**3 Difference-in-Difference Analysis**

Text in the published paper:

|  |
| --- |
| The third approach involves a **difference-in-differences specification**. We regress the IHS transformation of real FDI on battle fatalities, GDP, the interaction between ln battle fatalities (plus 1) and a treatment variable (coded as “1” for any year after the largest percentage increase in a country's air traffic, given that the amount increases by at least 200%, of which there are only 27 countries in the dataset where this is the case), and the post-treatment variable (the number of years after the first treatment year, beginning with 1 on the first treatment year). In effect, these large jumps in air traffic reflect an airport’s opening or, more often, reopening.  **Table 6**  **DiD regressions of IHS-Transformed Real FDI on percentage change in passengers flying into the country on US carriers**  A screenshot of a computer  Description automatically generated  The treatment variable (and its interaction with subsequent year terms) comes far closer to capturing a large air traffic shock, given our magnitude restriction. The significant and near-significant treatments (near-significant meaning a p-value of 0.051 and 0.052) under country fixed effects indicate extremely large impacts on FDI, with **a coefficient of 3 indicating a significant estimate of a 20-fold increase in FDI upon onset of the treatment,** when controlled by combinations of battle fatalities, real GDP, GDP growth, and interaction between battle fatalities and the post-treatment. Importantly, as these effects are only present with country fixed effects, we see that this effect emerges specifically when controlling for aspects of the country-specific environment not already captured by the model. The treatment interaction with battle fatalities with country fixed effects is not significant at a 5% level, but its p-value is close at 0.085, linking the shock to a war-related event, controlling for real GDP and GDP growth. **The consistently significant post-treatment interaction variable indicates that this relationship between a shock and FDI reverses in post-shock years,** which is what we would expect as the effect wanes.  **Bottom line**: contemporaneous and lagged air traffic is associated with increased foreign direct investment, especially for countries/airports with modest traffic. Beyond omitted variables and endogeneity, the obvious criticism of this approach is that the terms are likely cointegrated, limiting claims to having uncovered causal inference. However, the positive significance of an air traffic surge in areas with high battle fatalities on FDI seems more likely to be unidirectional: it seems unlikely that FDI has a non-idiosyncratic causal impact on battle fatalities. |

Replication notes:

In earlier versions of R, the percent change in passengers variable will need to be left in whole number terms for the regression above, producing low coefficient estimates. I am not sure why this occurs, but upon running this variable in percentage terms, the coefficients on the passenger variable reappeared (resembling what was found with the multiple OLS), but the significance levels on the treatment variable disappeared and diminished respectively on the treatment and post-treatment variables, while the value of the estimates stayed the same. Most likely, it seems like reduced variance and higher standard errors when inputting the variable in percentage terms soaked up much of the significant effect. Therefore, these coefficients need to be calculated with this variable in whole number terms instead. But for some reason, this is rectified in the latest version of R.