

## Applied Bayesian Multilevel Modeling: Remittances and Political Liberalization

Yu-Sung Su

ys463@columbia.edu

Department of Political Science

The Graduate School and University Center

The City University of New York

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## The importance of remittances

- 3 major distant moneys: foreign direct investment (FDI), foreign aid (ODA), remittances.
- Remittance: the portion of international migrant workers earnings sent back to countries of origin.
- Remittances became the 2nd largest external source, behind FDI, of external funding for countries in the world in 1997 (World Bank 2005).
- Remittances exceed all combined FDI and ODA to Latin America and the Caribbean and has become the largest distant money flows in that region (IADB 2004).

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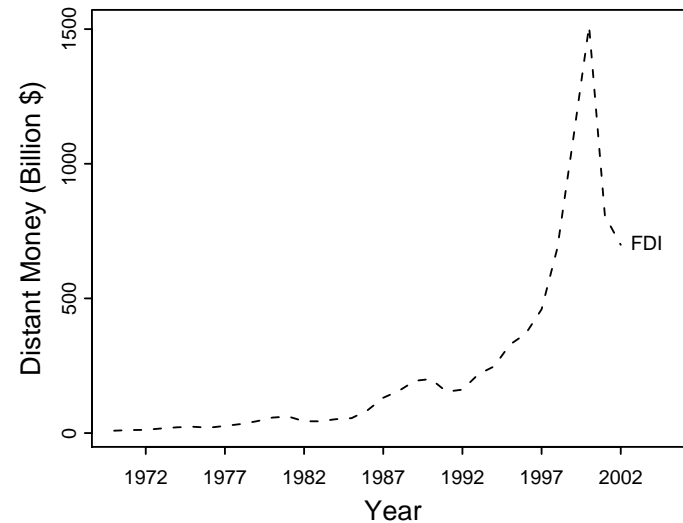
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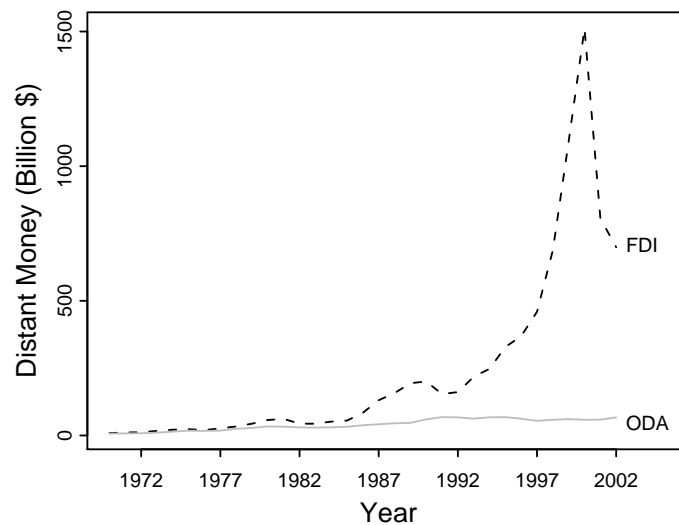
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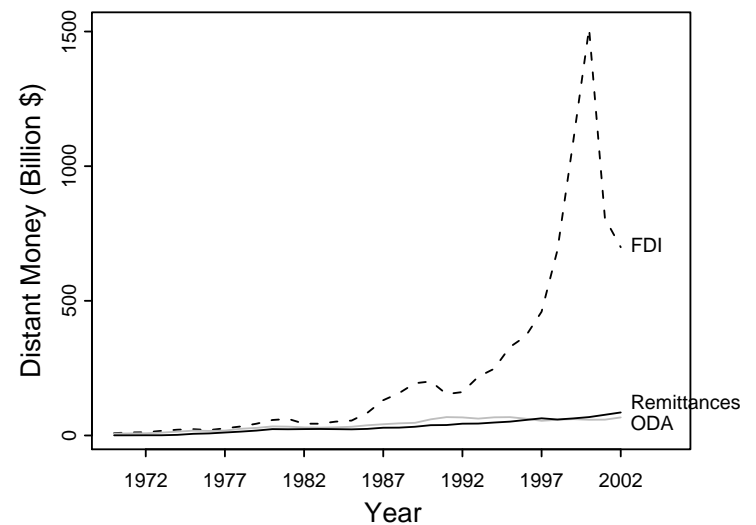
## Comparison of distant money



