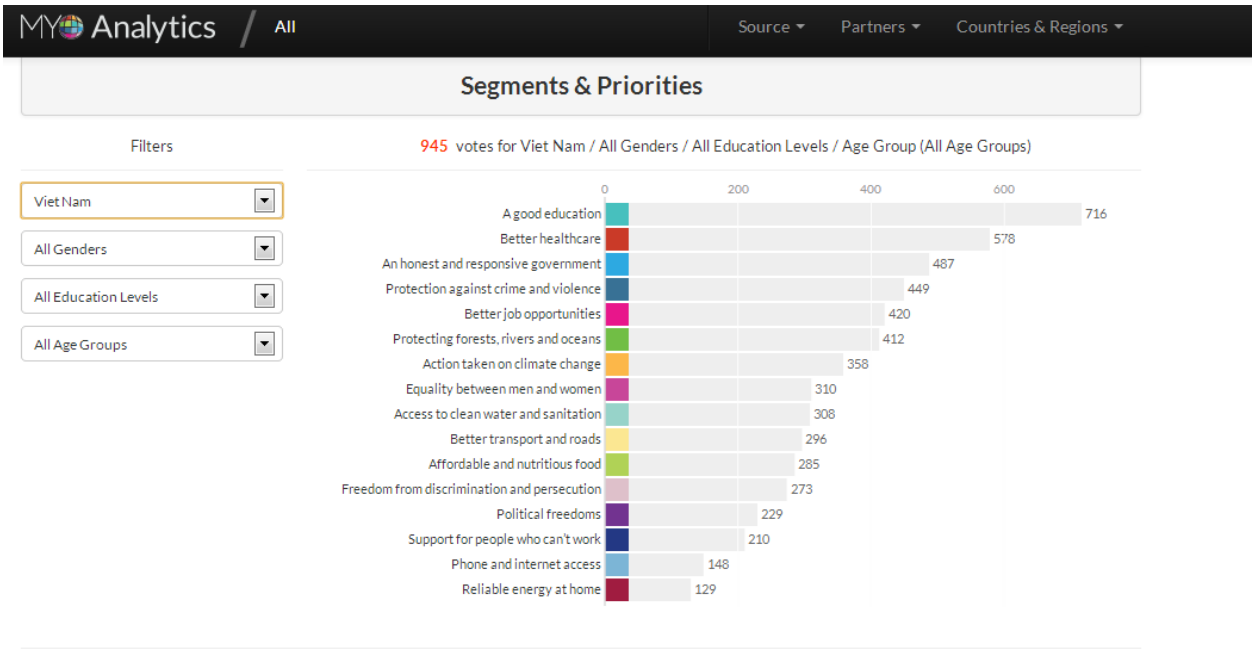
The Impact of Recentralization on Public Services: A Diff-in-Diff Analysis of the Abolition of Elected Councils in Vietnam

(ONLINE APPENDIX – NOT INTENDED FOR PUBLICATION, BUT MADE AVAILABLE TO REVIEWERS)

Appendix	Analysis	Pages
Appendix A	**Vietnam Results for MyWorld Survey** (Results cited in Footnote 6)	b
Appendix B	**The Importance of Infrastructure, Health, and Education Services in Citizens' Evaluation of Governance Quality** (Results cited in Footnote 6)	c
Appendix C1	**Descriptive Statistics of Variables Used in Main Regression (2008-2010)** (Results cited in Footnote 18)	d
Appendix C2	**Full Description of All Independent Variables Used in Main Regression** (Cited in Footnote 16)	e & f
Appendix D	**Difference-in-Difference Estimation between 2008 and 2010 using VHLSS Commune Data** (Full Regression Results for Table 2 and Figure 3).	g & h
Appendix E	**Testing the Parallel Paths Assumption: Using Pre-Treatment VHLSS 2006-2008** (Full regression results for all dependent variables, cited in Footnote 20).	i & j
Appendix F	**Province-Level Difference-in-Difference Estimation using VHLSS Data** (Results cited in Footnote 15).	k
Appendix G	**Further Elaboration of Randomization Inference Test** (Footnote 21)	l
Appendix H	**Access to Basic Public Services (Robustness Using UNDP-PAPI 2011)** (Results cited in Footnote 27).	m
Appendix I	**Equality of Service Delivery by District within Province (Aggregate Indices)** (Results cited in Footnote 25)	n
Appendix J	**Changes in Local Leadership after Pilot** (Results cited in Footnote 25)	o
Appendix K	**Difference-in-Mean MOHA Special Funds to Province** (Results cited in Footnote 22)	p
Appendix L	**Difference-in-Mean State Investment in Province** (Results cited in Footnote 23)	q

Appendix A: Vietnam Results for MyWorld Survey (http://data.myworld2015.org/)



Appendix B: The Importance of Infrastructure, Health, and Education Services in Citizens' Evaluation of Governance Quality

Dependent Variable= Satisfaction with local governance quality (0 -100)	**Infrastructure only** (1)	**Education only** (2)	**Health only** (3)	**All services** (4)	**With control variables** (5)
Infrastructure	2.374***			2.309***	2.380***
	(0.849)			(0.819)	(0.894)
Health services		5.823***		5.624***	5.477***
		(1.232)		(1.215)	(1.217)
Education services			6.861***	5.564**	5.834**
			(2.226)	(2.220)	(2.214)
Male					0.888
					(0.956)
Age					0.007
					(0.026)
Minority					1.277
					(1.495)
Government Employee					-0.016
					(0.022)
Economic Status					0.005
					(0.007)
National-Level City					0.018
					(0.214)
Regional FE	Yes	Yes	Yes	Yes	Yes
Constant	76.532***	70.889***	69.460***	57.774***	55.379***
	(1.895)	(2.214)	(3.769)	(4.318)	(5.360)
Observations	12,729	12,729	12,729	12,729	12,723
Number of Provinces	63	63	63	63	63
R-squared	0.010	0.018	0.011	0.025	0.026

Regressions employ OLS with probability and post-stratification weights to address the probability of selection with robust standard errors clustered at the province and district levels (*** p<0.01, ** p<0.05, * p<0.1)

Appendix C1: Descriptive Statistics of Main Variables Used in Regressions (2008-2010)

