

The Empirics of New Economic Geography

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New Economic Geography Theory

- Second-nature versus first-nature geography
- Agglomeration forces
 - Love of variety, increasing returns to scale and transport costs
 - Factor mobility (Krugman 1991) or intermediate inputs (Krugman and Venables 1995)
- Dispersion forces
 - Factor immobility (Krugman 1991, Krugman and Venables 1995) or non-traded amenities (Helpman 1998)
- Endogenous Core-Periphery and multiple equilibria

New Economic Geography Empirics

1. Market Access and Wages
2. Location of Production
3. Conclusion

Market Access and Wages

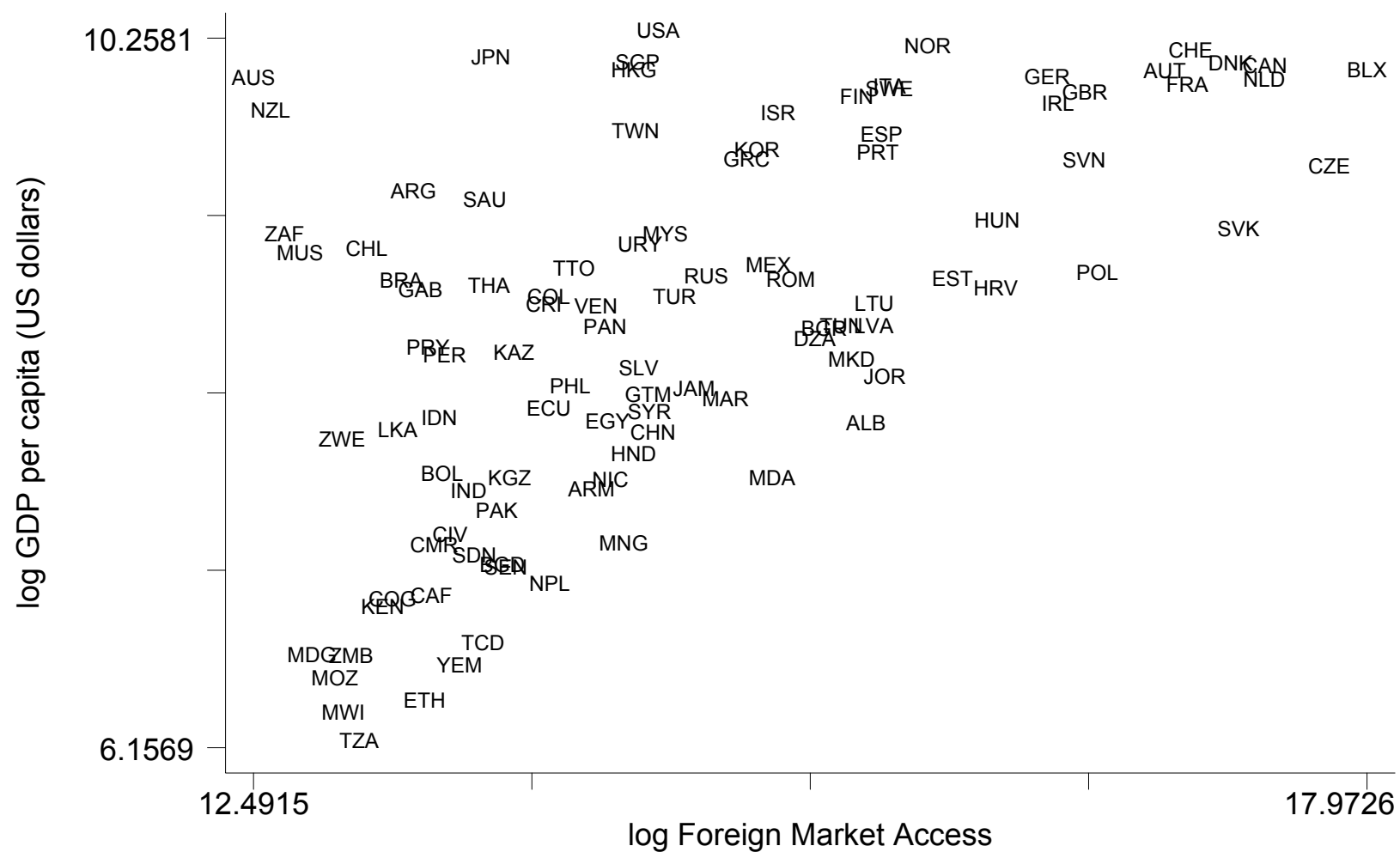
- Love of variety, increasing returns, transport costs and intermediate inputs (Krugman and Venables 1995)
- Profit maximization, zero profits and CES demand:

$$\left(\frac{\sigma}{\sigma - 1} w_i^\alpha P_i^{1-\alpha} \right)^\sigma = \frac{1}{\bar{x}} \sum_j \tau_{ij}^{1-\sigma} E_j P_j^{\sigma-1},$$

$$w_i = \theta MA_i^{\frac{1}{\alpha\sigma}} SA_i^{\frac{1-\alpha}{\alpha(\sigma-1)}},$$

$$MA_i \equiv \sum_j \tau_{ij}^{1-\sigma} E_j P_j^{\sigma-1}, \quad SA_j \equiv \sum_i n_i \left(\tau_{ij} p_i \right)^{1-\sigma}.$$

Figure 1 : GDP per capita and FMA



Map 1: The Division of Germany after the Second World War

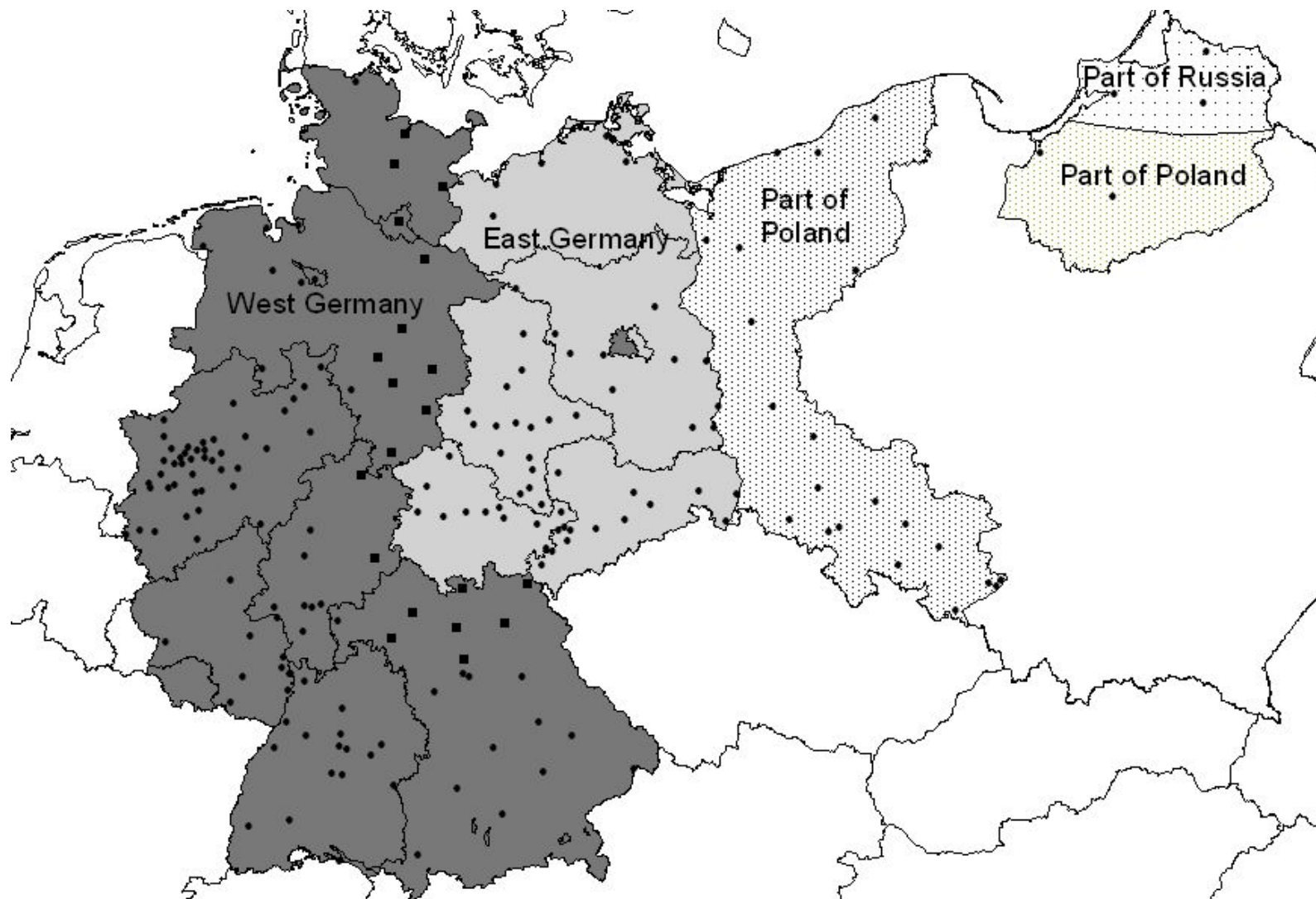
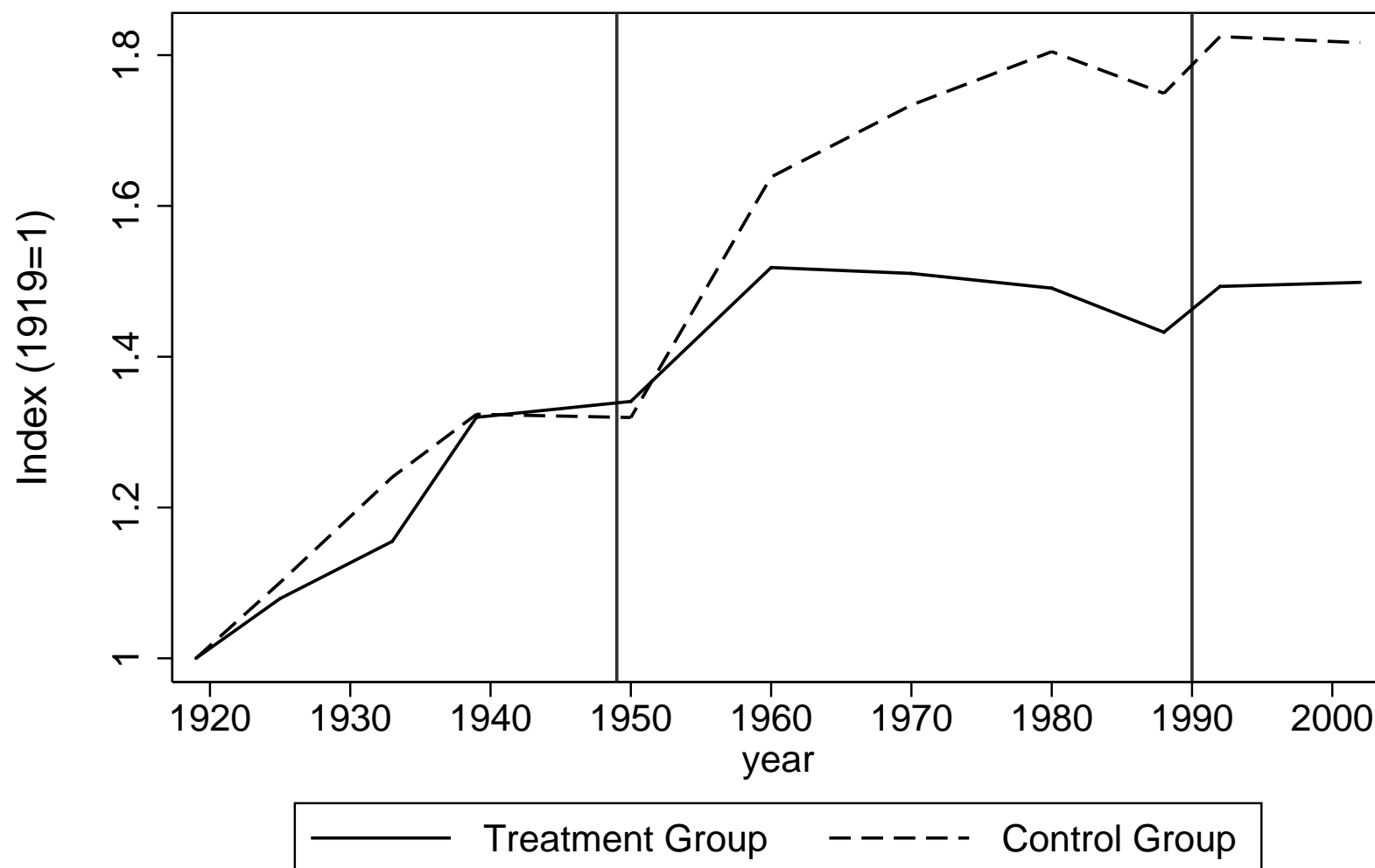