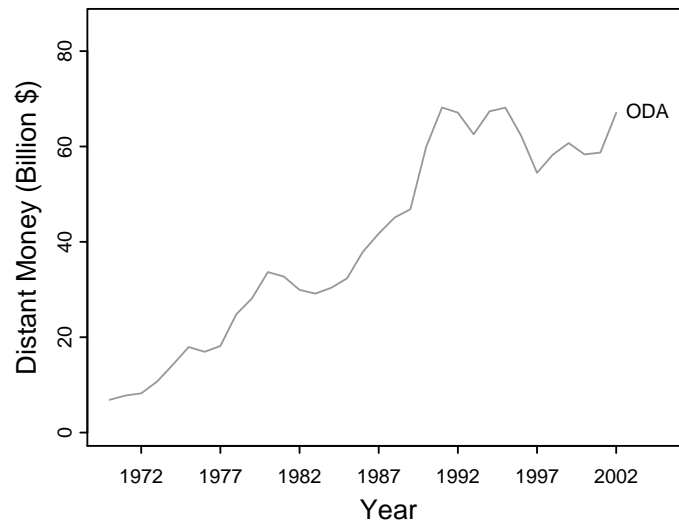
## Graphic comparison of distant money



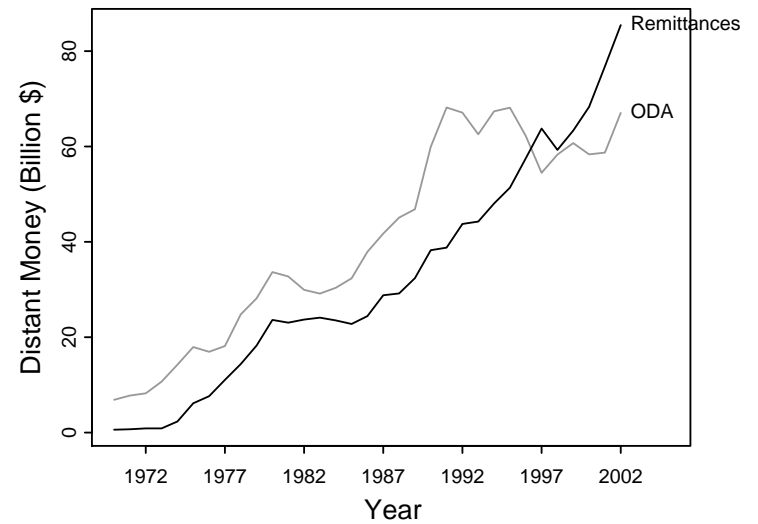
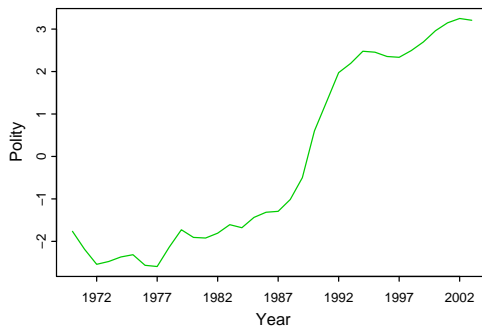
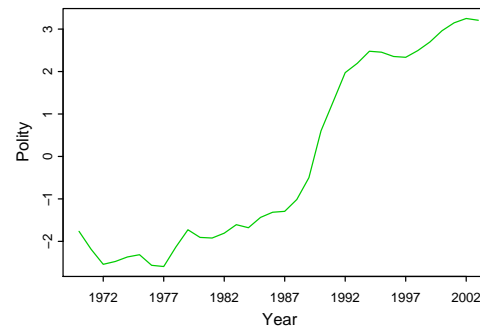
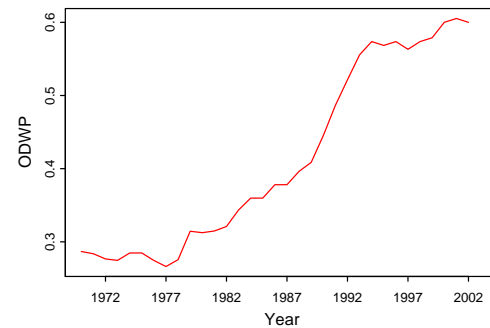
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Average Polity Score in the World  
from 1971–2002Average Polity Score in the World  
from 1971–2002Proportion of Democratic Regimes  
from 1972–2002