Independent variables	Obs	Mean	Std. Dev.	Min	Max
Log of area	2081	2.926	1.05	0.25	7.35
Log of commune area	2081	4.519	1.23	-1.11	7.66
Log of commune population density	2081	0.070	0.25	0.00	1.00
Dependent Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Infrastruture index	***2081***	***3.063***	***1.01***	***0.00***	***5.00***
All-Year Road in Commune	2081	0.799	0.40	0.00	1.00
Commune Has Public Transport	2081	0.751	0.43	0.00	1.00
Socio-Dev't/ Infra. Project	2081	0.555	0.50	0.00	1.00
Tap Water is Main Source	2081	0.084	0.28	0.00	1.00
Agricultural Services index	***2081***	***2.513***	***0.97***	***0.00***	***5.58***
Village has Paved Road	2081	0.875	0.33	0.00	1.00
Share of Households with Supported Crop	2081	0.076	0.18	0.00	1.00
Share of Households Receiving Agricultural Extension	2081	0.028	0.09	0.00	0.98
Share of Households Receiving Agriculture Tax Exemption	2081	0.162	0.33	0.00	1.00
Commune Has Veterinarians	2081	0.916	0.28	0.00	1.00
Number of visits by Agricultural Extension Staff	2081	0.092	0.10	0.00	1.80
Commune have Staff to Support Crops	2081	0.514	0.50	0.00	1.00
Commune has Agricultural Extension Center	2081	0.055	0.23	0.00	1.00
Commune Manages Irrigation Plants	2081	0.670	0.47	0.00	1.00
Health Services index	***2081***	***0.237***	***0.42***	***0.00***	***2.00***
Share of Households Supported w/ Healthcare Fee	2081	0.110	0.24	0.00	1.00
Public Health Project	2081	0.127	0.33	0.00	1.00
Education and Cultural Programs	2081	0.244	0.43	0.00	1.00
Education index	***2081***	***1.559***	***0.86***	***0.00***	***4.24***
Share of Households Supported w/Tuition fee	2071	0.021	0.03	0.00	0.25
Commune with Upper Secondary School	2081	0.160	0.37	0.00	1.00
Commune with Kindergarten	2081	0.617	0.49	0.00	1.00
Village with a Primary School	2081	0.516	0.50	0.00	1.00
Communication index	***2081***	***2.000***	***0.72***	***0.00***	***3.00***
Commune with Radio Broadcast	2081	0.806	0.40	0.00	1.00
Commune with Post Office	2081	0.897	0.30	0.00	1.00
Village with Post Office	2081	0.297	0.46	0.00	1.00
Household business development index	***2081***	***1.850***	***1.10***	***0.00***	***5.60***
Share of Households w/ Credit Support	2081	0.155	0.19	0.00	1.00
Share of households w/ Business Tax Exemption	2081	0.010	0.07	0.00	1.00
Commune with Market or Inter-commune Market	2081	0.637	0.48	0.00	1.00
Commune with Nonfarm Business	2081	0.605	0.49	0.00	1.00
Village with Daily Market	2081	0.287	0.45	0.00	1.00
Village with Periodic Market	2081	0.113	0.32	0.00	1.00
Village with Wholesale Market	2081	0.042	0.20	0.00	1.00

Appendix C2: Full Description of All Independent Variables Used in Main Regression

Individual Indicators	Code	Question
All-Year Road in Commune	This variable =1 if Q1=1 and Q2=12 of section 5	Q1. Is there a road passable by car to the People Committee Office of this commune? Q2. Usually how many months of the year is this road passable by car?
Commune Has Public Transport	Q11, section 5	Q11. Is there a passenger bus line, train or water transport that passes through the village?
Socio-Dev't/ Infra. Project	Q5, section 2, answer code = 3	Q5. Is there the following project in the commune: *Job creation* 1 *Hunger elimination and poverty reduction* 2 *Socio economic and infrastructure* 3 *Investment on culture and education* 4 *Health and public health* 5 *Environment/ clean water* 6 *Others (specify_____)* 7
Tap Water is Main Source	Q23, section 5 Answer code = 1, 2 and 3.	Q 23. What is the main source of drinking /cooking water for most people in this commune during the [.season.]? Indoor private piped water 1 Outdoor private piped water 2 Public piped water 3 Well water 4 Well with protection walls 5 Well without protection walls 6 Stream water with protection 7 Stream water without protection 8 Rainwater 9 Bottled water 10 Water brought by pedicab 11 Tank water 12 river lake pond…… 13 other (specify_____) 14
Village has Paved Road	Q7, section 5. Answer=1 or 2.	7. What is the material surface of the road? Cement/asphalt..... 1 Tar on gravel..... 2 Gravel..... 3 Dirt/earth..... 4 Other (specify_)..... 5
Share of Households with Supported Crop	Q7d, section 2	D7d. In 2007, through the HEPR program and other social support programs, how many households/people received Relief Fund for natural disasters and pre-harvest shortage?
Share of Households Receiving Agricultural Extension	Q7e, section 2	D7e. In 2007, through the HEPR program and other social support programs, how many households/people received Agricultural Extension training?
Share of Households Receiving Agriculture Tax Exemption	Q7g, section 2	Q7g. Exemption from land-use tax in agriculture (excluding the Households which exempted according to State's policy)
Commune Has Veterinarians	Q35, section 4	35. Does this commune have an animal health worker (veterinarian)?
Number of visits by Agricultural Extension Staff	Q33, section 4	33. How many times have staffs of agriculture extension center visited/ contacted the farmers of this commune in the last 12 months.
Commune have Staff to Support Crops	Q34, section 4	34. Does this commune have a plant protection official?
Commune has Agricultural Extension Center	Q26, section 4	26. Is there any agriculture extension center in this commune?
Commune Manages Irrigation Plants	Q21, section 5	21. Does this commune have any small irrigation system which managed by commune level or lower levels?
Share of Households Supported w/ Healthcare Fee	Q7c, section 2	D7c. In 2007, through the HEPR program and other social support programs, how many households/people received Exemption or reduction in hospital fees?

