**ONLINE APPENDIX**

# A1 Data Description

Table A1: Summary Statistics for Table 1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
| VARIABLES | N | mean | sd | min | max |
| Pension Ratio (lag) | 2,025.000 | 0.227 | 0.294 | 0.003 | 3.396 |
| Unemployment Insurance Ratio (lag) | 2,028.000 | 0.126 | 0.212 | 0.002 | 2.997 |
| FDI/GRP (lag) | 2,298.000 | 0.018 | 0.019 | 0.000 | 0.219 |
| GRP Growth (lag) | 2,019.000 | 9.274 | 3.928 | -19.380 | 23.960 |
| Employment in Primary Industry (lag) | 2,004.000 | 0.025 | 0.063 | 0.000 | 0.594 |
| Employment in Tertiary Industry (lag) | 2,027.000 | 0.520 | 0.134 | 0.154 | 0.948 |
| Employment in Manufacturing Industry (lag) | 2,027.000 | 0.244 | 0.138 | 0.003 | 0.813 |
| Employment in Other Secondary Industry (lag) | 2,027.000 | 0.211 | 0.109 | 0.015 | 0.628 |
| Population (ln, lag) | 2,033.000 | 15.067 | 0.767 | 5.991 | 17.340 |
| GRP per Capita (ln, lag) | 2,018.000 | 10.660 | 0.600 | 8.773 | 15.675 |
| Employment (ln, lag) | 2,027.000 | 12.835 | 0.850 | 10.159 | 16.105 |

Table A2: Summary Statistics for Table 2 and Table 3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
| VARIABLES | N | mean | sd | min | max |
| Foreign Ownership Ratio | 2,752.000 | 3.819 | 17.004 | 0.000 | 100.000 |
| State Ownership Ratio | 2,752.000 | 3.010 | 15.381 | 0.000 | 95.000 |
| Indirect Exports Ratio | 2,752.000 | 4.067 | 14.626 | 0.000 | 100.000 |
| Exports Ratio | 2,752.000 | 7.046 | 20.644 | 0.000 | 100.000 |
| Labor Regulation | 2,752.000 | 0.417 | 0.493 | 0.000 | 1.000 |
| Pension Ratio (lag) | 2,752.000 | 0.558 | 0.658 | 0.035 | 2.806 |
| Unemployment Insurance Ratio (lag) | 2,752.000 | 0.326 | 0.340 | 0.033 | 1.620 |
| FDI/GRP (lag) | 2,752.000 | 0.037 | 0.023 | 0.002 | 0.121 |
| GRP Growth (lag) | 2,752.000 | 11.763 | 1.811 | 8.000 | 15.400 |
| Employment in Primary Industry (lag) | 2,752.000 | 0.005 | 0.008 | 0.001 | 0.033 |
| Employment in Tertiary Industry (lag) | 2,752.000 | 0.481 | 0.110 | 0.286 | 0.754 |
| Employment in Manufacturing Industry (lag) | 2,752.000 | 0.364 | 0.132 | 0.119 | 0.675 |
| Firm Employment (ln) | 2,752.000 | 4.150 | 1.364 | 1.386 | 10.309 |
| Labor Costs/Total Sales | 2,752.000 | 0.176 | 0.139 | 0.000 | 0.949 |
| Employment (ln, lag) | 2,752.000 | 13.989 | 0.718 | 12.392 | 15.741 |
| Population (ln, lag) | 2,752.000 | 15.709 | 0.412 | 14.430 | 16.468 |
| GRP per Capita (ln, lag) | 2,752.000 | 11.086 | 0.425 | 9.614 | 11.612 |
| Employment in Other Secondary Industry (lag) | 2,752.000 | 0.150 | 0.080 | 0.037 | 0.276 |

# A2 Additional Results

## A2.1 Correlated random effects (CRE) model

Table [A3](#_bookmark79) present empirical results employing correlated random effects (CRE) models. The CRE additionally includes the average values of time-varying variables and time-dummies as control variables. This estimation strategy controls the cluster average of time-varying independent vari- ables in random effects models and absorbing the correlation between time-varying explanatory variables and the individual effects [(Mundlak,](#_bookmark95) [1978;](#_bookmark95) [Wooldridge,](#_bookmark99) [2019).](#_bookmark99) The CRE models can be a "compromise between random and fixed effects" as it estimates within effects while allowing for correlation among independent variables in the panel data [(Crisman-Cox,](#_bookmark92) [2021).](#_bookmark92) The impact of *FDI/GRP* remains significant across the models supporting that empirical results in Table 1 are not driven by the estimation strategy of using fixed effects.

