Poverty Alleviation and State Building in Peripheral Areas: Evidence from China

Online Appendix

# A1 Summary Statistics

Table A1: Summary statistics.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | N | Mean | St. Dev. | Min | Max |
| Fiscal assistance (log) | 588 | $-$3.004 | 4.832 | $-$6.908 | 5.471 |
| Work-for-relief (log) | 588 | $-$0.259 | 4.680 | $-$6.908 | 6.066 |
| Change in per capita security spending | 588 | 0.191 | 0.255 | $-$0.872 | 2.018 |
| Change in per capita admin spending | 588 | 0.127 | 0.218 | $-$1.000 | 1.397 |
| Change in per capita agricultural production | 588 | 0.072 | 0.205 | $-$0.579 | 1.943 |
| Change in per capita local fiscal revenue | 588 | 0.130 | 0.212 | $-$0.640 | 2.554 |
| Violence (=1) | 588 | 0.119 | 0.324 | 0 | 1 |
| Lagged GDP per capita (log) | 588 | 8.102 | 0.585 | 6.738 | 10.268 |
| Lagged fiscal dependence (percent) | 571 | 0.597 | 0.233 | 0.005 | 0.986 |
| Lagged economic growth rate (percent) | 588 | 0.199 | 0.502 | $-$0.870 | 9.373 |
| Share of Uyghur (percent) | 588 | 0.429 | 0.388 | 0.002 | 0.995 |
| Population density (log) | 587 | 2.565 | 1.541 | $-$1.964 | 7.431 |

Table A2: Correlation matrix. $Δ$ refers to “changes in.”

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| (1) Fiscal assistance (log) | $$1$$ |  |  |  |  |  |  |  |  |  |  |  |
| (2) Work-for-relief (log) | $$0.38$$ | $$1$$ |  |  |  |  |  |  |  |  |  |  |
| (3) $Δ$ per capita security spending | $$0.09$$ | $$0.04$$ | $$1$$ |  |  |  |  |  |  |  |  |  |
| (4) $Δ$ per capita admin spending | $$0.17$$ | $$0.05$$ | $$0.61$$ | $$1$$ |  |  |  |  |  |  |  |  |
| (5) $Δ$ per capita agricultural production | $$-0.13$$ | $$0.06$$ | $$0.07$$ | $$0.15$$ | $$1$$ |  |  |  |  |  |  |  |
| (6) $Δ$ per capita local fiscal revenue | $$-0.13$$ | $$0.08$$ | $$0.10$$ | $$0.10$$ | $$0.20$$ | $$1$$ |  |  |  |  |  |  |
| (7) Violence (=1) | $$-0.003$$ | $$-0.02$$ | $$-0.04$$ | $$-0.08$$ | $$-0.02$$ | $$-0.01$$ | $$1$$ |  |  |  |  |  |
| (8) Lagged GDP per capita (log) | $$-0.22$$ | $$-0.56$$ | $$0.02$$ | $$-0.01$$ | $$0.01$$ | $$0.004$$ | $$-0.10$$ | $$1$$ |  |  |  |  |
| (9) Lagged fiscal dependence (percent) | $$0.28$$ | $$0.54$$ | $$0.005$$ | $$0.07$$ | $$0.02$$ | $$0.04$$ | $$-0.07$$ | $$-0.61$$ | $$1$$ |  |  |  |
| (10) Lagged economic growth rate (percent) | $$-0.16$$ | $$0.06$$ | $$0.02$$ | $$0.08$$ | $$0.19$$ | $$0.23$$ | $$0.0002$$ | $$0.02$$ | $$0.01$$ | $$1$$ |  |  |
| (11) Share of Uyghur (percent) | $$0.13$$ | $$0.18$$ | $$0.03$$ | $$-0.004$$ | $$-0.13$$ | $$-0.001$$ | $$0.21$$ | $$-0.49$$ | $$0.06$$ | $$-0.06$$ | $$1$$ |  |
| (12) Population density (log) | $$-0.18$$ | $$-0.28$$ | $$-0.04$$ | $$-0.08$$ | $$0.02$$ | $$-0.13$$ | $$0.26$$ | $$0.04$$ | $$-0.36$$ | $$0.01$$ | $$0.15$$ | $$1$$ |

#

# A2 CBPS Analysis

##

## A2.1 Diagnostics

Ideally, following CBPS, the treatment should be uncorrelated with observed confounding covariates. As shown in Figures A1-A4, the non-parametric estimation of CBPS weights indeed greatly reduces the correlation between the treatment and included covariates to nearly 0.