## Motivations

- Few scholastic effort has been devoted into studying the political impact of remittances (rich on economic effect though)
- Past methods using pooled cross-sectional and time-series regression analysis of political liberalization is flawed.
  - Hard to validate their results country by country and year by year.
  - Cannot explain the micro-difference within each country

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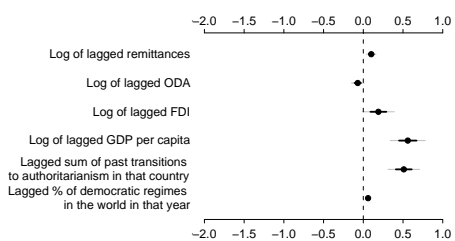
## Goals

- Systemic analysis of the effect of remittances on political liberalization
- Improve the ability of making inference by using Bayesian multilevel modeling (BML)

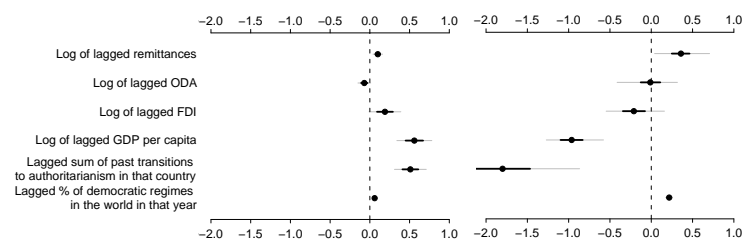
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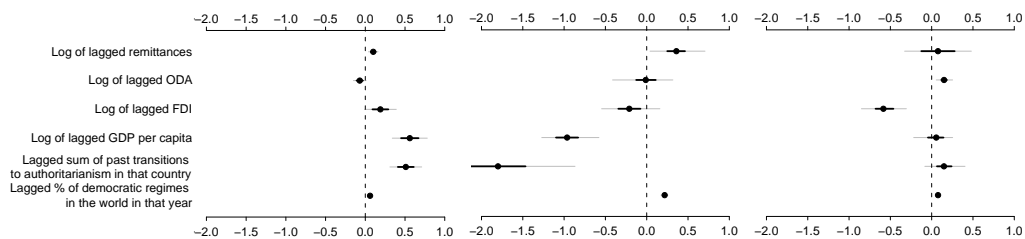
## Comparison of logit models



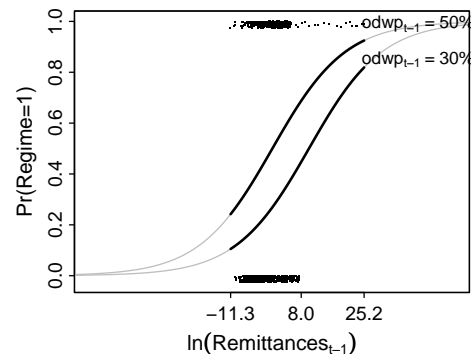
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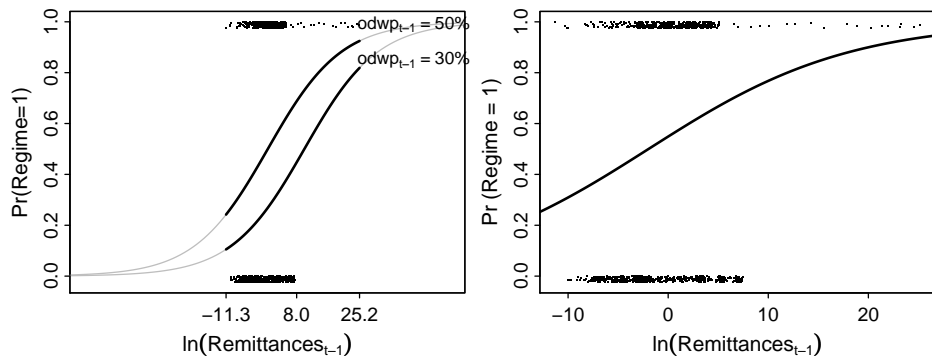
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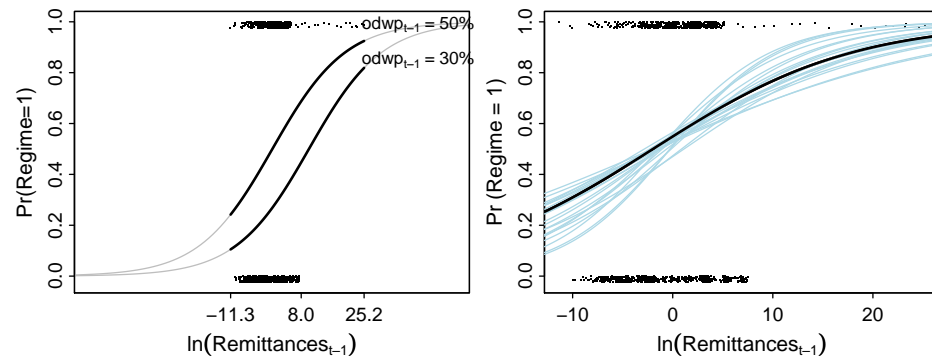
# Classical logit models



