WHAT DO BOND MARK-UPS **REALLY** COST COMMUNITY FINANCIAL INSTITUTIONS?

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WRITTEN BY

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> *"The process of creating new industries does not go forward without sweeping away the preexisting order."*
>
> *- Alm & Cox*

INTRODUCTION

Creative destruction, a term originated in the 1940's by economist, Joseph Schumpeter speaks to capitalism's ever-changing environment and its ability to innovate, improve and replace the outdated, underperforming and overpriced. In *Capitalism, Socialism, and Democracy* (1942), Schumpeter described creative destruction as the:

> "…process of industrial mutation that incessantly revolutionized the economic structure from within, incessantly destroying the old one, incessantly creating a new structure. This process of creative destruction is the essential fact about capitalism." (p. 83)
>
> *Noteworthy examples: Netflix & Blockbuster, Uber & taxis, Amazon & retail stores*

How has the fixed income marketplace remained virtually unchanged since inception if creative destruction is such an inherent force in our capitalistic society? The answer is fundamentally simple. One of the basic catalysts for change has been notably absent in the bond marketplace – *consumer influence*.

Why have investors been so complacent, when every other industry is tirelessly competing for consumer dollars in the capitalist arena?

The answer is a very well-kept secret. Institutional investors do not know how much they are being charged to buy and sell bonds. The spread, or mark-up, is embedded in the price of the bond and there is no centralized marketplace in existence with bond quotes for prevailing market prices.

As an investor, it's hard to demand change when you don't know it's necessary and as a securities seller it's easy to generate profits when your customers don't know what you charge.

Lack of portfolio transparency and associated hidden bond mark-ups reduce community financial institution profitability and capital levels. In this environment of low interest rates and margin compression, these hidden costs are more onerous than ever, and warrant further scrutiny.

INDUSTRY ANALYSIS: HIDDEN MARK-UPS

In 2013, The Securities Litigation & Consulting Group[3] prepared a study in which they reviewed over $13.6 million trades for fixed-coupon, long-term municipal bonds, with a traded par value of $2.5 trillion.

The study published the following findings:

> "We estimate that investors were charged $10.58 billion in municipal bond markups between 2005 and 2013 in our sample - $6.38 billion in trades on which excessive markups appear to have been charged." (Defined as more than twice the average mark-up studied.)

Martin Braun published an article for Bloomberg in April 2018, in which he quoted Andrew Clinton, founder of Stamford, Connecticut-based Clinton Investment Management. In reference to mark-ups hidden in the trades for municipal bonds, he stated the following:

> "The clients never saw the actual transaction costs and assumed, inappropriately, that they were getting that service for free."

With such compelling results, further analysis was warranted to determine the impact on community financial institution portfolios.

COMMUNITY FINANCIAL INSTITUTION ANALYSIS: HIDDEN MARK-UPS IN BOND TRADING

TRADE DATA ANALYZED

To identify the financial impact of mark-ups on community financial institutions, trade data was gathered from 42 community financial institutions ranging in size from $110 million to $7.2 billion, with portfolios values ranging from $24 million to $1.2 billion. Over 6,900 trades were analyzed representing over $8.2 billion of par value to determine the mark-ups hidden in bond trades for municipal bonds, mortgage back securities, corporate bonds and government agency bonds over a four-year period from 2016 through 2019.

PRESENTATION OF FINDINGS

The results of the findings are summarized in the tables below and analyzed in the following categories:

- Trade Volume by Financial Institution
- Security Type
- Par Value
- Buy/Sell Transactions
- Years to Maturity
- Mark-Up % Rates

The tables include mark-up details for the average mark-up per bond, the total mark-up costs and the average mark-up per trade, as defined below:

- Average Mark-Up Per Bond – the mark-up stated as a percentage of par value
- Total Mark-Up Costs – the cumulative mark-up dollars incurred over the four-year study period
- Average Mark-Up Per Trade – the cumulative mark-up dollars divided by the number of trades

PRICING SERVICES & METHODS

Corporate & Government Bonds: Bloomberg Generic Price (BGN) is Bloomberg's market consensus price for corporate and government bonds. Bloomberg Generic Prices are calculated by using prices contributed to Bloomberg and any other information that we consider relevant.

