

Stimulating the Vote: ARRA Road Spending and Vote Share
Emiliano Huet-Vaughn
Online Appendix

Table 1 of online Appendix: ARRA Public Good Spending and Voting

Dependent Variable: Democratic Presidential Vote Share (0 - 100)						
	Binary Treatment			Continuous Treatment		
	(1)	(2)	(3)	(4)	(5)	(6)
Treated x Post 2008	1.667*** (0.342)	1.339*** (0.332)	1.212*** (0.338)			
Distance x Post 2008				-5.860*** (1.667)	-7.060*** (1.679)	-7.264*** (2.309)
Demographic Controls	X	X	X	X	X	X
County-Specific Time Trend			X			X
Treated/Distance	1.084 (0.756)	1.606** (0.733)	0.409 (0.671)	-18.50*** (4.327)	-20.25*** (4.161)	-7.158 (4.640)
Observations	1130	1695	1695	1130	1695	1695
adj. R^2	0.707	0.676	0.759	0.717	0.688	0.759

Notes: This table reports additional difference-in-differences estimates of the effect of ARRA road spending on presidential voting outcomes using more restrictive criteria for inclusion of control variable data. All columns come from regressions of Democratic presidential vote share (from 0 to 100) on a measure of municipality proximity to the ARRA public good project, the interaction of this with an indicator for the year being after 2008, year fixed effects, and, additional controls. Columns 1 and 4 replicate the specifications in Columns 3 and 7 of Table 2, respectively, but using only years (2008 and 2012) when control variable data comes from a single data source (the ACS). The remaining columns also include observations from the year 2000 when municipality-level demographic control variable data comes from an alternative, but non-interpolated, source (see Section 2.2 in the text for further details about data sources). Columns 3 and 6 also include county-by-year interaction terms, as in columns 4 and 8 in Table 2. Columns 1-3 present the coefficient on the interaction term *Treated x Post 2008* using a binary measure of municipality proximity to the public good, whereby, municipalities are sorted into “treated” and “untreated” groups on the basis of whether the closest “ARRA-funded-by” sign (located at the terminus of each road construction project) is within a distance of 0.05 decimal degrees (approximately 5 kilometers) from the municipality geographic center. Columns 4-6 present the coefficient on the interaction term *Distance x Post 2008* using a continuous measure of this distance (in decimal degrees). Standard errors are clustered by municipality (565 clusters). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2 of online Appendix: ARRA Public Good Spending and Voting

Dependent Variable: Democratic Presidential Vote Share (0 - 100)								
	Binary Treatment				Continuous Treatment			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated x Post 2008	1.654*** (0.550)	1.791*** (0.582)	1.307*** (0.410)	1.398*** (0.466)				
Distance x Post 2008					-7.403*** (2.690)	-12.01*** (4.077)	-6.125** (2.363)	-9.930*** (3.266)
County-Specific Time Trend		X		X		X		X
Demographic Controls			X	X			X	X
Treated/Distance	5.671*** (1.608)	2.973** (1.276)	1.971** (0.855)	0.419 (0.686)	-41.21*** (12.29)	-25.32*** (7.787)	-23.94*** (7.566)	-6.077 (5.236)
Observations	2260	2260	2260	2260	2260	2260	2260	2260
adj. R^2	0.059	0.342	0.652	0.758	0.087	0.345	0.668	0.759

Notes: This table reproduces the regressions of Table 2 with an alternative two-way clustering of standard errors by county and municipal form of government (67 clusters). It reports difference-in-differences estimates of the effect of ARRA road spending on presidential voting outcomes. All columns come from regressions of Democratic presidential vote share (from 0 to 100) on a measure of municipality proximity to the ARRA public good project, the interaction of this with an indicator for the year being after 2008, year fixed effects, and, possibly additional controls. Columns 1-4 present the coefficient on the interaction term *Treated x Post 2008* using a binary measure of municipality proximity to the public good, whereby, municipalities are sorted into “treated” and “untreated” groups on the basis of whether the closest “ARRA-funded-by” sign (located at the terminus of each road construction project) is within a distance of 0.05 decimal degrees (approximately 5 kilometers) from the municipality geographic center. Columns 5-8 present the coefficient on the interaction term *Distance x Post 2008* using a continuous measure of this distance (in decimal degrees). County-specific time trends include county-by-year interaction terms. Demographic controls include the share of African-American population, the share of Latino/Hispanic population, the unemployment rate, population density, average home sale price, and, municipal form of government. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3 of online Appendix: ARRA Spending and Voting (Matching)