Public Health Project	Q5, section 2, answer code = 5	Q5. Is there the following project in the commune: *Job creation* *1* *Hunger elimination and poverty reduction* *2* *Socio economic and infrastructure* *3* *Investment on culture and education* *4* *Health and public health* *5* *Environment/clean water* *6* *Others (specify_____)* *7*
Education and Cultural Programs	Q5, section 2, answer code = 4	Q5. Is there the following project in the commune: *Job creation* *1* *Hunger elimination and poverty reduction* *2* *Socio economic and infrastructure* *3* *Investment on culture and education* *4* *Health and public health* *5* *Environment/clean water* *6* *Others (specify_____)* *7*
Share of Households Supported w/Tuition fee	Q7c, section 2	D7c. In 2007, through the HEPR program and other social support programs, how many households/people received Exemption or reduction in tuition fees?
Commune with Upper Secondary School	Q3, section 6	Q1. Does this commune have an Upper Secondary School?
Commune with Kindergarten	Q26, section 6	Q26. Is there a kindergarten in this commune?
Village with a Primary School	Q6, section 6	Q9. Is a Primary School located in village?
Commune with Radio Broadcast	Q20, section 5	20. Does this commune have any commune radio station?
Commune with Post Office	Q18, section 5	Q18. Does this commune have any commune cultural post office?
Village with Post Office	Q24, section 5, Answer code=5	24. Is [....] located within this village? 1. Daily market 2. Periodic market 3. Wholesale market 4. Commune's people committee office 5. Post office 6. Bank/bank branch
Share of Households w/ Credit Support	Q7a, section 2	D7a. In 2007, through the HEPR program and other social support programs, how many households/people received credit/loans?
Share of households w/ Business Tax Exemption	Q7f, section 2	D7e. In 2007, through the HEPR program and other social support programs, how many households/people received business tax exemption?
Commune with Market or Inter-commune Market	Q22, section 5	Q 22. Does this commune have any commune market/inter--commune market?
Commune with Nonfarm Business	Q1, section 3	Q1. Is there any enterprise/firm/factory located in the area that the people from the commune can go there for work and come back home within the day
Village with Daily Market	Q24, section 5, Answer code=1	24. Is [....] located within this village? 1. Daily market 2. Periodic market 3. Wholesale market 4. Commune's people committee office 5. Post office 6. Bank/bank branch
Village with Periodic Market	Q24, section 5, Answer code=2	24. Is [....] located within this village? 1. Daily market 2. Periodic market 3. Wholesale market 4. Commune's people committee office 5. Post office 6. Bank/bank branch
Village with Wholesale Market	Q24, section 5, Answer code=3	24. Is [....] located within this village? 1. Daily market 2. Periodic market 3. Wholesale market 4. Commune's people committee office 5. Post office 6. Bank/bank branch

Appendix D: Difference-in-Difference Estimation between 2008 and 2010 using VHLSS Commune Data

Independent/Outcome Variables	(1) All-Year Road in Commune	(2) Commune Has Public Transport	(3) Socio-Dev't/ Infra. Project	(4) Tap Water is Main Source	(5) Village has Paved Road	(6) Share of Households with Supported Crop	(7) Share of Households Receiving Agricultural Extension	(8) Share of Households Receiving Agriculture Tax Exemption
Time (2008 to 2010)	-0.007	-0.065***	0.047**	0.246***	0.002	0.005	0.010***	-0.005
	(0.012)	(0.018)	(0.021)	(0.033)	(0.011)	(0.009)	(0.003)	(0.020)
Treatment	-0.104**	-0.089*	-0.022	0.011	-0.065	0.002	-0.007	0.063
	(0.051)	(0.051)	(0.024)	(0.027)	(0.041)	(0.017)	(0.005)	(0.042)
Time*Treatment	0.086**	0.102*	0.087	-0.080	0.029	0.051**	0.021*	-0.043
	(0.037)	(0.053)	(0.059)	(0.077)	(0.027)	(0.025)	(0.012)	(0.029)
Surface Area of Commune (ln)	0.015	0.102***	-0.001	0.050**	0.004	-0.027***	-0.014***	-0.095***
	(0.022)	(0.018)	(0.022)	(0.022)	(0.022)	(0.009)	(0.005)	(0.018)
Commune Population (ln)	0.098***	0.116***	-0.069***	0.112***	0.056***	-0.056***	-0.021***	-0.123***
	(0.016)	(0.022)	(0.018)	(0.022)	(0.016)	(0.010)	(0.004)	(0.015)
National-Level City	-0.031	0.020	0.083**	0.059	-0.005	-0.010	0.006	-0.013
	(0.032)	(0.039)	(0.042)	(0.045)	(0.038)	(0.012)	(0.010)	(0.035)
Regional FE	YES	YES	YES	YES	YES	YES	YES	YES
Constant	0.352***	-0.068	0.795***	-0.665***	0.625***	0.394***	0.165***	0.992***
	(0.124)	(0.155)	(0.152)	(0.162)	(0.125)	(0.072)	(0.030)	(0.124)
Observations	4126	4126	4126	4126	4126	4126	4126	4126
Mean of dependent variable 2008	0.401	0.432	0.497	0.277	0.331	0.177	0.085	0.334
Number of Provinces	58	58	58	58	58	58	58	58
R-squared	0.140	0.146	0.054	0.183	0.138	0.271	0.042	0.105
RMSE	0.369	0.410	0.480	0.365	0.305	0.153	0.093	0.312

Independent/Outcome Variables	(9) Commune Has Veterinarians	(10) Number of visits by Agricultural Extension Staff	(11) Commune have Staff to Support Crops	(12) Commune has Agricultural Extension Center	(13) Commune Manages Irrigation Plants	(14) Share of Households Supported w/ Healthcare Fee	(15) Public Health Project
Time (2008 to 2010)	0.045***	-0.002	-0.025	0.001	0.013	-0.013	-0.000
	(0.017)	(0.005)	(0.021)	(0.008)	(0.020)	(0.010)	(0.012)
Treatment	0.011	-0.010	0.031	0.035**	-0.050	0.005	-0.018
	(0.024)	(0.008)	(0.076)	(0.017)	(0.046)	(0.014)	(0.022)
Time*Treatment	-0.050	0.020	-0.012	-0.008	0.017	0.039***	0.084***
	(0.031)	(0.015)	(0.020)	(0.025)	(0.045)	(0.015)	(0.031)
Surface Area of Commune (ln)	0.058**	0.014**	0.069**	0.043***	0.054**	-0.059***	-0.019
	(0.023)	(0.006)	(0.029)	(0.009)	(0.023)	(0.015)	(0.016)
Commune Population (ln)	0.067***	0.012**	0.111***	0.032***	0.040**	-0.106***	-0.024*
	(0.024)	(0.005)	(0.021)	(0.008)	(0.019)	(0.015)	(0.013)
National-Level City	-0.029	0.011	0.088	0.004	-0.058	0.013	0.017
	(0.026)	(0.023)	(0.073)	(0.021)	(0.059)	(0.014)	(0.024)
Regional FE	YES	YES	YES	YES	YES	YES	YES
Constant	0.487***	-0.029	0.019	-0.230***	0.484***	0.751***	0.269***
	(0.184)	(0.039)	(0.164)	(0.061)	(0.148)	(0.112)	(0.104)
Observations	4126	4126	4126	4126	4126	4126	4126
Mean of dependent variable 2008	0.278	0.104	0.500	0.229	0.470	0.238	0.333
Number of Provinces	58	58	58	58	58	58	58
R-squared	0.066	0.083	0.175	0.013	0.062	0.282	0.013
RMSE	0.238	0.107	0.454	0.229	0.454	0.195	0.336

Regressions employ OLS with standard errors clustered at district level and provincial level (*** p<0.01, ** p<0.05, * p<0.1). Regional fixed-effects are employed for seven major regions, but five provinces of the Central Highlands are dropped, as no pilot occurred there.

