

The Geography of Development: Evaluating Migration Restrictions and Coastal Flooding

Discussant: Clare Balboni

London School of Economics

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- Primary research questions:
 - How would relaxing international migration restrictions affect aggregate welfare and the global distribution of economic activity over time?
 - What is the impact of sea level rise under different migration regimes?
- Key findings:
 - Relaxing migration restrictions \Rightarrow large aggregate welfare gains, shifts locus of future economic activity towards today's developed countries.
 - Sea level rise \Rightarrow large present-value welfare losses, which have only a weak, non-monotonic relationship with migration restrictions.

- Highlights importance of the interaction of geography and factor mobility for the future development path of the world economy.
- Tackles the 'hard problem' of regional economics - joint consideration of agglomeration and growth - in an important empirical application.
- Ambitious empirical exercise - simulate evolution of world economy at $1^\circ \times 1^\circ$ resolution over 600 years using a wide range of data sources.
- Raises interesting questions about the uneven dynamic effects of migration policy and the time horizon over which policy should be assessed in a world with changing geography.

- ① Endogenous changes in fundamental amenities?
- ② Non-legal costs of migration?
- ③ Pace of sea level rise?

Comment 1: Fundamental amenities

- Fundamental amenities in each region are treated as exogenous characteristics that remain constant over time.
- Supported by evidence that estimated amenities are correlated with common exogenous measures of quality of life (geography/climate).
- Potential concerns:
 - To the extent that amenities are capturing these exogenous variables, can they be treated as fixed over 600 years?
 - More fundamentally, amenities likely to capture other endogenous characteristics (e.g. public services, infrastructure, institutions)?
- Potentially significant consequences for the estimated discounted welfare gains from liberalising migration, up to 80% of which are driven by reallocation from low- to high-amenity countries.

Comment 1: Fundamental amenities

- Possible evidence on the potential importance of these factors:
 - How large a share of estimated amenities can be explained by the geography/climate variables considered?
 - How are the results affected by allowing projected climate change to alter these variables over the study period?
 - How far do estimated fundamental amenities change over time (repeat estimation for two time periods)?

Comment 2: Non-legal migration costs

- International migration restrictions are modelled as a quota that adjusts to keep relative utilities across countries constant over time.
- To quantify the gains from relaxing migration restrictions, the authors consider the following counterfactual scenarios:
 - Full liberalization, with agents freely mobile across countries.
 - Partial liberalization, with fixed ranking of migration restrictions.
- This abstracts from differences in non-legal (physical, psychic) migration costs across and within countries (Docquier et al 2013, Morten & Oliveira 2014). Even with all legal barriers removed, these may continue to drive a significant wedge in utility across locations.
- How would incorporating this dimension of regions' geography affect the gains from relaxing legal migration restrictions?

Comment 3: Pace of sea level rise

- The paper analyzes the static cost of a 6m or 1m sea level rise occurring in period 1, 100 or 500, and the dynamic effects of the same rises occurring between periods 0 and 1.
- Modelling sea level rise as a one-time shock allows the authors to shed light on the interesting dynamic response to coastal flooding under different migration scenarios.
- As highlighted in the paper, sea levels are projected to rise more gradually than this. This will likely affect the dynamic response to flooding and therefore present value welfare losses.
- Is it possible to simulate the dynamic effects and welfare losses from a more gradual sea level rise?