

New Jersey Green Municipal Bonds

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Background

Green bonds are municipal bonds that use their proceeds to finance projects that deliver environmental benefits. Although green bonds make up a small portion of the total bond market, their share has grown steadily among corporations and international organizations.

Purpose

The purpose of our research is to determine the motivation behind municipalities issuing green bonds in New Jersey. We are interested in how these bonds impact the municipalities that issue them, as well as their peers who do not. Our findings could be useful for policymakers and investors who might want to start investing in green bonds, growing the investor base in this market, and contributing to public policy debate on climate change.

US Muni Bond Market per State – Top 10 for # GBs 2010M1 – 2024M6

State	Issuance of Green Muni Bonds (\$B)	Number of Green Muni Bonds	Issuance of Ordinary Muni Bonds (\$B)	Number of Ordinary Muni Bonds	Share of Green Muni Bonds (Dollar Amount) (%)	Share of Green Muni Bonds (Number of Bonds) (%)
California	40.80	4,064	695.36	484,612	5.54	0.83
New York	34.92	3,129	499.02	383,228	6.54	0.81
Texas	4.70	1,879	506.48	641,047	0.92	0.29
Massachusetts	5.45	1,045	124.28	134,849	4.20	0.77
Ohio	6.74	1,014	109.35	177,782	5.80	0.57
Indiana	3.93	970	52.19	152,299	7.01	0.63
Pennsylvania	1.36	938	161.58	283,647	0.83	0.33
New Jersey	1.55	823	128.96	191,824	1.19	0.43
Michigan	2.73	733	96.11	206,740	2.76	0.35
Washington	5.35	658	93.89	122,475	5.39	0.53