Appendix D: Difference-in-Difference Estimation between 2008 and 2010 using VHLSS Commune Data (Cont.)

Independent/Outcome Variables	(16) Education and Cultural Programs	(17) Share of Households Supported w/Tuition fee	(18) Commune with Upper Secondary School	(19) Commune with Kindergarten	(20) Village with a Primary School	(21) Commune with Radio Broadcast	(22) Commune with Post Office	(23) Village with Post Office
Time (2008 to 2010)	0.069***	-0.000	0.016	0.035***	-0.045***	0.011	-0.006	-0.051***
	(0.019)	(0.001)	(0.010)	(0.012)	(0.016)	(0.008)	(0.011)	(0.019)
Treatment	0.009	0.001	0.071***	-0.012	-0.012	-0.136*	-0.011	-0.050*
	(0.037)	(0.001)	(0.026)	(0.048)	(0.036)	(0.075)	(0.026)	(0.028)
Time*Treatment	0.083*	0.002	0.003	-0.011	0.014	0.057	0.042**	0.053*
	(0.047)	(0.002)	(0.043)	(0.014)	(0.047)	(0.039)	(0.021)	(0.031)
Surface Area of Commune (ln)	0.012	-0.010***	0.129***	0.117***	-0.016	0.070**	0.034**	-0.073***
	(0.020)	(0.002)	(0.016)	(0.026)	(0.028)	(0.028)	(0.017)	(0.019)
Commune Population (ln)	-0.017	-0.015***	0.132***	0.146***	-0.046*	0.112***	0.028*	-0.052***
	(0.019)	(0.002)	(0.018)	(0.025)	(0.025)	(0.028)	(0.017)	(0.017)
National-Level City	0.017	0.003	0.020	0.054	0.142**	-0.009	-0.068***	0.055
	(0.034)	(0.002)	(0.028)	(0.061)	(0.066)	(0.041)	(0.016)	(0.063)
Regional FE	YES	YES	YES	YES	YES	YES	YES	YES
Constant	0.250*	0.114***	-0.859***	-0.210	0.689***	0.216	0.721***	0.768***
	(0.150)	(0.012)	(0.129)	(0.191)	(0.201)	(0.207)	(0.125)	(0.134)
Observations	4126	4109	4126	4126	4126	4126	4126	4126
Mean of dependent variable 2008	0.429	0.032	0.367	0.486	0.500	0.395	0.304	0.457
Number of Provinces	58	58	58	58	58	58	58	58
R-squared	0.056	0.211	0.036	0.181	0.083	0.306	0.016	0.026
RMSE	0.437	0.030	0.370	0.436	0.479	0.322	0.303	0.441

Independent/Outcome Variables	(24) Share of Households w/ Credit Support	(25) Share of households w/ Business Tax Exemption	(26) Commune with Market or Inter-commune Market	(27) Commune with Nonfarm Business	(28) Village with Daily Market	(29) Village with Periodic Market	(30) Village with Wholesale Market
Time (2008 to 2010)	0.021***	-0.000	0.015	-0.010	-0.027**	-0.007	-0.004
	(0.007)	(0.003)	(0.012)	(0.015)	(0.013)	(0.012)	(0.007)
Treatment	0.036	0.004	0.040	-0.007	-0.080	-0.016	-0.010
	(0.025)	(0.004)	(0.050)	(0.061)	(0.052)	(0.033)	(0.024)
Time*Treatment	-0.054***	0.001	-0.042	0.033	0.044	0.011	0.015
	(0.012)	(0.006)	(0.034)	(0.048)	(0.037)	(0.020)	(0.013)
Surface Area of Commune (ln)	-0.079***	-0.009**	0.214***	0.117***	0.072***	0.032**	0.021***
	(0.011)	(0.005)	(0.026)	(0.024)	(0.027)	(0.016)	(0.008)
Commune Population (ln)	-0.098***	-0.012***	0.238***	0.175***	0.105***	0.030**	0.016*
	(0.010)	(0.004)	(0.025)	(0.023)	(0.022)	(0.013)	(0.009)
National-Level City	-0.015	-0.001	-0.028	0.063*	0.101	0.048	0.021
	(0.020)	(0.002)	(0.034)	(0.034)	(0.076)	(0.040)	(0.018)
Regional FE	YES	YES	YES	YES	YES	YES	YES
Constant	0.815***	0.093***	-1.105***	-0.525***	-0.392**	-0.054	-0.086
	(0.073)	(0.032)	(0.187)	(0.163)	(0.179)	(0.105)	(0.069)
Observations	4126	4126	4126	4126	4126	4126	4126
Mean of dependent variable 2008	0.188	0.070	0.481	0.489	0.453	0.317	0.201
Number of Provinces	58	58	58	58	58	58	58
R-squared	0.188	0.019	0.110	0.104	0.098	0.038	0.008
RMSE	0.174	0.068	0.451	0.463	0.427	0.306	0.199

Regressions employ OLS with standard errors clustered at district level and provincial level (*** p<0.01, ** p<0.05, * p<0.1). Regional fixed-effects are employed for seven major regions, but five provinces of the Central Highlands are dropped, as no pilot occurred there.

