Which Institutions are Good for Your Health?

The Deep Determinants of Comparative Cross-Country Health Status

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Background and aims

- Average life expectancy at birth varies widely across countries, e.g., in 2005, Japan 82 yrs; Botswana and Lesotho 35 yrs

- Cross-country variation in life expectancy – how much can be explained by institutional and geographic variables?

- In the tradition of the literature on ‘deep determinants’ of economic development
Deep Determinants Literature [1]

- Proximate determinants of income per capita are variables found in the aggregate production function (e.g. K/L, H/L, TFP)

- Deep determinants are the variables that affect the proximate determinants, and hence, income per capita
Development
E.g. Y/P

Proximate Determinants
E.g. K/L, H/L, TFP

Institutions

Geography
Deep Determinants Literature [2]

- Current literature emphasises role of (formal) institutions and geography as deep determinants
  - Sachs (2003)
  - Easterly and Levine (2003)
  - Hall and Jones (1999)
  - Olsson and Hibbs (2005)
  - Carstensen and Gundlach (2006)
North’s (1990) Definition of Institutions

- “The rules of the game in a society, or more formally, [they] are the humanly devised constraints that shape human interaction” (p.3)

- Formal v informal institutions (p.4)
  - Formal institutions = rules and regulations devised by human beings (e.g. laws and regulations enacted by govts)
  - Informal institutions = conventions, codes of behaviour, trust, cooperative norms etc

- Informal institutions are a similar notion to social capital
Contribution of the paper

- Focuses on health status (life expectancy) as an alternative indicator of economic development, rather than GDP per capita

- Considers both ‘formal’ institutions and ‘informal’ institutions AND interactions between the two
Why Institutions May Affect Health

*Formal Institutions*

- Poor institutions (e.g. corruption) will impede the efficiency with which health services are delivered.
- Weak institutions may lead to absenteeism on the part of medical staff.
- If poor institutions lead to violent conflict, this has obvious implications for health.
**Informal Institutions**

- When trust and cooperation are high, community health care facilities are more likely to be provided.

- Micro evidence suggests that individuals who are better networked (and more trusting of others) are likely to be more healthy.

- In theory, formal and informal institutions can either be substitutes or complements.
Why Geography May Affect Health

- Some diseases are more common in certain geographic zones (e.g. malaria)

- Climate affects food production, which in turn affects health
Institutional variables defined: 1

- **Formal**: Worldwide Governance Indicators, World Bank, mean of 6 measures:
  - Voice and accountability
  - Political stability and absence of violence
  - Government effectiveness
  - Regulatory quality
  - Rule of law
  - Control of corruption
Institutional variables defined: 2

- *Informal* is a simple index of:
  - *Trust* = % of individuals in a country who answered “most people can be trusted”
  - *Respect* = % of respondents who believe that parents should teach their children tolerance and respect for others
  - *Control* = % of respondents who believe that they have control over their lives
–\ln(85–LE) = \alpha + \beta_1\text{Formal} + \beta_2\text{Informal} \\
+ \beta_3\text{Formal} \times \text{Informal} + \beta_4\text{TropicArea} \\
+ \beta_5\text{Land100km} + \beta_6\text{Africa} + \beta_7\text{Communist} + \varepsilon

LE = \text{life expectancy at birth in 2005}
Formal, Informal = \text{formal and informal institutions}
TropicArea = \text{proportion of land area in tropics}
Land100km = \text{proportion of land within 100km of coast}
Africa, Communist = \text{dummy variables}
Sample

- Aggregate-level data
- 73 countries
- Developed and developing countries, including Eastern European transition economies
Life expectancy vs Informal
Endogenous institutions

- Identification problem
  (A) Institutions $\Rightarrow$ Development and
  (B) Development $\Rightarrow$ Institutions

- OLS regressions $\rightarrow$ biased and inconsistent estimates of (A)

- Econometric solution – instrumental variables (IV) estimation
Endogenous institutions: Instruments

- **StateHist** Index of state antiquity
- **EngFrac** Proportion speaking English
- **EngLegor** Common law system
- **ProtFrac** Proportion Protestant
- **CathFrac** Proportion Catholic
- **MuslimFrac** Proportion Muslim
### Representative results

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Formal</strong></td>
<td>0.073***</td>
</tr>
<tr>
<td><strong>Informal</strong></td>
<td>0.113***</td>
</tr>
<tr>
<td><strong>Formal × Informal</strong></td>
<td>−0.001***</td>
</tr>
<tr>
<td><strong>TropicArea</strong></td>
<td>−0.572***</td>
</tr>
<tr>
<td><strong>Land100km</strong></td>
<td>0.176</td>
</tr>
<tr>
<td><strong>Africa</strong></td>
<td>−0.427**</td>
</tr>
<tr>
<td><strong>Communist</strong></td>
<td>−0.269**</td>
</tr>
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** and *** denote statistically significant at the 5 and 1 per cent levels
Marginal Effect of Form on \(-\ln(85-LE)\) as Inform Changes

**Marginal Effect of Form**

**95% Confidence Interval**

![Graph showing the marginal effect of form on \(-\ln(85-LE)\) as inform changes. The graph includes a line for the marginal effect of form and a dashed line for the 95% confidence interval.](image-url)
Marginal Effect of Inform on $-\ln(85-LE)$ as Form Changes
Robustness Tests

Our results are robust to:

- The use of different estimation methods (LIML, GMM)
- The inclusion of a range of different controls (Gini coefficient, measure of malaria risk, openness of the economy)
Conclusions

- The quality of formal (informal) institutions has a statistically significant positive effect on health at lower levels of the quality of informal (formal) institutions.

- The quality of informal institutions has a positive effect on health for a larger number of countries – consistent with aggregate social capital-health relationship.

- Geographic factors also affect health status.