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The Hidden Costs of Financing a National Football League Stadium with Municipal Bonds: The Case of Allegiant Stadium in Las Vegas

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Abstract

The development of professional sports stadiums in the United States typically relies on public funding in the form of municipal bonds. Prior research has identified several economic and noneconomic reasons local governments choose to direct public funds towards the construction of stadiums. In this study, the process of issuing bonds is explored. The focus of the study is Allegiant Stadium in Las Vegas, Nevada. The bond issuance process is described and data associated with the bonds for the development of Allegiant Stadium are examined to quantify the hidden costs associated with financing the venue. Findings from this study demonstrate the financial consequences for taxpayers resulting from a lack of transparency in the municipal bond issuance process. The overall conclusion of this research suggests sport stadiums do not result in significant increases in economic activity. Thus, subsidized stadium development projects may lack adequate economic justification.

Keywords: *asymmetric information, bond underwriting, municipal bond, professional sports*

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Introduction

The use of public funds to finance professional sports stadiums in the United States has been the focus of many research studies. This body of literature tends to focus on the political economy associated with the use of government subsidies to fund sports stadiums as well as the economic impact of sports stadiums in specific markets. Municipalities may subsidize major renovations to existing venues to ensure the home team remains in the local market while “cities without home teams are often willing to dangle many carrots to entice teams to move...the most visible way cities do this is by building new stadiums and arenas” (Zaretsky, 2001, p. 5).

Local civic leaders and stakeholders frequently promote the economic benefits of stadium development to secure public support and justify investing public money in these projects. Their claims, which are typically supported by commissioned economic impact reports, are often overstated and misleading due to methodological flaws (Crompton, 1995; Siegfried & Zimbalist, 2000). For example, Long’s (2005) research included public subsidies typically omitted from estimates and found the cost for 99 major sports facilities operating in 2001 was underreported by an average of \$50 million per facility. Additionally, as noted by Matheson (2019) “...some academic economists suggest, only partially in jest, that if one wants to know what the true economic impact of a stadium project will be, simply take whatever number the consultants project and then move the decimal point one place to the left” (p. 271).

Researchers (e.g., Baade, 1996; Baade & Dye, 1988; Coates & Humphreys, 1999; Coates & Humphreys, 2008; Crompton, 2004; Matheson, 2019; Noll & Zimbalist, 1997; Rosentraub, 1999; Siegfried & Zimbalist, 2006) have repeatedly shown that investing public dollars into professional sports stadium development projects does not always result in significant positive economic impact above and beyond project costs. Even so, the trend of extracting public financial resources to subsidize their construction has continued (Holloway & Humphreys, 2019). This continuation of public investment may, in part, be attributed to subsidy advocates underreporting the actual costs of stadium development projects (Long, 2012).

The process of securing public funding for sports stadiums and other projects often involves the issuance of municipal bonds. A bond is a type of security in which a borrower pays a lender interest in addition to repayment of the principal amount of the loan at maturity. As there is a lack of transparency associated with the municipal bond market in the United States (Peng & Brucato, 2004), it is difficult for bond issuers (local government officials) to assess competitiveness of the pricing of municipal bonds, as well as the pricing associated with adding call provisions to refinance the debt in the future. The opaqueness of the bond market and fees associated with adding bond call provisions results in hidden costs, which drive up the price for publicly funded sports venues.

Hidden costs represent both an increased profit for the entity providing the financing for the stadium project (investment bank) and an increased cost for the entity paying the bill (local government via taxpayers). The outcome of these competing incentives can be explained by the theory of asymmetric information (Akerlof, 1970; Mas-Colell et al., 1995; Spence, 1976), whereby one stakeholder has more and/or better information than the other. Specifically, it is plausible that underwriters possess superior skills and knowledge and are therefore able to generate more profit at the expense of taxpayers through the bond issuance process.

In this study, the process of issuing bonds was examined. The bond issuance process has not been scrutinized in previous stadium finance studies. Herein, the researchers examined the bond issuance process, identified the stakeholders involved, and highlighted the benefits and costs associated with adding call options to municipal bonds. Data associated with the bonds for the development of Allegiant Stadium in Las Vegas, Nevada was used to quantify the hidden costs associated with financing the venue.

Bond Issuance Process and Callable Municipal Bonds

Municipal bonds (“munis”) are instruments used by governments to raise funds for public projects, such as highways, utilities, schools, and stadiums. The stakeholders in the municipal bond issuance process include an underwriter (investment bank) that serves as an intermediary between the bond issuer (local government) and fixed income investors. The interest payments, or stream of income, that investors earn from municipal bonds are typically exempt from federal income taxation and in unique cases exempt from the investor’s state income taxation (Cestau et al., 2019). Therefore, this type of security is highly coveted among investors seeking to minimize tax exposure.