Appendix E: Testing the Parallel Paths Assumption: Using Pre-Treatment VHLSS 2006-2008

Independent/Outcome Variables	(1) All-Year Road in Commune	(2) Commune Has Public Transport	(3) Socio-Dev't/ Infra. Project	(4) Tap Water is Main Source	(5) Village has Paved Road	(6) Share of Households with Supported Crop	(7) Share of Households Receiving Agricultural Extension	(8) Share of Households Receiving Agriculture Tax Exemption
Time (2008 to 2010)	0.021**	-0.029**	-0.012	0.013**	0.007	0.036***	-0.001	-0.007
	(0.010)	(0.012)	(0.012)	(0.006)	(0.007)	(0.012)	(0.002)	(0.018)
Treatment	-0.036	-0.012	-0.038**	-0.022	-0.051	0.016	-0.013	0.036**
	(0.050)	(0.023)	(0.017)	(0.021)	(0.039)	(0.025)	(0.008)	(0.015)
Time*Treatment	-0.070**	-0.079**	0.012	0.042**	-0.019	-0.016	-0.001	0.030
	(0.032)	(0.037)	(0.026)	(0.017)	(0.024)	(0.038)	(0.007)	(0.042)
Surface Area of Commune (ln)	0.016	0.091***	-0.023	0.012	0.012	-0.029***	-0.013***	-0.093***
	(0.018)	(0.023)	(0.029)	(0.014)	(0.018)	(0.007)	(0.004)	(0.021)
Commune Population (ln)	0.091***	0.109***	-0.095***	0.038**	0.054***	-0.054***	-0.016***	-0.125***
	(0.014)	(0.024)	(0.022)	(0.017)	(0.013)	(0.008)	(0.004)	(0.018)
National-Level City	-0.050	0.043	0.048	0.084***	-0.030	-0.004	0.043**	0.001
	(0.066)	(0.059)	(0.057)	(0.020)	(0.075)	(0.012)	(0.020)	(0.021)
Regional FE	0.386***	0.019	1.016***	-0.189*	0.634***	0.360***	0.139***	0.980***
Constant	(0.098)	(0.179)	(0.172)	(0.115)	(0.094)	(0.057)	(0.028)	(0.146)
	YES	YES	YES	YES	YES	YES	YES	YES
Observations	4,220	4,220	4,220	4,220	4,220	4,220	4,220	4,220
Mean of dependent variable 2006	0.782	0.792	0.566	0.067	0.865	0.042	0.029	0.166
Number of Provinces	58	58	58	58	58	58	58	58
R-squared	0.140	0.139	0.052	0.040	0.155	0.192	0.026	0.107
RMSE	0.377	0.390	0.483	0.258	0.309	0.137	0.0896	0.319

Independent/Outcome Variables	(9) Commune Has Veterinarians	(10) Number of visits by Agricultural Extension Staff	(11) Commune have Staff to Support Crops	(12) Commune has Agricultural Extension Center	(13) Commune Manages Irrigation Plants	(14) Share of Households Supported w/ Healthcare Fee	(15) Public Health Project
Time (2008 to 2010)	0.030**	0.011**	0.031*	-0.016	-0.000	0.006	-0.012
	(0.013)	(0.005)	(0.016)	(0.013)	(0.011)	(0.009)	(0.013)
Treatment	-0.017	0.001	-0.018	-0.013	-0.033	0.010	0.010
	(0.038)	(0.009)	(0.080)	(0.015)	(0.038)	(0.010)	(0.026)
Time*Treatment	0.014	-0.017*	0.042	0.049**	-0.021	-0.004	-0.030
	(0.043)	(0.009)	(0.046)	(0.025)	(0.036)	(0.021)	(0.024)
Surface Area of Commune (ln)	0.080***	0.009*	0.068***	0.037***	0.063**	-0.055***	-0.034*
	(0.029)	(0.005)	(0.023)	(0.011)	(0.032)	(0.014)	(0.018)
Commune Population (ln)	0.100***	0.009	0.116***	0.031***	0.047*	-0.097***	-0.035**
	(0.028)	(0.005)	(0.016)	(0.010)	(0.025)	(0.013)	(0.014)
National-Level City	-0.038	0.027**	0.061	0.007	0.004	0.010	0.025
	(0.051)	(0.012)	(0.087)	(0.014)	(0.092)	(0.016)	(0.029)
Regional FE	0.262	-0.006	-0.000	-0.200***	0.429**	0.692***	0.365***
Constant	(0.205)	(0.039)	(0.134)	(0.077)	(0.195)	(0.091)	(0.111)
	YES	YES	YES	YES	YES	YES	YES
Observations	4,220	4,220	4,220	4,220	4,220	4,220	4,220
Mean of dependent variable 2006	0.883	0.084	0.479	0.064	0.674	0.102	0.143
Number of Provinces	58	58	58	58	58	58	58
R-squared	0.090	0.078	0.178	0.012	0.070	0.286	0.012
RMSE	0.287	0.0945	0.453	0.236	0.453	0.197	0.340

Regressions employ OLS with standard errors clustered at district level and provincial level (*** p<0.01, ** p<0.05, * p<0.1). Regional fixed-effects are employed for seven major regions, but five provinces of the Central Highlands are dropped, as no pilot occurred there.

Appendix E: Testing the Parallel Paths Assumption: Using Pre-Treatment VHLSS 2006-2008 (Cont.)

Independent/Outcome Variables	(16) Education and Cultural Programs	(17) Share of Households Supported w/Tuition fee	(18) Commune with Upper Secondary School	(19) Commune with Kindergarten	(20) Village with a Primary School	(21) Commune with Radio Broadcast	(22) Commune with Post Office	(23) Village with Post Office
Time (2008 to 2010)	-0.004	-0.000	-0.004	0.032**	-0.001	0.000	0.031***	-0.006
	(0.014)	(0.001)	(0.006)	(0.013)	(0.017)	(0.012)	(0.010)	(0.023)
Treatment	0.012	0.001	0.040**	0.028	-0.084	-0.136*	0.015	-0.025
	(0.013)	(0.003)	(0.019)	(0.054)	(0.060)	(0.073)	(0.031)	(0.037)
Time*Treatment	-0.003	0.001	0.021	-0.062*	0.075***	-0.015	-0.020	-0.015
	(0.010)	(0.002)	(0.028)	(0.034)	(0.029)	(0.026)	(0.013)	(0.043)
Surface Area of Commune (ln)	0.002	-0.009***	0.142***	0.124***	-0.025	0.059*	0.013	-0.096***
	(0.020)	(0.002)	(0.017)	(0.026)	(0.023)	(0.031)	(0.020)	(0.021)
Commune Population (ln)	-0.029**	-0.014***	0.145***	0.154***	-0.054***	0.103***	0.005	-0.067***
	(0.013)	(0.001)	(0.020)	(0.024)	(0.020)	(0.030)	(0.015)	(0.022)
National-Level City	-0.009	0.001	0.045	0.102	0.048	0.060	-0.052	-0.014
	(0.027)	(0.002)	(0.045)	(0.105)	(0.054)	(0.062)	(0.037)	(0.047)
Regional FE	0.336***	0.105***	-0.950***	-0.241	0.772***	0.300	0.847***	0.902***
Constant	(0.104)	(0.011)	(0.135)	(0.184)	(0.157)	(0.222)	(0.123)	(0.163)
	YES	YES	YES	YES	YES	YES	YES	YES
Observations	4,220	4,203	4,220	4,220	4,220	4,220	4,220	4,220
Mean of dependent variable 2008	0.246	0.021	0.159	0.589	0.511	0.811	0.868	0.307
Number of Provinces	58	58	58	58	58	58	58	58
R-squared	0.048	0.196	0.040	0.212	0.071	0.321	0.015	0.022
RMSE	0.420	0.0304	0.359	0.434	0.482	0.324	0.320	0.454

