Appendix A. Post-estimations

1. Linearity

To examine the linearity, Pregibon test was conducted. First, the dependent variable was predicted using the fitted regression model. Second, a regression model was run with the original dependent variable and, as explanatory variables, the predicted value and the square of the predicted value. Third, F-test was conducted with the null hypothesis that the coefficient of the squared predicted value is zero. Lastly, if the p-value was greater than 0.05, the null hypothesis was not rejected, thereby showing that the linearity was valid for the regression model. The results in table A1 showed that all regression models had p-values higher than 0.05, suggesting that the assumption of the linearity held true.

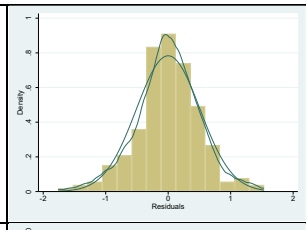
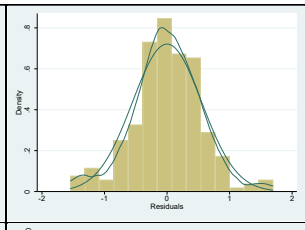
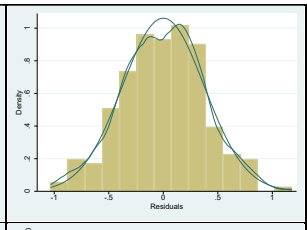
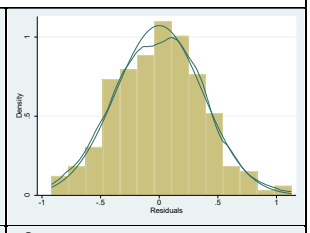
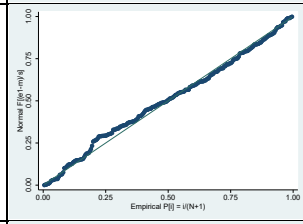
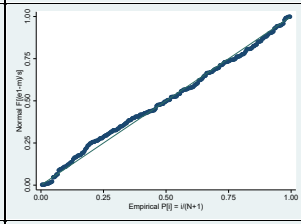
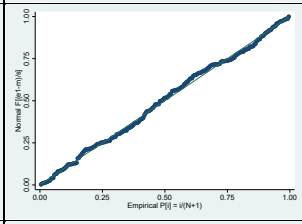
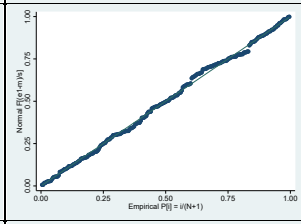
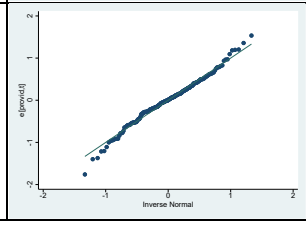
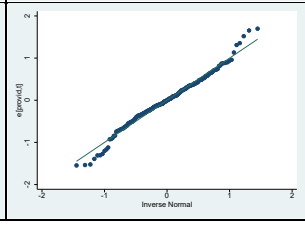
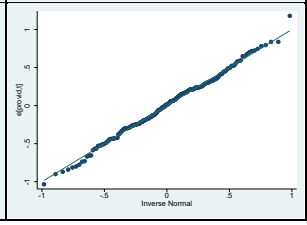
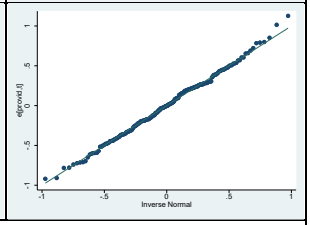
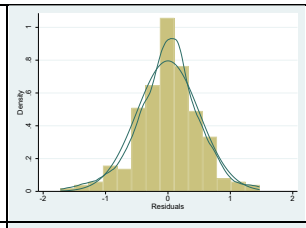
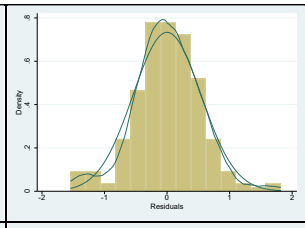
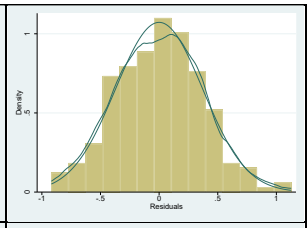
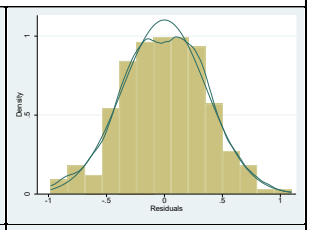
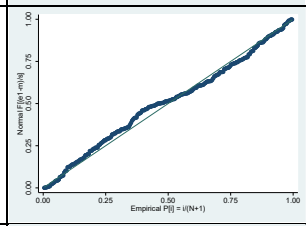
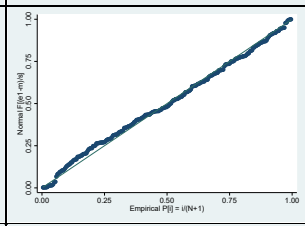
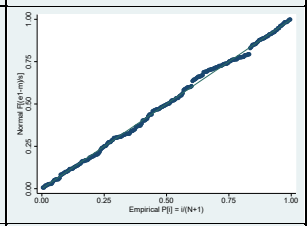
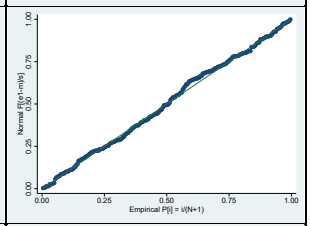
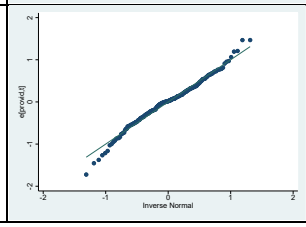
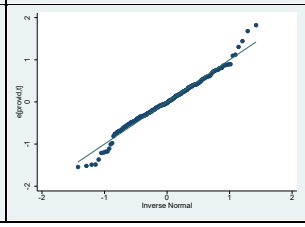
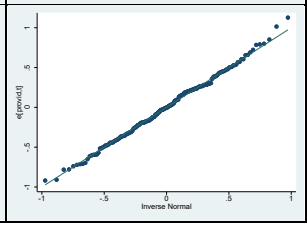
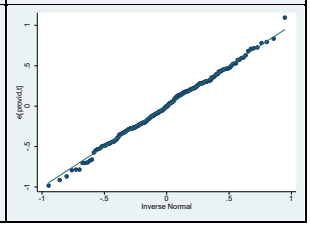
Table A 1. Linearity test