Table A3: Correlated Random Effects Models

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| FDI/GRP (lag) | 2.557*∗* | 2.479 | 2.946*∗* | 3.042*∗∗* |
|  | (1.536) | (1.520) | (1.504) | (1.468) |
| Unemployment Insurance Ratio (lag) |  | -1.237*∗∗∗* | -1.193*∗∗∗* | -1.061*∗∗∗* |
|  |  | (0.169) | (0.153) | (0.128) |
| Pension Ratio (lag) |  | -0.527*∗∗* | -0.295 | -0.413*∗∗* |
|  |  | (0.208) | (0.201) | (0.196) |
| Employment (ln, lag) |  |  | 0.737*∗∗∗* | 0.328*∗∗∗* |
|  |  |  | (0.071) | (0.095) |
| Employment in Manufacturing Industry (lag) |  |  | 5.685*∗∗∗* | 3.472 |
|  |  |  | (2.168) | (2.151) |
| Employment in Other Secondary Industry (lag) |  |  | 5.431*∗∗* | 3.785*∗* |
|  |  |  | (2.158) | (2.131) |
| Employment in Tertiary Industry (lag) |  |  | 5.474*∗∗* | 4.356*∗∗* |
|  |  |  | (2.223) | (2.217) |
| GRP Growth (lag) |  |  |  | -0.034*∗∗∗* |
|  |  |  |  | (0.008) |
| Population (ln, lag) |  |  |  | 0.522*∗∗∗* |
|  |  |  |  | (0.117) |
| GRP per Capita (ln, lag) |  |  |  | 0.144*∗∗∗* |
|  |  |  |  | (0.055) |
| Mean Controls | YES | YES | YES | YES |
| Observations | 1983 | 1982 | 1981 | 1981 |

*Note*: Correlated random-effects models additionally control the mean values of time- varying variables and include time dummies. Robust standard errors are in parenthesis.

*\*p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

## A2.2 Robust Population-averaged Negative Binomial Model

Table [A4](#_bookmark80) tests the main argument in a robust population-averaged negative binomial model employing a GEE estimator which shows empirical results from a marginal effects estimation [(Neuhaus, Kalbfleisch, and Hauck](#_bookmark96), [1991).](#_bookmark96) In a population-averaged specification, empirical re- sults present the average impact of independent variables on a population of the dependent variable. Thus, coefficients in Table [A4](#_bookmark80) measure the average impact of FDI on the incidence of labor protests. The results remain significant in Model 1 and Model 4. In particular, the significant result in Model 4 which includes all control variables supports that empirical results in Table [1](#_bookmark3) are not driven by serial correlation. The results in Model 2 and Model 3 also provide suggestive evidence supporting the impact of FDI on labor protests.

Table A4: Robust Population-Averaged Negative Binomial Models

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| VARIABLES | (1) | (2) | (3) | (4) |
| FDI/GRP (lag) | 3.962\* | 3.461\* | 2.899 | 3.997\* |
| Unemployment Insurance Ratio (lag) | (2.065) | (2.074)-1.316\*\*\* (0.357) | (2.067)-1.406\*\*\* (0.379) | (2.168)-1.325\*\*\* (0.361) |
| Pension Ratio (lag) |  | -0.394 | -0.430 | -0.348 |
|  |  | (0.391) | (0.388) | (0.373) |
| Employment (ln, lag) |  |  | 0.085 | 0.138 |
|  |  |  | (0.193) | (0.190) |
| Employment in Manufacturing Industry (lag) |  |  | 3.637 | 2.825 |
|  |  |  | (2.903) | (2.771) |
| Employment in Other Secondary Industry (lag) |  |  | 3.161 | 2.255 |
|  |  |  | (2.757) | (2.630) |
| Employment in Tertiary Industry (lag) |  |  | 3.371 | 2.473 |
| GRP Growth (lag) |  |  | (2.860) | (2.736)-0.031\*\*\* (0.009) |
| Population (ln, lag) |  |  |  | -0.380 |
| GRP per Capita (ln, lag) |  |  |  | (0.641) 0.164\*(0.095) |
| Constant | -1.365\*\*\* | -1.403\*\*\* | -5.757 | -0.938 |
|  | (0.096) | (0.097) | (3.944) | (10.490) |
| Observations | 2,005 | 1,968 | 1,928 | 1,917 |
| Number of cityid | 288 | 283 | 278 | 278 |
| City FE | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES |

*Note*: Employment in the primary industry is a baseline for the composition of the economy.

*\*p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

## A2.3 Additional Tests to Control for Spatial Autocorrelation

Spatial autocorrelation occurs when outcome values are more similar in locations close to each other. It violates the assumption that residuals are independent and identically distributed in each unit (the i.i.d assumption). To address concerns with spatial autocorrelation, I additionally conduct two empirical tests - (1) negative binomial model controlling labor protests in the same province (2) spatial autocovariate regression.

Table [A5](#_bookmark81) additionally controls the number of labor protests in the same province. It alleviates concerns with spatial autocorrelation as labor protests in the cities of the same province are more likely to influence the other cities. The significant impact of *Protests in Province* demonstrates that spatial correlation within each province is effectively controlled. The impact of FDI/GRP mostly remains statistically significant across the models.