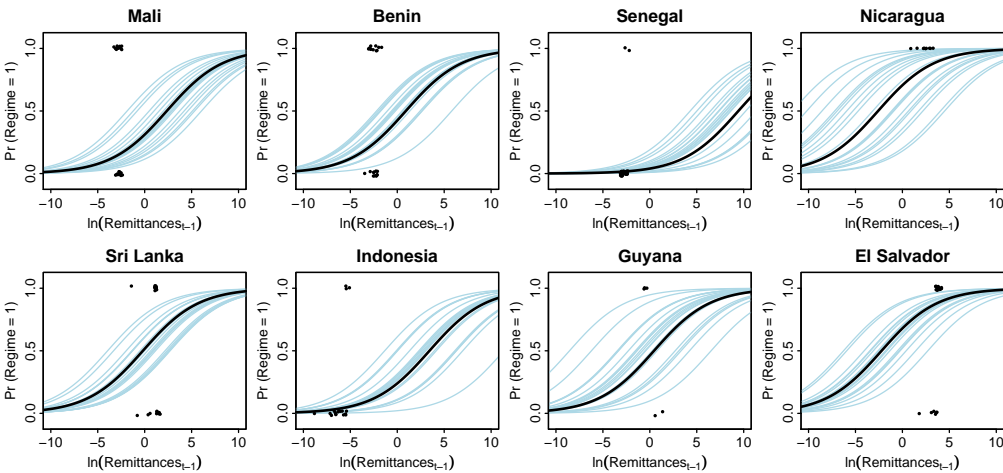
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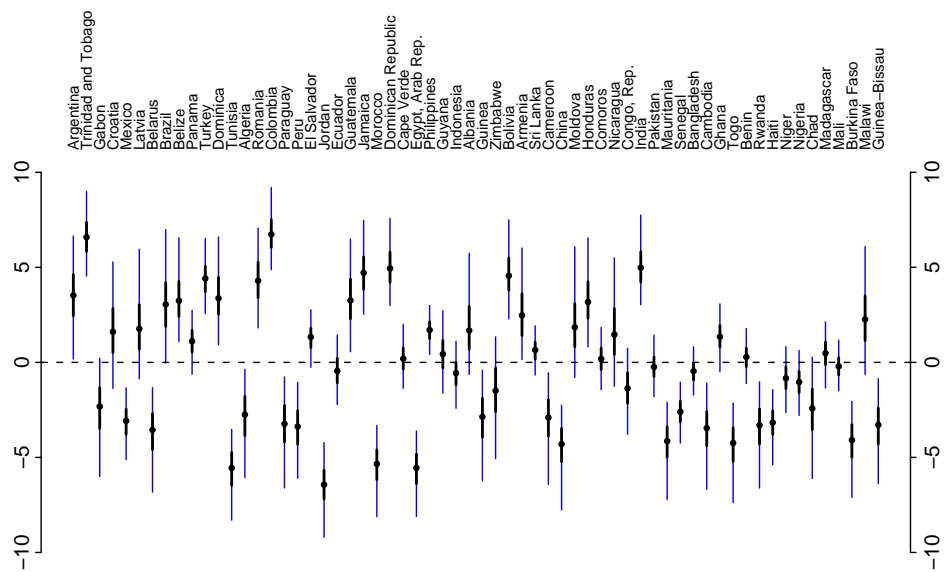
# Classical logit models