Mortgage Backed Securities: Any of the following may have been used in the evaluation process to determine the estimated value of a bond on the specified trade date: I Curve, N Curve, U Spread, Z Spread, S Spread, J Spread, BAM (Bloomberg Agency MBS Index prepayment model, Discount Margin and Option Adjusted Spread, which are defined as follows:

- I Curve – Conventional yield spread to the Interpolated Yield Curve
- N Curve – Conventional yield spread to the Swap Curve
- U Spread – Conventional yield spread to specific user defined benchmark
- Z Spread – Cash flow spread to implied spot curve
- S Spread – Cash flow spread to actual US Strip Curve
- J Spread – Conventional yield spread to Interpolated Nominal Yield Curve
- BAM – Bloomberg Agency MBS Index prepayment model
- Discount Margin (DM) - pricing to a particular Index on floating rate securities
- Option Adjusted Spread (OAS) – OAS is a methodology using option pricing techniques to value the imbedded options risk component of a bonds total spread. Imbedded options are call, put or sink features of bonds.

Municipal Bonds: The Electronic Municipal Market Access website is the official source for municipal securities data and documents. The Municipal Securities Rulemaking Board, or MSRB is a regulating body that creates rules and policies for investment firms and financial institutions in the issuing and sale of municipal bonds by states, cities and counties.

Over the Counter: The Trade Reporting and Compliance Engine (TRACE) is the FINRA-developed vehicle that facilitates the mandatory reporting of over-the-counter secondary market transactions in eligible fixed income securities. All broker-dealers who are FINRA member firms have an obligation to report transactions in corporate bonds to TRACE under an SEC-approved set of rules.

ANALYSIS BY TRADING VOLUME PER FINANCIAL INSTITUTION

The following table represents mark-ups summarized by number of trades made by a financial institution during the four-year study. Overall, the 42 financial institutions incurred hidden mark-ups totaling $41.1M, an average of almost $245,000 per financial institution, per year.

COMMUNITY FINANCIAL INSTITUTION BOND MARK-UP ANALYSIS 2016-2019							
# OF FINANCIAL INSTITUTIONS	TRADING VOLUME	TOTAL PAR VALUE	# OF TRADES	AVG MARK-UP/ BOND	AVG MARK-UP/ TRADE	TOTAL MARK-UP	AVG/BANK/ YEAR
3	> 500	$2,260,860,077	1,840	0.73%	$8,646	$15,908,714	$1,325,726
7	250 - 500	$2,032,779,862	2,262	0.38%	$3,639	$8,230,392	$293,943
10	100 - 250	$2,111,872,441	1,582	0.58%	$5,092	$8,056,308	$201,408
13	50 - 100	$1,099,531,311	882	0.63%	$6,270	$5,533,981	$106,423
9	< 50	$741,478,233	339	0.57%	$9,962	$3,376,997	$93,805
42		$8,246,521,923	6,905	0.56%	$5,953	$41,106,392	$244,681

ANALYSIS BY BUY/SELL TRANSACTIONS

As illustrated in the table below, mark-ups occurred on both buy and sell transactions and in relatively equal proportions for all trades.

Because the availability of cash fluctuates, financial institutions need the flexibility to buy and sell in their portfolio to effectively manage cash and maximize returns.

Why is this significant? Because community financial institutions are paying a mark-up on both sides of the transaction:

When a financial institution buys a bond, they are paying a mark-up in the form of a premium price
When a financial institution sells a bond, they are paying a mark-up in the form of a discounted price

COMMUNITY FINANCIAL INSTITUTION BOND MARK-UP ANALYSIS 2016-2019					
BUY/SELL	TOTAL PAR VALUE	# OF TRADES	AVG MARK-UP/BOND	AVG MARK-UP/TRADE	TOTAL MARK-UP
Buy	$6,462,786,335	4,830	0.55%	$6,186	$29,880,769
Sell	$1,783,735,588	2,075	0.59%	$5,410	$11,225,623
TOTAL	$8,246,521,923	6,905	0.56%	$5,953	$41,106,392

ANALYSIS BY SECURITY TYPE

Overall, the average mark-up per bond was consistent across municipal bonds, mortgage backed securities (MBS) and corporate bonds, ranging from .58% to .62% of par value traded. Government agency bonds were the single outlier, with an average mark-up of only .17%. Mortgage backed securities accounted for 55% of the par value traded and incurred a $24.6M mark-up or 60% of the total.

COMMUNITY FINANCIAL INSTITUTION BOND MARK-UP ANALYSIS 2016-2019

SECURITY TYPE	TOTAL PAR VALUE	# OF TRADES	AVG MARK-UP/BOND	AVG MARK-UP/TRADE	TOTAL MARK-UP
Municipal Bonds	$1,816,861,112	3,442	0.62%	$3,779	$13,007,566
Government Agency Bonds	$1,623,922,014	693	0.17%	$3,113	$2,157,536
Mortgage Backed Securities	$4,606,129,713	2,432	0.58%	$10,125	$24,623,205
Corporate Bonds	$199,609,084	338	0.61%	$3,889	$1,318,085
TOTAL	$8,246,521,923	6,905	0.56%	$5,953	$41,106,392

ANALYSIS BY YEARS TO MATURITY

There was a significant stair-step increase in hidden mark-ups as the years to maturity increased. Mark-ups for bonds maturing in less than a year were at .22% of par value traded, while mark-ups for bonds maturing in 45 to 50 years were at .76% of par value.