Table A5: Additional Tests Controlling Protests in the Same Province

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| FDI/GRP (lag) | 2.621*∗* | 2.348 | 2.258 | 3.088*∗∗* |
|  | (1.561) | (1.479) | (1.459) | (1.484) |
| Unemployment Insurance Ratio (lag) |  | -1.123*∗∗∗* | -1.051*∗∗∗* | -0.924*∗∗∗* |
|  |  | (0.141) | (0.140) | (0.140) |
| Pension Ratio (lag) |  | -0.625*∗∗∗* | -0.569*∗∗∗* | -0.490*∗∗∗* |
|  |  | (0.178) | (0.178) | (0.177) |
| Employment (ln, lag) |  |  | -0.132 | -0.096 |
|  |  |  | (0.102) | (0.103) |
| Employment in Manufacturing Industry (lag) |  |  | 2.872 | 2.407 |
|  |  |  | (2.126) | (2.163) |
| Employment in Other Secondary Industry (lag) |  |  | 3.250 | 2.759 |
|  |  |  | (2.136) | (2.171) |
| Employment in Tertiary Industry (lag) |  |  | 3.247 | 2.679 |
|  |  |  | (2.194) | (2.229) |
| GRP Growth (lag) |  |  |  | -0.031*∗∗∗* |
|  |  |  |  | (0.007) |
| Population (ln, lag) |  |  |  | -0.720*∗* |
|  |  |  |  | (0.418) |
| GRP per Capita (ln, lag) |  |  |  | 0.116*∗* |
|  |  |  |  | (0.061) |
| province\_control | 0.002*∗∗∗* | 0.002*∗∗∗* | 0.002*∗∗∗* | 0.002*∗∗∗* |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| City FE | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES |
| Observations | 2026 | 2019 | 1994 | 1983 |

*Note*: Empirical models in Table [A5](#_bookmark81) employ a negative binomial regression model with city-fixed and year-fixed effects. Employment in the tertiary industry is a baseline for the composition of the economy. *\*p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

Table [A6](#_bookmark82) presents the results of spatial autocovariate regression. Table [A6](#_bookmark82) controls for the spatial autocovariate which is calculated as the distance weighted average of labor protests in neighboring cities. Labor protests in surrounding cities are averaged and the outcomes of closer cities are more highly weighted in constructing the spatial autocovariate [(Brierley et al.,](#_bookmark89) [2016).](#_bookmark89)[21](#_bookmark0) Moreover, all explanatory variables are constructed using *the mean values* between 2012 and 2018 because spatial autocovariate takes the weighted average values of neighboring cities. As Table [A6](#_bookmark82) presents, the significant impact of FDI/GRP remains robust across the models. The significant impact of *Spatial Autocovariate* implies that it effectively controls for possible spatial correlation in labor protests.

Table A6: Spatial Autocovariate Regression

 *Dependent variable:*

count\_total\_mean

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 |
| FDI/GRP | 24.33*∗∗∗* | 17.10*∗∗∗* | 5.17*∗∗* | 5.23*∗∗* |
|  | (3.10) | (2.86) | (2.56) | (2.53) |
| Unemployment Insurance Ratio |  | -0.49 | -0.61 | -0.72 |
|  |  | (0.78) | (0.58) | (0.58) |
| Pension Ratio |  | 1.51*∗∗∗* | 0.77*∗* | 0.86*∗* |
|  |  | (0.57) | (0.44) | (0.45) |
| Employment |  |  | 0.0000*∗∗∗* | 0.0000*∗∗∗* |
|  |  |  | (0.0000) | (0.0000) |
| Employment in Manufacturing Industry |  |  | 3.69*∗∗∗* | 3.43*∗∗∗* |
|  |  |  | (1.06) | (1.06) |
| Employment in Other Secondary Industry |  |  | 3.71*∗∗∗* | 3.52*∗∗∗* |
|  |  |  | (1.07) | (1.06) |
| Employment in Tertiary Industry |  |  | 3.40*∗∗∗* | 3.19*∗∗∗* |
|  |  |  | (1.08) | (1.09) |
| GRP per Capita |  |  |  | 0.0000*∗∗* |
|  |  |  |  | (0.0000) |
| GRP Growth |  |  |  | 0.02 |
|  |  |  |  | (0.02) |
| Spatial Aucovariate | 0.42*∗∗∗* | 0.19*∗∗∗* | 0.17*∗∗∗* | 0.17*∗∗∗* |
|  | (0.06) | (0.06) | (0.06) | (0.05) |
| Constant | 0.56*∗∗∗* | 0.60*∗∗∗* | -2.82*∗∗∗* | -2.87*∗∗∗* |
|  | (0.10) | (0.09) | (1.02) | (1.01) |
| Observations | 276 | 276 | 276 | 276 |

*Note*: Empirical models in Table [A6](#_bookmark82) employs a negative binomial regression model. All explanatory variables are the average values. Employment in the primary industry is a baseline for the composition of the economy. *\*p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