# BML logit model with varying intercepts

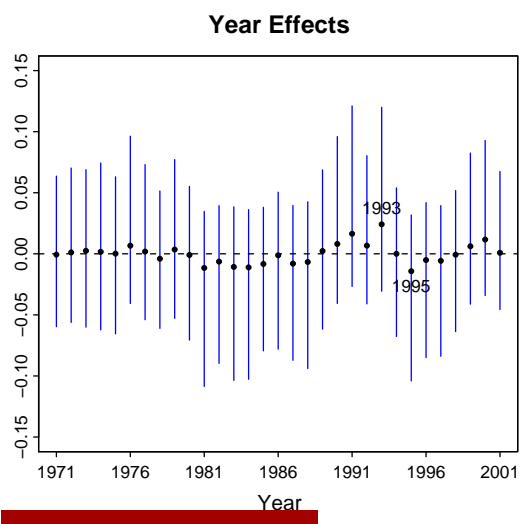


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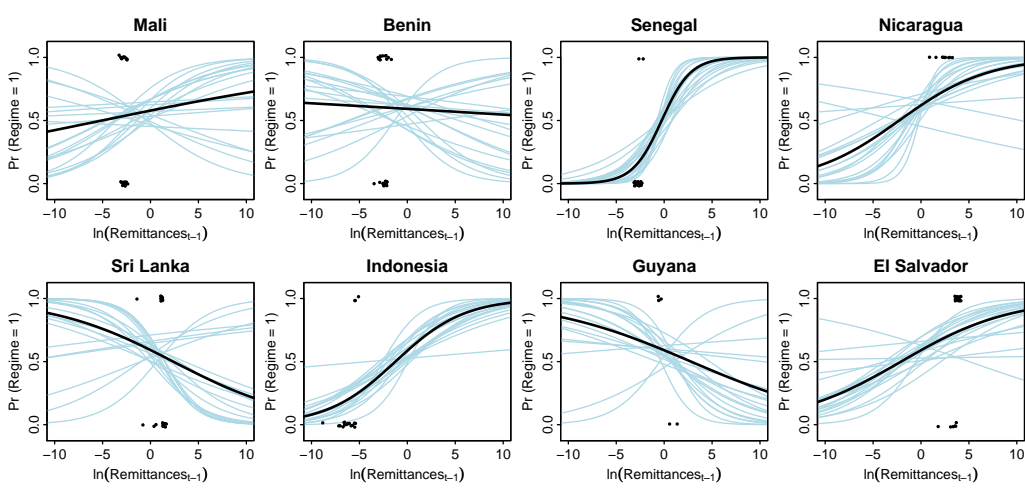