*Figure A1: Absolute Pearson correlations between treatment and covariates: Unweighted vs. weighted. Treatment is per capita fiscal assistance.*

|  |  |
| --- | --- |
|  |  |
| (a) Security | (b) Admin |
|  |  |
| (c) Revenue | (d) Agriculture |
|  |  |
| (e) Violence |  |

*Figure A2: Absolute Pearson correlations between treatment and covariates: Unweighted vs. weighted. Treatment is per capita fiscal assistance. Estimation includes lagged dependent variables.*

|  |  |
| --- | --- |
|  |  |
| (a) Security | (b) Admin |
|  |  |
| (c) Revenue | (d) Agriculture |
|  |  |
| (e) Violence |  |

*Figure A3: Absolute Pearson correlations between treatment and covariates: Unweighted vs. weighted. Treatment is per capita work-for-relief grants.*

|  |  |
| --- | --- |
|  |  |
| (a) Security | (b) Admin |
|  |  |
| (c) Revenue | (d) Agriculture |
|  |  |
| (e) Violence |  |

*Figure A4: Absolute Pearson correlations between treatment and covariates: Unweighted vs. weighted. Treatment is per capita work-for-relief grants. Estimation includes lagged dependent variables.*

|  |  |
| --- | --- |
|  |  |
| (a) Security | (b) Admin |
|  |  |
| (c) Revenue | (d) Agriculture |
|  |  |
| (e) Violence |  |

## A2.2 Main Results

Tables A[3](#eff_sec)-A[5](#eff_rev) present the full regression results from the OLS with CBPS weights, controlling for all observed covariates specified in the main paper. In each table, the treatment in the first two models is per capita fiscal assistance. The treatment in Models (3) and (4) is per capita work-for-relief grants.

