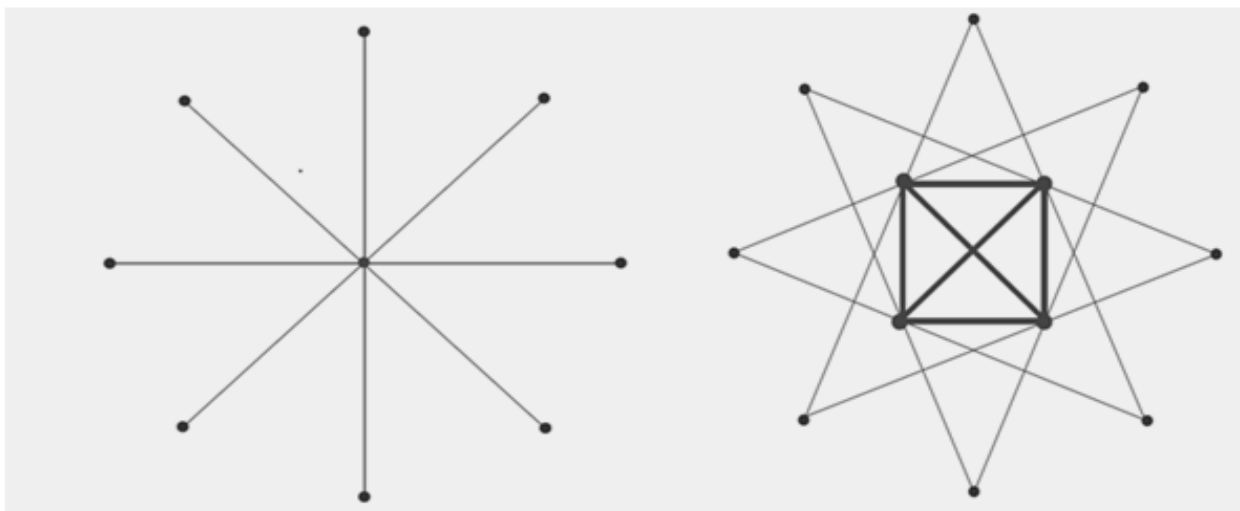
Market Structure and Bond Valuation

How does the underlying market structure affect issuers?

- ▶ More liquid, transparent secondary markets creates value for buyers → Higher prices for issuers

Centralized vs. Over-the-Counter Trading Paradigms

- ▶ Equity markets are generally centralized, transparent and liquid
- ▶ Most bond markets are OTC; opaque, dealerized, with relatively low liquidity and high spreads
- ▶ Asset proliferation is the critical element: Unlike equities, where there may be only one share class of a particular stock there may be multiple bonds by the same issuer with different coupons, maturities and call features. For example, General Electric has 905 different bond issues as of September 30, 2014 but only one US-listed common stock (GE), based on data from Bloomberg



For illustrative purposes only

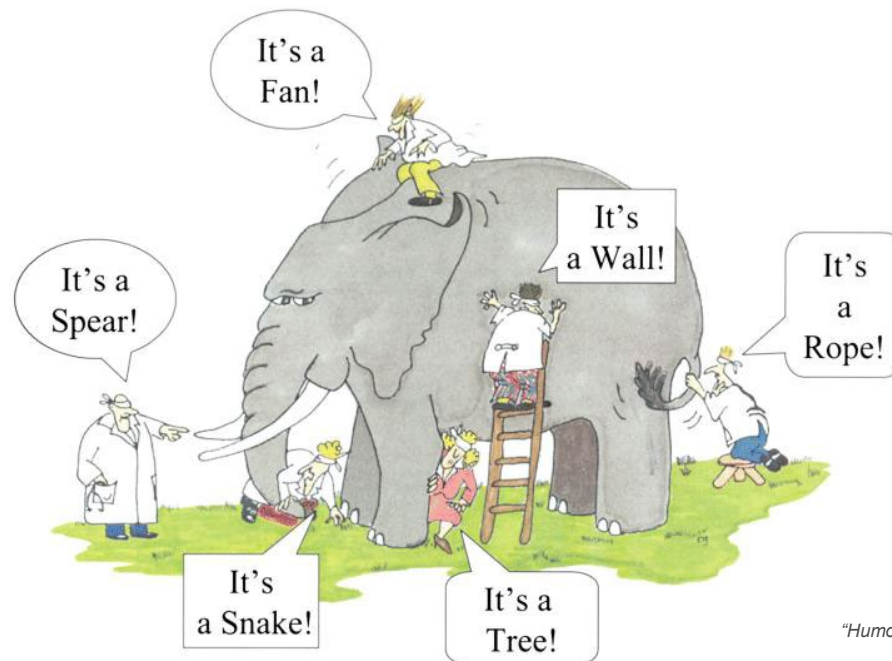
Defining Liquidity

Definitions of Liquidity vary considerably

- ▶ Liquidity as amount of turnover
- ▶ Liquidity means that trading volume (or order flow) doesn't move prices very much
- ▶ Liquidity measures the extent to which trade prices do not revert the following day

All of these approaches to analyzing and thinking about liquidity typically lead to similar conclusions

- ▶ Broadly defined, liquidity is a function of investor confidence in the market and conviction to trade at the quoted price

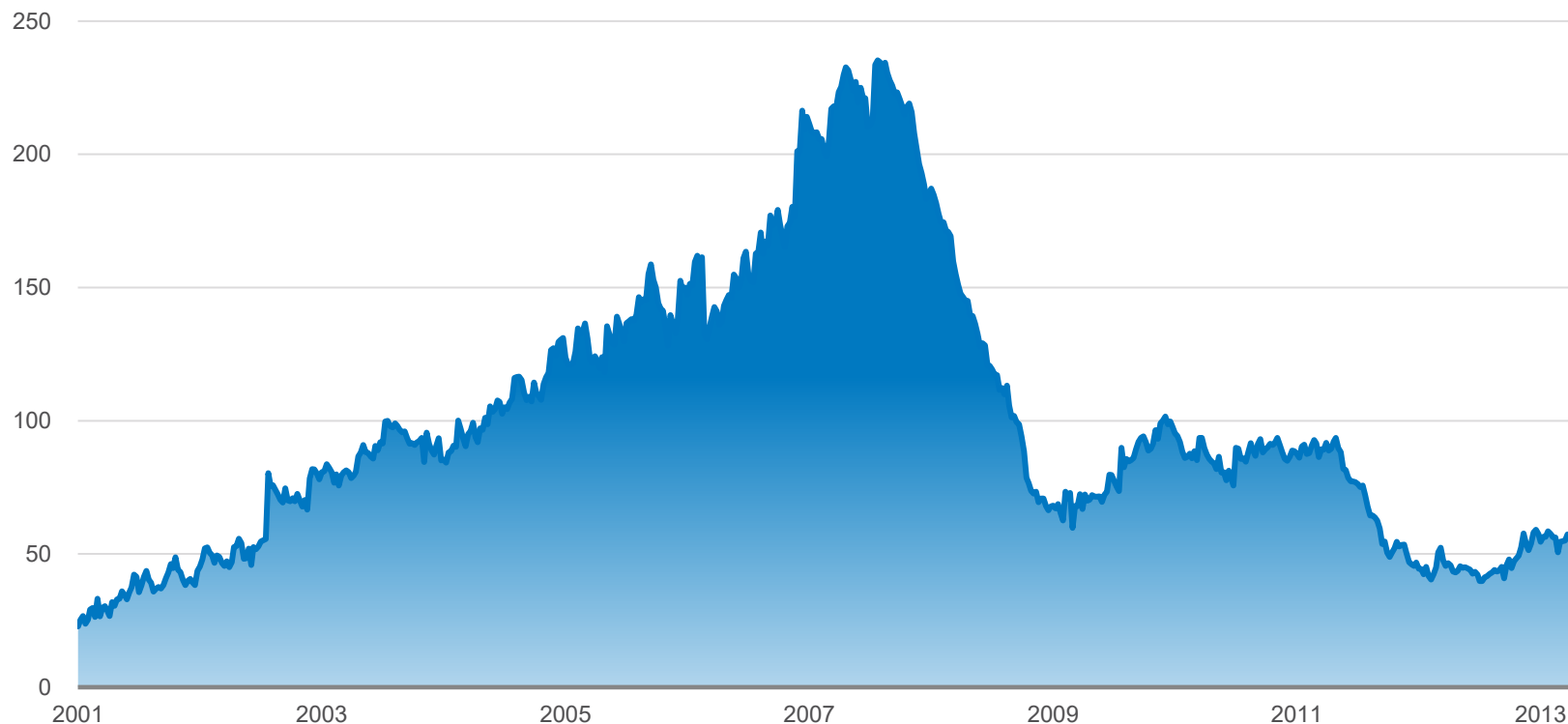


"Humor" sourced from Ron Kahn

Post-Crisis Regulatory Regime Pressuring Fixed Income Liquidity

Regulations pressure Dealer Balance Sheet Capacity

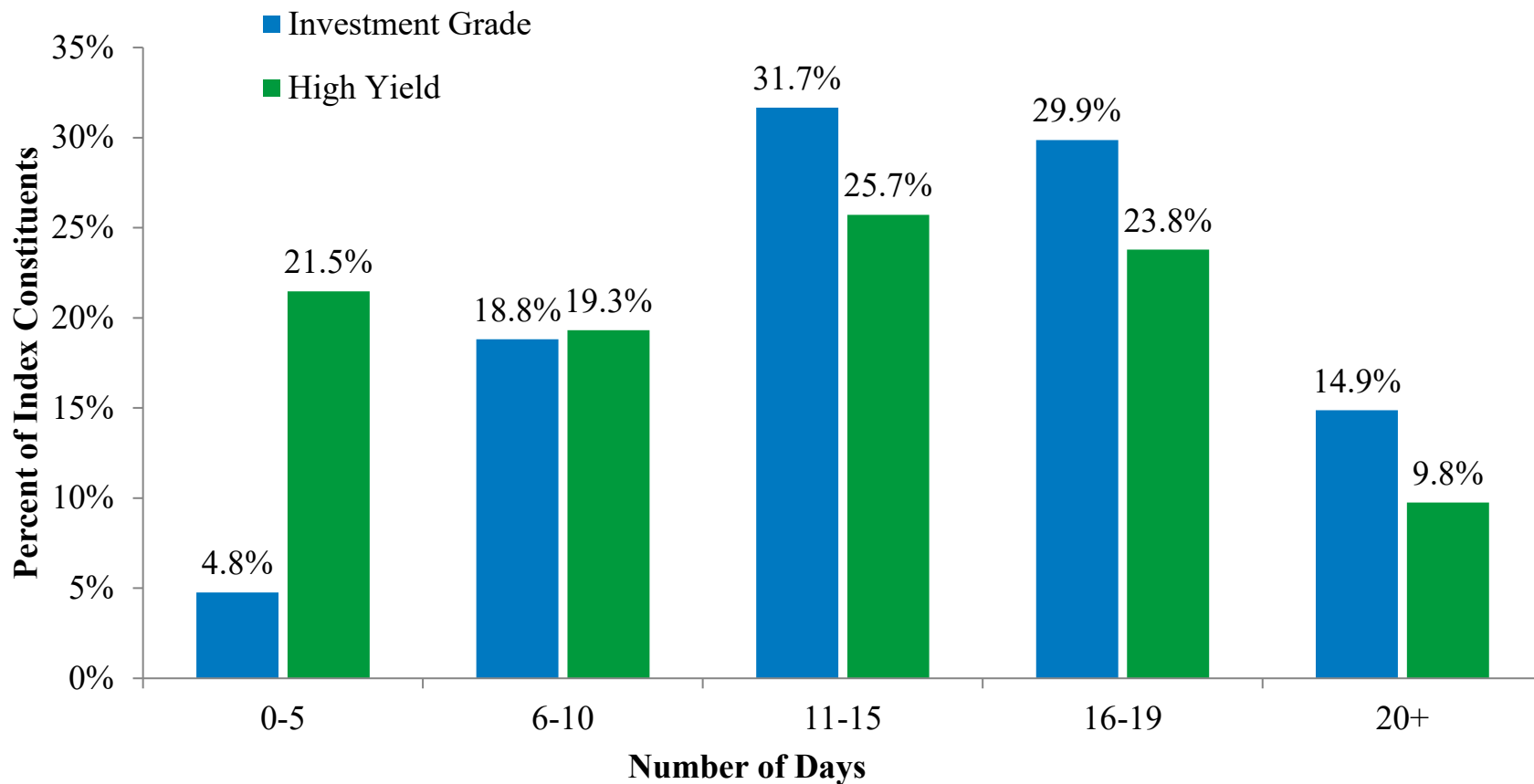
Value of Fixed Income Dealer Inventory (US Billions)



Source: Federal Reserve, 2014

Most Bonds Trade Infrequently, a Reflection of Low Liquidity

Frequency of Bond Trades: 2014 Monthly Average

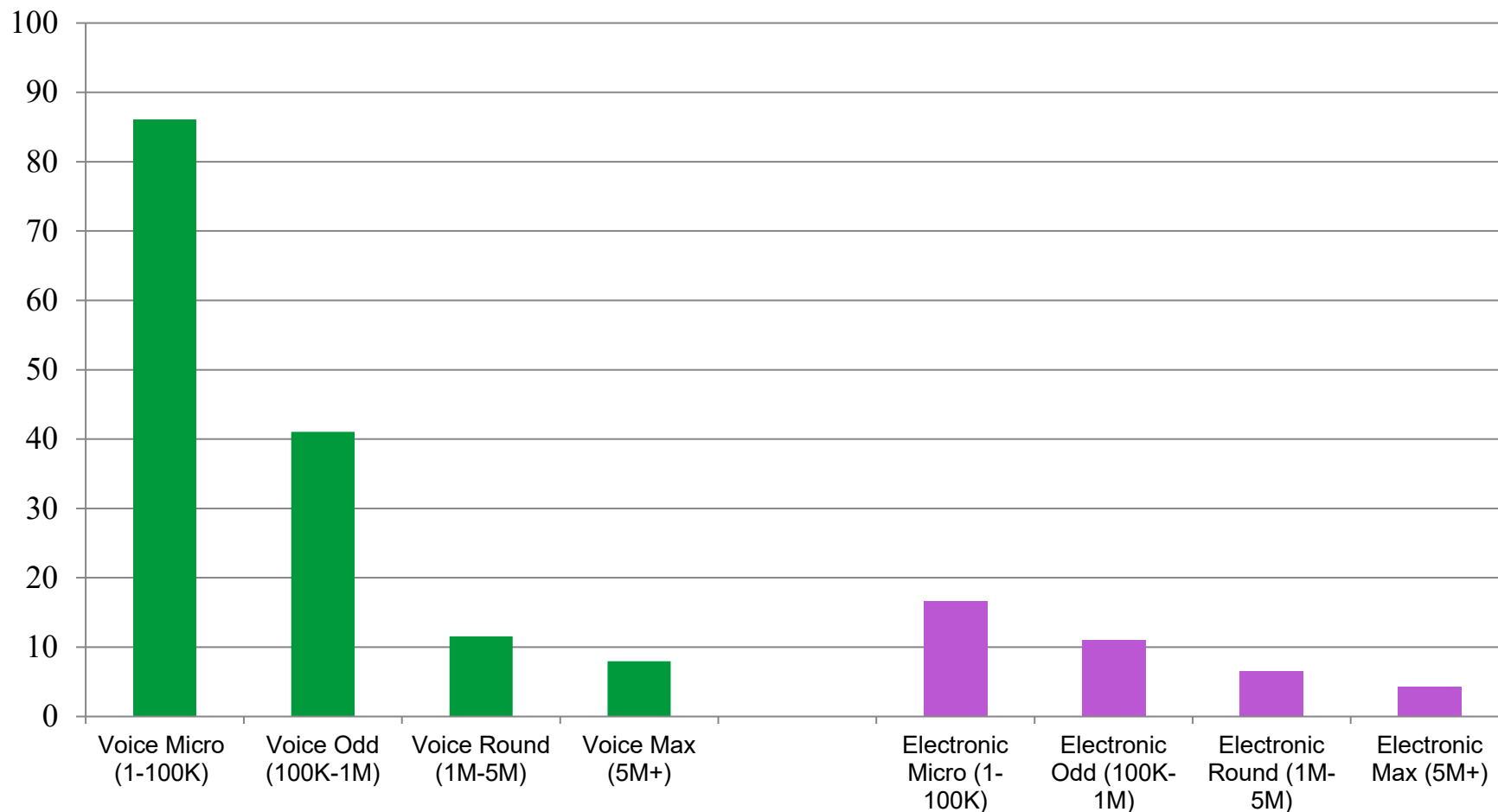


Source: BlackRock, based on TRACE and Bloomberg data, 2014.

The respective indexes are the Markit iBoxx USD Liquid Investment Grade Index and the Markit iBoxx USD Liquid High Yield Index

Bond Trading Costs have been Higher in OTC Markets Than Electronic Markets

Investment Grade Bond Trading Costs in Basis Points



Source: Hendershott and Madhavan, *Click or Call?*, Journal of Finance Vol. 70, Issue 1, January 19, 2015.

Using data for all 4.6 million corporate bond transactions in U.S. corporate bonds from January 2010 through April 2011.