21See the work of Williams(2017) to read R coding to measure spatial autocovariate, https://rstudio-pubs- static.s3.amazonaws.com/456209\_0fa02e75adc243dca9a2d1e51816889f.html

## A2.4 Naïve OLS Estimation

The impact of FDI/GRP is statistically significant in Model 1 and Model 2. The effect of FDI/GRR is not statistically significant in Model 3 and Model 4 although the coefficient remains positive. There could be two reasons for explaining these insignificant results. As the dependent vari- ables count the number of labor protests, which are nonnegative integer discrete values only, the variable has the negative binomial distribution. In this case, negative binomial regression is a more appropriate way of measuring the impact. Conducting OLS estimations also causes a het- eroskedasticity problem in measuring the effect. For these reasons, the main analysis employs negative binomial regression in estimating the impact of FDI/GRP on labor protests rather than OLS regression.

Table A7: OLS estimation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| VARIABLES | (1)count\_total | (2)count\_total | (3)count\_total | (4)count\_total |
| FDI/GRP (lag) | 109.437\*\*\* | 43.128\*\*\* | 1.696 | 4.153 |
| Unemployment Insurance Ratio (lag) Pension Ratio (lag)Employment (ln, lag) | (10.303) | (8.607)11.640\*\*\* (1.871)9.744\*\*\* (1.355) | (7.930)9.900\*\*\* (1.621)7.248\*\*\* (1.210)4.765\*\*\*(0.194) | (7.856)10.939\*\*\* (1.627)8.524\*\*\* (1.224)3.415\*\*\*(0.407) |
| Employment in Manufacturing Industry (lag) |  |  | 2.175 | 0.528 |
|  |  |  | (2.256) | (2.410) |
| Employment in Other Secondary Industry (lag) |  |  | 4.029\* | 2.108 |
| Employment in Tertiary Industry (lag) GRP Growth (lag)Population (ln, lag) |  |  | (2.408)15.197\*\*\* (2.340) | (2.458)11.534\*\*\* (2.579)-0.180\*\*\* (0.035)1.556\*\*\*(0.424) |
| GRP per Capita (ln, lag) |  |  |  | 0.186 |
| Constant | 2.865\*\*\* | 0.383 | -68.508\*\*\* | (0.343)-72.706\*\*\* |
|  | (0.268) | (0.239) | (3.048) | (4.886) |
| Observations | 2,026 | 2,019 | 2,017 | 2,005 |
| R-squared | 0.053 | 0.379 | 0.536 | 0.554 |

*Note*: Employment in the tertiary industry is a baseline for the composition of the economy.

*\*p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

## A2.5 Additional Tests for Table [3](#_bookmark5)

The revised manuscript presents the unadjusted models in Table A8 which presents the suggestive evidence of the negative impact of FDI on labor regulation. Model 1 shows that the bivariate relationship and Model 2 only controls firm-level variables. I gradually control other variables in Models 3-5 in a different way from main mechanism analysis to check robustness of results. Model 3 only adds economic growth. Model 4 additionally controls social insurance policies. Model 5 adds the total amount of employment in cities. These models do not control city-level variables as much as main mechanism analysis in Table 2 and Table 3 but still suggest that FDI weakens labor regulation in Chinese cities.

Table A8: Additional Results for Table [2](#_bookmark4)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| VARIABLES | (1) | (2) | (3) | (4) | (5) |
| FDI/GRP (lag) | -0.022 | -0.023 | -0.030\* | -0.035\* | -0.035\* |
|  | (0.016) | (0.015) | (0.017) | (0.019) | (0.020) |
| GRP Growth (lag) |  |  | 0.028 | 0.044 | 0.045 |
|  |  |  | (0.027) | (0.040) | (0.045) |
| Unemployment Insurance Ratio (lag) |  |  |  | 0.219 | 0.221 |
|  |  |  |  | (0.438) | (0.457) |
| Pension Ratio (lag) |  |  |  | -0.055 | -0.056 |
|  |  |  |  | (0.174) | (0.181) |
| Employment (ln, lag) |  |  |  |  | 0.002 |
|  |  |  |  |  | (0.064) |
| Firm Employment (ln) |  |  |  | 0.010 | 0.010 |
|  |  |  |  | (0.012) | (0.012) |
| Labor Costs/Total Sales |  |  |  | -0.046 | -0.047 |
|  |  |  |  | (0.157) | (0.154) |
| Indirect Exports Ratio |  |  |  | 0.002 | 0.002 |
|  |  |  |  | (0.001) | (0.001) |
| Exports Ratio |  |  |  | -0.000 | -0.000 |
|  |  |  |  | (0.001) | (0.001) |
| Foreign Ownership Ratio |  |  |  | 0.001 | 0.001 |
|  |  |  |  | (0.001) | (0.001) |
| State Ownership Ratio |  |  |  | -0.002 | -0.002 |
|  |  |  |  | (0.001) | (0.001) |
| Constant | 0.499\*\*\* | 0.503\*\*\* | 0.190 | -0.055 | -0.082 |
|  | (0.082) | (0.092) | (0.289) | (0.470) | (1.232) |
| Observations | 2,752 | 2,752 | 2,752 | 2,752 | 2,752 |
| R-squared | 0.011 | 0.024 | 0.034 | 0.045 | 0.045 |
| Industry FE | NO | YES | YES | YES | YES |

