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Can trust effects on development be generalized? A response by quantile

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ABSTRACT

While the beneficial effects of social trust on economic performance have been largely recognized, we analyze whether these effects can be generalized for economies at different stages of economic development. Contrary to previous studies on this issue based on average effects (mostly considering ordinary least squares estimations), we follow a quantile regression approach that enables us to capture heterogeneous effects of trust for different development levels. By considering data for 80 countries, and using trust indicators from five different waves of the World Values Survey (WVS), our results by quantile indicate that trust is not relevant for the poorest economies, showing the existence of a social poverty trap. In addition, results suggest that the impact of trust on income decreases as an economy becomes richer. This would suggest not only that trust benefits cannot be generalized for all countries, as some previous studies have proposed, but also that the extent of its implications are heavily dependent on the level of development.

1. Introduction

One of the most successful theories explaining the determinants of economic growth in relatively recent times is that considering the influence of social capital. In this field of research, scholars have attempted to ascertain whether the level of social capital in a given country or region is a key driver for economic development, among other related questions. Many studies were triggered by the findings of Putnam (1993), whose pioneering study concluded that social capital was a relevant determinant of the economic disparities across Italian regions. Following in Putnam's footsteps, contributions such as Knack and Keefer (1997), Zak and Knack (2001) or Beugelsdijk and Van Schaik (2005), and more recently, Dearmon and Grier (2009), Doh and McNeely (2011) or Horvath (2012), among others, have highlighted positive effects flowing from social capital to economic development, using different samples of countries or regions, and different time periods.

These widely accepted effects are not free from controversy, however, because the social capital definitions used differ from one study to another. Social capital is a multifaceted concept (Bjørnskov, 2006) and includes trust, networks and associationism, as well as social norms. Therefore, the selection of an appropriate proxy for social capital becomes essential. In this study, we select the level of *trust*, since it is the most widely used indicator in this context. In addition, the trust indicator has been proved to be a reliable measure of honesty, generalized trust and trustworthiness, as shown in Knack and Keefer (1997) and Uslaner (2002). Finally, although we could have included several social capital indicators, an in-depth study should focus on just one aspect of social capital (Yamamura, 2012).

Although academic progress in the field of research of trust and economic development is already substantial, more evidence is needed on some particular fronts. One of these fronts on which no consensus has yet been reached relates to determining

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whether trust effects are stronger in poor or in rich countries. This argument has become one of the most challenging issues in trust studies. This is highlighted by Knack and Keefer (1997), who included in their regression the interaction term *trust* × *initial income*, finding a negative coefficient, which implies that the effects might be stronger for poorer economies. Other authors have followed different strategies. For instance, Dearmon and Grier (2009), split their sample into two sub-samples based on the 25 (poorest) and 75 (richest) percentiles, carrying out Chow tests which showed no differential impacts. Ahlerup et al. (2009), controlling for the institutional environment, conclude that trust is more essential for the poorest economies, since these are characterized by weaker institutions and then interpersonal trust plays a major role. However, Putnam (1993, p.178), held the opposite opinion and argued–referring to social capital in a broader sense–that "the importance of social capital increases as development proceeds. This may help explain why the gap between the civic North and the uncivic South of Italy has widened over the last century". Whatever the case, this discussion evidences scholars' interest in highlighting *non-linearities* on the impact of trust.

Previous evidence on this issue is, however, based on *average effects*, mainly using ordinary least squares (OLS). Yet that approach, which generalizes the effect of trust on economic performance, suffers some limitations. On the one hand, in the large samples of countries on which studies are based, outlying observations are common. That may yield estimated coefficients heavily affected by these outliers, and therefore biased. Beugelsdijk et al. (2004) reported evidence suggesting that the robustness of the positive impact of trust is heavily affected by sample selection.[1] On the other hand, even when outliers are identified and controlled for, trust may be affecting economic development with varying intensity depending on the country's stage of development. Another likely scenario is that trust is relevant for some countries within a certain range of economic development, while for others its effects are not important at all.

The present contribution attempts to provide a response to these issues by using quantile regression, a methodology initially developed by Koenker and Bassett (1978). This technique, increasingly popular in the field of economic growth, as evidenced in recent studies by Mello and Perrelli (2003), Barreto and Hughes (2004) or Crespo-Cuaresma et al. (2011) (among others), enables us to quantify the different magnitudes of the effect of the covariates on the entire distribution of the variable of interest, in our case, the level of income. Different results by quantile would be suggesting *heterogeneous effects* of trust for different degrees of economic development, an unresolved question as argued in the preceding paragraphs. Additionally, as we will see later in the paper, quantile regression has other powerful advantages that are especially useful in this particular context. These include its efficiency when dealing with non-normal dependent variables, and when the analyst faces the difficulty of taking into account the whole set of variables that may be affecting economic performance.

In addition, previous studies on this issue are based on data provided by a single wave of the World Values Survey (WVS),[2] with a few exceptions such as Ahlerup et al. (2009) and Dearmon and Grier (2009, 2011), who considered several waves. Our study is based on the latter contribution, but substantially enlarges their sample by also considering data from the most recent WVS wave (2005–2007). Therefore, the contribution of the paper to the literature is twofold. First, it is innovative in both the sample considered–it is one of the largest in this context; and in the time span studied–it is to our knowledge one of the few considering the most recent wave from the WVS. Second, we use quantile regression to study the likely existence of heterogeneous effects between rich and poor countries. This twofold analysis might shed additional light on the true behavioral pattern showed by trust.

The paper is organized as follows. In Section 2 the causal links from trust to income are detailed. Section 3 is devoted to some insights on the quantile regression approach used in the paper. In Section 4 we present both the models to be estimated and the data, along with some descriptive statistics. Section 5 analyzes the results and, finally, Section 6 provides some concluding remarks.

2. The links between trust and economic development

A large number of studies have evaluated the influence of trust on economic performance, as well as the transmission mechanisms of its influence, especially since the late nineties. The first insights, however, were introduced some years previously in sociological studies such as those by Arrow (1972) and Sen (1977), who held that the existence of trust in society plays an important role in the operation of the systems and that societies need some norms and rules of conduct to be viable. The mechanisms through which trust may affect economic development are multilateral—i.e. they follow multiple paths. In practical terms, however, this seriously complicates the task of isolating the different channels through which trust may affect economic development.

The central point of the trust theory is the reduction of the transaction costs into economic operations. Putnam (1993) and Whiteley (2000) put forth that trust facilitates coordination and cooperation for mutual benefit, as well as solving problems of collective action and reducing the incentives for opportunism and egoism. In the same line, Knack and Keefer (1997) argued that trust reduces the cost of monitoring possible free riding behavior. Whiteley (2000) suggested that low-trust societies are characterized by strong regulations and bureaucratic procurements that impose costs and reduce efficiency. A sufficiently high stock of trust, therefore, might facilitate and lubricate complex transactions and improve their efficiency (Putnam, 1993), saving operational costs and, ultimately, enhancing economic output (Knack and Keefer, 1997). As Durlauf and Fafchamps (2005) noted, this might occur as a result of an increase in information flows, groups, flexibility and coordinated actions. A similar argument is put forward by Dearmon

[1] The authors evaluate the robustness of Knack and Keefer's (1997) and Zak and Knack's (2001) results. They conclude that the inclusion of additional countries in the sample in Zak and Knack (2001), in particular countries with low-trust levels, substantially increases the robustness of the findings—i.e. trust positively impacts economic growth.

[2] See http://www.worldvaluessurvey.org.