$excess\ calls_{prov,y,m} = \alpha + \beta_0 \widehat{excess\ calls}_{prov,y,m} + \beta_1 (\widehat{excess\ calls}_{prov,y,m})^2$ H0 (null hypothesis): $\beta_1 = 0$ H1 (alternative hypothesis): $\beta_1 \neq 0$				
Dependent variable based on:	Time trend over 2016—2019	Time trend over 2017—2019	Average over 2016—2019	Average over 2017—2019
Model 1				
F-statistics, F(1, 15)	0.22	1.30	3.72	3.80
p-value	0.636	0.255	0.054	0.051
Model 2				
F-statistics, F(1, 15)	0.63	1.44	0.92	0.92
p-value	0.428	0.230	0.338	0.338

2. Normality

Normality of error terms was examined using the frequency distribution of residuals, P-P plot, and Q-Q plot. Figure A1 shows that residuals show bell shapes in the histograms for all the regression models. In P-P plots and Q-Q plots, there are no residuals that are outstandingly off the identity lines. Also, for a large size of samples such as in this study, the normality of error terms is not a major issue based on the central limit theorem.

Figure A 1. Normality test

Dependent variable based on:	Time trend over 2016—2019	Time trend over 2017—2019	Average over 2016—2019	Average over 2017—2019
Model 1				
Histogram				
P-P plot				
Q-Q plot				
Model 2				
Histogram				
P-P plot				
Q-Q plot				

3. **Homoscedasticity**

To obtain unbiased standard errors of OLS estimators under heteroscedasticity, this study used clustered robust (White-Huber) standard error estimation, treating provinces as clusters [1].

4. **Strict exogeneity**

Considering the dataset is longitudinal which is highly likely to be autocorrelated, thereby violating strict exogeneity, clustered robust (White-Huber) standard error estimation was used to measure unbiased standard errors of OLS estimators under autocorrelation. Also, to minimize biases in OLS estimators due to omitted variables which can also result in the violation of strict exogeneity, four fixed effects were included in the regressions to account for possible omitted observable and unobservable variables that are potentially related to child maltreatment. First, province fixed effects were included to account for time-invariant province characteristics. Second, province-year fixed effects were included to control for province-specific characteristics that changes year to year. Third, year fixed effects were included to control for year-specific effects that affect all provinces. Lastly, year-month fixed effects were included to account for year-month effects that affect all provinces.

5. **Multicollinearity**

Table A2 and A3 show the pairwise correlation matrixes of explanatory variables for the model 1 and 2, respectively. There is no correlation above 0.7 among variables of interest, namely overall, female, and male unemployment rate and mobility restrictions. This suggests an absence of multicollinearity. The high correlation of 0.98 for year and year-month can be ignored because these are control variables and their effects are not intended to be separated apart.

Table A 2. Pairwise correlation for the model 1

	Overall unemployment rate	Mobility restrictions	Year	Year-month
Unemployment rate	1.00			
Mobility restrictions	0.27	1.00		
Year	0.35	-0.07	1.00	
Year-month	0.06	0.04	0.98	1.00

Table A 3. Pairwise correlation for the model 2

	Female unemployment rate	Male unemployment rate	Mobility restrictions	Year	Year-month
Female unemployment rate	1.00				
Male unemployment rate	0.64	1.00			
Mobility restrictions	0.31	0.17	1.00		
Year	0.38	0.25	-0.07	1.00	
Year-month	0.11	-0.01	0.04	0.98	1.00

References

[1] D. Hoechle, "Robust Standard Errors for Panel Regressions with Cross-Sectional Dependence," *Stata J.*, vol. 7, no. 3, pp. 281–312, Sep. 2007, doi: 10.1177/1536867X0700700301.