*Note*: Robust standard errors are clustered at the city-level. *\*p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

Table A9: Complete Results for Table [2](#_bookmark4)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| VARIABLES | (1)City-level | (2)All | (3)Foreign | (4)Domestic | (5)Joint |
| FDI/GRP (lag) | -0.049\*\* (0.022) | -0.049\*\* (0.021) | -0.133\*\*\* (0.032) | -0.042\* (0.024) | -0.083\*\*\* (0.017) |
| Unemployment Insurance Ratio (lag) | 0.819\* | 0.756 | 2.609\*\* | 0.676 | 0.880 |
|  | (0.438) | (0.446) | (1.000) | (0.468) | (0.603) |
| Pension Ratio (lag) | -0.430 | -0.393 | -1.085 | -0.349 | -0.299 |
|  | (0.323) | (0.327) | (0.629) | (0.345) | (0.312) |
| Employment (ln, lag) | 0.304 | 0.279 | 0.577\* | 0.248 | 0.147 |
| Employment in Primary Industry (lag) | (0.212)0.185\*\*\* (0.054) | (0.214)0.180\*\*\* (0.055) | (0.299)0.193\*\* (0.090) | (0.225)0.176\*\*\* (0.054) | (0.242)0.198\* (0.102) |
| Employment in Manufacturing Industry (lag) | 0.012\*\*\* | 0.011\*\*\* | -0.005 | 0.012\*\*\* | -0.001 |
|  | (0.004) | (0.004) | (0.010) | (0.004) | (0.006) |
| Employment in Other Secondary Industry (lag) | -0.002 | -0.002 | -0.076\*\* | -0.000 | -0.003 |
|  | (0.008) | (0.008) | (0.028) | (0.009) | (0.008) |
| GRP Growth (lag) | 0.079\* | 0.077\* | 0.320\*\*\* | 0.070 | 0.112\*\*\* |
|  | (0.041) | (0.040) | (0.094) | (0.044) | (0.026) |
| Population (ln, lag) | -0.393 | -0.358 | -0.448 | -0.326 | -0.161 |
|  | (0.377) | (0.381) | (0.634) | (0.404) | (0.395) |
| GRP per Capita (ln, lag) | -0.274 | -0.249 | -0.783\*\* | -0.243 | 0.153 |
|  | (0.286) | (0.287) | (0.353) | (0.292) | (0.349) |
| Firm Employment (ln) |  | 0.011 | 0.065 | 0.007 | 0.001 |
|  |  | (0.012) | (0.082) | (0.013) | (0.021) |
| Labor Costs/Total Sales |  | -0.054 | 0.853 | -0.121 | 0.497\* |
|  |  | (0.134) | (1.125) | (0.127) | (0.254) |
| Indirect Exports Ratio |  | 0.001 | -0.003 | 0.001 | -0.000 |
|  |  | (0.001) | (0.003) | (0.001) | (0.002) |
| Exports Ratio |  | -0.001 | -0.001 | -0.001 | 0.001 |
|  |  | (0.001) | (0.002) | (0.001) | (0.002) |
| Foreign Ownership Ratio |  | 0.001 |  |  | 0.000 |
|  |  | (0.001) |  |  | (0.002) |
| State Ownership Ratio |  | -0.001 |  |  | -0.003\* |
|  |  | (0.001) |  |  | (0.001) |
| Constant | 4.081 | 3.648 | 5.221 | 3.560 | -1.857 |
|  | (5.689) | (5.771) | (8.223) | (6.007) | (6.355) |
| Observations | 2,752 | 2,752 | 64 | 2,428 | 260 |
| R-squared | 0.112 | 0.127 | 0.774 | 0.126 | 0.399 |
| Industry FE | YES | Yes | Yes | Yes | Yes |

*Note*: Robust standard errors are clustered at the city-level. *\*p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