Table A3: Poverty-relief transfers and public security spending. Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
| (lr)2-3 (lr)4-5 | (1) | (2) | (3) | (4) |
| Treatment | 0.006$​^{\*}$ | 0.006$​^{\*}$ | 0.010$​^{\*\*}$ | 0.010$​^{\*\*}$ |
|  | (0.003) | (0.003) | (0.004) | (0.004) |
| Lagged GDP per capita (log) | $-$0.054 | $-$0.061 | $-$0.024 | $-$0.051 |
|  | (0.067) | (0.069) | (0.034) | (0.036) |
| Lagged share of subsidy | $-$0.006 | $-$0.036 | $-$0.106 | $-$0.159 |
|  | (0.157) | (0.153) | (0.157) | (0.152) |
| Lagged economic growth rate | $-$0.028$​^{\*\*}$ | $-$0.027$​^{\*\*}$ | $-$0.023$​^{\*\*\*}$ | $-$0.029$​^{\*\*\*}$ |
|  | (0.014) | (0.013) | (0.007) | (0.007) |
| Share of Uyghur population | $-$1.653 | $-$1.025 | $-$1.987 | $-$1.598 |
|  | (1.242) | (1.304) | (1.236) | (1.170) |
| Population density (log) | $-$1.013$​^{\*\*\*}$ | $-$0.905$​^{\*\*\*}$ | $-$1.303$​^{\*\*\*}$ | $-$1.205$​^{\*\*}$ |
|  | (0.274) | (0.335) | (0.379) | (0.496) |
| Constant | $-$0.0002 | $-$0.002 | $-$0.0004 | $-$0.0005 |
|  | (0.002) | (0.002) | (0.002) | (0.003) |
| Lagged Dep Var | Yes | No | Yes | No |
| Observations | 570 | 570 | 570 | 570 |
| Adjusted R$​^{2}$ | 0.152 | 0.040 | 0.192 | 0.090 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A4: Poverty-relief transfers and administrative management spending. Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
| (lr)2-3 (lr)4-5 | (1) | (2) | (3) | (4) |
| Treatment | 0.005$​^{\*\*}$ | 0.005$​^{\*\*}$ | 0.005 | 0.005 |
|  | (0.002) | (0.002) | (0.003) | (0.003) |
| Lagged GDP per capita (log) | $-$0.047 | $-$0.055 | $-$0.072$​^{\*\*\*}$ | $-$0.093$​^{\*\*\*}$ |
|  | (0.059) | (0.057) | (0.026) | (0.027) |
| Lagged share of subsidy | 0.044 | $-$0.047 | $-$0.011 | $-$0.119 |
|  | (0.167) | (0.145) | (0.174) | (0.153) |
| Lagged economic growth rate | 0.017 | 0.011 | 0.020$​^{\*\*}$ | 0.011 |
|  | (0.015) | (0.018) | (0.008) | (0.012) |
| Share of Uyghur population | 1.441 | 1.077 | 0.223 | $-$0.088 |
|  | (1.266) | (1.228) | (1.043) | (1.014) |
| Population density (log) | $-$0.997$​^{\*\*\*}$ | $-$0.803$​^{\*\*\*}$ | $-$1.140$​^{\*\*\*}$ | $-$1.005$​^{\*\*\*}$ |
|  | (0.180) | (0.200) | (0.191) | (0.272) |
| Constant | 0.002 | 0.002 | 0.002 | 0.002 |
|  | (0.002) | (0.002) | (0.002) | (0.002) |
| Lagged Dep Var | Yes | No | Yes | No |
| Observations | 570 | 570 | 570 | 570 |
| Adjusted R$​^{2}$ | 0.185 | 0.050 | 0.219 | 0.082 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A5: Poverty-relief transfers and local fiscal revenues. Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
|  | (1) | (2) | (3) | (4) |
| Treatment | $-$0.005 | $-$0.004 | $-$0.001 | $-$0.001 |
|  | (0.003) | (0.003) | (0.003) | (0.003) |
| Lagged GDP per capita (log) | 0.051 | 0.028 | $-$0.057 | $-$0.062$​^{\*}$ |
|  | (0.071) | (0.064) | (0.041) | (0.037) |
| Lagged share of subsidy | 0.613$​^{\*}$ | 0.686$​^{\*\*}$ | 0.351$​^{\*}$ | 0.402$​^{\*\*}$ |
|  | (0.325) | (0.296) | (0.194) | (0.161) |
| Lagged economic growth rate | 0.059 | 0.055 | 0.035$​^{\*}$ | 0.034$​^{\*}$ |
|  | (0.036) | (0.035) | (0.018) | (0.018) |
| Share of Uyghur population | 4.338 | 3.415 | 0.815 | 0.410 |
|  | (3.054) | (2.576) | (1.627) | (1.536) |
| Population density (log) | $-$0.189 | $-$0.117 | $-$0.001 | 0.022 |
|  | (0.354) | (0.314) | (0.448) | (0.420) |
| Constant | 0.004 | 0.002 | $-$0.001 | $-$0.001 |
|  | (0.004) | (0.003) | (0.002) | (0.002) |
| Lagged Dep Var | Yes | No | Yes | No |
| Observations | 570 | 570 | 570 | 570 |
| Adjusted R$​^{2}$ | 0.147 | 0.087 | 0.043 | 0.024 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A6: Poverty-relief transfers and agricultural production. Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
|  | (1) | (2) | (3) | (4) |
| Treatment | 0.004 | 0.006 | 0.010$​^{\*\*\*}$ | 0.008$​^{\*\*\*}$ |
|  | (0.003) | (0.004) | (0.003) | (0.003) |
| Lagged GDP per capita (log) | 0.109 | 0.270 | 0.107 | 0.107 |
|  | (0.221) | (0.313) | (0.083) | (0.093) |
| Lagged share of subsidy | 0.327$​^{\*}$ | 0.319 | 0.039 | 0.006 |
|  | (0.195) | (0.220) | (0.096) | (0.098) |
| Lagged economic growth rate | 0.036 | 0.038 | $-$0.003 | $-$0.001 |
|  | (0.051) | (0.057) | (0.013) | (0.012) |
| Share of Uyghur population | $-$0.922 | $-$1.434 | $-$1.517 | $-$1.592 |
|  | (2.117) | (2.334) | (1.684) | (1.619) |
| Population density (log) | $-$0.479$​^{\*\*}$ | $-$0.265 | $-$0.665$​^{\*\*\*}$ | $-$0.579$​^{\*\*\*}$ |
|  | (0.204) | (0.212) | (0.157) | (0.141) |
| Constant | 0.005 | 0.006 | $-$0.003$​^{\*}$ | $-$0.003 |
|  | (0.004) | (0.007) | (0.002) | (0.002) |
| Observations | 570 | 570 | 570 | 570 |
| R$​^{2}$ | 0.164 | 0.070 | 0.141 | 0.069 |
| Adjusted R$​^{2}$ | 0.153 | 0.060 | 0.130 | 0.059 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A7: Poverty-relief transfers and ethnic violence. Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
|  | (1) | (2) | (3) | (4) |
| Treatment | 0.010$​^{\*\*\*}$ | 0.007$​^{\*\*}$ | $-$0.002 | $-$0.002 |
|  | (0.004) | (0.003) | (0.005) | (0.005) |
| Lagged GDP per capita (log) | 0.295$​^{\*\*\*}$ | 0.282$​^{\*\*\*}$ | 0.141$​^{\*\*}$ | 0.141$​^{\*\*}$ |
|  | (0.095) | (0.091) | (0.058) | (0.056) |
| Lagged share of subsidy | 0.061 | 0.123 | 0.133 | 0.152 |
|  | (0.172) | (0.170) | (0.192) | (0.183) |
| Lagged economic growth rate | $-$0.009 | $-$0.003 | $-$0.020 | $-$0.017 |
|  | (0.023) | (0.023) | (0.015) | (0.015) |
| Share of Uyghur population | $-$0.371 | $-$0.654 | $-$0.548 | $-$0.510 |
|  | (1.440) | (1.439) | (1.438) | (1.419) |
| Population density (log) | 0.131 | 0.100 | 0.111 | 0.087 |
|  | (0.156) | (0.144) | (0.146) | (0.131) |
| Constant | 0.001 | $-$0.002 | 0.002 | 0.002 |
|  | (0.003) | (0.003) | (0.003) | (0.003) |
| Lagged Dep Var | Yes | No | Yes | No |
| Observations | 570 | 570 | 570 | 570 |
| Adjusted R$​^{2}$ | 0.040 | 0.016 | 0.010 | $-$0.001 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

##

## A2.3 Robustness Test

* Table A[8](#eff_riot2) presents the estimated effects of poverty alleviation transfers on ethnic violence (the number of incidents).
* Table A[9](#eff_con) presents the estimated effects of poverty alleviation transfers on per capita non-capacity government spending (i.e., spending for neither public security nor administrative management).
* Table A[10](#placebo) presents the estimated effects of non-poverty alleviation intergovernmental transfers on all outcome variables in the main analysis.

