**A Turbulent Silk Road: China’s Vulnerable Foreign Policy in the Middle East and North Africa**

**Online Appendices**

**Appendix A: Summary of variables**

**TABLE A1: Summary of definitions and data sources for all variables**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Detailed Definition** | **Rationale** | **Source** | |
| ***Key variables*** | | | |
| Workers | Number of Chinese engineering contract workers per country-year. | Key dependent variable. | ChinaMed | |
| Embassy warning | 1 = Chinese citizens have been advised to leave / not to travel to the host country, 0 = otherwise. | Key explanatory variable. | Chinese embassy websites | |
| Perceived stability | Perceptions of the likelihood (or lack thereof) of political instability and/or politically-motivated violence, including terrorism. | Key explanatory variable. | World Bank Governance Indicators | |
| Magnitude of violence | Total summed magnitudes of all (societal and interstate) major episodes of political violence experienced in host country. | Key explanatory variable. | MEPV data, Center for Systemic Peace | |
| ***Control variables*** | | | |
| Value of contracts | Total value of Chinese engineering contracts per country year (USD). | More and larger contracts will natural lead to more workers (and vice versa). | ChinaMed | |
| Polity2 | A measure of regime type ranging from -10 (most authoritarian) to +10 (most democratic). | More authoritarian states may face less domestic popular pressure to limit foreign labour, due to relying on performance legitimacy rather than norms-based legitimacy.[[1]](#footnote-1) | PolityIV data, Center for Systemic Peace. | |
| Openness | KOF Globalization Index (a measure of economic, social and political globalization). | More globalized countries are more open to the presence of foreign workers, including Chinese workers. | KOF[[2]](#footnote-2) | |
| Unemployment | % of (15 YO and older) population that is unemployed. | Countries facing higher unemployment may be more inclined to limit foreign workers, including Chinese workers. | ILO (World Bank) | |
|  |  |  |  | |
| Population | De facto total population. | Higher population indicates larger pool of local labour. | World Development Indicators (WDI) | |
| GDP per capita | Gross domestic product divided by population, constant 2010 U.S. dollars. | Higher GDP per capita proxies for higher local salary levels (and therefore stronger incentives to not to hire locally). Alternatively, given the relationship between GDP per capita and educational levels, a higher GDP per capita could indicate higher local availability of human capital. | WDI | |
| Resource rents | Sum of oil, natural gas, coal, mineral, and forest rents (% GDP). |  | WDI | |
| Arab Spring | 0 = pre-2011, and 1 = 2011 onward. | Firm behaviour may have changed as a result of the Arab Spring upheaval. | N/A | |

Source:

Authors.

**TABLE A2. Summary statistics for key variables**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Obs** | **Mean** | **Std. Dev.** | **Min** | **Max** |
| Dependent variable | | | | | |
| Workers | 357 | 4403.504 | 9160.39 | 0 | 59888 |
| Key numeric explanatory variables | | | | | |
| Perceived stability | 357 | -0.9005211 | 1.08922 | -3.314937 | 1.223623 |
| Magnitude of violence | 357 | 1.235294 | 1.987486 | 0 | 6 |
| Control variables | | | | | |
| Value of contracts | 357 | 132531.6 | 205815.9 | 0 | 1147436 |
| Polity2 | 349 | -2.492837 | 5.533397 | -10 | 9 |
| Openness | 322 | 57.57397 | 13.38828 | 27.23188 | 80.46345 |
| Unemployment | 356 | 8.78757 | 4.76011 | 0.14 | 19.568 |
| Population (ln) | 351 | 16.32111 | 1.316169 | 13.53226 | 18.48272 |
| GDP per capita | 309 | 13624.33 | 17045.89 | 215.1546 | 69679.09 |
| Resource rents | 331 | 19.07825 | 18.19236 | 0.0012279 | 68.77825 |

Source:

Authors.

**Appendix B: Impact of the Arab Spring**

**TABLE B1. Including Arab Spring dummy (panel Poisson model with country fixed-effects)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | ***Dependent variable:***  ***number of Chinese contract workers*** | | |
| ***Explanatory variables[[3]](#footnote-3)*** | (1) | (2) | (3) |
|  |  |  |  |
| ***Information on risk*** |  |  |  |
|  |  |  |  |
| Embassy warning[[4]](#footnote-4) | -0.671 |  |  |
|  | (0.591) |  |  |
| Perceived stability |  | 0.472 |  |
|  |  | (0.365) |  |
| ***Actual violence*** |  |  |  |
|  |  |  |  |
| Magnitude of violence |  |  | -0.541\*\*\* |
|  |  |  | (0.176) |
| ***Control variables*** |  |  |  |
|  |  |  |  |
| Post-Arab Spring[[5]](#footnote-5) | -0.240 | -0.145 | -0.111 |
|  | (0.201) | (0.187) | (0.160) |
| Value of contracts | 6.33e-07\*\*\* | 5.00e-07\*\* | 4.64e-07\*\* |
|  | (1.78e-07) | (2.40e-07) | (2.18e-07) |
| Polity2 | -0.129\*\*\* | -0.132\*\*\* | -0.141\*\*\* |
|  | (0.0409) | (0.0291) | (0.0521) |
| Openness | 0.132\*\* | 0.133\*\* | 0.115\* |
|  | (0.0608) | (0.0558) | (0.0629) |
| Unemployment | -0.0207 | -0.0249 | -0.0313 |
|  | (0.0300) | (0.0311) | (0.0263) |
| Population[[6]](#footnote-6) | -0.270 | -0.452 | -0.396 |
|  | (0.854) | (0.808) | (0.791) |
| GDP per capita | 4.19e-05 | 3.53e-05 | 3.63e-05 |
|  | (3.40e-05) | (2.95e-05) | (2.75e-05) |
| Resource rents | -0.00976 | -0.00938 | -0.00918 |
|  | (0.00719) | (0.00704) | (0.00700) |
| Observations | 274 | 274 | 274 |
| Number of countries | 22 | 22 | 22 |

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Source:

Authors.