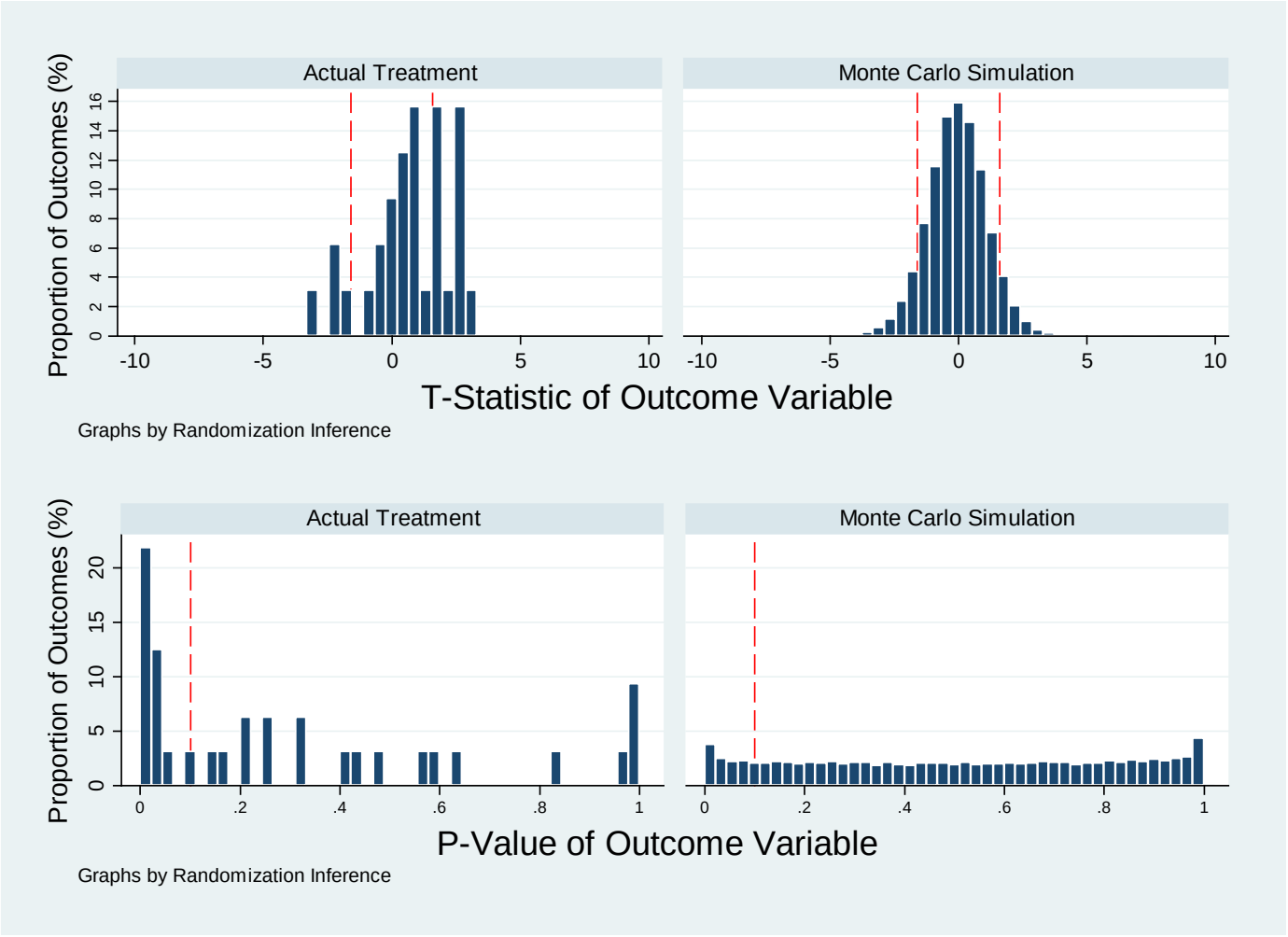
Independent/Outcome Variables	(24) Share of Households w/ Credit Support	(25) Share of households w/ Business Tax Exemption	(26) Commune with Market or Inter-commune Market	(27) Commune with Nonfarm Business	(28) Village with Daily Market	(29) Village with Periodic Market	(30) Village with Wholesale Market
Time (2008 to 2010)	0.017***	-0.004	-0.018**	0.046***	-0.018	0.001	0.007
	(0.004)	(0.004)	(0.008)	(0.017)	(0.016)	(0.012)	(0.009)
Treatment	0.022	0.013**	-0.013	-0.051	-0.048	-0.008	0.051***
	(0.020)	(0.006)	(0.048)	(0.047)	(0.059)	(0.027)	(0.018)
Time*Treatment	0.005	-0.006	0.037	0.028	-0.031	0.002	-0.059***
	(0.010)	(0.008)	(0.028)	(0.045)	(0.030)	(0.031)	(0.023)
Surface Area of Commune (ln)	-0.064***	-0.011*	0.249***	0.121***	0.081***	0.014	0.018*
	(0.008)	(0.006)	(0.038)	(0.034)	(0.030)	(0.016)	(0.009)
Commune Population (ln)	-0.076***	-0.014**	0.265***	0.177***	0.116***	0.016	0.016**
	(0.009)	(0.006)	(0.034)	(0.027)	(0.027)	(0.014)	(0.008)
National-Level City	0.012	-0.002	0.017	0.100	0.061	-0.042*	0.003
	(0.011)	(0.004)	(0.025)	(0.072)	(0.051)	(0.024)	(0.023)
Regional FE	0.656***	0.105**	-1.288***	-0.576***	-0.452**	0.072	-0.084
Constant	(0.061)	(0.046)	(0.260)	(0.208)	(0.203)	(0.102)	(0.062)
	YES	YES	YES	YES	YES	YES	YES
Observations	4,220	4,220	4,220	4,220	4,220	4,220	4,220
Mean of dependent variable 2008	0.138	0.015	0.644	0.554	0.309	0.110	0.042
Number of Provinces	58	58	58	58	58	58	58
R-squared	0.120	0.040	0.116	0.111	0.093	0.036	0.009
RMSE	0.169	0.0821	0.451	0.466	0.436	0.310	0.200

Regressions employ OLS with standard errors clustered at district level and provincial level (*** p<0.01, ** p<0.05, * p<0.1). Regional fixed-effects are employed for seven major regions, but five provinces of the Central Highlands are dropped, as no pilot occurred there.

