

Credit Support and Infrastructure Investment: The Case of the Transportation Infrastructure Finance and Innovation Act (TIFIA) Program

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ABSTRACT: The primary aim of the TIFIA program is to leverage municipal and private investments to deliver higher-risk transportation projects that nevertheless offer important benefits for citizens. Although unintended, recent policy changes under the 2015 FAST Act may have altered the program's market-leveraging function. By estimating the Fast Act's treatment effect on supported projects' credit ratings as compared to the previous MAP-21 period, this paper examined whether the program's market leveraging role changed during the recent FAST Act period. Although the proportion of projects receiving A (AAA/AA/A) and B (BBB) ratings appears unchanged, the proportion of total program assistance received by lower-risk, A-rated projects increased significantly during the Fast Act period.

Figure 1. Number of TIFIA Projects by Credit Rating at Financial Close

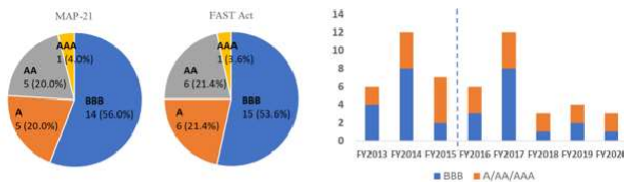
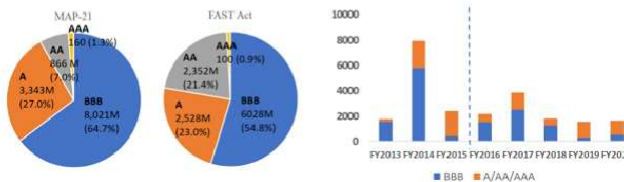
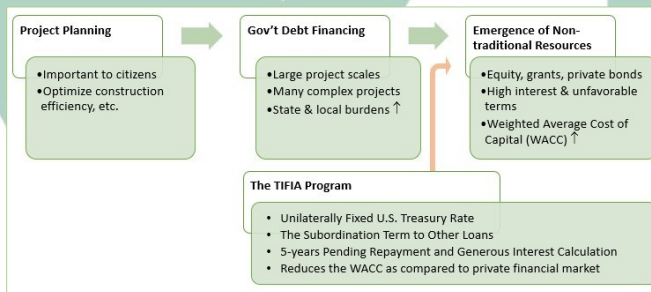


Figure 2. TIFIA Assistance Volume (Million \$US) by Credit Rating at Financial Close



THE MARKET LEVERAGING MECHANISM



- The TIFIA support reduces financial burdens for projects
- Higher-risk projects, which likely face higher interest rates and more unfavorable terms in the private market, benefit more from TIFIA
- One risk indicator for TIFIA applicants is credit ratings; applicants must receive investment-grade ratings (BBB- or above) from NRSROs

MAPS-21 vs FAST ACT

Major changes made to the TIFIA program by the 2015 FAST Act:

- A direct cut to 70% the direct program budget
- Inclusion of Transit-oriented Development (TOD) projects
- A Rural Project Initiative (RPI)
- Expediting low-risk and small-budget projects

RESEARCH QUESTIONS

Did the TIFIA program's the market leveraging aim change following the FAST Act? If so, why might this have occurred?

METHODOLOGY

$$y_i = \alpha + \beta X_i + \varepsilon_{it} \quad (1) \text{ LPM}$$

$$y_i = \alpha + \delta T_t + \beta X_i + \varepsilon_{it} \quad (2) \text{ LPM-TE}$$

$$y_i = \ln \frac{p}{1-p} = \alpha + \delta T_t + \beta X_i + \varepsilon_{it} \quad (3) \text{ Binary Logit}$$

TABLE 1. Dataset Variables

	Variable	Name	Unit and Measurement	Data Source(s)
Descriptive Statistics		Project Cost	Million \$US	TIFIA Website (USDOT)
		TIFIA Assistance Volume		
Regression Analyses	y_i	Credit Rating	Investment-grade ratings at financial close, coded as binary variable of A-group (A/AA/AAA) = 1 and B-group (BBB) = 0	NRSRO Ratings Reports
	T_t	FAST Act	0 = MAP-21 (FY 2013-2015) 1 = FAST Act (FY 2016-2020)	TIFIA Factsheets (USDOT)
	X_i	Project Type	Categorical Dummies: Transit (base category), Road and Toll, and Bridge	TIFIA Website (USDOT)
		Primary Revenue Pledge	Categorical Dummies: Toll revenue and Other	