**Appendix C: Robustness checks**

As laid out in the main text, we carried out a number of additional checks to test the robustness of the results. First, to make sure that the results are not driven by the extreme case of Libya, we re-ran the baseline regressions dropping Libya from the panel. Second, to account for the possibility that the governing effectiveness of host governments shapes the number of Chinese workers (for example, Chinese firms may be more willing to bring workers to countries with a more effective civil service, security risks notwithstanding), we re-ran the baseline regressions including the WGI’s government effectiveness index as a control. Third, to account for the possibility that the number of Chinese workers is affected by host government corruption, we re-ran our baseline regressions adding corruption as a control variable, using data from Coppege et al.[[7]](#footnote-7) Fourth, to account for the possibility that China’s diplomatic relationships with host countries shape whether or not contractors are motivated to bring their own workers (for example to complete projects more quickly in China’s allies), we re-ran our baseline regressions introducing host countries’ UN voting similarity index with China.[[8]](#footnote-8) Fifth, we replaced Polity2 with an alternative measure of regime type (the WGI’s voice and accountability Index). Sixth, as it is possible that countries in greater need of infrastructure may be more likely to encourage Chinese workers (given their presumed high efficiency), we re-ran our baseline regressions adding infrastructure quality as a control, using data from the World Bank. Definitions and sources for all these additional variables are in Table C1 below.

Finally, to check whether our results are robust to alternative statistical models, and to account for possible confounding effects of missing data, we re-ran the baseline regressions using a standard fixed effects panel regression model, a negative binomial model, controlling for a time trend to account for potential effects of trends over time, and using multiple imputation for control variables with missing data.[[9]](#footnote-9) The main results are, with a few exceptions, consistent with these alternative specifications.[[10]](#footnote-10)

**Table C1: Summary of definitions and data sources for additional variables in robustness checks**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Measures** | **Detailed Description** | **Data source** |
| *Diplomatic relations with China* | UN alignment with China | UN voting similarity index with China (0-1) (“pctagreechina” in original source data set) | Bailey, Strezhnev and Voeten 2017[[11]](#footnote-11) |
| *Alternative measures of regime type* | Voice & accountability | Index of perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. | WGI (World Bank) |
| *Other possible factors* | Infrastructure | Logistics performance index, measuring quality of trade and transport related infrastructure | Logistics Performance Index |
|  | Corruption | Varieties of Democracy index of executive, legislative and judicial corruption (v2x\_corr) | Coppedge, et al. 2019[[12]](#footnote-12) |
|  | Government effectiveness | Government effectiveness index, including quality of public services, the civil service, policy formulation and implementation, and government credibility. | WGI (World Bank) |

Source:

Authors.

**References**

Bailey, Michael A, Anton Strezhnev and Erik Voeten. 2017. “Estimating dynamic state preferences from United Nations voting data.” *Journal of Conflict Resolution* 61(2), 430–456.

Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I Lindberg, Jan Teorrell, David Altman, Michael Bernhard et al. 2019. “V-Dem dataset,” [https://doi.org/10.23696/vdemcy19. Accessed 13 July 2019](https://doi.org/10.23696/vdemcy19.%20Accessed%2013%20July%202019).

Gygli, Savina, Florian Haelg, Niklas Potrafke and Jan-Egbert Sturm. 2019. “The KOF Globalisation Index – revisited.” *Review of International Organizations* 14(3), 543–574. doi:https://doi.org/10.1007/s11558-019-09344-2.

1. von Soest and Grauvogel 2017. [↑](#footnote-ref-1)
2. Gygli et al. 2019. [↑](#footnote-ref-2)
3. All variables except embassy warning, magnitude of violence and Post-Arab Spring lagged by 1 year. [↑](#footnote-ref-3)
4. Base = 0 (Embassy has not issued a warning to leave the country) [↑](#footnote-ref-4)
5. All variables except [↑](#footnote-ref-5)
6. Natural logarithm. [↑](#footnote-ref-6)
7. 2019. [↑](#footnote-ref-7)
8. Bailey, Strezhnev and Voeten 2017. [↑](#footnote-ref-8)
9. Multiple imputation was carried out using Stata’s -mi- function. As data for some control variables lacked observations for every year for a small number of countries, it was not possible to carry out the imputation process in a way that accounted for the time-series cross-sectional nature of the data, limiting the validity of this result. [↑](#footnote-ref-9)
10. The main exceptions in these robustness checks to our baseline findings are: (1) when infrastructure quality is controlled for, none of the results for our key variables are statistically significant, although given the very small number of observations due to missing infrastructure data, it is difficult to draw any conclusions from this; (2) that magnitude of violence loses statistical significance in the negative binomial models; (3) the perceived stability results become weakly statistically significant (10% level) when missing data is multiply imputed, and in one of the negative binomial models; and (4) embassy warnings gain weak statistical significance (10% level). [↑](#footnote-ref-10)
11. Bailey, Strezhnev and Voeten 2017. [↑](#footnote-ref-11)
12. Coppedge et al. 2019. [↑](#footnote-ref-12)