Table A10: Complete Results for Table [3](#_bookmark5)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| VARIABLES | (1)Manufacturing | (2)Labor-Intensive | (3)Retail | (4)Exporting | (5)Domestic |
| FDI/GRP (lag) | -0.056\*\* (0.021) | -0.051\* (0.025) | -0.048\* (0.026) | -0.071\*\*\* (0.014) | -0.042\* (0.023) |
| Unemployment Insurance Ratio (lag) | 0.906\* | 0.918\*\* | 0.538 | 1.043\*\* | 0.709 |
|  | (0.442) | (0.421) | (0.610) | (0.400) | (0.466) |
| Pension Ratio (lag) | -0.547\* | -0.594\*\* | -0.484 | -0.530\*\* | -0.393 |
|  | (0.309) | (0.266) | (0.406) | (0.240) | (0.346) |
| Employment (ln, lag) | 0.390\* | 0.453\*\* | 0.272 | 0.266 | 0.295 |
|  | (0.209) | (0.188) | (0.316) | (0.158) | (0.224) |
| Employment in Primary Industry (lag) | 0.199\*\*\* | 0.271\*\*\* | 0.008 | 0.169\*\*\* | 0.186\*\*\* |
|  | (0.053) | (0.066) | (0.220) | (0.045) | (0.056) |
| Employment in Manufacturing Industry (lag) | 0.009\*\* | 0.004 | 0.018\*\* | 0.008\*\* | 0.012\*\*\* |
|  | (0.004) | (0.003) | (0.006) | (0.003) | (0.004) |
| Employment in Other Secondary Industry (lag) | -0.003 | -0.009 | -0.020 | -0.004 | -0.001 |
|  | (0.008) | (0.009) | (0.016) | (0.007) | (0.009) |
| GRP Growth (lag) | 0.075\* | 0.067 | 0.050 | 0.090\*\* | 0.072\* |
|  | (0.041) | (0.039) | (0.043) | (0.036) | (0.041) |
| Population (ln, lag) | -0.534 | -0.568 | -0.416 | -0.400 | -0.382 |
|  | (0.348) | (0.348) | (0.556) | (0.255) | (0.397) |
| GRP per Capita (ln, lag) | -0.247 | -0.169 | -0.801 | -0.132 | -0.280 |
|  | (0.254) | (0.240) | (0.604) | (0.160) | (0.302) |
| Firm Employment (ln) | 0.006 | 0.009 | 0.013 | 0.008 | 0.006 |
|  | (0.014) | (0.022) | (0.060) | (0.015) | (0.012) |
| Labor Costs/Total Sales | -0.010 | -0.107 | -0.068 | 0.152 | -0.038 |
|  | (0.139) | (0.145) | (0.354) | (0.179) | (0.137) |
| Indirect Exports Ratio | 0.000 | -0.000 | 0.006 | -0.000 | 0.006\*\*\* |
|  | (0.001) | (0.001) | (0.008) | (0.001) | (0.002) |
| Exports Ratio | -0.000 | -0.002\* | -0.001 | -0.001\* | 0.001 |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.002) |
| Foreign Ownership Ratio | 0.001 | 0.001 | 0.001 | -0.000 | 0.001 |
|  | (0.001) | (0.001) | (0.004) | (0.001) | (0.001) |
| State Ownership Ratio | -0.003\*\*\* | -0.005\*\*\* | 0.005\* | -0.000 | -0.001 |
|  | (0.001) | (0.001) | (0.002) | (0.003) | (0.001) |
| Constant | 5.042 | 4.191 | 11.462 | 3.450 | 4.170 |
|  | (5.078) | (5.425) | (10.868) | (3.398) | (6.022) |
| Observations | 1,748 | 472 | 163 | 668 | 2,472 |
| R-squared | 0.152 | 0.192 | 0.302 | 0.182 | 0.138 |
| Industry FE | Yes | Yes | Yes | Yes | Yes |

*Note*: Robust standard errors are clustered at the city-level. *\*p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

## A2.6 Instrumental Variable Approach

The instrument variable effectively predicts the FDI/GRP ratio avoiding the weak instrumental variable problem. Table [A11](#_bookmark86) presents the 1st-stage results that the instrumental variable is sig- nificantly associated with the FDI/GRP ratio. The Donald-Cragg Wald F statistic test shows that critical values of all models exceed the 10 percent threshold.[22](#_bookmark0) These results show that the instru- mental variable strongly predicts the FDI/GRP ratio.

Table A11: 1st-stage

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| IV (5-year lag) | 29.437*∗∗∗* | 37.107*∗∗∗* | 41.418*∗∗∗* | 35.982*∗∗∗* |
|  | (6.772) | (7.451) | (8.846) | (8.004) |
| Unemployment Insurance Ratio (lag) |  | 0.817*∗* | 0.910*∗* | 0.676 |
|  |  | (0.457) | (0.502) | (0.492) |
| Pension Ratio (lag) |  | -0.460*∗* | -0.358 | -0.328 |
|  |  | (0.246) | (0.254) | (0.242) |
| Employment (ln, lag) |  |  | -0.058 | -0.205 |
|  |  |  | (0.168) | (0.174) |
| Employment in Manufacturing Industry (lag) |  |  | 1.496*∗∗* | 1.372 |
|  |  |  | (0.633) | (2.113) |
| Employment in Other Secondary Industry (lag) |  |  | -1.610*∗∗* | -1.776 |
|  |  |  | (0.632) | (2.180) |
| Employment in Tertiary Industry (lag) |  |  |  | -0.078 |
|  |  |  |  | (2.246) |
| GRP Growth (lag) |  |  |  | 0.026*∗∗* |
|  |  |  |  | (0.011) |
| Population (ln, lag) |  |  |  | -0.668 |
|  |  |  |  | (0.483) |
| GRP per Capita (ln, lag) |  |  |  | 0.402*∗∗* |
|  |  |  |  | (0.202) |
| City FE | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES |
| Observations | 2182 | 1913 | 1890 | 1899 |
| F | 25.63 | 19.08 | 23.1 | 17.43 |