RESULTS

Table 3. TIFIA Project Credit Ratings Models by Project Frequency

No. of Projects	Rating (1)	Rating (2)	Rating (3)	Rating (4)	Rating (5)	Rating (6)
	LPM	LPM	LPM-TE	LPM-TE	LPM-TE	B Logit
FAST Act			0.0243 (0.140)	0.0805 (0.147)	0.143 (0.145)	0.138 (0.732)
Project Type (Base Category: Transit)						
Toll and Roads	-0.310** (0.146)	-0.127 (0.158)		-0.320** (0.147)	-0.130 (0.152)	-0.119 (0.692)
Bridges	-0.132 (0.239)	-0.173 (0.238)		-0.0892 (0.255)	-0.101 (0.249)	-0.082 (1.007)
Toll Primary Rev.			-0.394** (0.152)		-0.421*** (0.147)	-0.399*** (0.826)
Constant	0.632*** (0.114)	0.673*** (0.108)	0.440*** (0.101)	0.589*** (0.141)	0.601*** (0.127)	0.394*** (0.578)
Observations	53	53	53	53	53	53
R-squared	0.084	0.186	0.001	0.090	0.203	[0.159]

Robust standard errors in parentheses
Pseudo R-squared in parentheses []
*** p<0.01, ** p<0.05, * p<0.1

[Table 3] shows that the proportion of projects with A ratings and B ratings do not differ significantly between MAP-21 and the FAST Act.

Table 4. TIFIA Project Credit Ratings Models Weighted by Loan Amount (Million \$US)

US Million \$	Rating (1)	Rating (2)	Rating (3)	Rating (4)	Rating (5)	Rating (6)
	LPM	LPM	LPM-TE	LPM-TE	LPM-TE	B Logit
FAST Act			0.0910*** (0.00645)	0.234*** (0.00626)	0.244*** (0.00604)	0.224*** (0.035)
Project Type (Base Category: Transit)						
Toll and Roads	-0.261*** (0.00663)	-0.122*** (0.00656)		-0.294*** (0.00634)	-0.153*** (0.00591)	-0.120*** (0.032)
Bridges	0.134*** (0.00983)	0.0621*** (0.00979)		0.247*** (0.0102)	0.179*** (0.0101)	0.170*** (0.046)
Toll Primary Rev.			-0.354*** (0.00623)		-0.362*** (0.00541)	-0.362*** (0.038)
Constant	0.501*** (0.00510)	0.573*** (0.00503)	0.361*** (0.00437)	0.388*** (0.00580)	0.456*** (0.00553)	-0.292*** (0.028)
Observations	23,087	23,087	23,087	23,087	23,087	23,087
R-squared	0.097	0.187	0.009	0.145	0.239	[0.196]

Robust standard errors in parentheses ()
Pseudo R-squared in parentheses []
*** p<0.01, ** p<0.05, * p<0.1

However, [Table 4] shows that TIFIA support volume increased for A-rated projects under the FAST Act as compared to MAP-21. In general, projects employing toll revenues as their primary revenue pledge were more likely to receive B ratings, indicating higher perceived risk.

DISCUSSION

- The FAST Act's expedited application policy may have increased the odds that low-risk projects were selected during the study period. However, budgets for such projects were too small to substantially impact study findings.
- Similarly, the Rural Project Initiative (RPI) did not support any project selected during the study period.
- The inclusion of Transit-oriented Development (TOD) projects may provide a partial explanation for the study findings. Transit projects tend to have good ratings and received sizeable support. However, TOD and transit were not distinguishable from available information.

LIMITATIONS AND FUTURE STUDIES

The small total population of TIFIA-supported projects and the limited accessibility of some information constrained the analysis. Future studies shall add additional data and explore other risk indicators like credit subsidies.

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REFERENCES: USDOT Policy Documents, CRS Report, etc.

A complete list of the references is attached as a separate document.