Appendix F: Province-Level Diff-in-Diff Estimation using VHLSS Data on Aggregate Indices

Panel 1: Between 2008 and 2010						
Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable	**Transportation index**	**Agricultural Services index**	**Health Service index**	**Education index**	**Communication index**	**Household business development index**
Time (2008 to 2010)	0.216***	0.058	-0.028	0.079**	-0.045*	-0.004
	(0.064)	(0.046)	(0.020)	(0.032)	(0.024)	(0.039)
Treatment	-0.332***	0.065	-0.005	0.154	-0.196**	-0.032
	(0.111)	(0.118)	(0.035)	(0.097)	(0.084)	(0.188)
Time*Treatment	0.377**	0.005	0.109**	0.014	0.136*	0.085
	(0.169)	(0.137)	(0.044)	(0.095)	(0.080)	(0.178)
National-Level City	0.203*	0.131*	-0.019	0.385**	-0.026	0.202
	(0.111)	(0.078)	(0.037)	(0.148)	(0.057)	(0.142)
Regional FE	3.165***	2.782***	0.156***	1.489***	2.250***	1.923***
Constant	(0.075)	(0.091)	(0.024)	(0.081)	(0.046)	(0.123)
	YES	YES	YES	YES	YES	YES
Observations	116	116	116	116	116	116
Mean of dependent variable 2008	3.066	2.435	0.255	1.588	1.962	1.823
Number of provinces	58	58	58	58	58	58
R-squared	0.415	0.467	0.584	0.368	0.611	0.430
RMSE	0.387	0.363	0.128	0.237	0.219	0.372
Panel 2: Between 2006 and 2008						
Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable	**Transportation index**	**Agricultural Services index**	**Health Service index**	**Education index**	**Communication index**	**Household business development index**
Time (2006 to 2008)	0.016	0.085**	-0.011	0.017	0.030	0.046
	(0.032)	(0.041)	(0.019)	(0.035)	(0.025)	(0.040)
Treatment	-0.158	-0.066	0.024	0.087	-0.221**	-0.024
	(0.126)	(0.160)	(0.034)	(0.099)	(0.089)	(0.163)
Time*Treatment	-0.129*	0.120	-0.032	0.059	0.015	-0.077
	(0.072)	(0.178)	(0.044)	(0.064)	(0.096)	(0.136)
National-Level City	0.075	0.087	-0.008	0.352**	0.007	0.290**
	(0.166)	(0.126)	(0.024)	(0.140)	(0.051)	(0.135)
Regional FE	YES	YES	YES	YES	YES	YES
Constant	3.214***	2.809***	0.154***	1.521***	2.224***	1.963***
	(0.055)	(0.087)	(0.022)	(0.092)	(0.046)	(0.113)
Observations	116	116	116	116	116	116
Mean of dependent variable (2006)	3.075	2.389	0.261	1.574	1.948	1.817
Number of Provinces	58	58	58	58	58	58
R-squared	0.329	0.373	0.570	0.285	0.603	0.473
RMSE	0.338	0.431	0.139	0.260	0.235	0.369

Regressions employ OLS on provincial averages of dependent variables with robust standard errors clustered at the province level (*** p<0.01, ** p<0.05, * p<0.1). Regional fixed-effects are employed for seven major regions, but five provinces of the Central Highlands are dropped, as no pilot occurred there. Dependent variables are additive indexes created by summing up the groups of variables in Figure 3. Continuous variables are re-scaled between 0 and 1, and then added in with dichotomous variables.



Appendix G: Randomization Inference Test on Distribution of Significant Outcomes - Comparison of Treatment to Monte Carlo Estimation with 1000 Simulations. Left side depicts the results from the actual abolishment of District People's Councils. The right side depicts the results of the Monte Carlo simulation, where an artificial treatment was randomly assigned to provinces.

Appendix H: Access to Basic Public Services (Robustness Using UNDP-PAPI 2011)

The survey uses a clustered sampling approach to provide empirically reliable estimates at all levels of Vietnamese government (province, district, commune, and village. In 2011, all 63 provinces were included in the sample. Within each province, the capital district was selected along with two others using probability proportional to size (PPS) sampling. A similar strategy was used to select three communes in each district and two villages in each commune. Sampling and post-stratification weights are used in the analysis.

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent Variable	**Road in Front of House is Paved**			**Garbage is Picked Up**	**Total Hospital Quality**	**Main Drinking Water is Lake/River**	**Total Education Quality**
Treatment	0.150***	0.109***	0.105***	0.153***	0.819**	-0.038***	0.383
	(0.040)	(0.038)	(0.037)	(0.055)	(0.399)	(0.013)	(0.360)
Male			-0.006	-0.003	0.730**	-0.018*	0.713**
			(0.024)	(0.019)	(0.310)	(0.011)	(0.293)
Age			-0.000	0.001	0.004	0.000	-0.036***
			(0.001)	(0.001)	(0.010)	(0.000)	(0.013)
Minority			-0.075*	-0.215***	0.452	-0.038**	-0.898**
			(0.041)	(0.038)	(0.366)	(0.018)	(0.359)
Government Employee			0.124	0.059	1.398**	-0.063***	1.687**
			(0.076)	(0.047)	(0.607)	(0.017)	(0.705)
Economic Status			0.012	0.006	-0.007	0.009	0.151
			(0.011)	(0.010)	(0.139)	(0.007)	(0.165)
National-Level City		0.042	0.041	0.110**	0.841	-0.089***	0.497
		(0.052)	(0.051)	(0.048)	(0.556)	(0.019)	(0.465)
Regional FE	No	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.260***	0.167***	0.138**	0.829***	4.641***	0.143***	5.423***
	(0.022)	(0.053)	(0.065)	(0.072)	(0.653)	(0.034)	(0.888)
Observations	7,940	7,940	7,848	7,705	3,998	7,853	3,115
Mean of dependent variable	0.334	0.334	0.334	0.482	5.429	0.057	5.201
Number of Provinces	58	58	58	58	58	58	58
R-squared	0.014	0.054	0.060	0.382	0.026	0.062	0.043

Regressions employ OLS with probability and post-stratification weights to address the probability of selection with robust standard errors clustered at the province and the district levels (*** p<0.01, ** p<0.05, * p<0.1). Hospital and education quality are measured on 6-point scales, garbage pickup and drink water are dichotous variables, distance is continuous. Regional fixed-effects employed for seven major regions, but five provinces of the Central Highlands are dropped, as no pilot occurred there. N varies by number of citizens who experienced service (i.e. must have used hospital or have kids in school).