Underwriters assume the risk of buying the bonds from local governments and selling them to investors. They communicate with potential investors to gauge the price range and maturity of the proposed debt and earn a profit based on the difference between the buying and selling price (the spread). The borrowing costs, yields, and underwriting gross spreads are significantly influenced by the underwriter’s reputation (Daniels & Vijayakumar, 2007).

The issuance of municipal bonds sometimes features a call provision. A call provision provides local governments the option to refinance their debt at some point in the future to potentially reduce interest charges. While callable municipal bonds provide local governments flexibility to call the bonds before the maturity date, this type of security increases uncertainty for investors. Adding a call provision comes at a significant cost to local governments and represents additional opportunity for the selected underwriting firm to earn a substantial amount of revenue if and when the local government elects to exercise this option.

The municipal bond market in the United States lacks transparency (Peng & Brucato, 2004). Therefore, it is difficult for bond issuers (local government officials) to evaluate the competitiveness of the municipal bonds issuance. The addition of call provisions makes this valuation even more challenging. Thus, a key contribution of this study is that it seeks to quantify the hidden costs associated with financing a National Football League (NFL) stadium, whereby hidden costs include both the mispricing of the bonds and the call provisions of the municipal bonds issuance for stadium financing.

Allegiant Stadium Bond Data

The unit of analysis consists of the bond issuance used to finance the newly constructed Allegiant Stadium in Las Vegas, NV. The cost of the new stadium, including site costs, infrastructure, land and construction costs, is estimated to be \$1,800,000,000. The funding comes from public and private sources, including approximately \$750,000,000 from the issuance of municipal bonds, \$200,000,000 from the

NFL G-4 funds, \$250,000,000 from Personal Seat License (PSL) proceeds, and \$600,000,000 from a construction loan. Because the focus of the current analysis is the capital raised through the issuance of tax-exempt municipal bonds, the all bond tranches for this stadium were analyzed to control for different economic environments (e.g., state and local tax rate) and political climate. Information for all 22 bonds (tranches) were collected through Electronic Municipal Market Access (EMMA). The underwriters for the Raiders' stadium bonds were RBC Capital Markets, JP Morgan, Citi Group, Merrill Lynch, Pierce, Fenner & Smith, Morgan Stanley, Siebert Cisneros Shank & Co, Wells Fargo, and National Association.

The bonds in this study have different maturity dates ranging from 2019 through 2048. The (direct) bond issuance costs amounted to \$1,999,441 (Clark County Stadium Authority, 2018), while the total amount raised was \$743,917,126 (Clark County, 2018; Velotta, 2018). Consistent with Brown's (2012) findings, all bonds maturing after 10 years have a call option and a call protection of 10 years.

Table 1

Maturity Schedule and Yields for Clark County, NV Stadium

Maturing	Issue number	Principal	Coupon Rate	Yield	Market Yield ^M
6/1/2019	WM1	1,070,000	4	1.740	1.706
6/1/2020	WN9	1,775,000	5	1.840	1.804
6/1/2021	WP4	2,545,000	5	1.960	1.917
6/1/2022	WQ2	3,365,000	5	2.100	2.034
6/1/2023	WR0	4,240,000	5	2.220	2.157
6/1/2024	WS8	5,175,000	5	2.340	2.241
6/1/2025	WT6	6,170,000	5	2.430	2.336
6/1/2026	WU3	7,230,000	5	2.520	2.437
6/1/2027	WV1	8,355,000	5	2.600	2.522
6/1/2028	WW9	9,555,000	5	2.680	2.598
6/1/2029	WX7	10,830,000	5	2.760 ^c	2.669
6/1/2030	WY5	12,180,000	5	2.830 ^c	2.752
6/1/2031	WZ2	13,620,000	5	2.880 ^c	2.834
6/1/2032	XA6	15,145,000	5	2.920 ^c	2.897
6/1/2033	XB4	16,765,000	5	2.980 ^c	2.979
6/1/2034	XC2	18,480,000	5	3.050 ^c	3.053
6/1/2035	XD0	20,305,000	5	3.090 ^c	3.108
6/1/2036	XE8	22,230,000	5	3.120 ^c	3.146
6/1/2037	XF5	24,275,000	5	3.150 ^c	3.180
6/1/2038	XG3	26,440,000	5	3.170 ^c	3.194
6/1/2043	XH1	169,390,000	5	3.270 ^c	3.250
6/1/2048	XJ7	246,005,000	5	3.320 ^c	3.278

Note: Improvement Bonds CUSIP: 180848 Bonds Series 2018 A principal amount \$645,145,000

^c yield to earliest optional redemption date of June 1, 2028 at par

^M Market yield is the yield on April 11, 2018 obtained from Bloomberg

Analysis and Results

Callable bonds are priced at a yield to first call. How much money was raised within each tranche was calculated based on the published yields. According to those calculations, Clark County raised almost \$744,000,000. This is consistent with the amounts reported in the Comprehensive Annual Financial Reports (CAFR) (Clark County, 2018).