Fixed Income Markets Undergoing a Structural, Not Cyclical, Change

Spreads have declined since the crisis but remain elevated relative to pre-crisis levels

- ▶ However, market shallowness with absence of B-D liquidity backstop could pressure spreads in a dislocation

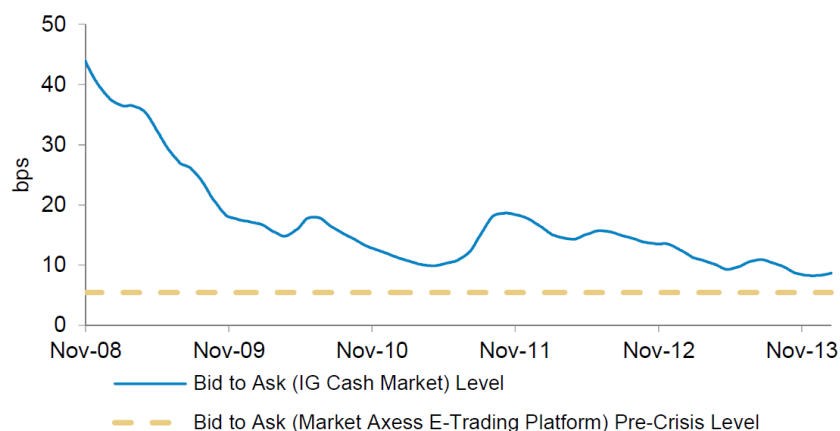
Electronic trading platforms have emerged to aggregate liquidity

- ▶ Though majority of corporate bond trading still occurs via phone, institutional clients now have access to additional liquidity sources
- ▶ Electronic venues provide a means for increased client-to-client matching of flow

Nonetheless, corporate bond e-trading is still dealer-centric and in its nascent stages

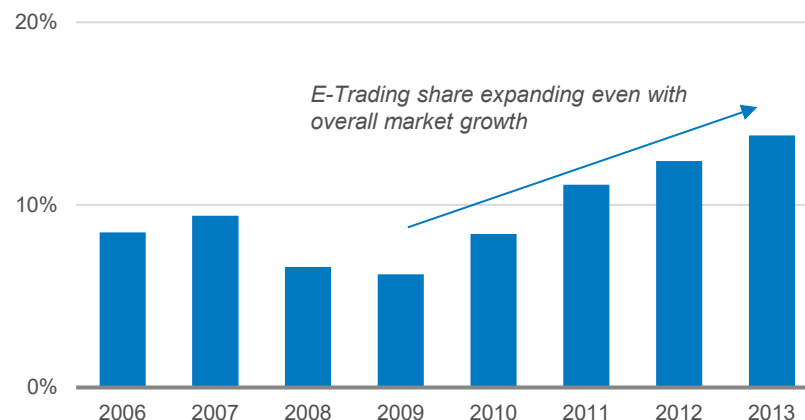
Corporate bond trading in the secondary market may be enhanced via standardized issuance

Spreads Down Since Crisis but Higher than Pre-Crisis



Source: Morgan Stanley

E-Trading Volume as a % of Total HG Corp Bond Volume



Source: MarketAxess

Evolution of Market Structure



Fixed Income execution risk shifting from the sell-side to the buy-side

- ▶ Agency-style trading volumes grow as principal dealers face balance sheet pressures

Equification of other asset classes

- ▶ Execution is rapidly moving towards electronic trading with multiple liquidity venues
- ▶ Decline in transaction costs and central clearing
- ▶ Encouragement of further standardization of products

Security types by percentage of e-Trading

 <i>voice</i>	< 1/3 electronic	1/3 – 2/3 electronic	> 2/3 electronic	 <i>electronic</i>
Fixed Income	<ul style="list-style-type: none"> • Derivatives • Corporates • Commodities • RMBS / CMBS 	<ul style="list-style-type: none"> • US Treasuries (Off the Run) • Treasury Bills 		
FX		<ul style="list-style-type: none"> • FX Forwards 	<ul style="list-style-type: none"> • FX Spot 	
Equities			<ul style="list-style-type: none"> • Equities 	

Source: ICAP

Future Perspectives and Discussion

Market structure matters

- ▶ Distinguish centralized and OTC structures
- ▶ Affects transparency, liquidity and trading costs, and hence pricing

Continuing evolution of electronic trading

- ▶ Most equities are traded electronically
- ▶ Provides transparent pricing (actionable quotes) and lower cost

Bond ETFs offer a vision of the future

- ▶ ETFs are already there...bond ETFs trade **intraday** like equities in **centralized** markets
- ▶ **Transparency:** Quotes are generally readily available even on Columbus Day and other bond market holidays
- ▶ **Liquidity:** Large bond ETFs typically have provided deep liquidity with tight bid-ask spreads
- ▶ **Price Discovery:** Considerable evidence that bond ETFs can assist in price discovery*

There can be no assurance that an active trading market for shares of an ETF will develop or be maintained.

* Source: Ananth Madhavan and Aleksander Sobczyk, 2015. "Price Dynamics and Liquidity of ETFs. Forthcoming, *Journal of Investment Management*

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Investing involves risk, including possible loss of principal. Fixed income risks include interest-rate and credit risk. Typically, when interest rates rise, there is a corresponding decline in bond values. Credit risk refers to the possibility that the bond issuer will not be able to make principal and interest payments.

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PANEL DISCUSSION, QUESTIONS & ANSWERS

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SESSION THREE

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IMPEDIMENTS TO ADVANCEMENTS: WHERE POLICY AND REGULATION ADDRESS THE CHALLENGES

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SIDLEY AUSTIN LLP

MICHAEL DECKER

MANAGING DIRECTOR,
SECURITIES INDUSTRY AND FINANCIAL
MARKETS ASSOCIATION

THOMAS DOE

CHIEF EXECUTIVE OFFICER AND FOUNDER,
MUNICIPAL MARKET ANALYTICS, INC.

DAVID COHEN

SENIOR COUNSEL, MUNICIPAL MARKETS,
RBC CAPITAL MARKETS



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COMMISSION

LUNCHEON FOR ALL

NEXT DOOR IN SALONS 1-3

WE WILL RECONVENE FOR SESSION FOUR AT 12:30 PM

UPCOMING CDIAC WEBINAR:

**POST-MUNICIPALITIES CONTINUING DISCLOSURE COOPERATION (MCDC)
INITIATIVE: WHAT DID WE LEARN AS ISSUERS?**

DECEMBER 9, 2015

10:00 AM – 11:45 AM PT

MORE INFORMATION: WWW.TREASURER.CA.GOV/CDIAC

SESSION FOUR

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CURRENT TECHNOLOGICAL ADVANCES IN THE MARKET: ALTERNATIVE TRADING SYSTEMS (ATS)

MARK CAMPBELL

EXECUTIVE DIRECTOR,
CDIAC

TOM MEDER

SENIOR VICE PRESIDENT,
TMC BONDS LLC

CLARKE ROBERTS

MANAGING PARTNER AND FOUNDER, EAX
TRADING

RAYMOND JOHNSON

FIXED INCOME APPLICATION SPECIALIST,
BLOOMBERG LP

ROB NOVEMBRE

CHIEF EXECUTIVE OFFICER AND PRESIDENT,
CLARITY BIDRATE ALTERNATIVE TRADING SYSTEM

ALLEN WILLIAMS

EXECUTIVE VICE PRESIDENT AND MANAGING
DIRECTOR, GLOBAL DEBT CAPITAL MARKETS,
IPREO

BLOOMBERG'S MUNICIPAL BOND PLATFORM

Raymond E. Johnson
Fixed Income Specialist

October 21st, 2015

BLOOMBERG ANALYTICS

What is Bloomberg?

- Market Monitoring
- News
- Advanced Analytics
- Security Master Database
- Communication/Execution Tools

BLOOMBERG ELECTRONIC EXECUTION PLATFORMS:

FIT <GO> “Fixed Income Trading”

- Treasuries
- TBA Mortgages
- Interest Rate Swaps
- Agency Bonds
- Corporate Bonds (ALLQ <GO> and IMGR <GO>)

FIT <GO> (TREASURIES, MORTGAGES, AGENCY BONDS AND INTEREST RATE SWAPS.

Treasuries

TBA Mortgages

Agency Bonds

Swaps



FIT <GO> EXECUTION PAGE

INPUT QUANTITY

SELECT DEALERS TO SOLICIT OFFERS

United States 1) Actions 3) Settings DEMO Fixed Income T... FIT Inquiry Ticket

10 Flip 10 None

Side	Security	Quantity	Settle	Date	Select Dealers
Buy	T 1 ³ / ₈ 09/30/20 912828L65 DV01	10000 M	Reg	10/06/15	BBAT D1 D2 D3 D4 Q2 Q6 SSOX
Price / Yield		100-10 / 1.310			
Principal		\$ 10,031,250.00			
Accrued (6 Days)		2,254.10			
Net		\$ 10,033,504.10			

4,817

Target Px

Broker	Bid Px	Ask Px	↓	BYld	AYld	BSz	ASz		
Q1	100-10 ⁷ / ₈	100-11 ¹ / ₈		1.315	1.313	260	260		
Q2	100-10 ⁷ / ₈	100-11 ¹ / ₈		1.315	1.313	160	160		
D4	100-10 ⁷ / ₈	100-11 ¹ / ₈		1.315	1.313	100	130		
D1	100-10 ⁷ / ₈	100-11 ¹ / ₈		1.315	1.313	50	20	07:13	57.01
D3	100-10 ⁷ / ₈	100-11 ¹ / ₈		1.315	1.313	50	10	07:13	54.27
BB	100-10 ⁷ / ₈	100-11 ¹ / ₈		1.315	1.313	10	10	07:13	47.16
D2	100-11 ¹ / ₈	100-11 ³ / ₈		1.313	1.312	10	30	07:12	37.61

Options

2) Add Notes
5) Order Ticket
9) Stage to TSOX
More Options

1) Submit Close

Input Quantity and Settle
Select Dealers
Submit

COMPETITIVE OFFERING RESPONSES

Page 1/1 Activity Panel							
Basic View Custom View							
x	T 1 3/8 09/30/20			Expire: 1:21		Detail	Pass
	Buy	Dealer	Quantity	Yield	Price		Status
Cusip	912828L65	D1	10,000,000	1.286	100-13 3/4	Lift	Firm 0:01
Settle	10/06/15	D2	10,000,000	1.287	100-13+	Lift	Firm 0:01
CBBT Px	100-09 1/4 / 100-09+	D3	10,000,000	1.308	100-10 1/4	Lift	Firm 0:01
CBBT Yld	1.315 / 1.313	D4	10,000,000	1.313	100-09+	Lift	Firm 0:03

- Activity Panel
- Identifies Best Price
- Provides Electronic Audit Trail confirming Best Execution.

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.
 SN 625582 PDT GMT-7:00 6556-3493-2 05-Oct-2015 07:16:26

ELECTRONIC CONFIRMATION

T 1 ³ / ₈ 09/30/20		↓ 100-09 ³ / ₄ - 02+		100-09+ / 100-09 ³ / ₄		1.313 / 1.312	
At 7:18		-- X --		Source BGN			
1) Transactions		2) Blotter		3) Allocate		5) Actions	
<div>Refresh</div> <div>Bloomberg</div>							
Buy/Sell	Buy			Cusip	912828L65		
Issue	T 1 ³ / ₈ 09/30/20			Status	Accepted		
Audit Trail	FIT:D1@100-10 ³ / ₈ D2@100-14 ¹ / ₄ D3@100-20 ³ / ₈			Broker Name	BLOOMBERG D4 DEMO		
				Broker	D4		
Quantity	10,000,000			Disc Rate	0.0000		
Clean Price	100.29687500 (100-09+)			Yield	1.313		
Settle Date	10/06/2015			Principal	\$ 10,029,687.50		
				Acc Int (6)	2,254.10		
				Net	10,031,941.60		
Entry/Exec Time	07:18:03 / 07:18:06			Seq No	12		
Trade Date	10/05/2015			TS Ticket			
User Name	RAYMOND JOHNSON						
Customer	BLOOMBERG/ SAN FRANCISCO						
Term Cust	BLOOMBERG/ SAN FRANCISCO						
30) Dealer Notes		31) Customer Notes		35) Miscellaneous			
DEFAULT b(6D)							
<div> Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 SN 625582 PDT GMT-7:00 6556-3493-2 05-Oct-2015 07:19:19 </div>							

Capture Necessary Security Master and Trade Detail Information.

MUNI MARKET UNIQUE CHARACTERISTICS:

1MM+ Active CUSIPS

Unique Issue Details

Greater Number of Dealers

More Cooperative Dealer Network

Far Greater Number of Investors

Relationships Important

CRITICAL SECURITY DETAILS

DES			Page 1/11			Description: Municipal		
709223UW Muni			92) Report		93) Alert		94) Notes	
PENNSYLVANIA ST TURNPIKE COMMISSION TURNPIKE REVENUE			95) Settings		96) Settings		97) Settings	
SUB-SER C			CUSIP		709223UW9		98) PICK	
Ticker PASTRN			Cpn 6.250		Maturity 06/01/2038		Dated 10/28/2008	
			State PA					
21) Municipal Bond			22) Series		23) Issuer Description			
Pages			Municipal Bond Information			Trading Information		
1) Bond Info			Issue Type			1st Settle Dt		
2) Addtl Info			Ult Borrower			Next Settle Dt		
3) Involved Parties			Maturity Type			Int Accrual Dt		
4) Adj Cpn Info			Ext Redemption			1st Coupon Dt		
5) Credit Enhance			Coupon			Next Par Call		
6) Credit Ratings			Prc/Yld @ Iss			Next Sink		
7) Call Sched & ERP			Coupon Freq			For \$ 9.175MM		
8) Put Schedule			Tax Provision			Week of Sale		
9) Sink & Est Sink			Credit Enhancement			Award		
10) Refunding Info			Insurance/Program - ASSURED GTY			First Trade		
11) DES Notes			Bond Ratings					
Quick Links			MOODY'S(Underlyi					
31) TDH MSRB Trade			Insured					
32) CACS Material Evt			S&P'S					
33) CF Filings			Underlying					
34) CN Sec News			FITCH					
35) HDS Holders								
66) Send Bond								
Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000								
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.								
SN 625582 PDT GMT-7:00 6556-3493-2 05-Oct-2015 07:22:43								

HUGE UNIVERSE OF OFFERINGS AVAILABLE PICK <GO>

Warning! Client-testing state. Data may not be accurate.
Monitoring Enabled.

All Offerings		1) Views	2) Actions	Page 1/417		Muni Offerings	
Filters:		Include: PICK Off...	All States	All Tax Statuses	All Sizes	All Filters: 1	
3MM	NJ	NEW JERSEY ST TRANSPRTN TRUSTF	TRANSPRTN PROGR	5.000	06/15/28	4.200 (NET)	PICK
A3/A-/A-/NA		ST APPROP	CA:22@100.000	EXEMPT	646136G96	SIEBERT (646)775-4860	 
5M	MI	LANSING MI TXBL-REF-LIMITED TAX-SER B		3.450	06/01/27	3.603 (NET)	PICK
NA/AA-/NA/NA		NONE	CA:22@100.000	TAXABLE	516372QY8	MILLENNIUM (980)213-2345	 
10M	MO	JACKSON CNTY MO CONSOL SCH DIS REF-MO DIRECT DEP		5.000	03/01/22	1.741 (NET)	PICK
NA/AA+/NA/NA		ST AID DIR DEP	NON-CALLABLE	EXEMPT	467430NR1	MILLENNIUM (980)213-2345	 
50M	NJ	NEW JERSEY ST TRANSPRTN TRUSTF	TRANSPRTN PROGR	5.000	06/15/22	3.669 (NET)	PICK
A3/A-/A-/NA		NONE	NON-CALLABLE	EXEMPT	646136R60	MILLENNIUM (980)213-2345	 
25M	WV	MONONGALIA CNTY WV BLDG COMMIS JUSTICE CTR-SER		3.000	02/01/17	0.664 (NET)	PICK
Aa3/NA/NA/NA		NONE	NON-CALLABLE	EXEMPT	61021PAC5	MILLENNIUM (980)213-2345	 
15M	PA	PENNSYLVANIA ST TURNPIKE COMMI MOTOR LICENSE FU		4.000	12/01/37	3.437 (NET)	PICK
A2/NA/AA-/NA		NONE	CA:21@100.000	EXEMPT	709223X30	MILLENNIUM (980)213-2345	 
5M	IA	HILLS IA HLTH FACS REVENUE MERCY HOSP PROJ		4.000	08/15/21	2.329 (NET)	PICK
A3/NA/NA/NA		NONE	CA:20@100.000	EXEMPT	431669AM2	MILLENNIUM (980)213-2345	 
10M	TX	UNIV OF TEXAS TX REF-FING SYS-SER B		5.000	08/15/22	1.746 (NET)	PICK
Aaa/AAA/AAA/NA		NONE	NON-CALLABLE	EXEMPT	9151373V3	MILLENNIUM (980)213-2345	 
20M	MO	COLUMBIA MO SPL OBLIG REF-ELEC UTIL PROJ-ANNUAL		3.000	10/01/27	2.664 (NET)	PICK
NA/AA/AA/NA		NONE	CA:20@100.000			(980)213-2345	 
5M	IA	S E POLK IA CMNTY SCH DIST SCH SER A				27 (NET)	PICK
NA/A+/NA/NA		NONE	CA:18@100.000			(980)213-2345	 
40M	PA	PENNSYLVANIA ST TURNPIKE COMMI MOTOR				86 (NET)	PICK
A2/NA/AA-/NA		NONE	CA:22@100.000	EXEMPT	7092234U2	MILLENNIUM (980)213-2345	 
1M	PA	PENNSYLVANIA ST TURNPIKE COMMI SUB-SER A		5.000	06/01/39	4.073 (NET)	PICK
A3/AA/A-/NA		ASSURED GTY	CA:19@100.000	EXEMPT	709223VW8	MILLENNIUM (980)213-2345	 

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New PICK.
IB and Email Links.