Figure 3: Indices of Treatment & Control City Population



Location of Production

Measurement and Identification

- To what extent is economic activity geographically concentrated?
 - Compare the observed distribution of economic activity within an industry to a null hypothesis of random location (Ellison & Glaeser 1997, Duranton & Overman 2005)
- What explains the geographic concentration of economic activity?
 - Identification problem of distinguishing externalities from natural advantage (Manski 1995, Ellison & Glaeser 1997)

Externalities Versus Natural Advantage

- Constant returns to scale and transport costs
 - An increase in expenditure leads at most to a proportionate increase in production of a good
- Love of variety, increasing returns to scale and transport costs
 - An increase in expenditure leads to a more than proportionate increase in production of a good (home market effect)
- Davis & Weinstein (1999, 2003) evidence
- Structural estimation? Home market effect with many industries and locations? Exogenous sources of variation?

Increasing Returns, Random Growth and Natural Advantage

- Davis & Weinstein (2002) historical evidence from Japan
- Substantial dispersion in population density over 8,000 years (natural advantage?)
- Substantial persistence in population density over 8,000 years (natural advantage?)
- Increase in the dispersion in population density after the industrial revolution (natural advantage + increasing returns?)
- No evidence the temporary shock of Allied bombing had a permanent impact on relative population size (interpretation?)

Interpretation

- Apparent examples of historical accident influencing location?
- But if even the temporary shock of wartime bombing cannot have a permanent effect on the location of economic activity, what hope is there for smaller interventions?
- Reasons for war-time bombing not having a permanent effect: short-lived, focal points, property rights and land-use regulations
- Temporary shocks that are sufficiently large and long-lived to influence location? German division and reunification
- What are the respective contributions of increasing returns and natural advantage? What types of economic activity?

Future Prospects

- Respective contributions of alternative sources of agglomeration (Ellison, Glaeser and Kerr 2009)
- Combining new economic geography and urban economics
 - Economic explanations for Gibrat's and Zipf's Laws and departures from them (e.g. Rossi-Hansberg and Wright 2007)
 - Organization of economic activity *within* and *across* cities
- Controlling for heterogeneity and selection
 - Non-random sorting of workers (Combes et al. 2008)
 - Agglomeration versus firm selection (Combes et al. 2008)