

APPENDIX B.
 INSTRUMENTAL-VARIABLE EQUATIONS
 FOR NORTHERN COUNTIES’ ENROLLMENT RATES IN 1850

As noted in the main text, the instruments used here are the number of years of residency in the state required for voting, these interacted with the immigrant share from other states, the same residency requirements interacted with the share foreign-born, and the existence of a state property requirement for voting.

Equations for expenditures per child and teachers per child did not pass the tests for instrument strength (validity) and/or exogeneity. On the criteria for instrument strength, see Staiger, D., and J. H. Stock, “Instrumental Variables Regression with Weak Instruments,”

Appendix Table B.1. OLS Determinants of Northern Counties' Enrollment Rates in 1850, with Instrumented Values for Votes per White Man

	Public school enrollments per white child 5-14			Total enrollments per white child 5-14	
	coeff.	(s.e.)		coeff.	(s.e.)
Votes per white man (instrumented)	1.31	(0.61)	*	1.32	(0.61)
Slaves per white man	-0.11	(24.56)		2.22	(24.55)
Free coloreds per white Children 5-14 as a pop. share	-4.17	(1.20)	**	-4.30	(1.20)
Share of men over 40	-0.80	(0.14)	**	-0.85	(0.14)
Urban share	2.64	(0.47)	**	2.71	(0.47)
Migrants from other states	0.01	(0.11)		0.11	(0.11)
Foreigners	-0.08	(0.12)		-0.09	(0.12)
County is on the Great Lakes	-0.09	(0.27)		-0.10	(0.27)
Atlantic coast	0.05	(0.06)		0.05	(0.06)
Ohio River	0.06	(0.08)		0.06	(0.08)
Mississippi River	0.06	(0.07)		0.06	(0.07)
<i>Church accommodations per capita</i>	-0.01	(0.13)		-0.03	(0.13)
Baptists	0.41	(0.15)	**	0.42	(0.15)
Christian n.e.c.	-0.38	(0.26)		-0.35	(0.26)
Congrational	0.00	(0.26)		0.06	(0.26)
Congrational orthodox	3.17	(6.71)		2.46	(6.71)
Dutch Reformed	-0.17	(0.39)		-0.18	(0.39)
Episcopal	-0.07	(0.50)		0.05	(0.50)

Free Churches	-0.10	(1.25)	-0.18	(1.25)
Friends or Quakers	-0.42	(0.30)	-0.34	(0.30)
German Reformed	-0.43	(0.64)	-0.27	(0.64)
Jewish	2.32	(11.28)	0.50	(11.27)
Lutheran	-0.17	(0.26)	-0.22	(0.26)
Mennonite	-0.93	(2.30)	-1.15	(2.30)
Methodist	0.022	(0.09)	0.028	(0.09)
Moravian	0.01	(0.66)	-0.07	(0.68)
Presbyterian	-0.06	(0.17)	-0.04	(0.17)
Roman Catholic	-0.33	(0.27)	-0.25	(0.27)
Swedenborgian Churches	-1.45	(12.86)	-3.55	(12.85)
Tunker Churches	1.94	(1.41)	1.87	(1.41)
Union Churches	0.94	(0.51)	1.07	(0.51)

**Appendix Table C.1,
continued**

	coeff.	(s.e.)	coeff.	(s.e.)
Unitarian Churches	-0.27	(1.09)	-0.56	(1.09)
Universalist Churches	0.86	(0.76)	0.92	(0.76)
Minor Sects	0.58	(0.63)	0.60	(0.63)
New = 1/(years since statehood)	0.30	(0.27)	0.27	(0.27)
Constant	-0.15	(0.31)	-0.10	(0.31)

Observations	518	517
F	9.672	10.9469

Standard errors in brackets

* significant at 5%; ** significant at 1%

Shea Partial R2	0.082	0.082
Partial R2	0.082	0.082
F (First Stage)	10.7	10.6
df	4	4
df_r	479	478
p(F First)	2.66E-08	2.84E-08
Sargan Hansen	0.539	0.625
p(S-H)	0.910	0.891
dof(S-H)	3	3