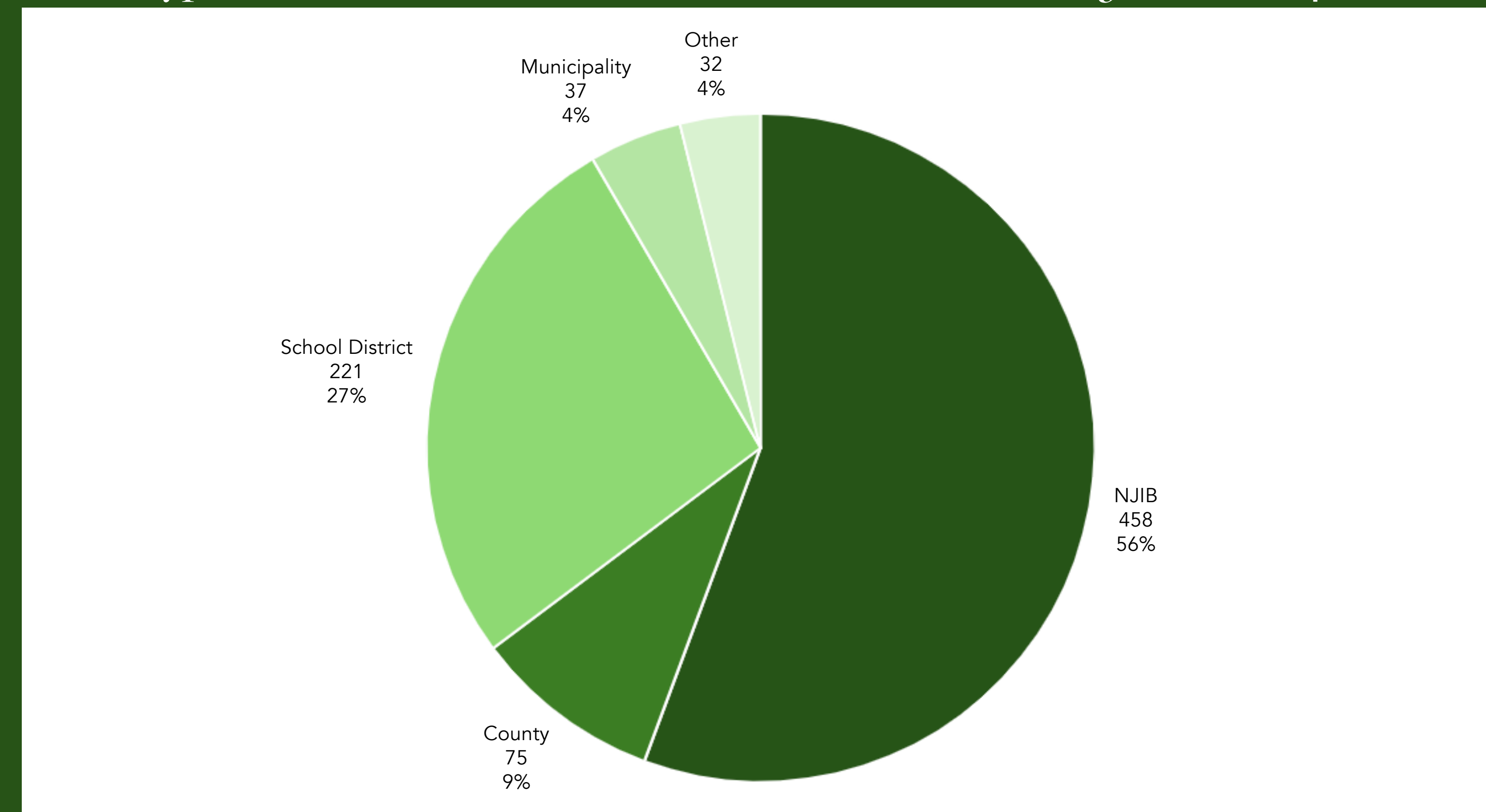
Methods

Our research is split into two stages. In Stage 1, we analyzed Bloomberg data at both the bond level and the municipal level. At the bond level, we compared the NJ green municipal bonds to NJ ordinary municipal bonds. We also analyzed green bonds and ordinary bonds issued by the same entity. This included a comparison of each bond's maturity, size, spread, coupon, and rating. We then created a map depicting each NJ county that issued green bonds to allow us to see if there was any clustering. The map includes a color gradient, with darker colors correlating to a higher number of bonds issued. This helps us visualize which counties issued more bonds, and if there was clustering again. Then, at the municipal level, we compared municipalities that issue green bonds to those that do not. We wanted to see if there was any financial incentive that would explain why these entities choose to issue green bonds instead of ordinary municipal bonds. In Stage 2, we aim to continue looking into this by conducting interviews with the municipalities and education boards that have issued large numbers of green municipal bonds. We plan to ask them about the reasoning behind why they choose to issue green bonds, what they use the funding for, and if they would recommend other institutions invest in these bonds as well.

Green and Ordinary Muni Bonds for New Jersey 2015M1 – 2024M6

Year	Issuance of Green Muni Bonds (\$B)	Number of Green Muni Bonds	Issuance of Ordinary Muni Bonds (\$B)	Number of Ordinary Muni Bonds	Share of Green Muni Bonds (Dollar Amount) (%)	Share of Green Muni Bonds (Number of Bonds) (%)
2024	0.08	64	10.3	1,267	0.815	4.808
2023	0.26	60	10.1	2,974	2.489	1.978
2022	0.14	59	8.6	3,043	1.621	1.902
2021	0.19	115	8.1	3,921	2.309	2.849
2020	0.33	137	11.5	4,107	2.740	3.228
2019	0.08	99	10.6	4,035	0.760	2.395
2018	0.07	85	8.4	3,212	0.803	2.578
2017	0.16	136	9.7	4,272	1.601	3.085
2016	0.02	41	7.8	4,780	0.295	0.850
2015	0.01	19	5.8	4,855	0.115	0.390
Total	1.34	815	90.9	36,466	1.450	2.186

