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Heterogeneity in the effects of government size and governance on economic growth☆

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ABSTRACT

This paper explores whether there exist nonlinear threshold effects of government size and governance on output growth and whether the effect is mainly mediated through the productivity growth channel. Using the panel smooth transition regression (PSTR) approach to a sample of developed and developing countries, it finds that (i) better governance helps government size increase productivity and hence output growth, and bigger government size helps governance raise productivity and then output growth; (ii) government size turns harmful to growth above some threshold level of government size; (iii) governance becomes beneficial to growth above some threshold level of governance; and (iv) the evidence is more pronounced in countries with abundant natural resources. The findings are robust and provide circumstantial support for government size and governance to promote economic growth.

1. Introduction

The role of government in the process of economic growth is a matter of considerable debate in the field of economics and political science. The debate centers on whether big government size implies fast economic growth, whether good governance is beneficial for economic growth, and how government size and governance interact. Yet, theory is far from clear cut in its predictions, the basic argument that the need for government interventions to mitigate market failures and generate positive externalities has led to an expansion in government size of many developing countries. Likewise, the basic hypothesis that governance greases the wheels of growth has led the international organizations such as the International Monetary Fund and the World Bank to place great emphasis on promoting good governance when providing policy advice, financial support, and technical assistance to its member countries.

The paper provides a new and robust empirical insight into these issues and contributes to the current empirical literature in several dimensions. First, instead of focusing on their direct impacts, this paper explores potential nonlinearity and heterogeneity in the effect of government size and governance on economic growth. Specifically, it investigates whether there exist government-size thresholds such that the growth impact of government size changes, whether there exist governance thresholds for the growth impact of governance to switch, and whether governance and government size act as complements or substitutes in determining economic growth. The main novelty of the study is to employ the PSTR model of Fouquau et al. (2008). The PSTR model can be regarded as a linear heterogeneous panel model with coefficients that vary across countries and over time. Heterogeneity in the regression coefficients is allowed by assuming that these coefficients are continuous functions of a threshold variable (here government size or governance), through a bounded function of this variable called the transition function, and fluctuate between a limited number (often two) of extreme regimes. As the threshold variable is country-specific and time varying, the regression coefficients for each country in the panel change over time. The PSTR specifications thus provide a simple parametric approach to capturing both cross-country heterogeneity and time variability of the growth-government size-governance correlation.

Second, the paper assesses whether government size and governance affect economic growth mostly through an effect on total factor productivity (TFP) growth. The question is important because TFP growth has been shown to be the main driver of economic performance (Easterly and Levine, 2001; Parente and Prescott, 2001; Caselli, 2005; Gomez-Sancho et al., 2013), a standard result of growth accounting, going back to Solow's first effort. More importantly, while several

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previous contributions to the institution literature suggest that institutional quality and government size arguably affect total factor productivity (TFP) (Hall and Jones, 1999; Olson et al., 2000; Bjornskov and Meon, 2015), there is no evidence whether the effect is regime-specific, conditional on a country's level of government size and governance.

As a final contribution, we divide the sample into high and low resource-rich countries to check whether a country's level of natural resources determines the growth impact of government size and governance. Natural resource wealth has been found to adversely affect economic growth and development (see van der Ploeg (2011) for the detailed survey). This phenomenon labeled as the "resource curse" has been related among other things to the adverse impact that natural resource abundance can have upon governance and institutions. Resource riches induce rent-seeking, corruption and patronage, thereby leading to deterioration in institutional quality, misallocation of public goods and increased employment in the government sector, which in turn negatively affects economic performance (Sachs and Warner, 2001; Bulte et al., 2005; Isham et al., 2005; Arezki and Bruckner, 2011; Tsui, 2011). It is also argued that whether natural resources are a curse or blessing depends crucially upon institutional quality (Mehlum et al., 2006; Robinson et al., 2006; Kim and Lin, 2017). These imply that natural resource abundance might play an important role in shaping the relationship of economic growth with government size and governance. Given the fact that most low-income developing countries tend to have poor economic growth and rich natural resources, policy toward pro-poor (inclusive) economic growth is crucial for these countries. Such an investigation thus provides important policy implications for these countries.

To anticipate the results, the paper shows that, in a sample of developed and developing countries, the effect of government size and governance on productivity and output growth is regime-specific, depending on a country's government size and governance. Specifically, there exists a government size threshold that seems to limit the ability of countries to benefit from increased government size and to allow countries to gain from better governance. There also exists a governance threshold for countries to benefit from improved governance and increased government size. The evidence is more prevalent in resource-rich countries.

The paper is organized as follows. Section 2 provides a brief review of related literature. Section 3 describes the employed methodology and presents the data. The estimation results are shown in Section 4. Section 5 concludes.