Intercepts of BML 1

# BML logit model with varying intercepts

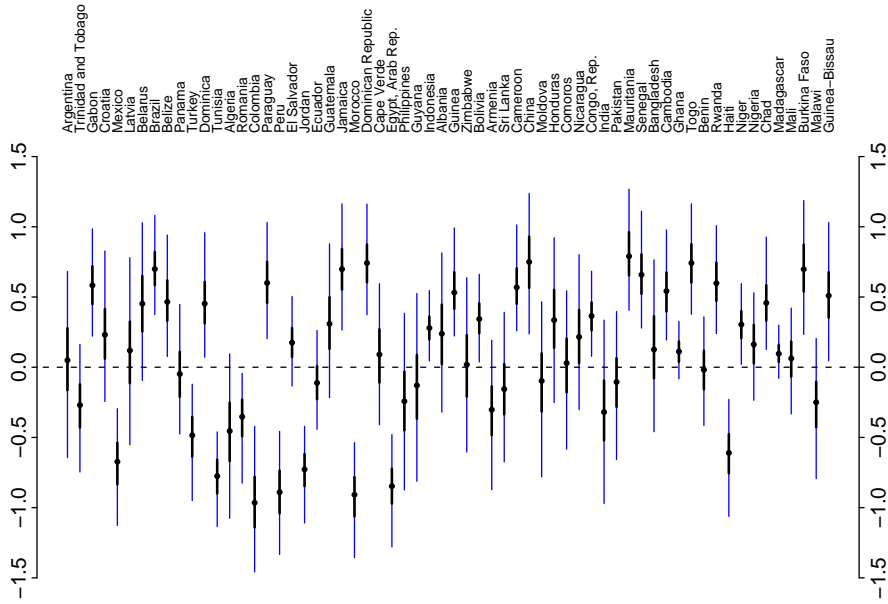


# BML logit model with varying intercepts and varying slopes

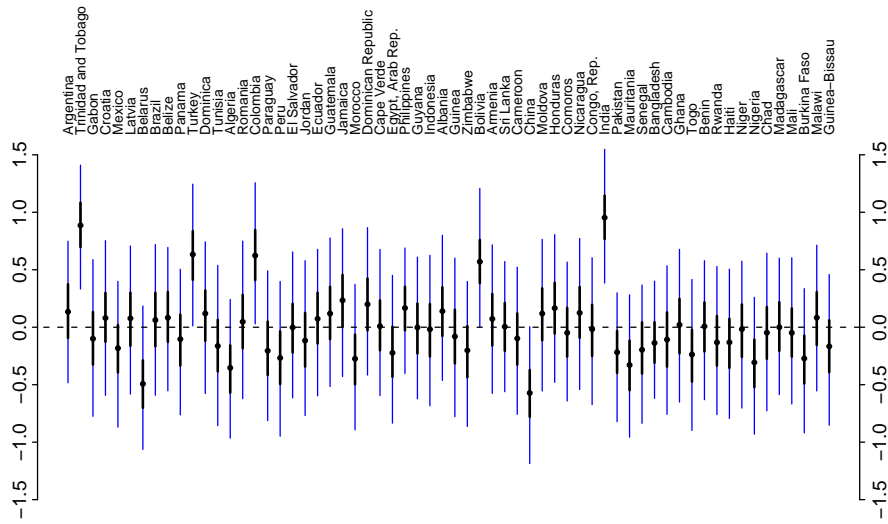


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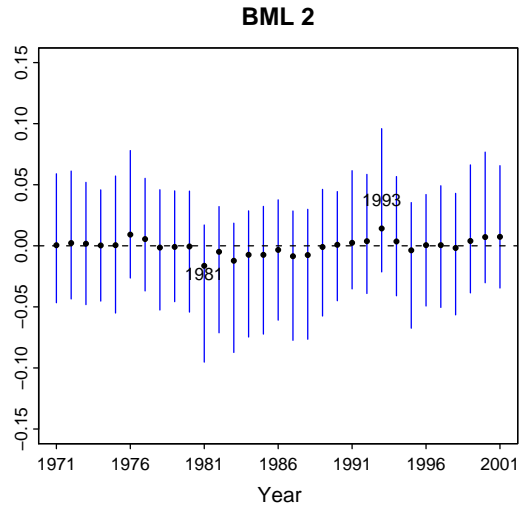
Slopes of BML 2