COMMUNITY FINANCIAL INSTITUTION BOND MARK-UP ANALYSIS 2016-2019

YEARS TO MATURITY	TOTAL PAR VALUE	# OF TRADES	AVG MARK-UP/BOND	AVG MARK-UP/TRADE	TOTAL MARK-UP
< 1 Year	$40,815,809	75	0.22%	$804	$60,307
1 - 5 Years	$1,262,622,731	1,434	0.28%	$1,522	$2,185,003
5 - 10 Years	$1,893,871,006	1,779	0.49%	$4,307	$7,662,996
10 - 15 Years	$2,189,667,682	1,557	0.60%	$7,312	$11,385,488
15 - 20 Years	$789,852,164	664	0.76%	$7,420	$4,926,691
20 - 25 Years	$851,811,709	572	0.81%	$11,352	$6,493,351
25 - 30 Years	$819,526,448	437	0.71%	$12,429	$5,431,455
30 - 35 Years	$82,799,379	31	0.66%	$18,328	$568,162
35 - 40 Years	$36,190,766	12	0.56%	$18,830	$225,960
40 - 45 Years	$18,006,236	7	0.57%	$15,304	$107,128
45 - 50 Years	$75,236,946	42	0.76%	$13,320	$559,452
No Data	$186,121,045	295	0.99%	$5,086	$1,500,397
TOTAL	$8,246,521,923	6,905	0.56%	$5,953	$41,106,392

Maturity dates were unavailable for 295 trades, which are reflected in the row titled No Data

ANALYSIS BY PAR VALUE PER TRADE

There were only intermittent decreases in the mark-up percentage as the par value of the trades increased, with only a significant drop observed once the traded par value exceeded $15M.

COMMUNITY FINANCIAL INSTITUTION BOND MARK-UP ANALYSIS 2016-2019					
PAR VALUE/TRADE	TOTAL PAR VALUE	# OF TRADES	AVG MARK-UP/BOND	AVG MARK-UP/TRADE	TOTAL MARK-UP
> 15M	$219,871,000	10	0.21%	$54,743	$547,425
12.5M - 15M	$156,071,811	11	0.53%	$77,723	$854,953
10M - 12.5M	$515,462,234	50	0.31%	$32,709	$1,635,436
7.5M - 10M	$357,827,080	40	0.52%	$47,114	$1,884,577
5M - 7.5M	$795,482,915	150	0.32%	$17,458	$2,618,704
2.5M - 5M	$1,609,241,835	480	0.43%	$14,634	$7,024,402
1M - 2.5M	$2,819,415,191	1,924	0.59%	$8,452	$16,266,089
750K - 1M	$433,079,333	486	0.57%	$5,052	$2,455,398
500K - 750K	$693,906,663	1,250	0.59%	$3,273	$4,091,612
250K - 500K	$487,860,286	1,380	0.60%	$2,121	$2,926,873
< 250K	$158,303,577	1,124	0.54%	$713	$800,922
TOTAL	$8,246,521,923	6,905	0.56%	$5,953	$41,106,392

ANALYSIS BY MARK-UP PERCENTAGE

To identify possible causation for increasing mark-ups across bond trades, the data was further reviewed to determine if buy/sell transactions, changes in par value, years to maturity or security type varied by mark-up rates. Security type was the only category with significant correlations, as detailed in the second table below. Mortgage Backed Securities, the security typically generating the highest returns, accounted for 59.9% of total mark-ups dollars and made up the majority of trades with mark-ups percentages exceeding 2.5%.

With such a concentration in MBS, a correlation between higher mark-ups and higher returns should be considered.

In the previous era of higher interest rates, investors could still earn a healthy return even with hidden mark-ups i.e. there was more pie to go around. Now that interest rates are low – perhaps for a long period of time - there's not enough pie to go around if bond sellers continue to extract historically large profit margins from unknowing fixed income consumers.