Type of Issuer for Green Muni Bonds in NJ 2015M1 – 2024M6



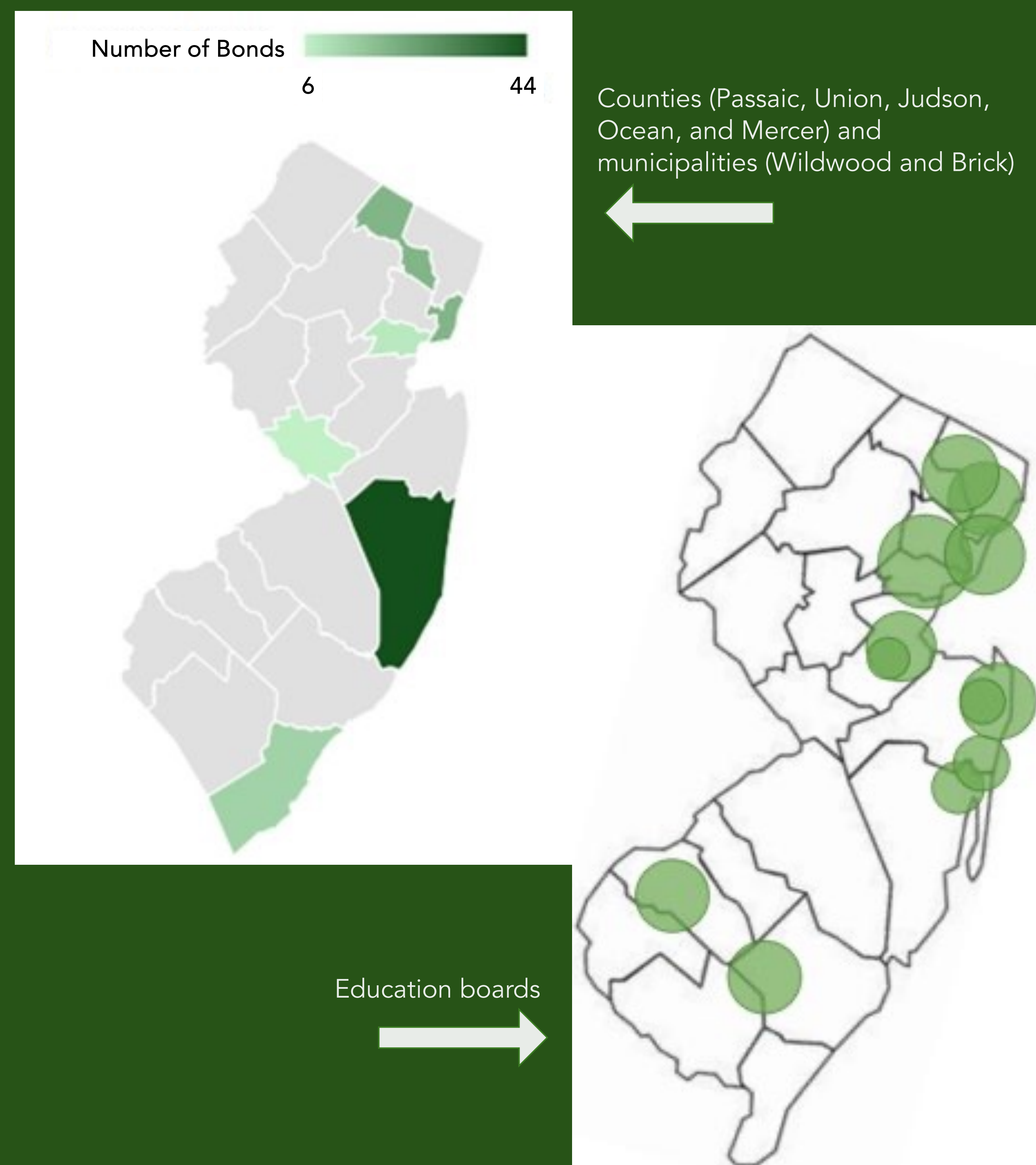
Comparison Green vs Ordinary NJ Muni Bonds 2015M1 – 2024M6

	All Ordinary Muni Bonds	Ordinary Muni Bonds from GMB-Issuing Munis	Green Muni Bonds	Green Muni Bonds Except NJIB
Number of Bonds	60,436	2,754	823	365
Maturity Size (\$M)	4.54	8.99	1.96	2.05
Maturity (years)	8.18	10.64	10.91	10.23
Coupon (%)	3.23	4.25	3.96	3.93
Spread		80.42	49.10	63.30
S&P Credit Rating				
AAA		10.55	55.16	2.19
AAA-		-	-	-
AA+		3.46	3.28	7.40
AA		24.38	13.37	30.14
AA-		4.19	7.41	16.71
A+		0.88	-	-
A		7.43	2.55	5.75
A-		9.30	2.55	5.75
BBB+		10.33	2.67	6.03
BBB or lower		5.04	-	-
No rating		24.45	13.00	26.03

Results

By the end of Stage 1, we found that New Jersey green bonds typically have lower issue sizes, lower spreads, and higher credit ratings. We also found statistical evidence for greenium, as green bonds have an 8bp lower spread than ordinary bonds do. Looking at our map, it appears that most clustering is in North Jersey and along the coast. The counties that issue green bonds have higher household incomes, lower average ages, fewer houses, and lower home ownership rates.

Geographic Spread for Green Muni Bonds in NJ 2015M1 – 2024M6



Future Research

To complete this first stage of our research, we must finish collecting bond and census data to conduct comparisons between green bond peers at the municipal and school board level. Then, we will be able to make our final calculations and draw conclusions on the benefits of investing in these bonds. In the second stage of our research, we plan to interview/survey these New Jersey municipalities and education boards that already issue green bonds.