To assess how competitive the yields were for these tranches, the researchers compared the respective yields to the yields that were obtained from Bloomberg for municipal bonds with a similar rating and similar maturity (See Table 1). Based on these yields, the “market price” of the Allegiant Stadium bonds was calculated. The stadium bonds are double barrel (i.e., guaranteed by the government if revenue proves to be insufficient). Hence, these bonds should be more secure than similarly rated bonds and thus should have warranted a higher price than bonds with similar characteristics. The results for these calculations can be found in Table 2.

Table 2
Bond Yields and Prices for Clark County, NV Stadium Improvement Bonds Compared to Market Yields and Prices

Maturing	Bond	Principal	Yield	Price	Total Amount Raised	Market Yield ^M	Market Price	% Price	Estimated Option Premium
6/1/2019	WM1	1,070,000	1.74	102.413	1,095,819.10	1.706	102.456	0.0%	
6/1/2020	WN9	1,775,000	1.84	106.428	1,889,097.00	1.804	106.519	0.1%	
6/1/2021	WP4	2,545,000	1.96	109.051	2,775,347.95	1.917	109.200	0.1%	
6/1/2022	WQ2	3,365,000	2.10	111.289	3,744,874.85	2.034	111.577	0.3%	
6/1/2023	WR0	4,240,000	2.22	113.291	4,803,538.40	2.157	113.629	0.3%	
6/1/2024	WS8	5,175,000	2.34	114.999	5,951,198.25	2.241	115.626	0.5%	
6/1/2025	WT6	6,170,000	2.43	116.629	7,196,009.30	2.336	117.315	0.6%	
6/1/2026	WU3	7,230,000	2.52	118.032	8,533,713.60	2.437	118.717	0.6%	
6/1/2027	WV1	8,355,000	2.60	119.303	9,967,765.65	2.522	120.018	0.6%	
6/1/2028	WW9	9,555,000	2.68	120.378	11,502,117.90	2.598	121.205	0.7%	
6/1/2029	WX7	10,830,000	2.76 ^c	119.596	12,952,246.80	2.669	122.254	2.2%	287,886.82
6/1/2030	WY5	12,180,000	2.83 ^c	118.91	14,483,238.00	2.752	122.991	3.3%	497,114.04
6/1/2031	WZ2	13,620,000	2.88 ^c	118.435	16,130,847.00	2.834	123.555	4.1%	697,383.35
6/1/2032	XA6	15,145,000	2.92 ^c	118.052	17,878,975.40	2.897	124.196	4.9%	930,460.64
6/1/2033	XB4	16,765,000	2.98 ^c	117.479	19,695,354.35	2.979	124.427	5.6%	1,164,905.99
6/1/2034	XC2	18,480,000	3.05 ^c	116.814	21,587,227.20	3.053	124.614	6.3%	1,441,427.77
6/1/2035	XD0	20,305,000	3.09 ^c	116.436	23,642,329.80	3.108	124.945	6.8%	1,727,795.45
6/1/2036	XE8	22,230,000	3.12 ^c	116.154	25,821,034.20	3.146	125.436	7.4%	2,063,333.64
6/1/2037	XF5	24,275,000	3.15 ^c	115.873	28,128,170.75	3.180	125.903	8.0%	2,434,781.52
6/1/2038	XG3	26,440,000	3.17 ^c	115.686	30,587,378.40	3.194	126.635	8.6%	2,895,002.36
6/1/2043	XH1	169,390,000	3.27 ^c	114.755	194,383,494.50	3.250	129.874	11.6%	25,610,035.76
6/1/2048	XJ7	246,005,000	3.32 ^c	114.293	281,166,494.65	3.278	132.795	13.9%	45,514,665.02
		645,145,000			743,916,273.05				85,264,792.35

Note: c yield to earliest optional redemption date June 1, 2028 at par; ^M Market yield is the yield April 11, 2018 obtained from Bloomberg