Table A8: Poverty-relief transfers and ethnic violence (frequency). Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
|  | (1) | (2) | (3) | (4) |
| Treatment | 0.008 | 0.005 | $-$0.004 | $-$0.004 |
|  | (0.005) | (0.005) | (0.009) | (0.009) |
| Lagged GDP per capita (log) | 0.253 | 0.199 | 0.195$​^{\*}$ | 0.193$​^{\*}$ |
|  | (0.291) | (0.272) | (0.105) | (0.110) |
| Lagged share of subsidy | 0.082 | 0.064 | 0.170 | 0.161 |
|  | (0.417) | (0.403) | (0.456) | (0.467) |
| Lagged economic growth rate | $-$0.020 | $-$0.026 | $-$0.017 | $-$0.012 |
|  | (0.045) | (0.046) | (0.020) | (0.021) |
| Share of Uyghur population | 1.137 | 0.223 | $-$1.347 | $-$1.579 |
|  | (3.634) | (3.172) | (3.071) | (2.862) |
| Population density (log) | 0.018 | $-$0.055 | 0.018 | $-$0.022 |
|  | (0.277) | (0.262) | (0.233) | (0.231) |
| Constant | 0.002 | $-$0.010 | 0.005 | 0.005 |
|  | (0.006) | (0.007) | (0.005) | (0.005) |
| Lagged Dep Var | Yes | No | Yes | No |
| Observations | 570 | 570 | 570 | 570 |
| Adjusted R$​^{2}$ | $-$0.002 | $-$0.008 | $-$0.002 | $-$0.006 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A9: Poverty-relief transfers and non-capacity government spending. Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
|  | (1) | (2) | (3) | (4) |
| Treatment | $-$0.001 | $-$0.001 | 0.004 | 0.004 |
|  | (0.003) | (0.002) | (0.003) | (0.003) |
| Lagged GDP per capita (log) | $-$0.076 | $-$0.097 | 0.033 | 0.033 |
|  | (0.075) | (0.069) | (0.058) | (0.059) |
| Lagged share of subsidy | 0.318 | 0.225 | 0.157 | 0.045 |
|  | (0.250) | (0.252) | (0.169) | (0.150) |
| Lagged economic growth rate | 0.010 | 0.013 | 0.006 | 0.009 |
|  | (0.023) | (0.020) | (0.010) | (0.008) |
| Share of Uyghur population | 2.020 | 1.903 | $-$0.443 | $-$0.762 |
|  | (2.173) | (2.194) | (1.479) | (1.398) |
| Population density (log) | $-$0.444$​^{\*}$ | $-$0.441$​^{\*\*}$ | $-$0.509$​^{\*\*}$ | $-$0.489$​^{\*\*}$ |
|  | (0.236) | (0.220) | (0.208) | (0.193) |
| Constant | 0.006$​^{\*\*}$ | 0.003 | 0.0001 | $-$0.001 |
|  | (0.003) | (0.003) | (0.002) | (0.002) |
| Lagged Dep Var | Yes | No | Yes | No |
| Observations | 570 | 570 | 570 | 570 |
| Adjusted R$​^{2}$ | 0.098 | 0.042 | 0.102 | 0.036 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A10: Effects of non-poverty alleviation transfers. Models use cluster standard errors by county.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Security | Admin | Violence | Rural | Revenue |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Treatment | 0.039 | 0.016 | $-$0.039 | $-$0.036 | $-$0.045 | $-$0.033 | $-$0.050$​^{\*}$ | $-$0.033$​^{\*}$ | 0.017 | 0.048$​^{\*\*}$ |
| (0.039) | (0.034) | (0.025) | (0.025) | (0.062) | (0.055) | (0.026) | (0.019) | (0.013) | (0.021) |
| Lagged GDP per capita (log) | $-$0.079 | $-$0.067 | $-$0.097$​^{\*\*}$ | $-$0.090$​^{\*}$ | 0.194$​^{\*\*}$ | 0.195$​^{\*\*}$ | 0.015 | 0.003 | 0.003 | 0.024 |
| (0.059) | (0.060) | (0.046) | (0.050) | (0.085) | (0.088) | (0.151) | (0.131) | (0.060) | (0.063) |
| Lagged share of subsidy | $-$0.054 | $-$0.032 | 0.105 | 0.227$​^{\*}$ | 0.294 | 0.262 | 0.179 | 0.215$​^{\*}$ | 0.417$​^{\*}$ | 0.438$​^{\*}$ |
| (0.175) | (0.177) | (0.113) | (0.126) | (0.202) | (0.210) | (0.130) | (0.127) | (0.221) | (0.263) |
| Lagged economic growth rate | $-$0.027$​^{\*\*}$ | $-$0.020 | 0.017 | 0.022 | $-$0.018 | $-$0.023 | 0.005 | 0.010 | 0.049$​^{\*}$ | 0.046$​^{\*}$ |
| (0.011) | (0.015) | (0.016) | (0.014) | (0.022) | (0.023) | (0.021) | (0.022) | (0.027) | (0.024) |
| Share of Uyghur population | $-$0.790 | $-$1.927 | 0.226 | 0.713 | $-$0.799 | $-$0.886 | $-$0.925 | $-$0.873 | 1.392 | 2.135 |
| (1.341) | (1.319) | (1.126) | (1.224) | (1.349) | (1.379) | (1.439) | (1.512) | (1.629) | (1.863) |
| Population density (log) | $-$1.164$​^{\*\*\*}$ | $-$1.245$​^{\*\*\*}$ | $-$0.985$​^{\*\*\*}$ | $-$1.189$​^{\*\*\*}$ | 0.069 | 0.089 | $-$0.454$​^{\*\*\*}$ | $-$0.578$​^{\*\*\*}$ | $-$0.142 | $-$0.176 |
| (0.405) | (0.319) | (0.239) | (0.195) | (0.133) | (0.142) | (0.163) | (0.168) | (0.339) | (0.367) |
| Constant | $-$0.001 | $-$0.0001 | 0.001 | 0.0002 | 0.003 | 0.002 | 0.0003 | 0.001 | $-$0.002 | $-$0.0002 |
| (0.002) | (0.002) | (0.002) | (0.002) | (0.003) | (0.003) | (0.001) | (0.001) | (0.001) | (0.001) |
| Lagged Dep Var | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes |
| Observations | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 |