ELECTRONIC TRADE CONFIRMATION.

BXT
1<Go> to send to MSG & VCON, View other options under Settings

PASTRN 6 1/4 06/01/38 Muni	1) Send (VCON)	2) Enrich VCON	Buy Ticket
10/05/2015 07:57 Trade Date	10/05/15		97) Settings

Trade Information

Trader	RAYMOND JOHNSON		
At	BLOOMBERG/ SAN FRANCISCO		
CUSIP	709223UW9		
NYSE SYMB	N.A.		
9) BUY	1000 M	of PASTRN 6 1/4 06/01/38	PA TPK SUB-SER C
Price	99.5000	Yield 6.2910 to Worst	Int Acc Date 10/28/08
Settlement	10/08/15	(T+3 for calendar 'US')	1st Coupon Dt 06/01/09
Concession	Rate 0.000000	Expressed in Points	State PA

Ratings S&P AA Moody's A3 Fitch A-

Notes

* PA TPK SUB-SER C *

Trade Numbers

View Amounts in USD

Principal	USD	995,000.00
Concession		0.00
Prin Net Conc		995,000.00
Accrued (127 days)		22,048.61
Total	USD	1,017,048.61

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
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CONSOLIDATED TRADE BLOTTER

Load Complete

Single Day 1) Settings 2) Actions 3) Teams Voice Confirmation

Cash & Repo		Derivatives		Novations		Positions									
View Alert		Trade Details		Match/Affirm		Confirm		Reject/Cancel		Allocate		Modify		Chat	
	Chat	B/S	Amount	Accrued	Net	Security	Price	Counterparty	Status	Trade Date	Settl				
									All	10/05/15	___/___/___				
Trades My Firm Submitted															
1.	Chat	B	1,000,000		1,005,000.00	CTSGEN 5 08/0	100.5000000	BLOOMBERG/ SA	New	10/05/15	10/0				
2.	Chat	B	1,000,000		1,010,000.00	SACDEV 3 12/01	101.0000000	BLOOMBERG/ SA	New	10/05/15	10/0				
Trades My Firm Received															
1.	Chat	B	5,000,000	29,150.00	4,988,150.00	FNMA 2.12 12/2	99.1800000	BB	New	10/05/15	10/0				
2.	Chat	B	2,000,000	25,777.78	2,050,777.78	AAPL 3.2 05/13	101.2500000	BB	New	10/05/15	10/0				
3.	Chat	B	1,000,000	16,969.44	1,261,969.44	F 7.45 07/16/3	124.5000000	BB	New	10/05/15	10/0				
Matched/Affirmed Trades															
1.	Chat	B	10,000,000	28,260.87	10,006,385.87	T 2 08/15/25	99-25	BB	Confirmed	10/05/15	10/				

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ACCOUNT ALLOCATION

1) Send	2) Save	3) Clear	4) Actions	Client Allocation
T 2.000 8/15/2025 @ 99.781250 (2.0245)		Broker	BLP Test Broker Code (BB)	
Identifier	912828K74	Trade Date	10/5/2015	Set. Date 10/6/2015
BLOOMBERG/ SAN FRANCISCO		Status	NoAlloc	
Account Group	ALL	Seq No	50907	
Buyer	RAYMOND JOHNSON	Balance	0 (0.00%)	
Buy	10,000,000			
Amount Format	Amount	Amount Scaling	None	
<input checked="" type="checkbox"/> BuySide Calculated				

Account	Amount	Principal	Accrued	Total
Total		9,978,125.00	28,260.86	10,006,385.86
1	2,000,000	1,995,625.00	5,652.17	2,001,277.17
123	1,500,000	1,496,718.75	4,239.13	1,500,957.88
1234	3,000,000	2,993,437.50	8,478.26	3,001,915.76
2	2,000,000	1,995,625.00	5,652.17	2,001,277.17
3	100,000	99,781.25	282.61	100,063.86
4	1,000,000	997,812.50	2,826.09	1,000,638.59
56578	400,000	399,125.00	1,130.43	400,255.43
96569	0			
ABSOLUTE OPPS	0			
AC3	0			
PPSM1061	0			

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SHORT TERM MUNI OFFERINGS {BOOM <GO>}

95<GO> to Show Dealer List, <Menu> to Display Searches

Municipal VRDNs 91) Searches 92) Settings 97) Trading Access Money Market Offerings

93) Refine Search DEFAULT

Group by LIQ

86) Table 87) Settlement Ladder

	Issuer	St	AskSz (M)	Mod	Tax	CDT	LIQ	Rate	Set Date	Nxt Rst Dt	Dlr	Cusip
	ROCHESTER HLTH-A-MAY	MN	500	W	NON		BANK OF AME	.020	10/08/15	10/14/15	WFS	771902FF5
	BANK OF MONTREAL											
	NORTH CALIF PWR-1B	CA	100	W	TAX		BANK OF MON	.160	10/13/15	10/14/15	CITI	664845BF0
	BANK OF NOVA SCOTIA											
	OH AIR QLT-Var-B	OH	400	W	NON		BANK OF NOV	.010	10/08/15	10/14/15	MS	677525TH0
	BANK OF NY MELLON											
	FULTON DEV-Var-DONNE	GA	100	W	NON		BANK OF NY M	.120	10/08/15	10/15/15	WFS	36004PAD6
	NH BUS TXB-SER B	NH	400	W	TAX	ST GTD	BANK OF NY M	.160	10/08/15	10/15/15	BNY	64468EAZ3
	NH ST BUS FIN-TXB-A	NH	1,060	W	TAX	ST GTD	BANK OF NY M	.160	10/08/15	10/15/15	BNY	64468EAY6
	NJ MFH-Var-AMT-SER A	NJ	1,685	W	AMT	AGM	BANK OF NY M	.140	10/08/15	10/15/15	JPM	646108CR9
	NJ MFH-Var-TXB-I	NJ	2,595	W	TAX	AGM	BANK OF NY M	.300	10/08/15	10/15/15	JPM	646108DZ0
	SHELBY CNTY-Var-Var-	TN	300	W	NON		BANK OF NY M	.010	10/08/15	10/15/15	GS	821686TM4
	UT HFA TXB-Var-SFM-E	UT	35	W	TAX		BANK OF NY M	.160	10/08/15	10/14/15	BARC	91755NVE2
	UT SFM-Var-D3-CL 1	UT	480	W	TAX		BANK OF NY M	.160	10/08/15	10/14/15	BARC	917436BY2
	BANK OF NY MELLON TR											
	INTERNAL TEST-Var	SC	2,222	W	NON		BANK OF NY M	N.A.	10/08/15	ERROR(1)	BBLP	9999609H2
	BANK OF STOCKTON											
	CA ECON Var-SCIENTIF	CA	660	W	AMT		BANK OF STO	.040	10/08/15	10/14/15	RBC	13066PAX6
	BANK ONE N.A.											
	S CENTRAL TX TXBL RO	TX	100	W	TAX		BANK ONE N.A.	.100	10/08/15	10/14/15	JPM	837264AA8
	BARCLAYS BANK PLC											
	BARCLAYS TR-RI-4B	VA	3,335	W	NON		BARCLAYS BA	.100	10/08/15	10/15/15	BARC	06740GAG1
	BLACKROCK-7-269	NY	13,800	W	AMT		BARCLAYS BA	.110	10/14/15	10/15/15	BARC	09255F307

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MONITORING THE NEW ISSUE MARKET

30 records found

1) Export to Excel

2) Edit Columns

Municipal Fixed Rate Calendar

Date10/05/2015- mm/dd/yyyy

Date↓	Time	Issuer Description	ST	Amt (MM)	Tax	Senior Manager	Int Cost	Status	Type	Industry	Security Type	*
11)	10/05/2015	CA INFRA & ECON DEV BK	CA	221.000	N	WELLS FARGO BANK N		WED	NEGT	Not-For-Profit Cultural O	Revenue Bonds	*
12)	10/05/2015	CA INFRA & ECON DEV BK	CA	128.000	N	WELLS FARGO BANK N		WED	NEGT	Not-For-Profit Cultural O	Revenue Bonds	*
13)	10/05/2015	CA MUNI FIN AUTH -A	CA	20.250	N	CITIGROUP GLOBAL M		MON	NEGT	State Multi-Family Housi	Revenue Bonds	*
14)	10/05/2015	CALIFORNIA SCH FIN AUTH	CA	27.490	N	RBC CAPITAL MARKET		DAY/DAY	NEGT	Charter Schools	Revenue Bonds	
15)	10/05/2015	CALIFORNIA SCH FIN AUTH	CA	.270	T	RBC CAPITAL MARKET		DAY/DAY	NEGT	Charter Schools	Revenue Bonds	
16)	10/05/2015	CALIFORNIA ST -REF -CK	CA	152.295	N	BANK OF AMERICA ME		THUR	NEGT	General Obligation	G.O. Unlimited Bon	*
17)	10/05/2015	CALIFORNIA ST -REF -CL	CA	128.610	N	BANK OF AMERICA ME		THUR	NEGT	General Obligation	G.O. Unlimited Bon	*
18)	10/05/2015	CALIFORNIA ST-AMT-REF-C	CA	164.795	A	BANK OF AMERICA ME		THUR	NEGT	General Obligation	G.O. Unlimited Bon	*
19)	10/05/2015	CHINO CMNTY FACS DT	CA	13.500	N	STIFEL NICOLAUS & C		WED	NEGT	Mello-Roos	Special Tax	*
20)	10/05/2015	CHINO HILLS FING AUTH -	CA	10.760	N	PIPER JAFFRAY & CO		TUE	NEGT	Miscellaneous Tax	Special Tax	
21)	10/05/2015	COMPTON CCD-REF	CA	13.190	N	RBC CAPITAL MARKET		TUE	NEGT	Community College Distri	G.O. Unlimited Bon	*
22)	10/05/2015	DELANO UNION ESD -A -R	CA	9.635	N	STIFEL NICOLAUS & C		TUE	NEGT	School Districts	G.O. Unlimited Bon	*
23)	10/05/2015	MTN VIEW WHISMAN SD	CA	9.895	N	RBC CAPITAL MARKET		WED	NEGT	School Districts	G.O. Unlimited Bon	*
24)	10/05/2015	ORANGE CNTY CFD 2015-1	CA	90.925	N	STIFEL NICOLAUS & C		WED	NEGT	Mello-Roos	Special Tax	
25)	10/05/2015	RNR SCH FIN AUTH -SUB-	CA	14.315	N	STIFEL NICOLAUS & C		TUE	NEGT	Mello-Roos	Special Tax	*
26)	10/05/2015	SAN MATEO-FOSTER CSD	CA	10.000	N	RBC CAPITAL MARKET		MON	NEGT	School Districts	G.O. Unlimited Bon	*
27)	10/05/2015	SOLANO CCD-REF	CA	47.677	N	RBC CAPITAL MARKET		TEST	NEGT	Higher Education	G.O. Unlimited Bon	*
28)	10/12/2015	DOWNEY USD -REF	CA	2.000		PIPER JAFFRAY & CO		WED	NEGT			
29)	10/12/2015	DOWNEY USD -REF	CA	7.000		PIPER JAFFRAY & CO		WED	NEGT			
30)	10/12/2015	GREENFIELD USD -A	CA	5.000	N	STIFEL					Bon	*
31)	10/12/2015	GREENFIELD USD -A1	CA	5.000	N	STIFEL					Bon	*
32)	10/12/2015	SULPHUR SPRINGS UN SD-	CA	10.000		PIPER						
33)	10/06/2015	SAN FRANCISCO USD -C	CA		N							
34)	10/06/2015	SAN FRANCISCO USD -F	CA	226.000	N							
35)	10/07/2015	SAN FRANCISCO CITY/CO-R	CA	127.980	N				COMP	Intergovernmental Lease	Certificates of Par	
36)	10/07/2015	CAJON VALLEY USD-D	CA	17.880	N				COMP	School Districts	G.O. Unlimited Bon	
37)	10/08/2015	SAN FRANCISCO USD -RE	CA	71.950	N				COMP	School Districts	G.O. Unlimited Bon	
38)	10/13/2015	SONOMA CO WTR AGY	CA	20.190	N				COMP			
39)	10/13/2015	SONOMA CO WTR AGY-TXBL	CA	1.760	T				COMP			
40)	10/15/2015	STANDARD SD-REF	CA	8.190	Q				COMP	School Districts	G.O. Unlimited Bon	

"I" allows comparison of deals series:
Coupon/Yield/Spread

"i" allows comparison of deals series:
Coupon/Yield/Spread

Blue Deals - Internal To Bloomberg Only.

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COMPARING NEW ISSUE DEALS

Sale Date	08/03/15	08/03/15	08/24/15	08/03/15	10/06/15
Issuer	CLOVIS USD	OAKLAND USD-A-REF	BEVERLY HILLS USD	OAKLAND USD-REF	SAN FRANCISCO USD
State	-D	-D	CA	CA	-F
Amount (MM)	103.018729	173.5	76	168.705	226
Moody/S&P/Fitch	Aa2/AA/ --	-- / -- / --	Aa1e/AA+/ --	-- / -- / --	Aa2e/APPLIED/ --
Senior Manager	STIFEL NICOLAUS & CO INC	SIEBERT BRANDFORD SHANK	CITIGROUP GLOBAL MKTS INC	SIEBERT BRANDFORD SHANK	
Call	08/01/25 @ 100	08/01/25 @ 100	08/01/25 @ 100	08/01/25 @ 100	06/15/24 @ 100
Tax Type	FED & ST TAX-EXEMPT	FED & ST TAX-EXEMPT	FED & ST TAX-EXEMPT	FED & ST TAX-EXEMPT	FED & ST TAX-EXEMPT
Year	Coupon/Yield/Spread/SprToMat	Coupon/Yield/Spread/SprToMat	Coupon/Yield/Spread/SprToMat	Coupon/Yield/Spread/SprToMat	Coupon/Yield/Spread/SprToMat
1Y	4.000 / 0.220 / -5 / -5	-- / -- / -- / --	2.000 / 0.230 / -2 / -2	5.000 / 0.820 / +54 / +54	-- / -- / -- / --
2Y	4.000 / 0.590 / -4 / -4	5.000 / 1.140 / +69 / +69	2.000 / 0.590 / +5 / +5	5.000 / 1.290 / +65 / +65	-- / -- / -- / --
3Y	5.000 / 0.840 / -7 / -7	-- / -- / -- / --	3.000 / 0.840 / +1 / +1	5.000 / 1.630 / +73 / +73	-- / -- / -- / --
4Y	5.000 / 1.060 / -6 / -6	-- / -- / -- / --	3.000 / 1.020 / -6 / -6	5.000 / 1.920 / +82 / +82	-- / -- / -- / --
5Y	5.000 / 1.320 / -6 / -6	5.000 / 2.280 / +90 / +90	2.000 / 1.290 / -5 / -5	5.000 / 2.280 / +94 / +94	-- / -- / -- / --
6Y	5.000 / 1.620 / -2 / -2	5.000 / 2.570 / +93 / +93	2.000 / 1.560 / -3 / -3	5.000 / 2.320 / +71 / +71	-- / -- / -- / --
7Y	5.000 / 1.930 / +7 / +7	5.000 / 2.840 / +98 / +98	2.000 / 1.760 / -2 / -2	5.000 / 2.590 / +75 / +75	-- / -- / -- / --
8Y	5.000 / 2.100 / +6 / +6	5.000 / 3.000 / +96 / +96	4.000 / 1.870 / -6 / -6	5.000 / 2.750 / +73 / +73	-- / -- / -- / --
9Y	5.000 / 2.290 / +13 / +13	5.000 / 3.180 / +102 / +102	4.000 / 2.010 / -5 / -5	5.000 / 2.930 / +76 / +76	-- / -- / -- / --
10Y	5.000 / 2.450 / +16 / +16	5.000 / 3.340 / +105 / +105	4.000 / 2.170 / -3 / -3	5.000 / 3.090 / +79 / +79	-- / -- / -- / --
11Y	5.000 / 2.660 / +37 / +43	5.000 / 3.480 / +119 / +119	5.000 / 2.280 / +8 / +14	5.000 / 3.230 / +80 / +80	-- / -- / -- / --
12Y	-- / -- / -- / --	5.000 / 3.560 / +127 / +126	5.000 / 2.400 / +20 / +30	5.000 / 3.310 / +78 / +78	-- / -- / -- / --
13Y	5.000 / 2.900 / +61 / +70	5.000 / 3.640 / +135 / +131	3.500 / 2.830 / +63 / +43	5.000 / 3.390 / +77 / +77	-- / -- / -- / --
14Y	5.000 / 2.970 / +68 / +77	5.000 / 3.710 / +142 / +134	3.500 / 3.010 / +81 / +52	5.000 / 3.460 / +77 / +77	-- / -- / -- / --
15Y	-- / -- / -- / --	5.000 / 3.780 / +149 / +137	3.000 / 3.090 / +41 / +41	5.000 / 3.530 / +77 / +77	-- / -- / -- / --
16Y	-- / -- / -- / --	5.000 / 3.850 / +156 / +139	4.000 / 3.120 / +92 / +65	-- / -- / -- / --	-- / -- / -- / --
17Y	-- / -- / -- / --	5.000 / 3.900 / +161 / +141	4.000 / 3.170 / +97 / +66	-- / -- / -- / --	-- / -- / -- / --
18Y	-- / -- / -- / --	5.000 / 3.930 / +164 / +141	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --
19Y	-- / -- / -- / --	5.000 / 3.940 / +165 / +140	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --
20Y	-- / -- / -- / --	5.000 / 3.970 / +168 / +141	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --
22Y	5.000 / 3.370 / +108 / +103	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --
25Y	4.000 / 4.000 / +90 / +90	5.000 / 4.100 / +181 / +141	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --

BIDS WANTED INPUT

Muni		11) Lists		12) Options		Get Enabled		Bid/Offer List Trading					
Name		TCULLUM12 10/5/15 11:19:42		Bid Time		13:00		Time Zone		Eastern Time (US)			
				Firm Until Time		13:02		Distribution		A - 10000			
	CUSIP	Amt(M)	Settle	Issue	ST	Cpn	Maturity	M	S&P	I	Allocations	Item	
1.	13063BFV9	25	10/08/15	CALIFORNIA ST BUILD AMERICA ...	CA	7.95	03/01/36	Aa3	AA-	N	Alloc	A1	
2.	358240FC8	50	10/08/15	FRESNO CA WTR SYS REVENUE R...	CA	6.75	06/01/40	N.A.	A	N	Alloc	A2	
3.	799387AH8	150	10/08/15	SAN RAMON CA REDEV AGY SUCC...	CA	5	02/01/24	N.A.	AA	Y	Alloc	A3	
4.	702274AV3	100	10/08/15	PASADENA CA PUBLIC FING AUTH...	CA	6.998	03/01/34	N.A.	AA+	N	Alloc	A4	
5.	901072EB0	35	10/08/15	TUSTIN CA UNIF SCH DIST SCH F...	CA	6.589	08/01/34	Aa1	AA	N	Alloc	A5	
6.	798136TS6	25	10/08/15	SAN JOSE CA ARPT REVENUE TX...	CA	6.6	03/01/41	A2	AA	Y	Alloc	A7	
7.	59334PDA2	50	10/08/15	MIAMI-DADE CNTY FL TRANSIT S...	FL	5.624	07/01/40	A1	AA	N	Alloc	A8	
8.	514444WZ7	200	10/08/15	LANCASTER TX BUILD AMERICA ...	TX	6.528	02/15/40	Aa3	AA-	N	Alloc	A9	
9.	67884FZG4	0	10/08/15	OKLAHOMA DEV FIN AUTH LEASE ...	OK	4.768	06/01/40	N.A.	AA	N		A10	
10.													
11.													
12.													
13.													
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22.													