2. A brief review of literature

Government can affect economic growth by its sheer size and quality. Typically, the size and quality effects of government are explored in two distinctive strands of literature. The study on government size and economic growth stresses the importance of the state's absorption of society's resources through its spending and related taxation and has reached inconclusive outcomes. The majority of these studies find that a larger public sector is growth-impeding (e.g., Barro, 1991; Folster and Henrekson, 2001; Sala-i-Martin et al., 2004; Ghosh and Gregoriou, 2007; Bergh and Karlsson, 2010) and relate the detrimental effect to the expansion of the state sector in promoting rent-seeking behavior at the expense of economically productive activities and the efficient allocation of resources by the market. Some find, however, opposite results (e.g., Barro, 1990; Grossman, 1990; Barro and Sala-i-Martin, 1992; Hansson and Henrekson, 1994; Turnovsky and Fisher, 1995; Kneller et al., 1999) and attribute the beneficial effect to the existence of market failures and negative externalities.

The work on governance and economic growth highlights the quality of government in underpinning the efficiency with which the government manages the provision of public goods and the creation of market-friendly policies and regulatory framework as well as adherence to the rule of law. Since markets are almost incomplete, and information is always imperfect, successful market-based economies need good governance institutions (Rodrik, 1999; Frankel, 2002). Efficient governance alleviates market failures as it reinforces confidence of economic actors—individuals and firms—in the credible commitment of government in enhancing stable politics and an open society, enforcing contracts and protecting property rights, discouraging corruption and lawlessness, and facilitating markets. Despite its plausible argument, empirical investigations are not unambiguous. Studies based on cross-country or panel-data regressions present evidence that good governance stimulates economic growth (e.g., Barro, 1997; Keefer and Knack, 1997; Kaufmann and Kraay, 2002; Seldadyo et al., 2007; Olson et al., 2000; Vieira et al., 2012; Knutson, 2015). However, country-specific studies tend to show a negative relationship between governance and economic growth (Quibria, 2006; Hausmann et al., 2008). Some even dismiss governance out of hand. Barro (1999), for instance, shows improvements in governance institutions as the consequences of increased income or wealth, not the causes. Glaeser et al. (2004) confirm that poor countries may grow because of policies which are pursued by dictators.

These inconclusive findings could arise because there is no relation or because the relation is not linear but nonlinear with thresholds. Barro (1990), Karras (1996) and Asimakopoulos and Karavias (2016) indeed demonstrate that only when the size of the government sector exceeds a certain threshold can a negative effect be observed. Barro (1996) argues that more democracy enhances growth at low levels of democracy but hinders growth when a moderate level of democracy has been attained. Ma and Ouyang (2016) find that only in democratic countries with prolonged experiences of democratic rule can democracy promote growth. Mamun et al. (2017) show that the positive effect of governance on growth is strengthened by greater infrastructure, social capital, globalization and financial development. Aidt et al. (2008) find that corruption has a substantial negative impact on growth in a regime with high-quality political institutions but has no impact on growth in a regime with low-quality institutions. However, these findings are built in a polynomial framework or Hansen (1999)'s panel threshold regression assuming the transition from one regime to another, also depending on the value of a threshold variable, is discrete. Countries differ in their economic and socio-political institutions, market imperfections, and government capacity, all of which determine the extent of government interventions, and the efficacy of such interventions (Acemoglu and Verdier, 2000). The growth effect of government size and governance is highly likely to vary across countries and through time. The polynomial and discrete threshold regression models may not adequately capture the true data structure.

On the other hand, the literature has firmly established that government size and governance are intertwined. Merely allocating public resources for the right goods and services may not lead to desirable outcomes if budget institutions—involving budget formulation, execution and monitoring—are malfunctioning (World Bank, 2003). In other words, well-functioning public institutions are critical for translating public spending into effective services. There is also evidence of the effectiveness and productivity of public spending depending upon the extent of a country's governance (Gupta et al., 2001; Rajkumar and Swaroop, 2008; Alonso and Garcuimartin; 2013). Gupta et al. (2001) show that countries with high levels of corruption are associated with the lower quality public health care and education. From a different perspective, La Porta et al. (1998) find that the larger governments tend to be the better-performing ones. Baskaran and Bigsten (2013) show that fiscal capacity has a positive effect on government quality because the availability of tax revenues allows leaders to offer citizens a more responsive and less corrupt administration. Kotera et al. (2012) show that an increase in government size can lead to a decrease in corruption if the democracy level is sufficiently high. Alonso and Garcuimartin (2013) argue that a sound tax system not only provides the necessary resources to build high-quality