| Adjusted R$​^{2}$ | 0.061 | 0.159 | 0.078 | 0.207 | 0.004 | 0.015 | 0.023 | 0.066 | 0.027 | 0.080 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A11: Poverty-relief transfers and telecommunication. Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
|  | (1) | (2) | (3) | (4) |
| Treatment | 0.014 | 0.014 | 0.015 | 0.012 |
|  | (0.008) | (0.009) | (0.012) | (0.012) |
| Lagged GDP per capita (log) | $-$0.730$​^{\*\*\*}$ | $-$0.544$​^{\*\*\*}$ | $-$0.725$​^{\*\*\*}$ | $-$0.657$​^{\*\*\*}$ |
|  | (0.276) | (0.211) | (0.278) | (0.241) |
| Lagged share of subsidy | $-$0.940$​^{\*\*\*}$ | $-$0.632$​^{\*}$ | $-$0.557 | $-$0.465 |
|  | (0.351) | (0.330) | (0.412) | (0.397) |
| Lagged economic growth rate | 0.203 | 0.085 | 0.220 | 0.178 |
|  | (0.166) | (0.132) | (0.143) | (0.142) |
| Share of Uyghur population | 5.593 | 5.044 | 3.379 | 3.078 |
|  | (4.986) | (4.549) | (4.289) | (3.788) |
| Population density (log) | $-$0.062 | $-$0.072 | 0.327 | 0.085 |
|  | (0.831) | (0.777) | (0.668) | (0.693) |
| Constant | 0.009 | 0.008 | 0.016$​^{\*}$ | 0.008 |
|  | (0.009) | (0.006) | (0.009) | (0.006) |
| Lagged Dep Var | Yes | No | Yes | No |
| Observations | 327 | 327 | 327 | 327 |
| Adjusted R$​^{2}$ | 0.014 | 0.004 | 0.011 | $-$0.002 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A12: Poverty-relief transfers and economic growth. Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
|  | (1) | (2) | (3) | (4) |
| Treatment | $-$0.001 | $-$0.001 | $-$0.018$​^{\*}$ | $-$0.017$​^{\*}$ |
|  | (0.002) | (0.002) | (0.010) | (0.010) |
| Lagged GDP per capita (log) | $-$1.130$​^{\*\*\*}$ | $-$1.096$​^{\*\*\*}$ | $-$3.139$​^{\*\*\*}$ | $-$3.173$​^{\*\*\*}$ |
|  | (0.327) | (0.292) | (0.838) | (0.793) |
| Lagged share of subsidy | $-$0.066 | $-$0.044 | $-$0.202 | $-$0.174 |
|  | (0.134) | (0.125) | (0.447) | (0.454) |
| Share of Uyghur population | $-$0.112 | $-$0.092 | $-$1.016 | $-$1.120 |
|  | (1.208) | (1.175) | (3.081) | (3.096) |
| Population density (log) | $-$0.239 | $-$0.167 | 0.078 | 0.054 |
|  | (0.154) | (0.135) | (0.304) | (0.306) |
| Constant | $-$0.007 | $-$0.006 | 0.032$​^{\*\*\*}$ | 0.034$​^{\*\*\*}$ |
|  | (0.008) | (0.007) | (0.012) | (0.012) |
| Lagged Dep Var | Yes | No | Yes | No |
| Observations | 570 | 570 | 570 | 570 |
| Adjusted R$​^{2}$ | 0.376 | 0.382 | 0.752 | 0.752 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A13: Poverty-relief transfers and the size of Han population relative to the Uyghur population. Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
|  | (1) | (2) | (3) | (4) |
| Treatment | 0.001 | 0.001 | $-$0.0001 | 0.0001 |
|  | (0.001) | (0.001) | (0.002) | (0.002) |
| Lagged GDP per capita (log) | 0.045 | 0.044 | 0.002 | 0.001 |
|  | (0.042) | (0.046) | (0.038) | (0.036) |
| Lagged share of subsidy | $-$0.164 | $-$0.171$​^{\*}$ | $-$0.152 | $-$0.160 |
|  | (0.111) | (0.099) | (0.126) | (0.109) |
| Lagged economic growth rate | 0.002 | 0.007 | 0.002 | 0.003 |
|  | (0.010) | (0.012) | (0.008) | (0.008) |
| Population density (log) | $-$0.319 | $-$0.218 | $-$0.328 | $-$0.231 |
|  | (0.464) | (0.383) | (0.447) | (0.363) |
| Constant | $-$0.0003 | $-$0.0002 | $-$0.001 | $-$0.002 |
|  | (0.001) | (0.001) | (0.002) | (0.002) |
| Lagged Dep Var | Yes | No | Yes | No |
| Observations | 570 | 570 | 570 | 570 |
| Adjusted R$​^{2}$ | 0.074 | 0.004 | 0.066 | 0.0002 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A14: Poverty-relief transfers and fiscal dependent population. Models use cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
|  | (1) | (2) | (3) | (4) |
| Treatment | $-$0.001 | $-$0.001 | 0.0004 | 0.0004 |
|  | (0.001) | (0.001) | (0.001) | (0.001) |
| Lagged GDP per capita (log) | 0.025 | 0.025 | 0.029$​^{\*}$ | 0.027 |
|  | (0.020) | (0.020) | (0.016) | (0.018) |
| Lagged share of subsidy | 0.006 | 0.006 | 0.011 | $-$0.012 |
|  | (0.055) | (0.055) | (0.058) | (0.057) |
| Lagged economic growth rate | 0.002 | 0.002 | $-$0.001 | $-$0.0005 |
|  | (0.002) | (0.002) | (0.003) | (0.003) |
| Share of Uyghur population | 0.080 | 0.069 | $-$0.396 | $-$0.308 |
|  | (0.642) | (0.640) | (0.680) | (0.716) |
| Population density (log) | 0.179 | 0.179 | 0.340$​^{\*\*}$ | 0.318$​^{\*\*}$ |
|  | (0.130) | (0.130) | (0.134) | (0.146) |
| Constant | 0.001 | 0.001 | $-$0.001 | $-$0.0002 |
|  | (0.001) | (0.001) | (0.001) | (0.001) |
| Lagged Dep Var | Yes | No | Yes | No |
| Observations | 388 | 388 | 388 | 388 |
| Adjusted R$​^{2}$ | $-$0.0002 | 0.003 | 0.031 | 0.026 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