21) List Entry 22) List Activity Panel 23) Intraday Blotter

BIDS WANTED RESPONSES

Successfully sent!

Muni	11) Lists	12) Options	Get Enabled	Bid/Offer List Trading						
Name TCULLUM12 10/5/15 11...	Par Amt 685M	# Items 9	Time to Curtain 00:00:00	Pass All						
Side SELL	Exec Amt 0	# Responses 9	Time to Expiry 11:18:50	Hit All Best						
Hide done trades			Showing top 3 dealers			Excel Exec				
Securities	Brkr	Firm	Gr Prc	Net Prc	Gr Yld	Net Yld	Con	Status		
1. CAS 7.950 03/01/36	CAS	7.950 03/01/36	Cusip: 13063BFV9	State: CA	Amt: 25M			#A1	Pass	
2. FREWTR 6.750 06/01/40	D2	BLOOMBERG L.P.	121.071	121.071	2.820	2.820		Firm	00:18:50	Hit
3. SRADEV 5.000 02/01/24	BB	BLOOMBERG L.P.						Expired		
4. PASGEN 6.998 03/01/34	D3	BLOOMBERG L.P.						Expired		
5. TUSEDU 6.589 08/01/34	FREWTR	6.750 06/01/...	Cusip: 358240FC8	State: CA	Amt: 50M			#A2	Pass	
6. SJSAPT 6.600 03/01/41	D2	BLOOMBERG L.P.	253.556	251.556	0.290		2	Firm	00:18:50	Hit
7. MIATRN 5.624 07/01/40	BB	BLOOMBERG L.P.						Expired		
8. LAN 6.528 02/15/40	D3	BLOOMBERG L.P.						Expired		
9. OKSDEV 4.768 06/01/40	SRADEV	5.000 02/01/24	Cusip: 799387AH8	State: CA	Amt: 150M			#A3	Pass	
	D2	BLOOMBERG L.P.	140.056	137.056	0.150	0.453	3	Firm	00:18:50	Hit
	BB	BLOOMBERG L.P.						Expired		
	D3	BLOOMBERG L.P.						Expired		
	PASGEN	6.998 03/01/...	Cusip: 702274AV3	State: CA	Amt: 100M			#A4	Pass	
	D2	BLOOMBERG L.P.	225.712	225.712	0.100			Firm	00:18:50	Hit
	BB	BLOOMBERG L.P.						Expired		
	D3	BLOOMBERG L.P.						Expired		
	TUSEDU	6.589 08/01/...	Cusip: 901072EB0	State: CA	Amt: 35M			#A5	Pass	
	D2	BLOOMBERG L.P.	123.861	121.861	1.440	1.824	2	Firm	00:18:50	Hit
	BB	BLOOMBERG L.P.						Expired		
	D3	BLOOMBERG L.P.						Expired		
	SJSAPT	6.600 03/01/41	Cusip: 798136TS6	State: CA	Amt: 25M			#A6	Pass	
	D2	BLOOMBERG L.P.	123.247	119.247	2.030	2.739	4	Firm	00:18:50	Hit

21) List Entry 22) List Activity Panel 23) Intraday Blotter

KEYS TO IMPROVING MUNI WORKFLOW EFFICIENCY:

- Efficient Distribution of Offerings and Bid Lists
- Access to all Information needed to Evaluate Trade
- Digital Capture of Trade Details
- Communication of Trade Details to Back Office/Clearing
- Electronic Audit Trail (Compliance)

CDIAC Session- Ipreo Overview

Who is Ipreo?

We are the engine behind your new
issuance process.



Ipreo delivers a powerful suite of capital market solutions to manage all aspects of the new-issue workflow, serving all participants in the capital-raising process

Over **90%** of new issuance in the municipal market is run on our systems

Bidding & Origination

Manage new issuance with greater efficiency

- **The industry standard competitive bid calculation system**
- Online Bookrunning's comp/ neg AAU function allows syndicate & selling group members to respond electronically to an invitation
- Municipal Information Center provide comprehensive municipal new-issue data and deal information and offer historical analysis to produce pitch books and RFP's
- A full-service electronic document delivery providing a complete audit trail

Syndication & Marketing

Form the underwriting group, share documents and market to investors

- **Order Monitor enables any authorized deal player to access a sale in real-time from the web and view orders & accounts**
- Online Bookrunning manages the entire new-issue process in real-time
 -
- NM Bookrunning system allows for real-time communication & sharing of deal information
 -
- Retail/ Institutional Electronic Order Entry platform allows sales force to receive wires & deal information

Orders & Allocation

Streamline the entire process from indications of interest through final pricing

- **Ownership Analysis and Profiles help underwriters and issuers understand interested investors to ensure a fit**
- Bookbuilding platform to give all participants real-time access to order information
- Fully automated workflow ensures efficient & accurate pricing and allocations, including designations, P/ L accounting and straight-through-processing
- iProspectus allows timely and efficient delivery of all deal documents to appropriate investors

Trading & Settlement

Ensure success of deals and manage institutional investor distribution channels


- **Our private-labeled prospectus library facilitating "Access Equals Delivery"**
- Customized Trading Systems & Feeds designed to flow seamlessly from Bookrunning system
- Retail/ Institutional Electronic Order Entry enables sales force to break down allotments by account online to feed directly into the firm's internal trading system
- Variable Rate Trading provides access to buy-side & sell-side users allowing full trading automation

Are you a Municipal Advisor, Underwriter or Issuer?

Ipreo continues to lead the way in innovations which are now so commonly used in the market's day-to-day operations; they are standards of behavior. Some of our products you would know include:

01	BIDCOMP: The industry standard competitive bid calculation system to conduct transactions quickly and efficiently	
	Parity: a secure process for underwriters to submit bids and for issuers to receive bids in combination with the BIDCOMP system	02
03	Deal Monitor System: enables any authorized deal player to access real-time collection of investor data	

As we continue to broadly improve workflow software, Ipreo is innovating around how Issuers access the Capital Markets, starting with the launch of a new tool allowing for a real-time view of how an Issuer's deal is progressing



New tools allow Banks to communicate deal progress with Issuers more effectively. Some of these new tools include:

- Real-time view of how an issuer's deal is progressing, available on any browser or tablet device
- Market based views and insight, both during, before and after a deal
- Roadshow and Order Book views
- Real-time Document management and accessibility
- Scale and comparable analysis tools

TMC Bonds

CDIAC Pre-Conference

Alternative Trading Systems (ATS)

Tom Meder
(t.meder@tmcbondd.com)
October 2015

Overview

Primary Market & Underwriter Applications

- Muni New Issue Order Platform
- MassDirect Notes – Commonwealth of Massachusetts
- Recent Deals & Secondary Trading of Unsold Balances

Issuers

- Search and Plot Secondary Offerings by CUSIP Root

Portfolio Managers & Traders

- Fixed Income Investment Products
- TMC Model – What's in it for you?

Pedigree—note that TMC was responsible for 27% of all secondary interdealer trading in Municipal bonds (September 2015)

➤ Muni New Issue Application

- TMC's functionality enables underwriters to post New Issue Primary offerings via TMC's marketplace.
- Approved dealers and investors submit orders via TMC marketplace during the order period. TMC is deemed a 'conduit' and not an underwriter.
- Functionality allows for re-pricing, allotments and real-time ticketing. Dealers' orders receive approximately one-half the takedown—again, TMC is not involved herein.
- TMC's new issue site is multi-dealer with new underwriters added in 2015. Since launch TMC has placed 500+ orders (for \$150+ million par) on Citi's negotiated underwritings alone.

➤ New Issue Muni Ex. – Turlock Irrigation District

CUSIP	Issue Name	Coupon	Maturity ▲	Atrb	Rating	Ins	Call	SDate	Bid Yld	Ofr Yld	Ofr Pr...
616794LL5	MORELAND CALIF SCH DIST GO BDS 2004-D	0.000	08/01/2036	XO	A3/AA-/WD	FGIC	X 14@ 28.9	07/09		BW 11:00 AM	BW 11...
801546MW9	SANTA CLARA CNTY CALIF GO BDS 2013 B	5.000	08/01/2015		-/AAA/AA+			07/11		0.119	105.147
13033L3K1	CALIFORNIA HEALTH FACS FING AU REV BD...	2.000	10/01/2015	EC	Aa3/AA-/AA			07/11		0.080	102.345
13063A5D2	CALIFORNIA ST GO BDS	5.950	04/01/2016	Taxable	Aa3/A/A			07/11	1.150	0.850	108.699
13063A5D2	CALIFORNIA ST GO BDS	5.950	04/01/2016	Taxable	Aa3/A/A			07/11	1.280	0.570	109.206
NONE	Turlock Irrigation District TURLOCK IRRIGATIO...	4.000	01/01/2017		A+/A+		C 24@ 100	07/23	OrdP 09:00	0.730	107.889
13063CHM5	CALIFORNIA ST FOR PREVIOUS ISS GO BDS ...	5.000	12/01/2017		Aa3/A/A	Available		07/11		0.690	114.411
NONE	Turlock Irrigation District TURLOCK IRRIGATIO...	4.000	01/01/2018		A+/A+		C 24@ 100	07/23	OrdP 09:00	1.160	109.546
271014XG2	EAST BAY CALIF MUN UTIL DIST W REV REF ...	2.000	06/01/2018		Aa1/AAA/-			07/11		0.770	104.703
77781PBU0	ROSEVILLE CALIF FIN AUTH SPL T REF BDS 2...	4.000	09/01/2018		-/A/-			07/11		1.100	111.701
91857RAE3	VACAVILLE CALIF REDEV AGY SUCC SUB T...	5.000	09/01/2018		-/A/-			07/11		1.037	116.012
NONE	Turlock Irrigation District TURLOCK IRRIGATIO...	5.000	01/01/2019		A+/A+		C 24@ 100	07/23	OrdP 09:00	1.540	114.789
13063A7G3	CALIFORNIA ST GO BDS 2009	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11	2.600	2.270	119.246
13063A7G3	CALIFORNIA ST GO BDS 2009	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11	2.890	2.270	119.246
13063A7G3	CALIFORNIA ST GO BDS 2009	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11		2.250	119.355
13063A7G3	CALIFORNIA ST GO BDS 2009	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11		2.200	119.627
13063A7G3	CALIFORNIA ST GO BDS 2009	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11		2.186	119.704
13063A7G3	CALIFORNIA ST GO BDS 2009	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11		2.143	119.938

➤ MassDirect Notes

The Bond Buyer 13th Annual Deal of the Year Award winner

TMC's electronic bond trading platform is used to offer bonds to retail investors via 1,000+ firms and 125,000+ Financial Advisors who access TMC's marketplace.

- Three different fixed rate GO maturities offered initially
- Different maturities offered the following week and regularly thereafter
- Daily allotment and re-pricing of bonds
- Orders submitted by broker-dealers via TMC
- Over \$100mm par placed

Known issuers can make their offerings available to retail investors on a nearly continuous basis and expand their distribution via an electronic ATS.

\$60,000,000*

**The Commonwealth of Massachusetts
General Obligation Bonds**

\$30,000,000 Consolidated Loan of 2014 (MassDirect Notes), Series 1
\$30,000,000 Consolidated Loan of 2014 (MassDirect Notes), Series 2

*****Bonds will be sold to Retail Investors Only over a two week offering period*****

\$30,000,000*

**General Obligation Bonds
Consolidated Loan of 2014
(MassDirect Notes), Series 1**

Dated: Date of Delivery

Due: As shown below

<u>Maturity*</u>	<u>Amount*</u>	<u>Interest Rate</u>	<u>Price or Yield</u>	<u>CUSIP Number**</u>
April 1, 2017	\$10,000,000			
April 1, 2019	\$10,000,000			
April 1, 2024	\$10,000,000			

\$30,000,000*

**General Obligation Bonds
Consolidated Loan of 2014
(MassDirect Notes), Series 2**

Dated: Date of Delivery

Due: As shown below

<u>Maturity*</u>	<u>Amount*</u>	<u>Interest Rate</u>	<u>Price or Yield</u>	<u>CUSIP Number**</u>
April 1, 2016	\$10,000,000	%	%	
April 1, 2018	\$10,000,000			
April 1, 2023	\$10,000,000			

Bond Sale Schedule*:

Series 1 Bonds to be sold during Week 1 of Sales (3/17 – 3/21)
Series 2 Bonds to be sold during Week 2 of Sales (3/24 – 3/28)

Primary Market - Unsold Balances



TMCBONDS.COM
FIXED INCOME MARKETPLACE

Muni Desk:(646) 375-1111 | Taxable Desk:(646) 375-1104

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RECENT DEALS

16:18:34 GMT-0400 (Eastern Daylight Time)

Prefix	State	Description	Offers	Par
722480	AR	PINE BLUFF ARK SCH DIST NO 003 REF BDS 2015	4	4,775
745400	AR	PULASKI CNTY ARK SPL SCH DIST CONSTR BDS 2015	18	39,670
98851U	AZ	YUMA ARIZ MUN PPTY CORP EXCISE SR LIEN UTIL SYS REV REF 2015	5	9,620
988516	AZ	YUMA ARIZ MUN PPTY CORP UTIL S SR LIEN UTIL SYS REV REF 2015	11	31,020
128019	CA	CAJON VALLEY CALIF UN SCH DIST GO BDS D	2	2,475
13034A	CA	CALIFORNIA INFRASTRUCTURE & EC REV BDS 2015A ACADEMY OF MOTION PICTURE ARTS	1	2,350
13063C	CA	CALIFORNIA ST FOR PREVIOUS ISS VETERANS GO BDS CM	3	9,925
13068L	CA	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	12	44,975
21221M	CA	CONTRA COSTA CALIF TRANSN AUTH LTD TAX BDS 2015A	10	22,460
421209	CA	HAYWARD CALIF CTFS PARTN COPS 2015	3	10,815
587635	CA	MERCED CALIF UN HIGH SCH DIST GO BDS D	2	3,445
785849	CA	SACRAMENTO CALIF CITY FING AUT REF BDS 2015A	2	7,980
78805Q	CA	SACRAMENTO CALIF PUB FING AUTH REV BDS 2015	1	2,840
798720	CA	SAN BERNARDINO CALIF CMNTY COL GO BDS D	2	3,935
797681	CA	SAN FRANCISCO CALIF BAY AREA R GO BDS 2015D	8	14,745
79771T	CA	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2015	12	57,365
79785D	CA	SAN FRANCISCO CALIF CITY & CNT REF COPS 2015-R	8	19,420
798083	CA	SAN JOAQUIN CALIF DELTA CMNTY GO REF BDS A	4	5,000
928346	CA	VISTA CALIF UNI SCH DIST GO REF BDS 2015	1	1,000
038899	CO	ARAPAHOE CNTY COLO SCH DIST NO GO BDS	1	3,275
19848A	CO	COLORADO HEALTH FACS AUTH REV HOSP REV BDS 2015 VAIL VALLEY MED CTR	2	9,920



TMCBONDS.COM
FIXED INCOME MARKETPLACE

Primary - Unsold Balances

(cont'd)