COMMUNITY FINANCIAL INSTITUTION BOND MARK-UP ANALYSIS 2016-2019					
MARK-UP RANGE	TOTAL PAR VALUE	# OF TRADES	AVG MARK-UP/BOND	AVG MARK-UP/TRADE	TOTAL MARK-UP
7.5% up to 10%	$229,075	4	8.37%	$4,736	$18,943
5% up to 7.5%	$1,981,752	2	6.41%	$63,519	$127,037
2.5% up to 5%	$27,836,418	33	2.96%	$24,727	$815,975
1% up to 2.5%	$957,003,306	1,049	1.34%	$12,061	$12,652,405
.75% up to 1%	$821,252,586	657	0.86%	$10,689	$7,022,921
.5% up to .75%	$1,563,298,228	1,451	0.59%	$6,414	$9,307,359
.5% and under	$4,874,920,559	3,709	0.24%	$3,009	$11,161,751
TOTAL	$8,246,521,923	6,905	0.56%	$5,953	$41,106,392

COMMUNITY FINANCIAL INSTITUTION BOND MARK-UP ANALYSIS 2016-2019									
MARK-UP RANGE	TOTAL MARK-UP	MORTGAGE BACKED SECURITIES	% OF TOTAL	MUNICIPAL BONDS	% OF TOTAL	GOVERNMENT AGENCY BONDS	% OF TOTAL	CORPORATE BONDS	% OF TOTAL
7.5% up to 10%	$18,943	$18,943	100.0%		0.0%		0.0%		0.0%
5% up to 7.5%	$127,037	$63,507	50.0%		0.0%		0.0%	$63,530	50.0%
2.5% up to 5%	$815,975	$450,344	55.2%	$365,631	44.8%		0.0%		0.0%
1% up to 2.5%	$12,652,405	$5,612,937	44.4%	$6,319,286	49.9%	$10,205	0.1%	$709,977	5.6%
.75% up to 1%	$7,022,921	$4,927,908	70.2%	$1,971,665	28.1%	$6,675	0.1%	$116,674	1.7%
.5% up to .75%	$9,307,359	$6,342,837	68.1%	$2,632,731	28.2%	$124,378	1.3%	$216,413	2.3%
.5% and under	$11,161,751	$7,206,729	64.6%	$1,727,252	15.5%	$2,016,278	18.1%	$211,491	1.9%
TOTAL	$41,106,392	$24,623,205	59.9%	$13,007,566	31.6%	$2,157,536	5.2%	$1,318,085	3.2%

WHAT WILL CHANGE THIS PICTURE?

There has been much talk of increased technology introduced in the fixed income marketplace of late, but this alone will not decrease hidden mark-ups charged to investors. (While better technology might create efficiencies and reduce costs amongst bond providers in the long run, it will not move a firm to willingly reduce its own profits.)

What, then, will decrease hidden fixed income mark-ups in community financial institutions?

- Community financial institution C-suite employees must increase their awareness of fixed income mark-ups and portfolio transparency.

- Financial Institution Directors must demand fixed income portfolio transaction analyses \ on a regular basis and require financial institution employees with fixed income portfolio management responsibility to continually seek low cost trading options, including but not limited to flat fee versus commission-based trading relationships. (Should financial institution directors understand this issue but fail to demand accountability and responsibility from internal financial institution portfolio managers related to these embedded costs, their fiduciary role to the financial institution might be questioned in the future.)

- For publicly traded community banks: new Federal Reserve rules designed to simplify and increase transparency in determining bank control have been approved and are slated to go into effect April 1, 2020. These rules, which will significantly increase the ability of community bank shareholders to build larger "non-control" positions, could greatly increase shareholder activism in the community bank industry. Shareholder activists are traditionally quite proficient at uncovering unwarranted and superfluous costs and expenses, as well as any hints of impropriety in regard to bank-vendor relationships, including but not limited to combined or pooled services, benefits not available to the general investing public and "pay to play" regarding investment banking and coverage. Increased bond market transparency coupled with increased shareholder activism could prove to be problematic to publicly traded institutions that do not implement in-house surveillance tools or objective non-affiliated advisory relationships to monitor these important activities and their related costs to shareholders.

CONCLUSION

Consistent with previously published studies, our analysis finds that community financial institutions are financially impacted by significant hidden mark-ups in their investment portfolios; mark-ups that reduce ROI, ROA and financial institution capital, and preclude the alternative use of funds for the benefit of the financial institution and its customers.

In this environment of low interest rates and shrinking margins, community financial institution C-suites and boards of directors must understand and control all expenses, including those that are hidden. The positive? Like most other industries – and capitalism in general – I believe creative destruction will occur in community financial institution fixed income management. Increased portfolio transaction transparency and a more educated fixed income consumer will result in better bond pricing, increased portfolio returns and more profitable community financial institutions in the future.

And why do I believe this now, after all these years?

Because now we know there is a need for change.

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