#

# A3 First-Differenced Regression

In this section, we carry out an alternative specification to account for possible selection bias of poverty alleviation transfers. We estimate a first-differenced version of the regression model, in which we include controls for preexisting trends.

$$Δy\_{i,t}=α\_{i}+βΔ\left(Treatment\right)\_{i,t}+ΔX\_{i,t}γ+ϕΔy\_{i,t-1}+Δϵ\_{i,t},$$

where $Δ$ indicates yearly difference within the county (e.g., $Δx\_{i,t}=Δx\_{i,t}-Δx\_{i,t-1}$).

The results for main and additional variables are presented in Tables A[15](#fd1) and A[16](#fd2). Compared with the main results, the estimated coefficients of poverty alleviation transfers are either marginally significant or statistically insignificant. The only statistically significant coefficient occurs when we estimate the correlation between difference in per capita work-for-relief grants and difference in per capita security spending – as a result, the results align with the proposed hypotheses.

Table A15: Effects of poverty alleviation subsidies (first-differenced regression). Models use cluster standard errors by county. Treatment of odd columns is difference in per capita fiscal assistance. Treatment of even columns is difference in per capita work-for-relief grants. All models include county and year fixed effects.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Security | Admin | Revenue | Rural | Violence |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Relief per capita | $-$0.011 | 0.027$​^{\*}$ | $-$0.026 | 0.108 | 0.014 | $-$0.022 | $-$0.0001 | $-$0.00004 | $-$0.001 | 0.0001 |
|  | (0.014) | (0.016) | (0.066) | (0.112) | (0.076) | (0.032) | (0.0001) | (0.00003) | (0.001) | (0.0002) |
| GDP per capita | $-$0.001 | $-$0.0005 | 0.0001 | 0.0002 | 0.013$​^{\*\*}$ | 0.013$​^{\*\*}$ | 0.00001 | 0.00001 | $-$0.00003$​^{\*}$ | $-$0.00003$​^{\*}$ |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.006) | (0.006) | (0.00001) | (0.00001) | (0.00002) | (0.00002) |
| Share of subsidy | 14.246 | 14.204 | $-$7.297 | $-$6.662 | $-$284.668$​^{\*\*}$ | $-$284.600$​^{\*\*}$ | 0.030 | 0.029 | $-$0.166 | $-$0.171 |
|  | (14.529) | (14.559) | (28.167) | (27.764) | (135.486) | (135.488) | (0.026) | (0.026) | (0.191) | (0.191) |
| Economic growth rate | 0.621 | 0.627 | 0.059 | 0.022 | $-$7.682$​^{\*\*\*}$ | $-$7.669$​^{\*\*\*}$ | $-$0.003 | $-$0.003 | 0.007 | 0.007 |
|  | (0.400) | (0.408) | (0.659) | (0.630) | (2.788) | (2.792) | (0.002) | (0.002) | (0.012) | (0.012) |
| Population density | $-$0.448 | $-$0.458 | $-$1.505$​^{\*\*\*}$ | $-$1.537$​^{\*\*\*}$ | $-$2.273 | $-$2.269 | $-$0.005 | $-$0.005 | $-$0.013$​^{\*\*\*}$ | $-$0.013$​^{\*\*\*}$ |
|  | (0.285) | (0.286) | (0.583) | (0.580) | (2.141) | (2.141) | (0.003) | (0.003) | (0.005) | (0.005) |
| Constant | 17.865$​^{\*\*\*}$ | 17.689$​^{\*\*\*}$ | 38.776$​^{\*\*\*}$ | 37.952$​^{\*\*\*}$ | $-$0.116 | $-$0.077 | 0.039$​^{\*\*\*}$ | 0.040$​^{\*\*\*}$ | 0.020 | 0.023 |
|  | (0.756) | (0.740) | (2.800) | (2.261) | (5.619) | (5.749) | (0.008) | (0.008) | (0.039) | (0.038) |
| Observations | 557 | 557 | 557 | 557 | 557 | 557 | 557 | 557 | 557 | 557 |
| Adjusted R$​^{2}$ | 0.363 | 0.373 | 0.371 | 0.384 | 0.418 | 0.418 | 0.201 | 0.199 | 0.170 | 0.169 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