TMC

TMCBONDS.COM

FIXED INCOME MARKETPLACE

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Municipal

47.49m Par | 39 Items

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On the Fly

Ofr Qty	O min	CUSIP	Issue Name	Coupon	Maturity	Atrb	Rating	Call	SDate	Ofr YTW	Ofr Price	Ofr YTM	IDC Yld	IDC O...
250	10	13068LWK7	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	4.000	05/01/2025	EC	A1/ A+ /A		10/16	2.340	114.121	2.340	2.370	-3.0
25	25	13068LVS1	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2025	EC	A1/ A+ /A		10/16	2.368	122.357	2.368	2.369	-0.1
5825	10	13068LVS1	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2025	EC	A1/ A+ /A		10/16	2.350	122.532	2.350	2.369	-1.9
1500	50	13068LVS1	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2025	EC	A1/ A+ /A		10/16	2.340	122.627	2.340	2.369	-2.9
2275	10	13068LVM4	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2026	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.520	120.915	2.706	2.519	0.1
1450	50	13068LVM4	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2026	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.490	121.199	2.678	2.519	-2.9
75	5	13068LWL5	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	5.000	05/01/2026	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.490	121.199	2.678	2.519	-2.9
2135	25	13068LWL5	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	5.000	05/01/2026	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.420	121.863	2.614	2.519	-9.9
7050	10	13068LVN2	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2027	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.640	119.790	2.963	2.629	1.1
250	100	13068LWN1	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	3.000	05/01/2028	EC	A1/ A+ /A	EC C 25@ 100	10/16	3.012	99.878	3.012	3.100	-8.8
310	10	13068LWN1	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	3.000	05/01/2028	EC	A1/ A+ /A	EC C 25@ 100	10/16	3.011	99.880	3.011	3.100	-8.9
4690	10	13068LVT9	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2028	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.770	118.584	3.190	2.759	1.1
700	50	13068LVT9	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2028	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.750	118.769	3.174	2.759	-0.9
5000	25	13068LVT9	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2028	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.680	119.417	3.117	2.759	-7.9
210	10	13068LVU6	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2029	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.890	117.484	3.380	2.890	0.0
1650	10	13068LVU6	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2029	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.860	117.758	3.357	2.890	-3.0

Issuers

Monitor secondary market supply in your state

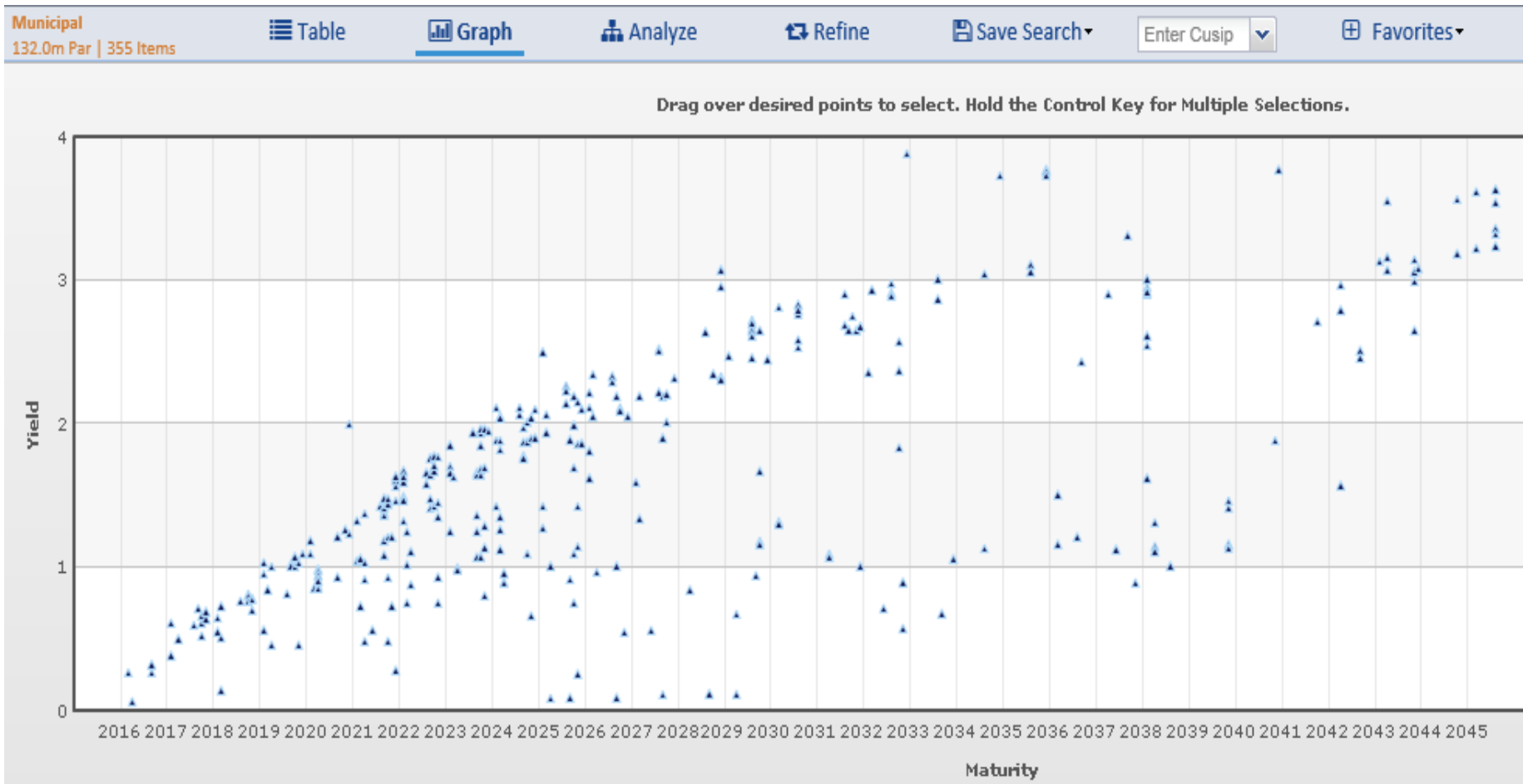
- CA 6,368 offerings for \$1.76 Billion in Par (10/9/15)



Track your issuance in secondary market by root CUSIP.

Ofr Qty	O min	CUSIP	Issue Name	Coupon	Maturity ▲	Rating	Call	SDate	Ofr YTW	Ofr Price
25	10	797646WP7	SAN FRANCISCO CALIF CITY & CNT GO BDS C	5.000	06/15/2017	Aa1/ AA+ /AA		10/19	0.445	107.504
25	10	797646PX8	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2017	Aa1/ AA+ /AA		10/19	0.350	107.669
75	10	797646WQ5	SAN FRANCISCO CALIF CITY & CNT GO BDS C	5.000	06/15/2018	Aa1/ AA+ /AA		10/19	0.650	111.433
25	5	797646RQ1	SAN FRANCISCO CALIF CITY & CNT GO BDS B	4.000	06/15/2018	Aa1/ AA+ /AA		10/19	0.224	109.993
1195	300	797646ML7	SAN FRANCISCO CALIF CITY & CNT GO BDS 2010A	4.750	06/15/2019	Aa1/ AA+ /AA		10/19	0.840	114.045
115	10	797646PZ3	<u>SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -</u>	5.000	06/15/2019	Aa1/ AA+ /AA		10/19	0.880	114.788
15	15	797646LV6	SAN FRANCISCO CALIF CITY & CNT GO HOSPITAL IMPT BDS 2009A	5.250	06/15/2023	Aa1/ AA+ /AA	R 19@ 100	10/19	1.022	115.131
25	25	797646LT1	SAN FRANCISCO CALIF CITY & CNT GO HOSPITAL IMPT BDS 2009A	5.250	06/15/2021	Aa1/ AA+ /AA	R 19@ 100	10/19	0.750	116.197
20	5	797646QB5	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2021	Aa1/ AA+ /AA		10/19	1.269	120.296
5	5	797646QW9	SAN FRANCISCO CALIF CITY & CNT GO BDS A	3.000	06/15/2021	Aa1/ AA+ /AA	C 20@ 100	10/19	1.415	107.115
20	5	797646A30	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2015-R	5.000	06/15/2022	Aa1/ AA+ /AA		10/19	1.532	121.861
265	100	797646YK6	SAN FRANCISCO CALIF CITY & CNT GO BDS C	5.000	06/15/2022	Aa1/ AA+ /AA		10/19	1.290	123.587
10	10	797646QC3	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2022	Aa1/ AA+ /AA	C 21@ 100	10/19	1.327	121.643
10	10	797646QC3	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2022	Aa1/ AA+ /AA	C 21@ 100	10/19	1.299	121.828
5	5	797646RV0	SAN FRANCISCO CALIF CITY & CNT GO BDS B	3.000	06/15/2023	Aa1/ AA+ /AA	C 20@ 100	10/19	1.570	106.394
35	5	797646QD1	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2023	Aa1/ AA+ /AA	C 21@ 100	10/19	1.468	120.714
750	25	797646QD1	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2023	Aa1/ AA+ /AA	C 21@ 100	10/19	1.430	120.962
10	10	797646QD1	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2023	Aa1/ AA+ /AA	C 21@ 100	10/19	1.325	121.650
20	5	797646QD1	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2023	Aa1/ AA+ /AA	C 21@ 100	10/19	1.199	122.488
75	50	797646UK0	SAN FRANCISCO CALIF CITY & CNT GO BDS E	5.000	06/15/2024	Aa1/ AA+ /AA	C 22@ 100	10/19	1.574	121.564
20	5	797646A55	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2015-R	5.000	06/15/2024	Aa1/ AA+ /AA	C 23@ 100	10/19	1.807	122.730
25	10	797646XT8	SAN FRANCISCO CALIF CITY & CNT GO BDS 2014A	5.000	06/15/2025	Aa1/ AA+ /AA	C 22@ 100	10/19	1.816	119.875
35	35	797646XT8	SAN FRANCISCO CALIF CITY & CNT GO BDS 2014A	5.000	06/15/2025	Aa1/ AA+ /AA	C 22@ 100	10/19	1.750	120.332
15	15	797646ZL3	SAN FRANCISCO CALIF CITY & CNT GO BDS D	4.000	06/15/2027	Aa1/ AA+ /AA	C 22@ 100	10/19	2.300	110.433
10	10	797646SA5	SAN FRANCISCO CALIF CITY & CNT GO BDS B	3.000	06/15/2028	Aa1/ AA+ /AA	C 20@ 100	10/19	2.477	102.286

Plot a yield curve of your secondary market offerings.
355 California GO offerings - \$132mm Par (10/13/15)



TMC for Portfolio Managers & Traders

Fixed Income products on TMC's marketplace

- Agency & Treasury securities
- Primary and secondary CD's
- Corporate and Municipal bonds
- MBS & Structured Products

What's in it for you...

- Content – bids, offers & bids wanted on a single venue
Levels playing field for smaller participants
- Advanced search functionality enhances work flow
- Liquidity
- Centralized counterparty clearing > Access / Credit
- Pre and post trade anonymity
- Electronic trading supported by trading professionals



The Electronic Platform for Variable-Rate Securities

What is Clarity BidRate ATS?

Clarity is a new electronic platform for remarketing variable-rate securities

- Powerful combination of an electronic platform and a team of active market experts
- Replaces pricing role of traditional remarketing agent

Key points

- Competitive bid process
- Allocations determined by bid level – encourages buyers to compete on price
- Pre-trade price transparency
- Multi-modal security – Clarity is simply an additional mode
- New deals and/or conversions of outstanding deals

Goals of the Clarity system

1. Improve Execution
2. Lower Volatility
3. Provide Data
4. Promote Transparency, Competition and Centralization

Market Dynamics

TEAM

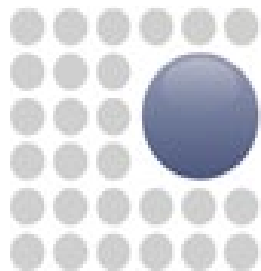
- Broad Experience
- Tier 1 Professionals
- Independent

ATS

- Competitive Bidding
- Transparent
- Centralized Liquidity

STRATEGY

- Market Standardization
- Lessons Learned
- Clarity Securities



CLARITY[®]
BIDRATE ALTERNATIVE TRADING SYSTEMSM

Clarity ATS vs. Current Market

Important Similarities

- Multi-modal
- 2a7-eligible products
- Marketing team of experienced professionals
- Access to existing investor base
- Fees competitive with current market
- Uses traditional underwriting process

Important Differences

- Pricing and allocation is competitive
- All positions re-bid at each reset period
- Pre-trade price transparency
- Multiple order types, including Good-Til-Cancelled (GTC)
- Access to data – both historical and real-time markets
- Does not use dealer balance sheet

Market Dynamics

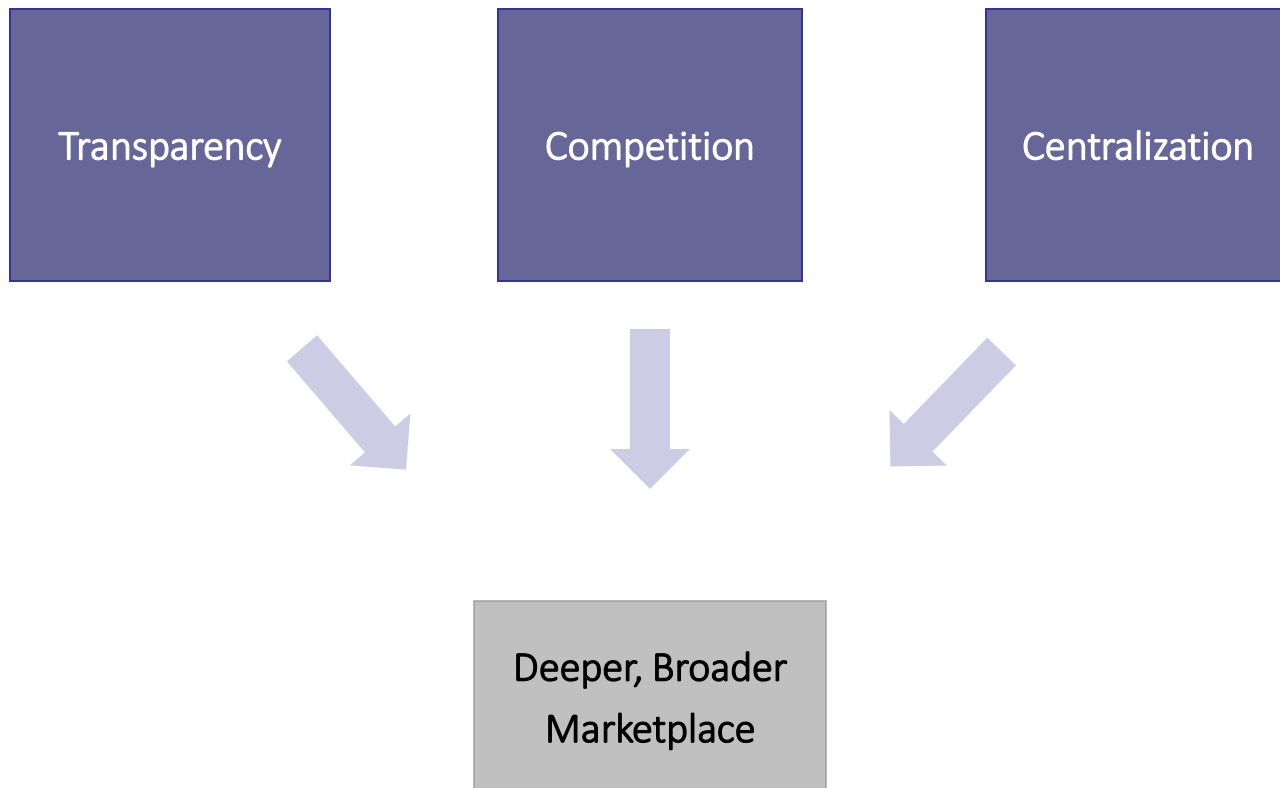
Dealer Balance Sheet

- Hold positions sold by investors
- Average of only 1.3% of outstanding VRDNs [Moody's 4/14/2014]
- Capital is expensive given new regulations (Basel III, Fed Leverage Ratio)