*Note*: The instrumental variable (IV) is the ratio of foreign marriages to total marriages divided by the shortest distance to the neighboring economies. Employment in the primary industry is a baseline for the composition of the economy. *\*p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

A valid instrumental variable should also satisfy the exclusion restriction. That is, the instru- mental variable should affect labor protests only through the channel of FDI. The first potential challenge concerns the possibility that foreign marriages can draw media attention from other

22See [Stock and Yogo](#_bookmark98) [(2002)](#_bookmark98) and [Sovey and Green](#_bookmark97) [(2011)](#_bookmark97) for more detailed discussion of weak instruments.

countries that can embolden workers to protest. Foreign media is more likely to pay attention to labor protests in China when the size of protests is large or the Chinese authorities crack down on workers. However, labor protests in China tend to be small-scaled and individualized actions [(Fu,](#_bookmark25) [2017*a*](#_bookmark25)). The probability of government’s intervention is also relatively low in labor protests because vast majority of workers aim to address economic problems and do not politicize their actions [(Göbel,](#_bookmark93) [2020).](#_bookmark93) Indeed, a very few protests received foreign media attention among the total number of 12,387 protests in the dataset of this paper. Thus, foreign media is not likely to significantly affect the frequency of labor protests.

The second potential challenge regards to the diffusion of norms. A marriages is a diffusion of cultures that can possibly spread different norms about political behavior. However, it is not en- tirely certain whether foreigners are inclined toward more political actions given their unfamiliar- ity with local politics. Even if foreign citizens are from cultures where people have more political freedom, it does not automatically lead to their support of political actions in China where they face totally different settings from their own backgrounds.

Table A12: Foreign Marriage and Political Attitudes

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
| Union | Criticize | Freedom | Union | Criticize | Work Freedom |
| Foreign Marriage (5-year lag) | 8.008 | 24.520 | 45.284 | 1.966 | 19.356 | 55.657 |
|  | (9.586) | (20.576) | (38.410) | (12.879) | (18.530) | (52.631) |
| Province FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| Controls | NO | NO | NO | YES | YES | YES |
| Observations | 112 | 112 | 112 | 100 | 101 | 100 |

I also address concerns about the diffusion of norms through empirical analysis. Table [A12](#_bookmark87) tests whether the foreign marriage ratio is correlated with political attitudes. The dataset is drawn from China General Social Survey conducted in 2012, 2013, 2015, and 2017. I take the mean of indi- viduals’ answers at the province level because the surveys do not have the city-level information. The dependent variable measures whether Chinese citizens participate in unions and whether they think the government should not interfere with criticisms of the Chinese Communist Party and freedom of work and living. Models 1-3 test the bivariate relationship and Models 4-6 in- clude the province-level covariates. These findings provide evidence that there is no significant

relationship between foreign marriage and political attitudes at the province level. While the em- pirical analysis cannot completely rule out the potential relationship between foreign marriages and norms about protests, it alleviates the concerns that foreign marriage influences labor protests through the diffusion of ideas or norms about protests or labor rights.

Moreover, the instrumental variable uses the five-year lag and province-level values of the foreign marriage ratio which are less likely to be associated with protests at the city level. The impact of family ties in fostering foreign investment is relatively a long-term process because building social ties through marriages can take several years. On other hand, the frequency of labor protests considerably varies in a short-term period. The differences in time horizons of the instrumental variable and dependent variable further make sure that the estimation strategy satisfies exclusion restrictions. I also use the foreign marriage ratio at the province-level which is more exogenous to city-level labor protests compared with employing the city-level foreign marriage ratio.While employing the spatial instrument can be concerning due to the potentially undetected exogeneity [(Betz, Cook, and Hollenbach,](#_bookmark6) [2018),](#_bookmark6) the instrumental variable employed in this paper also exploits time-varying foreign marriage. Thus, the problem with the spatial instrument is less likely compared with the cases where the instrumental variable fully depends on spatial instruments.

Table [A13](#_bookmark88) suggests the second-stage results from the two-stage least squares (2SLS) models. The empirical models follow the same logic in Table [1](#_bookmark3) in deciding the city-level covariates. The findings support the main argument suggesting that the FDI ratio significantly increases the fre- quency of labor protests across the models. These results alleviate the concerns about endogeneity and provide additional evidence that the influx of FDI leads to more labor protests in China.