As shown in Table 2, the non-callable tranches are on average less than 0.7% underpriced. This results in a difference of \$292,987.10, or 0.51% of the amount raised for these tranches. The bonds maturing on June 1, 2029 or later are all callable. Hence, the price difference calculated is partly the result of incomplete information (i.e. mispricing) and partly because of the cost of the option to call the bonds. Assuming that there was no mispricing, the cost of the option to call the bonds before maturity is roughly \$85,265,000 (See table 2). This is 11% of the amount of funds raised with callable bonds (13.9% premium on the 30-year callable tranche). Assuming that the mispricing for the callable bonds is 1% (1% is higher than the mispricing we noted in Table 2 for the non-callable tranches), the estimated cost of the option to call would be roughly \$77.5 million and the mispricing, as a result of incomplete information, costs taxpayers an additional estimated \$8 million.

Discussion

Delaney and Eckstein (2003) suggest financial corporations and local governments form alliances that promote the development of these type of construction projects. According to positive accounting theory, an individual's actions are explained by the need to maximize their utility (Watts & Zimmerman, 1978; Watts & Zimmerman, 1990). In short, elected officials are incentivized to promote projects that will enhance the probability of remaining and/or gaining access to an elected position. Stigler (1971) found evidence that suggests that political agents are incentivized to honor their promises. Thus, the risk of a failed project deters elected and/or appointed officials from engaging in interest and/or other bond option negotiations due to negative repercussions associated with failure to fund a stadium project. The possibility of failure and the incentivization to honor political commitments creates an economic environment in which elected politicians' incentives do not align with their constituents' best interests (i.e. efficient use of public funds).

The theory of asymmetric information in economics (Akerlof, 1970; Mas-Colell, Whinston, & Green, 1995; Spence, 1976) illustrates transactions where one party has more and/or better information than the other party. Due to highly specialized skills and knowledge necessary to issue bonds, it is plausible that elected officials responsible for the development of these stadium projects do not possess the skills and/or knowledge needed to determine the project's inherent financial risk. Thus, elected officials are forced to rely on the bond underwriter's expertise. The underwriters' fees and commission may disincentivize them from serving as a fiduciary. The lack of transparency regarding the true costs of issuing bonds creates an opportunity for the underwriter to extort an egregious profit at the expense of taxpayers. On the otherhand, information asymmetry is not unidirectional as municipal bond issuers possess more information about their ability to pay the underlying debt obligations than the investors (Park et al., 2017).

The results from this analysis suggest the taxpayers from Clark County incurred an unnecessary expense of approximately \$85 million for an option to call bonds during a period of extraordinarily low interest rates. Though callable bonds could provide a valuable option to Clark County (and therefore might be worth the cost), the interests rates in April 2018, and therefore the required yields in bonds, were approaching historical lows. Hence, it would be more likely that interest rates would rise than fall. In that scenario, since a call option protects the issuer against falling interest rates and allows for refinancing at a

lower rate, there was not strong justification to spend \$85 million of public funds for the option to call the bonds and refinance them through the issuance of new bonds.

Second, Clark County issued bonds with a 5% coupon. While the interest rates might not be falling, the expectation is that the interest rates will remain below 5%. Given the coupon rates, it is very likely that Clark County will choose to refinance the bonds because, from a financial perspective, it will reduce interest payments. This expectation holds as long as the new bonds, which are issued when the required yield to maturity for bonds with these characteristics, do not exceed 5%. By setting the coupon rate at 5% and issuing the bonds at a premium, Clark County is in a situation where they are more likely to call the bonds even though the interest rates at the time of issuance were approaching historical lows. Thus, the evidence strongly suggests that Clark County did incur a hidden (indirect) financing cost that is larger than could have been reasonably expected.

Limitations and Future Research

Measuring the costs of financing new professional sports stadiums is complex (Zimbalist & Long, 2006), and in many cases information regarding actual costs is not readily available and/or misleading due to omitted subsidies (Long, 2012). In the future, researchers should assess whether elected officials possess the skills and knowledge necessary to engage in these types of complex transactions and whether incentives align with their fiduciary duty. The individual analyzing the information must possess the human capital and/or financial literacy, and be incentivized to evaluate the true cost of issuing municipal bonds. Although the analysis in this research is limited to 22 bond tranches associated with one NFL stadium, it is not unreasonable to think that municipal bond mispricing could be a prevalent issue resulting from the lack of transparency in the municipal bond issuance process. Thus, future studies should examine the bond issuance process of additional sports stadiums to quantify the hidden costs of these projects because taxpayers should be made aware of the actual costs of these projects. Further, through such examination, financing strategies can be developed to help lower or eliminate costs assessed during the bond underwriting process.

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