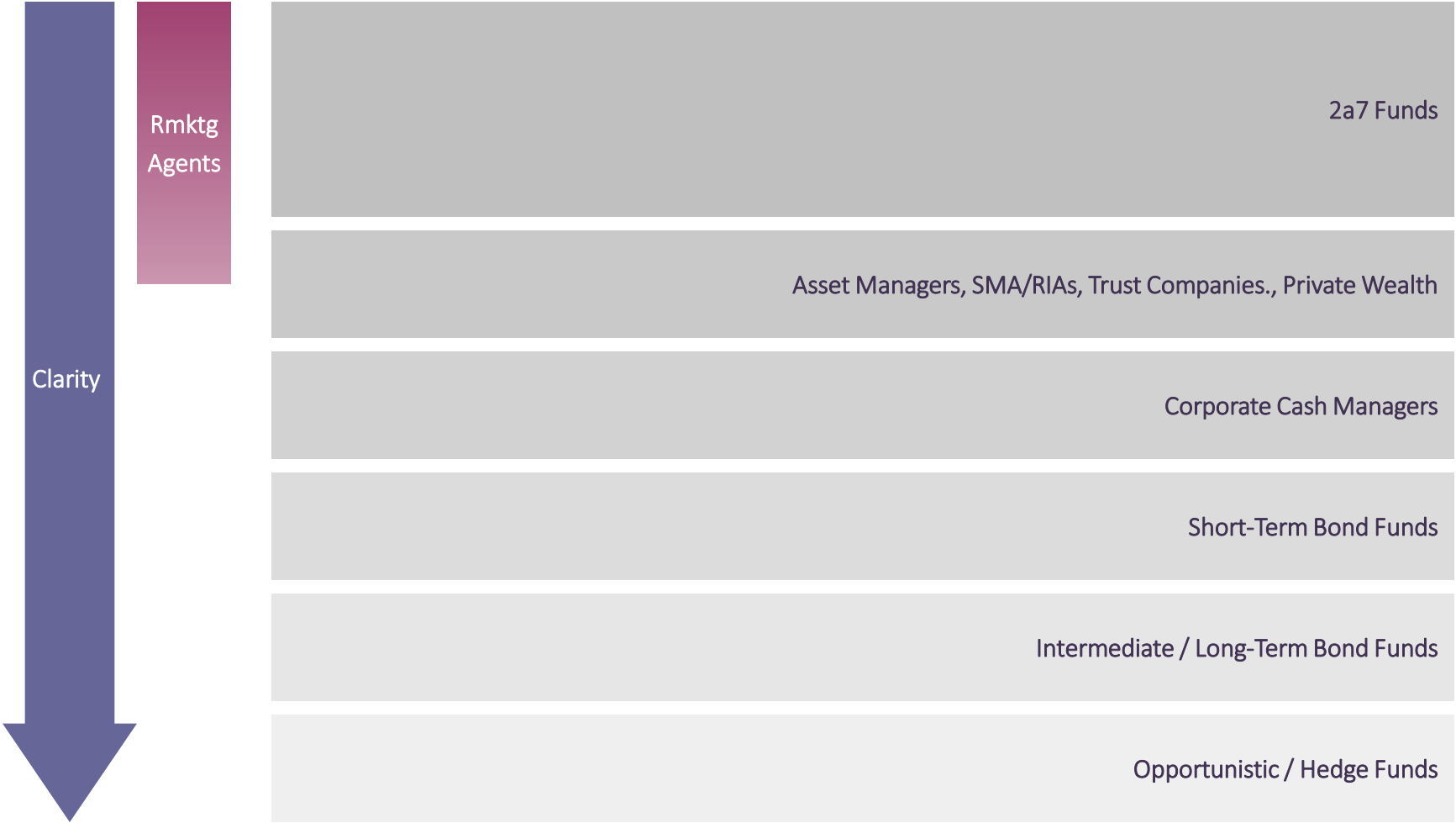
Clarity Operates Without Balance Sheet

- Active Competition – full-time buyer participation in the market
- Buyer Base – extension of equal access to all institutional investors
- Intelligent Bidding – resting GTC orders to create layers of liquidity
- Real-Time Data and Transparency – alerts sideline investors to buying opportunities
- Centralized – immediate, one-stop access to investors that may not participate frequently

Clarity ATS Market Dynamics



Market Dynamics Comparison



Comparison

	Remarketing Agents	Clarity
Market	Voice	Electronic
Organization	Fragmented	Centralized
Liquidity Providers	Yes	Yes
Bidding	No	Yes
Pricing	Determined by Dealer	Competitive Bidding
Balance Sheet	Yes	No
Real-Time Data	No	Yes
Pre-Trade Transparency	No	Yes
Conflicts of Interest	Yes	No

WELCOME

to Clarity Bidrate Alternative Trading System.
Enter your account info below.

User ID:

Password:

LOGIN

TECHNICAL SUPPORT 212.849.5026

Clarity BidRate ATS



Clarity Reports Logout

Welcome Fidelity Test Bidder!

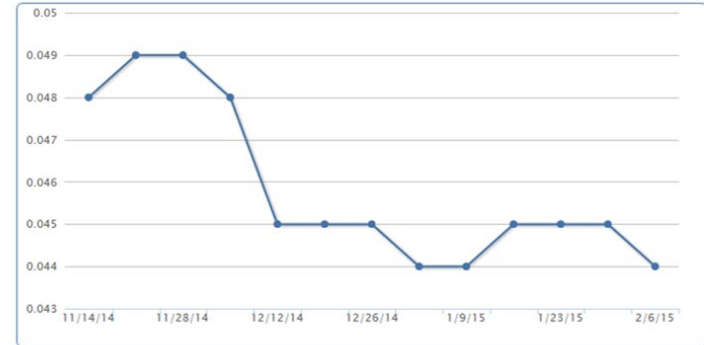
PRIMARY BIDDING

Market Activity

Views: to

<input type="checkbox"/>	Doc	Reset Date	Cusip	Issuer Description	Previous Reset	Des
<input type="checkbox"/>		03/02/15	24500000	NEW JERSEY ECONOMIC DEV	.037%	CLO
<input type="checkbox"/>		03/02/15	24500000	New Jersey Econ Dev	.032%	CLO
<input type="checkbox"/>		03/02/15	24500000	New York Econ Dev	.084%	CLO
<input type="checkbox"/>		03/02/15	24500000	New York Econ Dev	.047%	CLO
<input type="checkbox"/>		03/02/15	24500000	PROCESSIONAL	.100%	2-4

Effective Period	Rate	High	Low
11/14/14-11/20/14	0.048	4.000	0.035
11/21/14-11/27/14	0.049	4.000	0.035
11/28/14-12/4/14	0.049	4.000	0.035
12/5/14-12/11/14	0.048	4.000	0.035
12/12/14-12/18/14	0.045	4.000	0.040
12/19/14-12/25/14	0.045	4.000	0.040
12/26/14-1/1/15	0.044	4.000	0.040
1/2/15-1/8/15	0.044	4.000	0.040
1/9/15-1/15/15	0.044	4.000	0.040
1/16/15-1/22/15	0.045	4.000	0.040
1/23/15-1/29/15	0.045	4.000	0.040
1/30/15-2/5/15	0.045	4.000	0.040
2/6/15-2/12/15	0.044	4.000	0.040



- Full Rate History – table and graph view
- On-demand and in real-time
- Download all historical data
- Export in PDF, Excel or email

Clarity BidRate ATS



Clarity Reports Logout
Welcome

PRIMARY BIDDING

Bid Summary

Reset Date:
Cusip:
Deadline Time: 5:12 PM
 Current Time: 5:04:27 PM

Actions:

64972FWK8 - Municipal Bond Ser A 2015
Outstanding Size: \$125,000,000.00
Security Name: BVRDO

Ceiling Rate: 11.000%
All Sell Rate: 1.100%
Previous Reset: 0.052%
Projected Final Rate: 0.046%
Projected Contractual Bidder Final Position: 0

Account	Account #	Opening Position	Bid Type	Bid Amt	Bid Rate	Index	Spread/%	Projected Allocation	
ABC Fund	71-00001	0	BUY						
Order13		0	BUY	50,000	.543%			0	
Order14		0	BUY	25,000	.035%			25,000	
Order15		0	BUY	15,000	.031%			15,000	
ABC Fund	71-00001	20,600	BUY-GTC	2,400	.080%	SIFMA	.040 S	0	
Order1		0	BUY-GTC	25,000	.428%			0	
ABC Fund	71-00001	20,600	ROLL	3,000	.155%	LIBOR	.025 S	0	
ABC Fund	71-00001	20,600	ROLL	5,600	.052%			0	
ABC Fund	71-00001	20,600	ROLL	1,000	.050%			0	
Order11		15,000	ROLL	2,000	.001%			2,000	
Order16		30,900	ROLL	30,900	.029%			30,900	
Order2		9,500	ROLL-GTC	5,000	.048%			0	
Order4		9,500	ROLL-GTC	2,000	.045%			2,000	
Order5		20,000	ROLL-GTC	5,000	.047%			0	
Order6		20,000	ROLL-GTC	5,000	.046%			3,100	
Order7		20,000	ROLL-GTC	5,000	.046%			5,000	
Order8		20,000	ROLL-GTC	5,000	.043%			5,000	
ABC Fund	71-00001	20,600	SELL	5,000				0	
Order12		15,000	SELL	5,000				0	
Order3		9,500	SELL	2,500				0	
Contractual Bidder									
XYZ Bank	71-000002	0	BUY	125,000				0	

* All amounts are in 000's

Bid Distribution

	# of Bonds	# of Accounts
Total Buys:	117,400	3
Total Rolls:	112,500	6
Total Sells:	12,500	3
Total Missing:	0	0

Disclaimer

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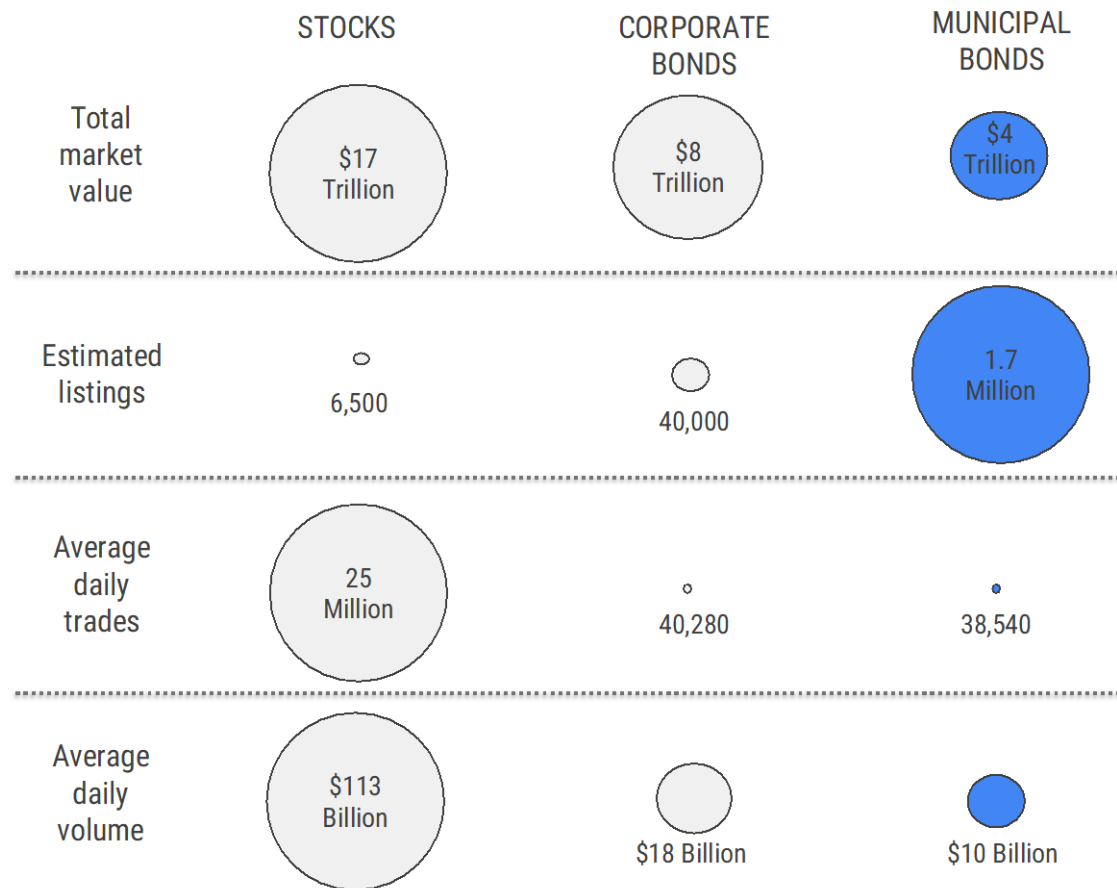
Arbor Research & Trading, LLC is a member of FINRA



EAX TRADING

MUNI BOND TRADING + DATA

COMPARISON OF THE US MARKETS



“Although the municipal securities market is often characterized as a “buy-and-hold” market, significant secondary market trading occurs.”*

*SEC Report of the Municipal Market 2012

PROBLEMS IN SECONDARY MUNI TRADING



- Muni trades incur exorbitant transaction & search costs in the secondary market
 - Price differential exceeds 2%(200 bps) for over half of customer-to-customer chains¹
 - Length of 2 or more days for over half of customer-to-customer chains¹
- Regulators: “.investors have access to relatively little pricing information”²
- Dealer inventories to provide liquidity declined 65% since 2007³ due to new regulations
- \$2.5 trillion² in annual secondary trading via phone or antiquated bulletin-board systems

1. MSRB Report on Secondary Market Trading in the Municipal Securities Market, July 2014

2. SEC Report on the Municipal Market, July 2012

3. Federal Reserve



MUNIS ARE LIKE THE HOUSING MARKET

Muni Characteristics

- 1.7 million individual bonds (CUSIPs)
- High retail ownership (>75%)
- Personal tax exemption
- Low turnover, most bonds trade twice per year¹

Price Discovery in the Housing Market

- Buyers express interest by house type: # of bedrooms, # of bathrooms, for about \$X
- Sellers list their house for a price
- Agent matches serious buyers + sellers prior to firm bidding

1. SEC Report on the Municipal Market, July 2012



INEFFECTIVE PRICING DATA

Muni Reference Pricing

- Last trade
- 3rd party price evaluation
- Comparables of like-bonds

..similar to housing market

- The price you bought your house
- Zillow estimated price
- Your neighbor's selling price



No quote on
CURRENT demand
for your bond &
amount for sale



EAX REDEFINES TRADING & DATA

- For the first time, buyers may express interest across types of bonds (patent pending*)
- Buyers use our cloud technology to indicate desired bond features, size & price range
- Sellers view indicative market for their bonds & contact buyers at attractive prices
- Search based model creates a new trading and data ecosystem

Align Interest: Sellers have specific security
 Buyers want type of bond within price range

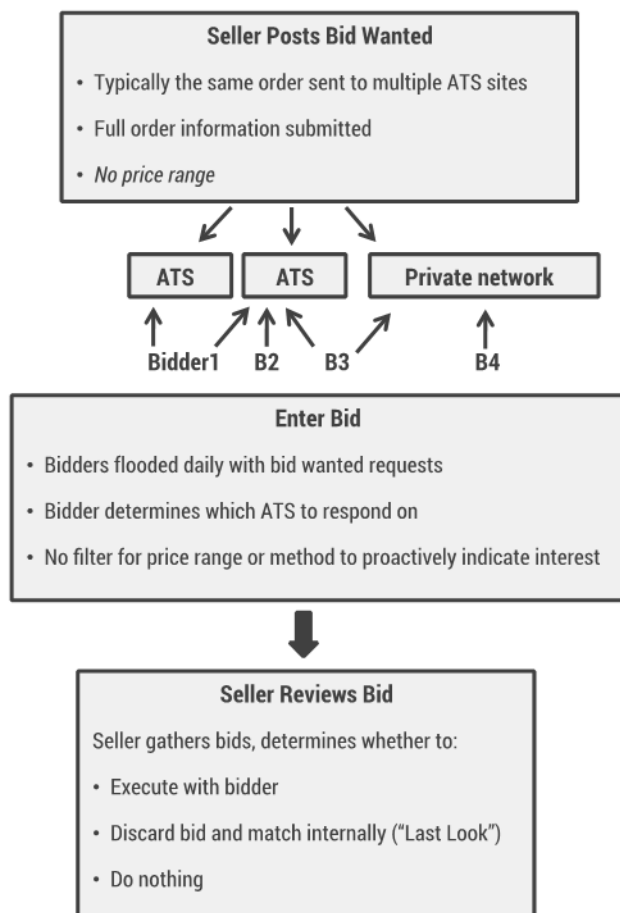
*United States Patent Application Serial No.
14/643,870

(claiming priority to Serial No. 62/950,594, filed March
10, 2014) Filed: March 10, 2015