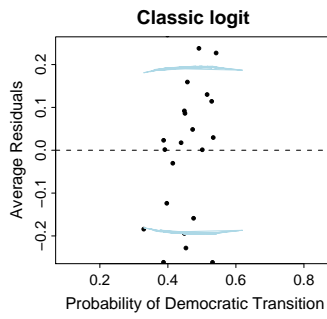
Intercept of BML 2

BML logit model with varying intercepts and varying slopes

Binned residual plots for logit models



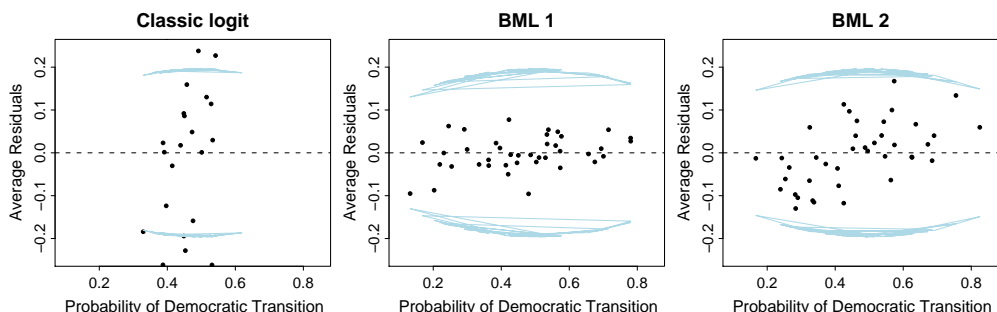
BML 2



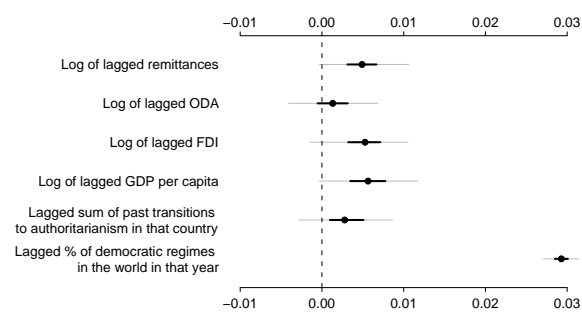
Classic logit



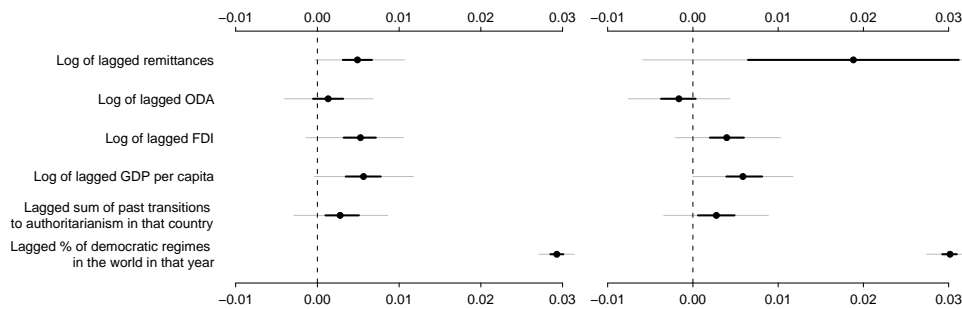
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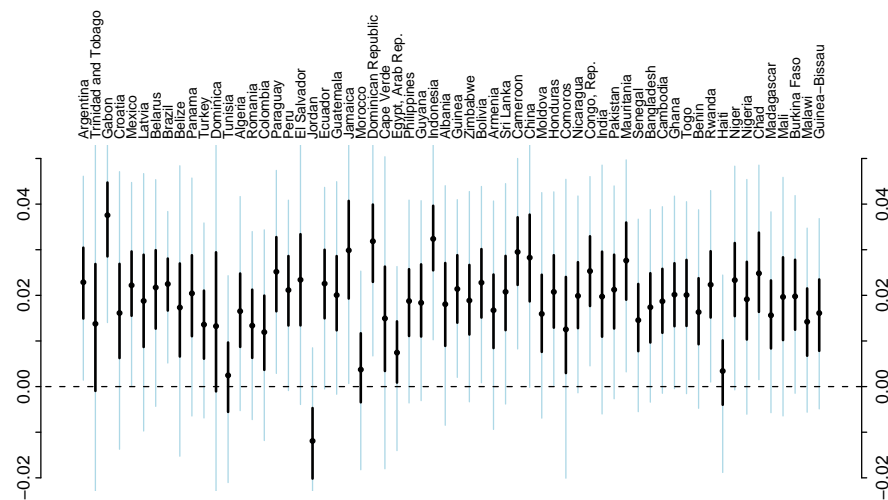
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## Conclusions

- 1 The statistical results confirm my hypothesis that an increase in the remittance inflows will increase the chance for an autocracy to democratize.
- 2 The paper also shows that an increase in the remittance inflows will enhance the regime performance.
- 3 To examine the effect country by country and over time, the result varies.
- 4 The paper does not claim that if we pour in a tremendous amount of remittances in a autocratic country in a certain year, we can cause that autocracy transits to democracy.
- 5 Bayesian multilevel modeling does perform better, though; it is computationally intensive.

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