# Love Me, Love My Dog: Effects of Attitudes on Trade and FDI

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### **Research question and Dataset**

- The paper studies the effect of attitudes on **bilateral** trade and FDI using
  - annual survey data on 400,000 interviews
  - 59 reporting countries to 27 corresponding countries from 2002 to 2015.
  - 14 year unbalanced panel dataset of 1913 observations

# Model and methodologies

Empirical gravity model

 $ln(import_{ijt}) = ln(attitude_{ijt})\beta + X_{ijt}\gamma + FEs + e_{ijt}$ (1)

- where X<sub>ijt</sub> include observed control variables such as log GDP of importer, log GDP or exporter, distance, and other gravity variables for trade barriers
  - And where FEs account for **unobserved** factors (i)  $\alpha_i, \alpha_j, \alpha_t$ , (ii)  $\alpha_{it}, \alpha_{jt}$ , (ii)  $\alpha_{ij}, \alpha_t$
- Main interest is $\beta$  in various contexts.
- Equation (1) is estimated by OLS and PPML
  - OLS is better to account for unobserved factors
  - PPML can account for heteroskedasticity of error (bias due to heteroskedasticity is serious for OLS when there are piles of obs at the bound)

# Construction of main variable of interest – Attitude variable

- Specifically, let a1, a2, a3 and a4 denote the fractions of responses in "very favorable", "somewhat favorable", "somewhat unfavorable" and "very unfavorable", respectively.
- Three different attitude variables.
  - The first one is the overall attitude, defined as Attitude = 2a1 + a2 a3 2a4
  - favorable/positive attitude variable, defined as Attitude-P = a1 + a2
  - unfavorable/negative attitude variable, defined as Attitude-N= a3 + a4

### Main contribution of this paper

#### Previous literature:

- The culture effects on bilateral economic activities such as international trade and FDI (e.g. Blomberg and Hess, 2004 – violence; Guiso et al. 2009 - Trust; Michaels and Zhi, 2010 – US public attitude; Glick and Taylor, 2010 – Wars; Che et al. 2015 – Japanese invasion of China)
- The **bilateral** economic activities on culture/conflict (e.g. Martin et al. 2008; Lee and Pyun 2016)
- The cultural effects on **individual** countries' economic performance (e.g., Guiso et al. 2003 – religion; Barro and McCleary 2003 – Church attendance; Davis and Weinstein, 2002; Blomberg, Hess and Orphanides, 2004; and Barro, 2006)

#### Main results

- In tables 2 and 3, A one-standard-deviation increase in the attitude increases imports
  - by 6.6% for OLS with FEs that account for  $\alpha_i, \alpha_j, \alpha_t$
  - by 17.4% for OLS with FEs that account for  $\alpha_{it}, \alpha_{jt}$
  - by 7.7% for OLS with FEs that account for  $\alpha_{ij}, \alpha_t$
  - by 21.8% for PPML with FEs that account for  $\alpha_i, \alpha_j, \alpha_t$
- They are all statistically significant at 1% nominal level. The results of the effect are quite robust to various specifications.
- The effects are heterogeneous depending upon characteristics of importer-exporter.

#### Main results - heterogeneous effects

- In Table 5, the effect is most strong in consumer goods compared to intermediate/capital goods.
  - If investors and CEOs (who consume intermediate/capital goods) are less emotional and more objective, then the effect is most strong for general consumers.
- In table 6, using income level for importer-exporter pairs as conditioning variable, show that the effects are all significant except low-income(importer) and high-income(exporter) pairs.
  - The demand may be inelastic for high-income importers to natural resources like oil and gas from low-income exporters.
- In table 7, the impact of attitude is stronger for exporters.
  - It is counter-intuitive and may conflict to the results in Table 5. As this result could imply that firms are more responsive to attitude.

## Estimation issues: (1) endogeneity

- In table 2, with least control variables in column (1), β̂ is 0.25, but with more control variables it is reduced to 0.11.
  - the difference of estimates 0.14 (0.25-0.11) can be attributed to bias due to simultaneity/unobserved factors.
  - For instance, large InGDP can affect attitude and trade flows in the same direction so the estimates omitting In(GDP) overestimate the impact.

# Estimation issues: (1) endogeneity (Continue)

- There is endogeneity problem due to (1) reverse causality and (2) simultaneity
- Simultaneity: there could be time-varying unobserved factors that could affect both trade and attitude simultaneously
  - For instance, **migration workers** who work hard in exporting countries can positively affect attitude as well as trade/FDI
- Authors used (i) lagged attitude, (ii) average attitude variables, and (iii) IV for reverse causality
  - 20 -year lagged cumulated number of Militarized Interstate Disputes (MID) since 1914 (IV1) and 1939 (IV2)
    - Why 20 years? Why not 18, 19, 21, 22 year lags? Why disputes 20 years ago matter now but not 18 years ago? Given that variation used are time-varying, it is a critical issue.
    - (i) Suggestion: May try with different lags
  - May try estimation of reverse direction (i.e. replacing attitude variable as dependent variable) and see there is no effect of trade on attitude with all controls.

### Estimation issues: (2) Weak IV issue

- 1st stage estimation should be reported. The rule of thumb for F-stat is around 10.
- High coefficient (0.11 vs 2.07) and SE (0.03 vs 0.39, 13 times bigger) estimates for IV implicitly indicate weak IV problem which could invalidate IV estimation results.
- The estimate of 2.07 is too high to be realistic.
- Suggestions:
  - (i) May find other IV from some big events (in new paper article) that affect negatively to the image of countries
  - (ii) Can improve upon accounting for unobserved factors FEs for *α<sub>ij</sub>*, *α<sub>jt</sub>*, *α<sub>it</sub>*.
  - (iii) Can improve upon accounting for trade flows (reverse causality): by adding explanatory variables such as bilateral tariff, bilateral trade agreement dummy variables

# Estimation issues: (3) standard error and inference

• Overall, standard error estimates are too small: clustered (pair, importer, or exporter) standard error should be used instead.

- It is a very interesting and important study with a rich dataset.
  - Attitude measures are based on the survey that are very rich (interview with 400,000 individuals).
  - It uses a **bilateral** country-pair data that encompass 59 counties. It could improve upon account for endogeneity problem.
  - Also looked at beyond the mean effects. It has a potential to identify the mechanism behind the positive effect by more closely examine heterogeneous effects.
- Although I point out some estimation issues, the results are quite **robust** in various specifications as well as in falsification analysis.