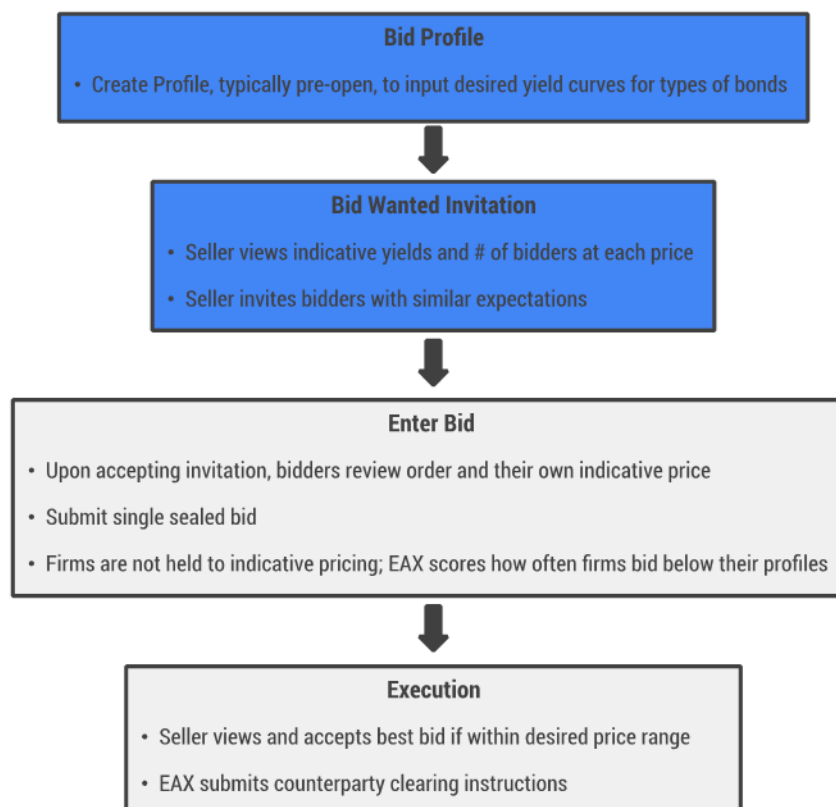


EAX: THE TARGETED APPROACH

Current Process



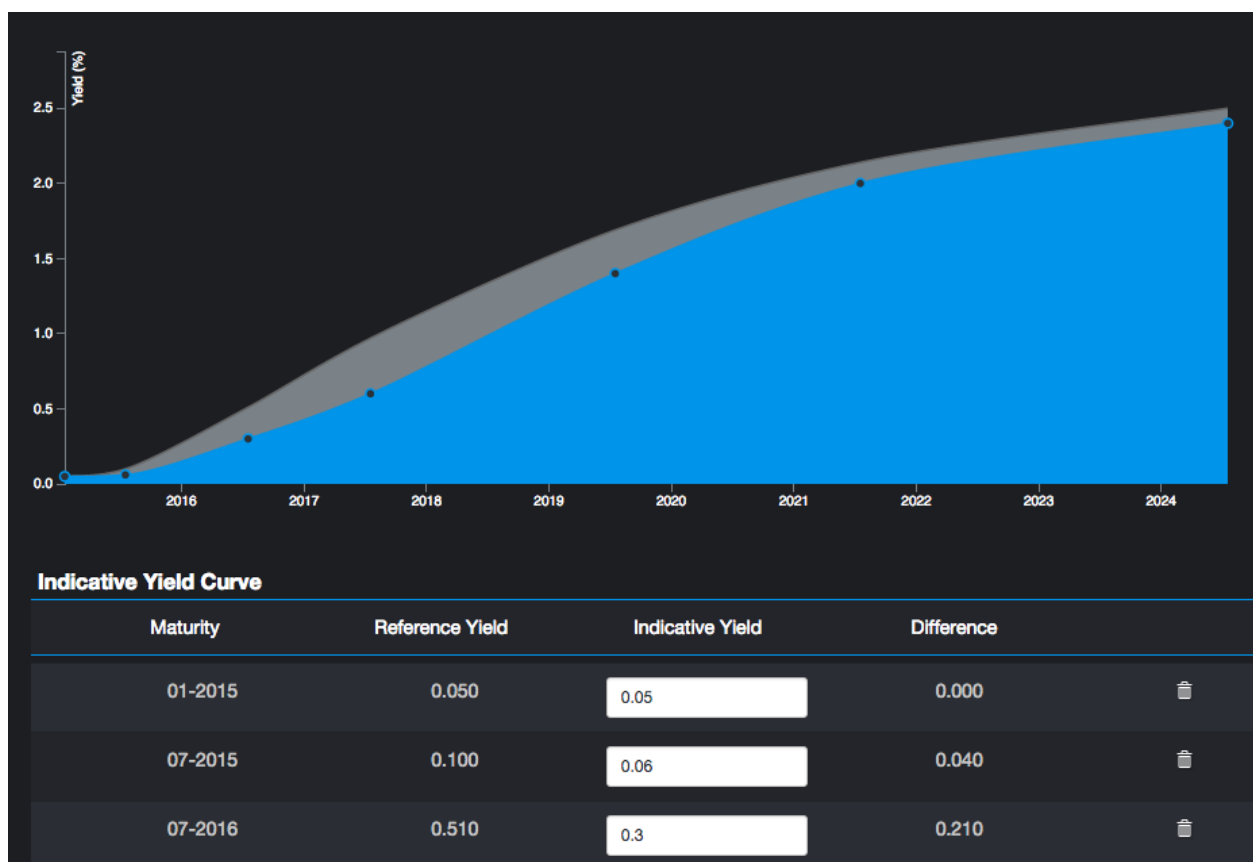
EAX Process





CREATE BID PROFILE

- Enter target yields vs. indexes across bond features, maturity & call ranges
- Limit bid-wanted invitations to sellers with similar expectations
- Flexible methods to receive bid invitations: app, email, IM, text



Start Profile Profile settings and trade criteria

Name

Account

Matching Criteria Basic criteria for bonds matching this profile

Maturities Start: Maturities End:

Ratings Worst: Ratings Best:

☐ Alabama ☐ Arkansas ☒ California ☐ Colorado ☐ Delaware ☐ District of Columbia ☐ Hawaii ☐ Guam ☐ Illinois ☐ Indiana ☐ Louisiana ☐ Massachusetts

TARGETED BID INVITATIONS FOR SINGLE-SEALED BIDS



Sellers Search & Select Invitation
Price

Size
300

Counterparty Score
Unlimited

Lookup

Select a price level to continue

Yield	Price	Matches
1.705	122.449	1
1.753	122.116	2
1.790	121.860	4
1.802	121.777	5
1.957	120.714	6
2.005	120.386	7

Invitations Display Profile Price

Auction Invitations
5 pending invitations

300 @ 1.705
2:12 PM to 3:12 PM

California Tax Exempt AA- / A1 / NR
0 Complex

300 @ 1.790
2:12 PM to 3:12 PM

California Tax Exempt AA- / A1 / NR
0 Complex

REDEFINE THE SECONDARY MUNI BOND MARKET

CREATE A SEARCHABLE NETWORK OF TRADING INTEREST

SESSION FIVE

CDIAC

**CALIFORNIA
DEBT AND
INVESTMENT
ADVISORY
COMMISSION**

TAKING LEADERSHIP IN THE BOND MARKET: THE ISSUER'S ROLE

JUSTIN MARLOWE PH.D.

ENDOWED PROFESSOR OF PUBLIC FINANCE,
EVANS SCHOOL OF PUBLIC POLICY AND
GOVERNANCE,
UNIVERSITY OF WASHINGTON

KIRAN JAIN

CHIEF STRATEGY OFFICER,
NEIGHBORLY

COLIN MACNAUGHT

FORMER ASSISTANT STATE TREASURER,
COMMONWEALTH OF MASSACHUSETTS

TIM SCHAEFER

DEPUTY TREASURER, PUBLIC FINANCE,
CALIFORNIA STATE TREASURER'S OFFICE

COLIN MACNAUGHT

FORMER ASSISTANT STATE TREASURER,
COMMONWEALTH OF MASSACHUSETTS

MassDirect Notes

- In 2014, Massachusetts launched its MassDirect Notes (MDN) program
- The MDN program was created to be a dedicated way for retail investors to get regular, predictable access to new-issue bonds
- Bonds were sold on a near-continuous basis as part of a rolling offering
- Modeled on the corporate medium term note programs of large, blue chip companies like Caterpillar and Duke Energy
- Bonds were sold through an open-architecture electronic trading platform called TMC Bonds

MDN Program Details

- As part of the MDN program, bonds were offered for sale every day for the last two weeks of every month
- Bonds re-priced daily: yields adjusted based on changes to MMD, but spreads to MMD were maintained
- All of the bonds were state G.O.'s, fixed-rate securities, with maturities ranging from two to ten years
- The entire program was rated in advance by the rating agencies
- Bonds were assigned the state's regular CUSIPs, standard denominations, same ratings
- The program was sized at \$250 million and ran from March 2014 to July 2014

Why Did We Develop This Program?

The MDN program was based on three goals to provide long-term benefits to taxpayers:

- I. To expand the investor base, particularly for retail investors, giving them dedicated access to the primary market
- II. To position the state to “get paid” for more transparency
- III. To price bonds daily through smaller bond sales, which would effectively plumb the market for true investor demand

I. Expanding the Investor Base for Retail

- The MDN program was more than just a typical retail order period on steroids
- It was a dedicated, daily, convenient program for retail investors
- The open-architecture nature of the electronic trading platform made it possible for any retail advisor anywhere in the country to place an order for a Mass. G.O.
- Open architecture MDN program vs. traditional underwriting:

Level 1: National Broker-Dealers

Level 2: Regional Broker-Dealers

Level 3: Independent & Other

II. “Getting Paid” for Transparency

- The ability to offer bonds in a rolling offering program was possible because of the state’s enhanced disclosure program
- The state updated its information statement on a bi-monthly basis, whether it was selling bonds or not
- And it developed a dedicated investor website that was used to make voluntary filings on a regular basis
- Also, the use of an electronic trading platform provided investors with significantly more pre- and post-price transparency than a traditional financing
- Bonds were also sold and allotted on a first come, first serve basis
- Same day order confirmation for investors

III. Finding the Right Level of Demand

- Even for frequent issuers, it's incredibly hard to know where bonds should price on a given day
- The typical process of pricing bonds on a single day – typically in a large transaction – makes it unlikely that supply and demand equal each other out
- The MDN program priced bonds every day, taking a dollar-cost averaging approach to pricing
- This reduced market risk, but more importantly, it removed the relative value buyer from the pricing
- No bonds were underwritten – no supply was forced upon the market
- The daily pricing of small amounts of bonds plumbed the market for the true investor demand for Mass. G.O.'s, which led to a **normalizing of pricing spreads**

Pricing Spread Analysis

- Prior to the launch of the program, MA looked at how short-dated MA G.O.'s had priced in the primary in previous transactions
- Analysis covered bond sales from 2008-2014
- Focused on spreads to MMD for new issue bonds with maturities of 2 years to 10 years
 - So no BABs, no taxable, no variable rate bonds included in the analysis

Pricing Spread Analysis Results

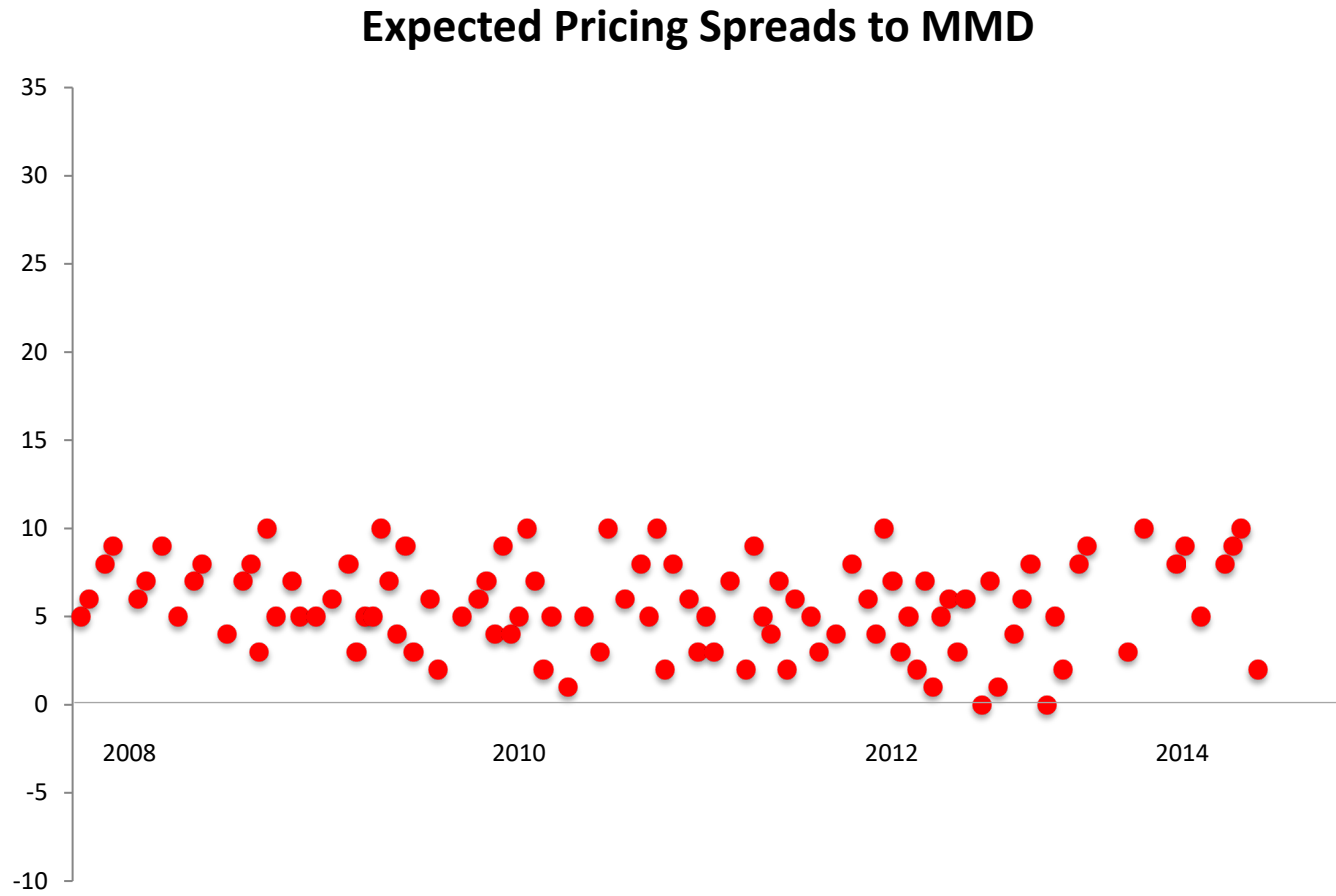
- The wide range of spreads to MMD for short-dated, highly rated bonds was a big surprise and counter intuitive

MA G.O.'s Historical Spread Analysis

Maturity	MAX Spread	MIN Spread	AVG Spread	Hi/Low Range
1	15	-2	2	17
2	23	6	13	17
3	23	9	15	14
4	23	-5	14	28
5	25	-5	15	30
6	29	0	18	29
7	30	0	20	30
8	30	17	24	13
9	30	18	24	12
10	32	12	22	20

- Wider spreads tended to be associated with larger deals, with larger maturities, in negotiated financings
- However, not enough data points to be definitive

Pricing Spreads: Expected



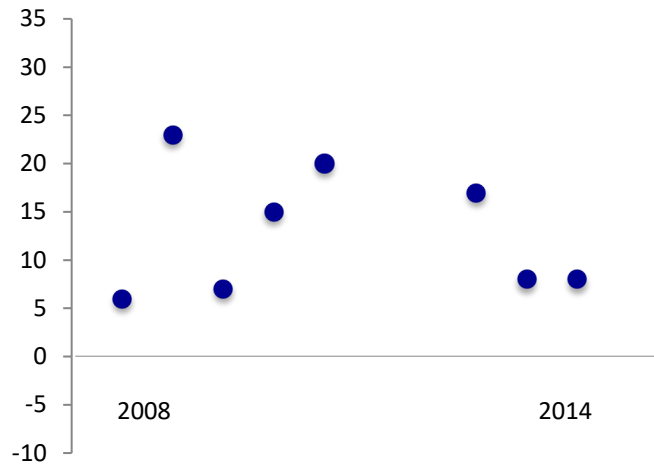
Pricing Spreads: Actual

Historical Pricing Spreads to MMD

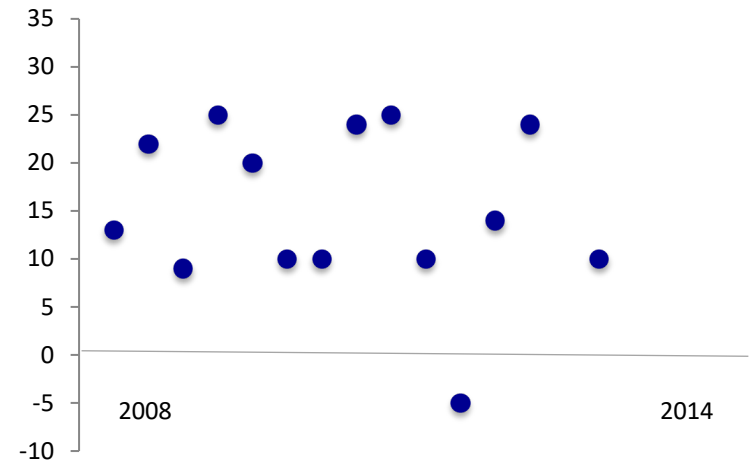


Pricing Spreads for Select Maturities

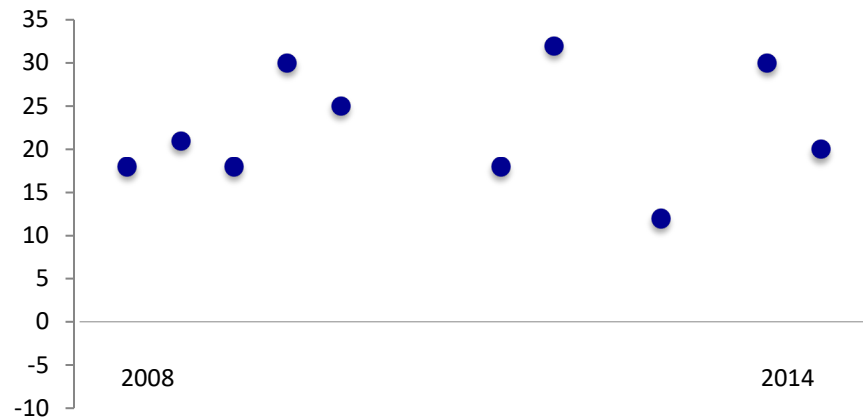
2 Yr Bonds



5 Yr Bonds



10 Yr Bonds



Results

- The initial MDN period in 2014 included 9 weeks of sales, with the program selling out of bonds ahead of schedule
- For the program, \$250 mm in bonds sold to retail, or \$6 million in bonds per day
- 1,080 individual orders from 44 different firms
- Average order size under \$250,000
- The small daily bond sales provided the state with real-time feedback on investor demand
- Over the course of the MDN program, the state used this real-time investor feedback to determine normal pricing spreads

Key Take-Aways

Electronic Trading Platforms can be used effectively by municipal issuers for new-issue financings, like they are in other markets

They promote a far more transparent, issuer and investor friendly process

They can lead to significantly better pricing results for issuers

Questions & Contact Information

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colin@bondlink.com



THE COMMUNITY INVESTMENT MARKETPLACE



 131 @ NEIGHBORLY

neighborly.com

Brisbane's Peer!



"WILLIAM CHALLEN"

If The Golden Gate Bridge were Highway, the Taxpayer would be in this position:

He would not be consulted as to its building.

He would have to absorb its almost its cost in direct taxes.

He would get no direct return.