Table A16: Effects of poverty alleviation subsidies on additional outcome (first-differenced regression). Models use cluster standard errors by county. Treatment of odd columns is difference in per capita fiscal assistance. Treatment of even columns is difference in per capita work-for-relief grants. All models include county and year fixed effects.

|  |  |  |
| --- | --- | --- |
|  | Non-Capacity | Hu-Uyghur |
|  | (1) | (2) | (3) | (4) |
| Relief per capita | $-$0.033 | 0.002 | $-$0.001 | $-$0.008 |
|  | (0.181) | (0.003) | (0.009) | (0.007) |
| GDP per capita | $-$0.002 | 0.0001 | 0.0001 | 0.0001 |
|  | (0.006) | (0.0003) | (0.0003) | (0.0002) |
| Share of subsidy | 72.030 | $-$5.678 | $-$5.503 | $-$5.525 |
|  | (114.404) | (5.663) | (5.627) | (5.591) |
| Economic growth rate | $-$2.210 | $-$0.177 | $-$0.183 | $-$0.177 |
|  | (2.095) | (0.183) | (0.185) | (0.183) |
| Population density | $-$4.902$​^{\*\*}$ | 0.044 | 0.035 | 0.037 |
|  | (1.975) | (0.222) | (0.234) | (0.234) |
| Constant | 144.104$​^{\*\*\*}$ | $-$0.446 | $-$0.231 | $-$0.181 |
|  | (6.352) | (0.982) | (0.615) | (0.591) |
| Observations | 557 | 557 | 557 | 557 |
| Adjusted R$​^{2}$ | 0.472 | 0.458 | 0.458 | 0.458 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

#

# A4 Instrumental Variable Estimation

As an alternative identification strategy, we aggregate our county-year observations by taking the average of every variable by county and instrument the main explanatory variable – per capita relief – with the average per capita amount of poverty relief transfers between 1990 and 1993. Here we do not make the distinction between fiscal assistance and work-for-relief transfers because it was not until the 8-7 Plan that Beijing clearly defined different categories of poverty reduction transfers.

Notably, the results in Table A[17](#main_iv) are still consistent with the main hypothesis that poverty alleviation in Xinjiang under the 8-7 Plan led to greater investment in state apparatus. The *Per capita relief* coefficient even turned negative although it is only marginally significant. The diagnostic tests suggest that we can reject the null hypothesis that the IV we chose is a weak one.

Table A17: Effects of poverty alleviation subsidies (instrumental variable estimation). Models use robust standard errors. All models include prefecture fixed effects.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Security | Admin | Revenues | Violence | Rural |
|  | (1) | (2) | (3) | (4) | (5) |
| Per capita relief | 0.008$​^{\*\*}$ | 0.009$​^{\*\*\*}$ | 0.003 | 0.0001 | $-$0.002 |
|  | (0.003) | (0.003) | (0.002) | (0.001) | (0.002) |
| GDP per capita (log) | $-$0.00000 | $-$0.00001 | 0.0001$​^{\*\*}$ | $-$0.00001 | 0.00001 |
|  | (0.00001) | (0.00002) | (0.00003) | (0.00001) | (0.00003) |
| Share of subsidy | $-$0.123 | $-$0.349 | $-$0.120 | 0.308$​^{\*\*\*}$ | 0.334 |
|  | (0.340) | (0.254) | (0.399) | (0.070) | (0.606) |
| Economic growth rate | $-$0.803$​^{\*\*}$ | $-$0.367 | $-$2.612$​^{\*\*\*}$ | $-$0.233$​^{\*}$ | $-$0.095 |
|  | (0.390) | (0.309) | (0.372) | (0.139) | (0.446) |
| Share of Uyghur population | 0.279 | 0.241 | 0.289 | $-$0.016 | 0.080 |
|  | (0.375) | (0.364) | (0.398) | (0.107) | (0.337) |
| Population density (log) | 0.036 | $-$0.056 | $-$0.019 | 0.040$​^{\*\*}$ | $-$0.184$​^{\*\*}$ |
|  | (0.065) | (0.063) | (0.080) | (0.019) | (0.077) |
| Constant | 3.144$​^{\*\*\*}$ | 4.372$​^{\*\*\*}$ | 5.603$​^{\*\*\*}$ | 0.220$​^{\*}$ | $-$1.258$​^{\*\*\*}$ |
|  | (0.534) | (0.447) | (0.301) | (0.114) | (0.428) |
| Observations | 84 | 84 | 84 | 84 | 84 |
| Adjusted R$​^{2}$ | 0.503 | 0.672 | 0.799 | 0.388 | 0.471 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |

