Initial Endowments and Access to Finance: the Role of Neolithic Transformation

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Abstract

- We evaluate the influences of the timing of Neolithic transformation, when the hunter-gatherers became the first farmers, on contemporary financial development.
- We examine hypotheses using world-wide datasets at country-level, firm-level and household level.
- Results show that early Neolithic transformation has endured positive influence on access to finance today via shaping the quality of legal institutions.
- The positive effects hold when we use regional high-resolution measures, and when we instrument Neolithic timing using six biogeography characteristics.

Motivation

- Do natural endowments in 10,000 BC matters for financial development today?
- Neolithic transformation provides a global setting to explore the historical root of divergence in financial development.
- Debates about Neolithic transformation in the economic literature suggest that this event could shape different institutions that exert opposite impacts (Borcan, Ola and Puttemann, 2018; Bowles and Choi, 2019; Olsson and Paik, 2020).

Research Questions

- Does early Neolithic transformation benefit contemporary finance?
- If there is any influence, what (are) the influencing channel(s)?

Pre-view a pilot result

Notes: This figure shows the scatter plot between Neolithic timing and the average value of Financial development index over 2000-2018.

Data

- Neolithic timing (Putteman, 2008): the number of thousand years elapsed, until the year 2000, since the population got more than half of their calories from cultivated foods and domesticated animals for their subsistence. Min. mean and max. value are 1337, 5461, 10400 years.
- Financial development index (International Monetary Fund): a relative ranking of countries on the depth, access, and efficiency of their financial institutions and financial markets.
- Firms’ access to finance (World Bank Enterprise Survey 2006 - 2019): an expansive array of economic data on 158,000 firms in 144 countries.
- Households’ access to finance (World Bank’s Financial Inclusion Database 2017): covers 150,000 adults age 15 and above in 144 economies.
- Institutional quality: World Bank’s Worldwide Governance Indicators measure modern institutions while Ethnographic Atlas measure pre-industrial institutions.

Financial development across countries

- Results show that early transition has positive relation with financial development. Based on column 2, one thousand years early transition explains 0.037 higher index (11.2% of mean value).

Households’ access to finance

- Early transition has positive relation with whether an individual has an account, debit card credit card in financial institutions, whether be able to raise emergency funds and use internet pay.
- We have controlled people’s education, employment, incomes, gender and age.

Firms’ access to finance

- Better state capacity in year 1500

Influencing channel(s)

- Results show that early transition is associated with fewer financial obstacles faced by firms, and for industries which more rely on external finance, the effect is larger.
- Access to finance further influences firms’ R&D spending, innovation, and providing new products/services (table not shown).

Robustness

- Regional level analysis geo-coded firms’ data is combined with alternative transition timing data of 750 sites (Pinhasi, Fort and Amann, 2003).

Contributions

- We add to finance literature by identifying the timing of Neolithic transition as a long-lasting determinant and emphasizing the importance of legal institution (La Porta, Florencio, Shleifer and Robert, 1998; Acemoglu, Johnson and Robinson, 2001; Levine, Lin and Xie, 2020).
- Our work relates to debates about long run impacts of the agriculture (Alesina, Giuliano and Nunn, 2013; Olsson and Paik, 2020).
- We provide implications for contemporary financial development by learning from history.