Dependent Variable: Democratic Presidential Vote Share (0 - 100)						
	(1)	(2)	(3)	(4)	(5)	(6)
Treated x Post 2008	1.290*** (0.427)	0.993** (0.396)	1.233*** (0.424)	0.870** (0.407)	1.105** (0.446)	0.823** (0.401)
County-Specific Time Trend		X		X		X
Demographic Controls		X		X		X
Treated	1.735 (1.342)	0.411 (0.741)	1.982 (1.424)	0.869 (0.758)	2.423* (1.360)	1.293* (0.721)
Observations	1312	1312	1312	1312	1296	1296
adj. R^2	0.130	0.739	0.023	0.733	0.119	0.757

Notes: This table reports difference-in-differences estimates of the effect of ARRA road spending on presidential voting outcomes following a propensity score matching procedure used to identify a sub-sample of the untreated municipalities whose pre-ARRA profile of observable characteristics more closely matches that of the eventually treated municipalities. Specifically, a logit regression for treated status is run on pre-treatment observable characteristic (the share of African-American population, the share of Latino/Hispanic population, the unemployment rate, population density, average home sale price, municipal form of government, and county) with propensity scores subsequently computed. For each treated municipality, the municipality with the closest propensity score is selected using nearest neighbor matching without replacement and imposing the requirement of common support. This matched sample is then used in the difference-in-differences regressions reported in the table, where the interaction term *Treated x Post 2008* and the associated specification is defined as in Table 2. Columns 1 and 2 report results derived from a matching procedure that matched on observable characteristics from the first year of the data (2000), and, then, used these matched municipalities (in all years) for the difference-in-differences analysis. Similarly, columns 3 and 4 report results derived from matching only on observables for the year prior to ARRA (2008), while columns 5 and 6 report results derived from matching on the full pre-ARRA year-by-year profile of observable characteristics. Standard errors are clustered by municipality (565 clusters). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4 of online Appendix: ARRA Sign Saliency vs. Local Multiplier

	Dependent Variable: Democratic Presidential Vote Share (0 - 100)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated x Post 2008		1.866*** (0.367)		1.880*** (0.355)		1.902*** (0.354)		1.887*** (0.354)
Dollars x Post 2008 (100,000)	0.00107 (0.000815)	-0.000404 (0.000696)						
Dollars2 x Post 2008 (100,000)			0.00175 (0.00222)	-0.00206 (0.00195)				
Dollars3 x Post 2008 (100,000)					0.000869 (0.00170)	-0.00258 (0.00166)		
Dollars4 x Post 2008 (100,000)							0.00123 (0.00171)	-0.00223 (0.00182)
Observations	2260	2260	2260	2260	2260	2260	2260	2260
adj. R^2	0.330	0.343	0.330	0.343	0.330	0.342	0.330	0.342

Notes: This table reports the results from specifications identical to those described in Table 8 but with all columns here additionally including county-specific time trends. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1 of online Appendix: ARRA Road Sign Instructions

New Jersey Department of Transportation QUALITY IMPROVEMENT ADVISORY CAPITAL PROGRAM SUPPORT Director: Walter McGrosky Telephone: (609) 530-5367		QIA No. QIA 049 <hr/> Approved: W. McGrosky Date: May 15, 2009
Subject: American Recovery and Reinvestment Act Sign (Construction Identification Sign)		
Process Affected: Scope <input checked="" type="checkbox"/> Design Right of Way Utilities Environmental Historic <input checked="" type="checkbox"/> Construction		
Bureaus Affected: In-house Design, Project Management, Traffic Engineering, Construction, Design Consultants		Procedure(s) Affected:
Nature of Issue(s): On March 3, 2009 President Obama made the commitment that all projects funded by the American Recovery and Reinvestment Act (ARRA) will bear a recovery emblem to make it easier for Americans to see which projects are funded by the ARRA. To meet this commitment, designers are to include the ARRA signs on all projects funded by the ARRA including projects under construction.		

Figure 2 of online Appendix: Example of ARRA “Funded By” Road Sign