Appendix I: Equality of Service Delivery by District within Province (Aggregate Indices)

Between 2008 and 2010						
Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable	**Transportation index (Gini)**	**Agricultural Services index (Gini)**	**Health Service index (Gini)**	**Education index (Gini)**	**Communication index (Gini)**	**Household business development index (Gini)**
Time (2008 to 2010)	0.003	-0.015	0.024	-0.003	-0.002	-0.013
	(0.007)	(0.010)	(0.027)	(0.013)	(0.009)	(0.015)
Treatment	0.020	0.017	0.050	-0.013	0.020	-0.022
	(0.016)	(0.019)	(0.043)	(0.017)	(0.015)	(0.022)
Time*Treatment	-0.022	-0.016	-0.094	0.017	0.006	0.033
	(0.024)	(0.024)	(0.058)	(0.024)	(0.026)	(0.032)
National-Level City	0.023	0.003	-0.130**	0.007	0.021	-0.019
	(0.017)	(0.014)	(0.056)	(0.019)	(0.018)	(0.023)
Regional FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.362***	0.448*	0.564	-0.006	0.097	0.242
	(0.138)	(0.249)	(0.449)	(0.222)	(0.199)	(0.273)
Observations	114	114	114	114	114	114
Mean of Dependent Variable (2008)	0.121	0.153	0.511	0.187	0.127	0.216
Number of provinces	57	57	57	57	57	57
R-squared	0.295	0.328	0.303	0.253	0.392	0.373

Regressions employ OLS on provincial averages of dependent variables with robust standard errors clustered at the province level (*** p<0.01, ** p<0.05, * p<0.1). Regional fixed-effects are employed for seven major regions, but five provinces of the Central Highlands are dropped, as no pilot occurred there. Dependent variables are the Gini coefficients, measuring the inequality of public service delivery among districts within the 57 provinces.

Appendix J: Changes in Local Leadership after Pilot

Between 2008 and 2010	
Dependent Variable=1 if Commune leader was replaced	
Treatment	-0.032
	(0.057)
National-Level City	0.025
	(0.081)
Regional FE	Yes
Constant	0.623
	(0.048)
Observations	690
Ratio of Change to Total Leaders (T)	39/91
Ratio of Change to Total Leaders (C)	225/599
Pseudo R-squared	0.0352

Probit regression on dichotomous leadership variable change (*** p<0.01, ** p<0.05, * p<0.1). Regional fixed-effects are employed for the seven major regions,

Appendix K: Difference-in-Means in Special Projects in Province (during Pilot)

Variable	Means (All)		Difference in Means (All)	
	Control	Treatment	T-Statistic	P-Value
Level of MOHA Funding over Provincial GDP 2010	n=53	n=10		
Total funding for all programs	3.03%	2.08%	1.02	0.31
Official development assistance	0.45%	0.46%	0.05	0.96
Infrastructure for port econ zone	0.08%	0.15%	0.66	0.51
Agricultural extension	0.03%	0.04%	0.41	0.69
Infrastructure for tourism	0.09%	0.06%	0.91	0.37
Local healthcare	0.06%	0.03%	1.74	0.09
Province/district split	0.22%	0.05%	1.40	0.17
Funding for minority people	0.02%	0.01%	0.88	0.38
Cutural programs	0.05%	0.04%	0.13	0.90
ODA matching fund	0.16%	0.10%	1.00	0.32
Other programs	0.34%	0.27%	0.49	0.63
Forest development	0.02%	0.02%	0.62	0.54
Growth in MOHA Funding between 2008 and 2010	n=53	n=10		
Total funding for all programs	4.4%	-10.7%	1.42	0.16
Official development assistance	24.8%	-15.4%	1.70	0.09
Infrastructure for port econ zone	-6.6%	5.5%	0.31	0.76
Agricultural extension	-36.5%	-13.7%	1.35	0.18
Infrastructure for tourism	-4.7%	-16.3%	1.72	0.09
Local healthcare	-55.8%	-58.3%	0.33	0.74
Province/district split	16.9%	27.8%	0.41	0.68
Funding for minority people	-90.2%	-79.0%	0.61	0.54
Cutural programs	-24.0%	-41.5%	0.65	0.52
ODA matching fund	53.2%	15.8%	1.03	0.31
Other programs	-2.2%	-14.3%	0.60	0.55
Forest development	-26.3%	-35.5%	0.64	0.52

Data is non-public data from the Ministry of Finance (2008-2010). We standardize both figures by nominal, provincial GDP.

Appendix L: Difference-in-Means State Investment in Province (during Pilot)

Variable	Means (All)		Difference in Means (All)	
	Control	Treatment	T-Statistic	P-Value
Level of Central SOE Transfer Indicators (2009 & 2010)	n=100	n=20		
Capital/Provincial GDP	25.30%	28.71%	-0.16	0.87
Liabilities/Provincial GDP	17.30%	21.77%	-0.29	0.77
State Equity/Provincial GDP	8.00%	6.93%	0.17	0.87
Investment/Provincial GDP	1.31%	1.31%	-0.01	0.99
Construction Outlays/Provincial GDP	4.16%	2.17%	0.34	0.73
Assets under Management/Provincial GDP	2.06%	2.18%	-0.17	0.87
Growth in Central SOE Transfer Indicators (2008-2010)	n=49	n=10		
Capital/Provincial GDP	23.3%	13.2%	0.28	0.78
Liabilities/Provincial GDP	16.7%	9.3%	0.27	0.78
State Equity/Provincial GDP	6.6%	3.8%	0.28	0.78
Investment/Provincial GDP	0.3%	-0.8%	2.34	0.02
Construction Outlays/Provincial GDP	2.6%	-0.4%	0.86	0.39
Assets under Management/Provincial GDP	0.8%	0.6%	0.25	0.80

Data is from the GSO Enterprise Census (2008-2010). Using the annual census, we create aggregate measures for centrally-managed SOEs in each province. We standardize both figures by nominal, provincial GDP.