#

# A5 Central and Local Transfers

In the main paper, we present the estimation of the correlation between fiscal assistance (by Urumqi) and work-for-relief grants (by Beijing).

Table A[18](#col_main) provides the results that show how the correlation between fiscal assistance and work-for-relief grants evolved during the 8-7 Program. The coefficients of the interaction term are positive, especially in the case of the fiscal assistance program.

Table A18: Correlation between two poverty alleviation payments by year. All models control for county and year fixed effects with cluster standard errors by county.

|  |  |  |
| --- | --- | --- |
|  | Fiscal assistance | Work-for-relief |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Concurrent aid | $-$0.302$​^{\*\*}$ | $-$0.328$​^{\*\*}$ | $-$0.331$​^{\*\*}$ | $-$0.308$​^{\*\*}$ | 0.076 | 0.052 | 0.038 | 0.081 |
| (0.132) | (0.130) | (0.130) | (0.132) | (0.088) | (0.093) | (0.096) | (0.090) |
| Year | 0.846$​^{\*\*\*}$ | 0.804$​^{\*\*\*}$ | 0.812$​^{\*\*\*}$ | 0.865$​^{\*\*\*}$ | $-$0.297$​^{\*\*\*}$ | $-$0.530$​^{\*\*\*}$ | $-$0.509$​^{\*\*\*}$ | $-$0.297$​^{\*\*\*}$ |
| (0.170) | (0.114) | (0.116) | (0.171) | (0.092) | (0.091) | (0.093) | (0.095) |
| Lagged GDP per capita (log) | $-$0.640 |  |  | $-$0.539 | $-$1.798$​^{\*\*}$ |  |  | $-$1.807$​^{\*\*}$ |
| (1.386) |  |  | (1.346) | (0.821) |  |  | (0.825) |
| Fiscal dependence  | $-$0.254 |  |  | $-$0.575 | 8.356$​^{\*\*\*}$ |  |  | 8.413$​^{\*\*\*}$ |
| (3.574) |  |  | (3.552) | (2.366) |  |  | (2.373) |
| Economic growth (percent) | $-$0.235 |  |  | $-$0.236 | 0.215$​^{\*}$ |  |  | 0.224$​^{\*}$ |
| (0.207) |  |  | (0.203) | (0.128) |  |  | (0.127) |
| Riot (=1) |  | 0.356 |  | 0.325 |  | 0.154 |  | 0.154 |
|  | (0.248) |  | (0.251) |  | (0.136) |  | (0.137) |
| Share of Uyghur (percent) |  |  | 16.207 | 27.439 |  |  | 17.724 | $-$4.377 |
|  |  | (28.593) | (30.014) |  |  | (15.696) | (15.331) |
| Population density (log) | 0.130 | 0.714 | 0.816 | 0.057 | $-$0.721 | $-$1.190 | $-$1.155 | $-$0.795 |
| (2.915) | (2.253) | (2.205) | (2.798) | (2.025) | (2.204) | (2.215) | (2.007) |
| Concurrent x Year | 0.115 | 0.114$​^{\*\*\*}$ | 0.115$​^{\*\*\*}$ | 0.115$​^{\*\*\*}$ | 0.019 | 0.028$​^{\*}$ | 0.031$​^{\*}$ | 0.018 |
| (0.017) | (0.016) | (0.016) | (0.017) | (0.015) | (0.016) | (0.016) | (0.016) |
| Constant | $-$2.817 | $-$10.335$​^{\*}$ | $-$11.760$​^{\*\*}$ | $-$5.294 | 10.435 | 1.492 | 0.084 | 10.962 |
| (16.721) | (6.000) | (5.242) | (16.287) | (7.261) | (5.742) | (5.770) | (7.293) |
| Observations | 570 | 587 | 587 | 570 | 570 | 587 | 587 | 570 |
| Adjusted R$​^{2}$ | 0.609 | 0.607 | 0.606 | 0.611 | 0.813 | 0.786 | 0.787 | 0.813 |
| *Note:* $​^{\*}$p$<$0.1; $​^{\*\*}$p$<$0.05; $​^{\*\*\*}$p$<$0.01 |