BUT, Since The Golden Gate Bridge is A Public Toll Bridge, the taxpayer is in this position:

He is consulted as to its building.

He is taxed only for the preliminary work, the total of he to date, and this will be refunded.

All the remaining costs is absorbed by bonds redeemed from tolls.

There will be no tax after the bonds are noted and sold.

There will be a surplus earned of over five million Dollars in forty years, which will be distributed among the counties and may be applied for the reduction of general taxation.

Which is a better proposition for a taxpayer?

He accepts the highway without taxpayer and recognizes that the toll of the road to the entire community is a sufficient return.

Then, how can he fail to welcome a bridge now it is built without taxation and extra money which

BRIDGE THE BAY!

DO NOT HESITATE! BUILD THE SPAN ACROSS THE GATE!

Volume 1

VOTE EARLY AND LATE!

ELECTION: TUESDAY, NOV. 4, 1929

REVIVE BUSINESS, RE-GENERATE!

Number

A \$35,000,000
BRIDGE

Vote Yourself a Job!

\$20,000,000

L-A-B-O-R

Build Your Own Bridge! OWN Your OWN Bridge!
WORK FOR YOURSELF!

Times Are Fierce!

Vote in PROSPERITY

BE YOUR OWN BOSS



100

000

Millennials Will Live In Cities Unlike Anything We've Ever Seen Before



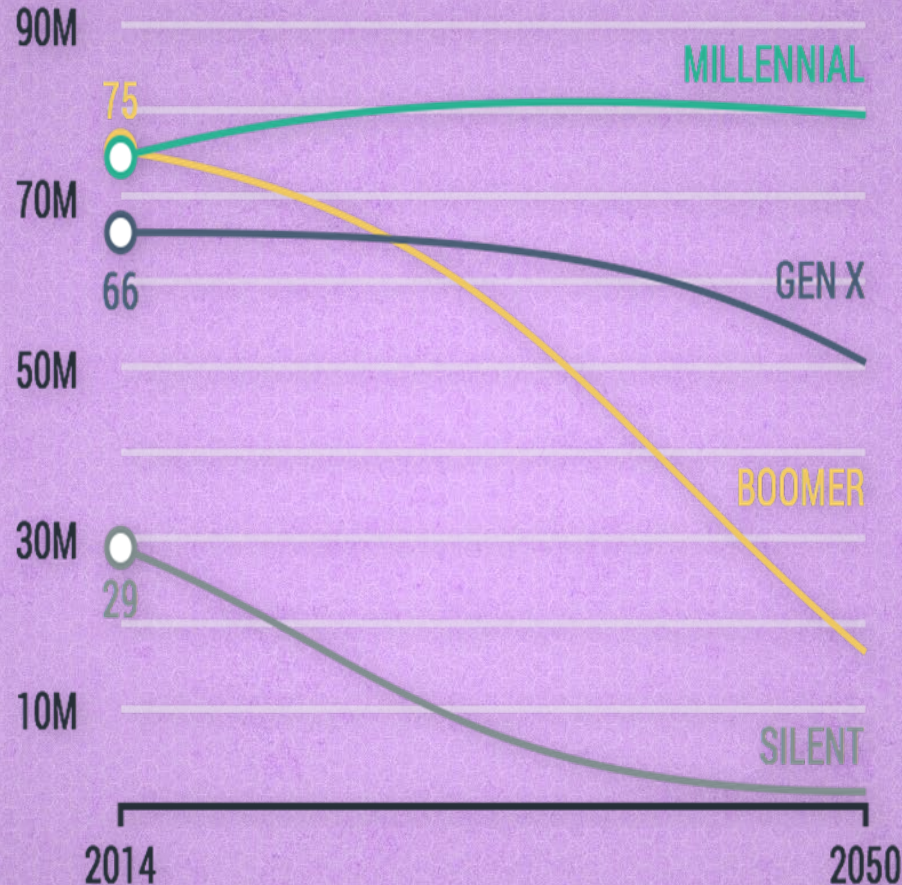
Alissa Walker

Filed to: URBANISM 7/16/15 1:45pm

61,158 🔥 11 ★ ⌵



MILLENNIALS: THE LARGEST GENERATION

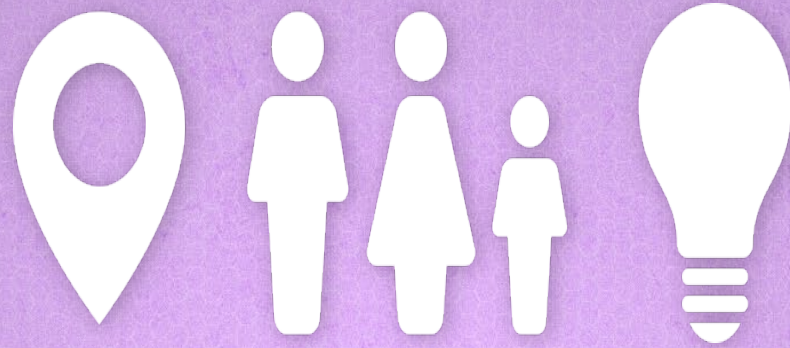


PROJECTED POPULATION BY GENERATION
PEW RESEARCH CENTER - CENSUS 2014

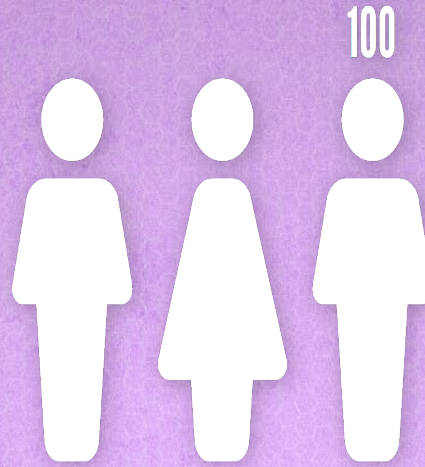
NOT ALL MILLENNIALS LIVE IN THEIR PARENTS' BASEMENT



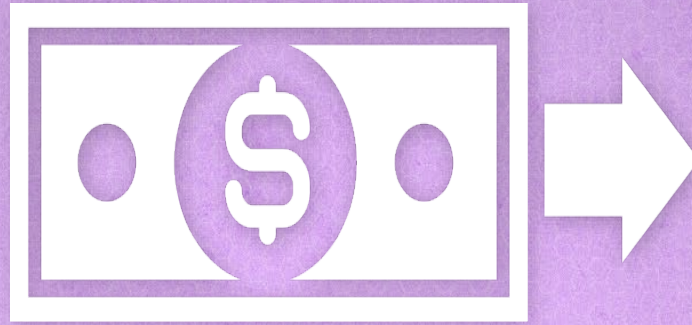
SHAPED BY TECHNOLOGY
“IN ALGORITHMS WE TRUST”



VALUE COMMUNITY, FAMILY & CREATIVITY IN THE WORKPLACE



1 IN 3 MILLENNIALS
WILL LIVE TO BE 100

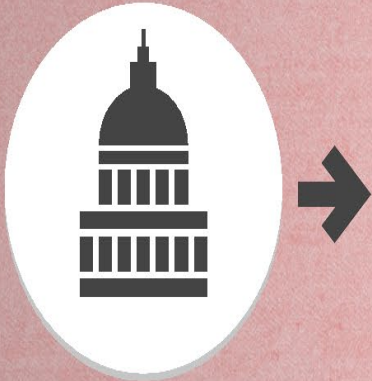


LARGEST WEALTH TRANSFER IN HISTORY

PROBLEM

TOO HARD FOR MILLENNIALS
TO INVEST IN CITIES

PROBLEM TOO EXCLUSIVE



THE WALL STREET JOURNAL.  MARKETS

CREDIT MARKETS

Muni Bond Costs Hit Investors in Wallet

Investors Pay Twice as Much for Municipal Debt as for Corporate Bonds

By MATT WIRZ

March 10, 2014 7:44 p.m. ET

Big Money

Mom-and-pop investors traded about \$915 billion in municipal bonds from 2009-13. But they are paying more to brokers for those investments than do purchasers of other types of U.S. securities.

Average broker profit on \$1,000 trade in 2013*



Category	Average broker profit (\$)
Orange	~17
Blue	~5
Green	~2

Percentage of securities held by individual investors

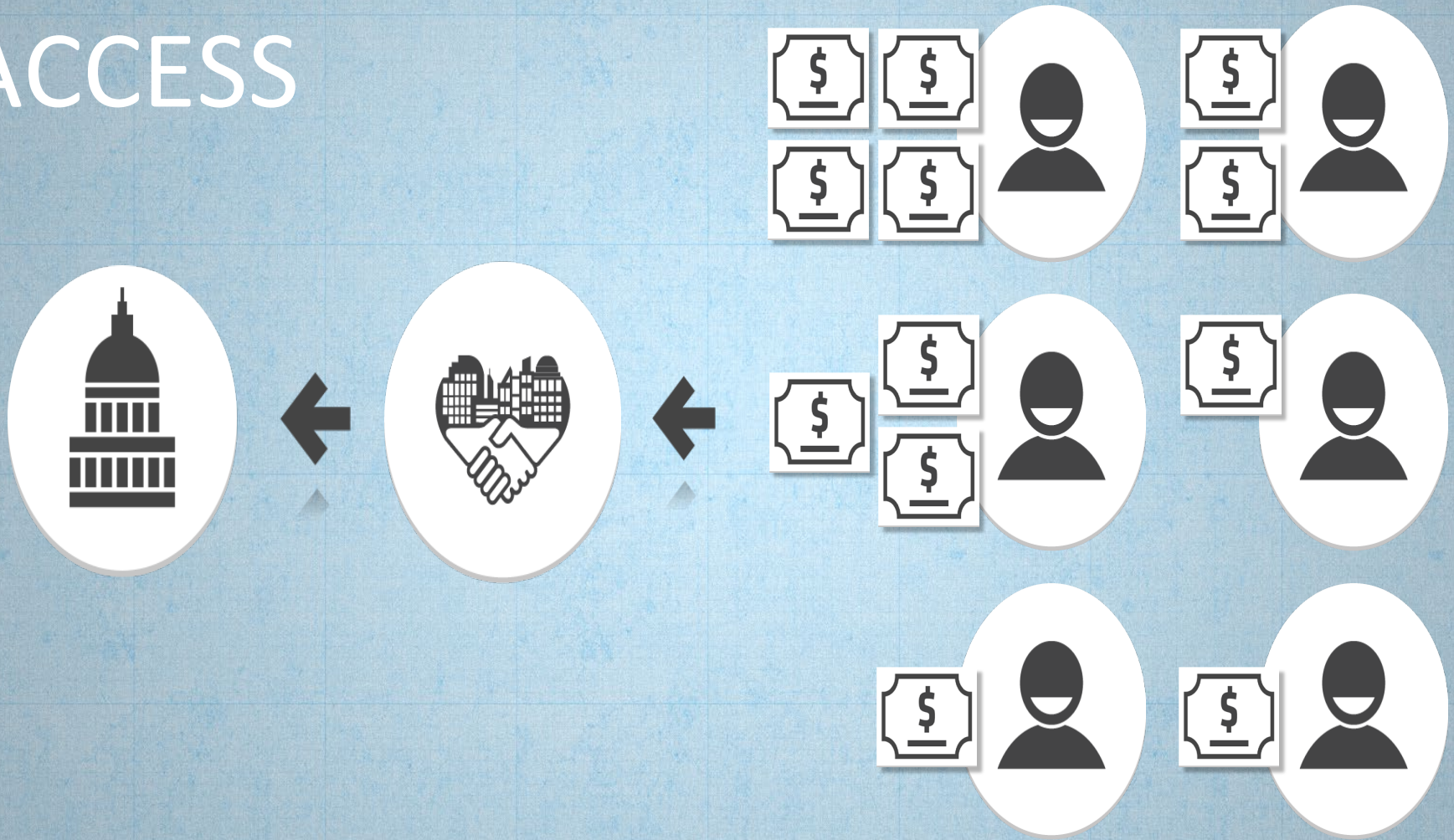


Category	Percentage (%)
Orange	~45
Green	~38

A vertical column of six identical white circular icons. Each icon contains a black silhouette of a person's head and shoulders, with a simple curved line indicating a sad or frowning mouth.

141

SOLUTION: DEMOCRATIZE ACCESS



SOLUTION DEMOCRATIZE ACCESS

1 FIND by Place, Type, Yield

2 REVIEW

3 INVEST!

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Popular Tags: 501c3 Bikes Complete Streets Dogs Education Green Space Healthy Mixed Use Park Placemaking Playground Preservation Public Space Streetscapes Transportation Urban Design Youth

Grid of projects:

- BIG U HARBOR BERM New York, NY \$26.3M 02 May '15 8%
- ELECTRIFY CALTRAIN San Francisco, CA \$35.8M 10 Feb '15 10%
- SOUTH SAN FRANCISCO UNIFIED SCHOOL DISTRICT San Francisco, CA \$91.2M 30 Aug '14 9%
- STREETCAR STARTER LINE Kansas City, MO \$8.2M 20 Dec '14 6%
- THREE POINTS BEAUTIFICATION Louisville, KY \$1,011 (2M) 13 days left
- BE A PLAYER - SOUTHTOWN ZONE Kansas City, MO \$340 (2M) 287 days left
- BE A PLAYER - UNIVERSITY ZONE Kansas City, MO \$465 (2M) 287 days left
- BE A PLAYER - SOUTH PLAZA ZONE Kansas City, MO \$330 (2M) 287 days left
- KANSAS CITY BE A PLAYER - UNION HILL Kansas City, MO \$1,011 (2M) 13 days left
- KANSAS CITY BE A PLAYER - HOSPITAL Kansas City, MO \$340 (2M) 287 days left
- KANSAS CITY BE A PLAYER - JAZZ Kansas City, MO \$465 (2M) 287 days left
- KANSAS CITY BE A PLAYER - WESTSIDE Kansas City, MO \$330 (2M) 287 days left

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SAN FRANCISCO UNIFIED SCHOOL DISTRICT

State of California
San Francisco Unified School District
General Obligation
Sale Date: Saturday August 30, 2014
Bond Maturities: 2016 to 2025
Anticipated Yields: 1.24% to 2.26%
Issue Size \$91,285,000
See all Maturities

Support the growth of this community. Invest as little as \$500. INVEST

New Facilities to Foster Higher Learning

Pursuant to Measure J, proceeds of the District's bonds may be used for the specific projects named in the Bond Projects List approved by the voters, summarized as follows: to provide safe, modern classrooms and educational support facilities by replacing deteriorated portable classrooms with permanent classrooms; repairing deteriorated roofs; providing disabled students access; upgrading science labs, libraries, technology and restrooms; enhancing safety, fire detection and security systems; improving energy efficiency; replacing outdated electrical, plumbing and heating systems (the "Measure J Project").

NEIGHBORS BEHIND THIS \$4 neighbors

ACTIVITY

- SALE DATE 19 August 2014 12:30 pm EDT
- DATED DATE 04 August 2014
- ANNOUNCEMENT 30 July 2014

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YOU ARE INVESTING IN

SAN FRANCISCO UNIFIED SCHOOL DISTRICT

Total: \$1,005.00
I'll cover the transaction fees

Please select a payment method

CREDIT / DEBIT CARD Fees \$29.30
BANK ACCOUNT Fees \$3.00

Checkout using a Bank Account

neighborly 1234 DATE
PAY TO THE ORDER OF Your Community \$
DOLLARS
MEMO 1234567890 0123456789 1234
ROUTING NUMBER ACCOUNT NUMBER

Account Holder Name Account Type
Checking Savings
Routing Number Account Number Bank Name

Billing Information
Name Street Address
City State Zip code
Select an option

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September 28, 2015 1:09 pm

Kenya launches bond sale via mobile phone

John Aglionby in Nairobi

[Print](#) [Clip](#)[Comments](#)

Kenya on Monday launched the world's first Treasury bond to be offered exclusively via mobile phone and slashed the minimum investment level in government debt, in a bid to stimulate public participation in the capital markets, raise money cheaply and boost the national savings rate.

The Ks5bn (\$48m) five-year retail M-Akiba infrastructure bond is based on Kenya's innovative M-Pesa mobile money system, which allows mobile phone subscribers to send and save money and pay bills with a few clicks on their phone.

~~CROWDFUNDING~~ COMMUNITY FINANCE

NEXT GENERATION COMMUNITY PROJECTS

PLAYGROUNDS LIBRARIES BIKE LANES PARKLETS
COMMUNITY GARDENS COMMUNITY SOLAR WIRELESS MESH NETWORKS
SKATE PARKS DISC GOLF PARKS MUNICIPAL DRIVERLESS FLEETS
OPEN SPACES DISTRIBUTED WATER RETENTION RESILIENCE RETROFITS

WHAT ELSE?

THANK YOU

“Anyone should be able to invest in anywhere”

“I want to save for retirement financially and socially”

“I want to invest directly in projects I care about”

“I want to invest in my community to help it become greener, healthier, more efficient...”



CALIFORNIA
DEBT AND
INVESTMENT
ADVISORY
COMMISSION

CLOSE OF PRE-CONFERENCE

PLEASE COMPLETE THE GOLDEN
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HANDOUT AND GIVE TO CDIAC STAFF.
THANK YOU FOR PARTICIPATING
TODAY!

UPCOMING CDIAC WEBINAR:

**POST-MUNICIPALITIES CONTINUING DISCLOSURE COOPERATION (MCDC)
INITIATIVE: WHAT DID WE LEARN AS ISSUERS?**

DECEMBER 9, 2015

10:00 AM – 11:45 AM PT

MORE INFORMATION: WWW.TREASURER.CA.GOV/CDIAC