

What helps firms grow in regions?

Institutions and firm performance

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This paper aims to understand how the quality of institutions relates to firm performance at the subnational (regional) level, in the OECD and selected non-OECD countries. By combining data on regional institutional quality (from corruption to quality of public services to political instability) and relating it to various measures of firm performance (employment, productivity, business dynamics), the paper aims to provide a more detailed understanding of which aspects of regional institutions matter and why.

Starting with (North, 1991^[2]), previous research has argued that institutions affect everything from trust, economic growth and employment. However, for a long time the focus was on national institutions, such as the origins of the legal system (Porta, Lopez-de-Silanes and Shleifer, 2008^[3]), political institutions and economic liberalization (Giavazzi and Tabellini, 2005^[4]), or institutions in a broad sense (Acemoglu, Johnson and Robinson, 2001^[5]).

Institutions have a regional dimension that has received less attention than the national dimension. Although rules are often set at the national level, their implementation is often left to subnational governments, which can result in significant heterogeneity within a single country. More recent studies have shown that regional institutions matter significantly for economic performance, from trade (Ketterer and Rodríguez-Pose, 2018^[6]) to productivity (Rodríguez-Pose et al., 2021^[7]). However, such studies tend to use aggregate measures of institutional quality and rarely go into the details of which exact institutions affect firm performance. One notable exception is the very recent literature on institutions and entrepreneurship (Audretsch et al., 2021^[9]) (Audretsch et al., 2022^[8]).

This paper aims to understand not only whether regional institutions matter for firm performance, but also which institutions matter and how they affect specific aspects of firm performance. It starts with a categorisation of institutions and then combines quantitative measures comparable across both regions and countries. Then, it uses those measures to provide a more detailed picture of both direct and indirect effects of institutions on various types of firm performance.

By modifying an existing framework (Williamson, 2000^[1]), this paper categorises institutions not only by their timescale (fast, medium and slow moving), but also by their relevance at the regional level. It then proceeds to identify the direct effect of the various types of institutions on firm performance, as well as the indirect effects, by exploring channels such as innovation (as measured by patents, product and process innovation).

To provide a better understanding of how institutional factors relate to firm performance, this paper leverages a variety of sources in order to compile a regional database of subnational indicators (at the OECD TL2 and TL3 level) of both institutional quality and firm performance. The database covers a number of OECD and selected non-OECD members, the latter covering mostly the EU. Sources include the OECD Regional Database, complemented by new indicators of regional institutional quality that span administrative capacity, corruption, legal certainty, level of bureaucracy etc. In addition, the database includes variables related to regional firm performance and variables related to the regional business environment, as well as a number of controls (population density, physical and digital infrastructure etc).

To measure institutional quality at the regional level, the study uses both traditional survey-based measures of institutional quality, as well as newer administrative sources. It combines data from a variety of sources, covering institutional quality as measured by firms' perceptions, individual's perceptions and administrative data.

The first data source is the World Bank Enterprise Survey, which includes information at the subnational level (TL2) for 24 OECD members and 4 non-OECD members of the EU. The survey is at the firm level and includes information about firms' financing, hiring, infrastructure (such as access to electricity), corruption, regulation, tax administration as well as the extent to which these factors hinder the firms' activity. It takes place roughly every four years and covers the period 2008-21, but not all countries are covered in every wave. A second source of institutional data, this time obtained from surveys of physical persons, is the European Quality of Government Dataset. The survey and subsequent regional dataset is developed by the Quality of Government Institute at the University of Gothenburg. It combines survey-based measures such as corruption perceptions with indices about the legal system and the level of bureaucracy. It covers the 27 countries of the European Union over four waves (2010, 2013, 2017, 2021). Most data is available at the EU NUTS2 level, which corresponds to TL2 regions or lower. The third source of data is the Public Procurement Quality index, a newly available dataset on public procurement indicators (Fazekas and Czibik, 2021^[14]). Given the richness and comparability of public procurement data across Europe (large contracts are regulated through a Directive in the European Union), recent literature has suggested that they can be used as a proxy to study government quality at the regional or even local level. The dataset covers the EU countries over 2011-2020, with a possibility to include some pre-2011 years. Indicators measure the transparency of public procurement (as captured by the use of open auctions, as well as voluntary data reporting), competition (as the average number of bidders for procurement contracts), administrative efficiency (such as the decision-making speed and price savings) and control of corruption (the share of contract awards with single bidding, the average length of procedures and decisions etc.). The European Quality of Government Dataset and the Public Procurement Quality index exhibit a strong correlation, but are not perfectly related. This allows the study to capture different aspects of institutional quality at the subnational level (TL2 and TL3).

To measure regional firm performance, the study draws on data from the OECD Regional Business demography and uses three categories of variables that capture business demography, employment and economic value creation. Indicators on business demography include birth and death rates of (employer) firms, as well as firm survival rates and rates of fast growing firms. Employment indicators include total employment in levels and growth rates, as well as the

number of persons employed by firm type (currently active or newly born) and size, while economic value creation is measured by variables such as levels and growth of output and productivity. The dataset also includes a number of controls on the regional level. These include, but are not limited to, the size of inputs available such as the amount of human capital, as well as infrastructure, demography and prior level of economic development in an area.

Given the national and regional differentials in data coverage the econometric analysis takes place at different levels of detail aiming to balance data availability with the broadest geographical scope possible. The study first uses cross-sectional data to explore the effect of relatively slow moving regional institutions on business demography, employment and economic value creation on large regions (TL2) and small regions (TL3). Using a panel dataset that combines the European Quality of Government Dataset and the Public Procurement Quality index the paper then employs a fixed effects model to identify the effect of faster moving institutions on firm performance. The analysis also looks at indirect channels through which institutions may be affecting business performance and dynamism, namely, innovation.

Preliminary findings suggest a positive relationship between stronger institutions, employment and labour productivity. Weaker institutions are associated with more business dynamics, especially business death rates, as well as smaller firms and a lower density of active firms. Conversely, there is preliminary evidence of a positive relationship between weaker institutions and the business survival rate.

Fast and slow moving institutions exhibit stronger correlations with business dynamics, while medium and slow moving institutions play a more important role for economic value creation. The analysis provides evidence that innovation is an important channel through which higher-quality institutions contribute to improved productivity, employment and overall economic activity.

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