

# Discussion of “AI and Trade”

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# Open Economy Dimensions of AI

- Goldfarb and Trefler provide a wide-ranging, creative, and thoughtful discussion of the issues
- High-level summary:
  - AI is a production technology
  - So it has the same implications for trade policy, as a function of its technological characteristics, as we are used to thinking about:
    - $\Rightarrow$  factor prices, inequality (e.g. Trefler, 1993; Trefler, 1995)
    - $\Rightarrow$  complications with mobile factors
    - $\Rightarrow$  trade policy (including “behind the border”) as industrial policy if geographically local externalities (e.g. EES, knowledge spillovers) and/or market power
  - But, a lot of uncertainty about what those characteristics will actually look like...

# Potential Externalities from AI Technology

- Economies of scale (R&D, data)
  - But are they external to firms?
  - Is AI (or training data) not a service that can be bought/sold?
- Knowledge spillovers
  - But how geographically far will those spillovers spill?
  - Evidently, quite far within firm (e.g. London, Edmonton)
- ...and then there is the usual problem of picking winners
  - McKenzie et al (2016): Lagos business plan competition RCT
  - McKenzie et al (2017): Predicting which entrepreneurs have good plans

# The Home-Market Effect

- Definitions:
  - Weak HME (Linder, 1961): Home demand  $\Rightarrow$  export more
  - Strong HME (Krugman, 1980): Home demand  $\Rightarrow$  *net* export more
- Home-biased positive externality (+ some trade friction)  $\Rightarrow$  HME
  - Stronger externality  $\Rightarrow$  stronger HME

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  - As-if EES revenue elasticity is about 0.8 (=1 in usual trade/growth models).
  - Bartleme et al (2017): between 0.55-0.78 across all 2-digit manufacturing sectors



# Is AI Technology Purely a “Domestic” Technology?

- Likely to have effects on technology of bilateral trading too

# Trading Frictions Are Important—“The World Is Not Flat”

*Leamer: A Review of Thomas L Friedman's The World is Flat*

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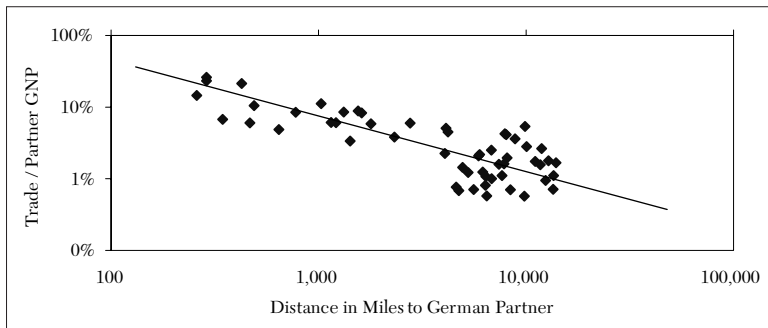
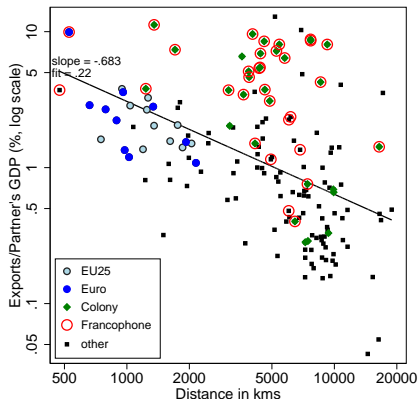


Figure 8. West German Trading Partners, 1985

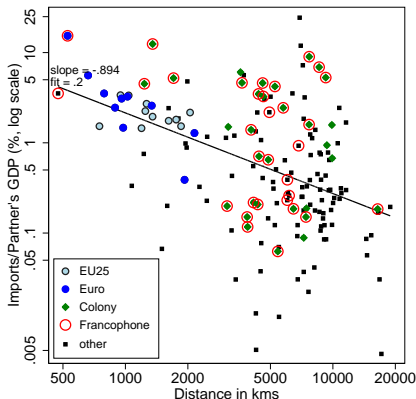
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Figure 2: Trade is inversely proportional to distance

(a) France's exports (2006)



(b) France's imports (2006)



# Is AI Technology Purely a “Domestic” Technology?

- Likely to have effects on technology of bilateral trading too
- Plenty of reasons to suspect this could be a big deal:
  - Lawyers (contracts, compliance)
  - Trade finance
  - Supply chain management
  - Translation
  - Transport
  - Buyer-seller matching platforms
- Exporting/importing firm strategy?
  - Dickstein and Morales (2016), applying tools from Manski (various): Large firms in Chile appear to know about 45% of what they need to know about exporting

# Interactions Between AI Technology and Trade Costs

- Most dramatic change in trade costs in recent decades has probably increasing tradability of services
- Seems likely that those same newly tradable services may see largest disruption from AI
  - E.g., same features that enable us to import radiology services from India enable us to import radiology services from the cloud