Table A13: Second Stage Results

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| FDI/GRP (lag) | 0.784*∗∗∗* | 0.620*∗∗∗* | 0.504*∗∗∗* | 0.521*∗∗∗* |
|  | (0.105) | (0.138) | (0.125) | (0.139) |
| Unemployment Insurance Ratio (lag) |  | -0.767*∗∗∗* | -0.758*∗∗∗* | -0.619*∗∗∗* |
|  |  | (0.181) | (0.182) | (0.158) |
| Pension Ratio (lag) |  | -0.349 | -0.431*∗∗* | -0.318 |
|  |  | (0.220) | (0.212) | (0.212) |
| Employment (ln, lag) |  |  | -0.097 | -0.012 |
|  |  |  | (0.096) | (0.100) |
| Employment in Manufacturing Industry (lag) |  |  | 2.409 | 2.176 |
|  |  |  | (1.868) | (1.908) |
| Employment in Other Secondary Industry (lag) |  |  | 3.874*∗∗* | 3.800*∗∗* |
|  |  |  | (1.836) | (1.887) |
| Employment in Tertiary Industry (lag) |  |  | 3.061 | 2.857 |
|  |  |  | (1.898) | (1.932) |
| GRP Growth (lag) |  |  |  | -0.042*∗∗∗* |
|  |  |  |  | (0.008) |
| Population (ln, lag) |  |  |  | -0.073 |
|  |  |  |  | (0.539) |
| GRP per Capita (ln, lag) |  |  |  | -0.078 |
|  |  |  |  | (0.094) |
| City FE | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES |
| Observations | 2182 | 1913 | 1890 | 1899 |

*Note*: The main analysis employs a negative binomial regression model. Employment in the primary industry is a baseline for the composition of the economy. *\*p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

# A3 Impact of FDI on Labor Regulation in the Context of China

Studies suggest that firms have incentives to upgrade labor standards depending on investor ori- gin and targeted market [(Distelhorst and Locke,](#_bookmark21) [2018;](#_bookmark21) [Malesky and Mosley,](#_bookmark54) [2018,](#_bookmark54) [2021).](#_bookmark55) In par- ticular, we can expect that labor upgrading is likely when three conditions are met: (1) individual firms are clearly accountable for violation of labor standards; (2) information about labor stan- dards is accessible; (3) improving labor standards leads to more exports.

For example, [Malesky and Mosley](#_bookmark54) [(2018)](#_bookmark54) ask whether firms are willing to upgrade labor condi- tions if such upgrading renders them eligible for a contract with overseas lead firm, while [Malesky](#_bookmark55) [and Mosley](#_bookmark55) [(2021)](#_bookmark55) suggest in the vignette as “adopting the Code of Conduct will allow you the possibility of future orders from this multinational and others like it”. These papers’ experimen- tal setting clearly satisfy three conditions and the incentives for complying with labor regulations are obvious. Information exporting factories’ labor standards is also relatively more accessible in the global supply chain in the case of [Distelhorst and Locke](#_bookmark21) [(2018).](#_bookmark21) The sourcing company can effectively monitor and punish exporters’ violation of labor standards. In this case, firms are more likely to comply with labor regulation to enjoy export gains.

Compared with these papers, the three conditions are not likely to be met in the case of China, thus the effects of FDI are less likely to show a pattern of such upgrading of labor standards. First, foreign investors collectively exert pressure in China’s labor regime. For example, hundreds of foreign firms are members of the American Chamber of Commerce (AmCham) in Shanghai and collectively mobilize to influence labor regulations. The collective action allow individual firms to economically benefit from labor deregulation while avoiding the blame in the collective action.

Second, Chinese workers’ protests and their labor standards, in many cases, do not receive attention from foreign media and the public to the extent that can modify firms’ export strategies. Although foreign media acquires information about labor protests and draws the attention of the public in some cases, most of the workers’ protests and standards rarely cause the externalities to foreign markets. For example, an extremely small portion of labor protests has been reported in foreign media among the total number of 12, 236 workers’ protests in this paper’s dataset.

Moreover, it is very difficult for firms or the public in foreign countries to notice the variation

of de facto labor regulation in the case of China’s labor regime. The sub-national variation of de facto labor standards requires a very subtle understanding of domestic institutions and the actual enforcement of regulation. China’s control of domestic information also renders it more difficult for foreign media and consumers to acquire relevant information. In the absence of adequate information about labor standards, firms are not incentivized enough to upgrade labor standards. This paper does not aim to generalize the argument that FDI invariably undermines labor stan- dards in any circumstances. FDI is likely to negatively affect labor standards under China’s con- ditions that are theorized by this paper. Indeed, [Distelhorst et al.](#_bookmark22) [(2015)](#_bookmark22) suggest that the impact of private regulation considerably varies depending on the national context. More specifically, [Dis-](#_bookmark22) [telhorst et al.](#_bookmark22) [(2015)](#_bookmark22) suggest that factories in China are less likely to observe regulation compared with the ones in countries with stronger civil society and regulation. In the similar vein, this paper

attempts to theorize how FDI can ratchet down labor standards in the context of China.

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