Governmental decentralization and corruption revisited: Accounting for potential endogeneity

CrossMark

Sanchari Choudhury *

Department of Economics, Box 0496, Southern Methodist University, Dallas, TX 75275-0496, United States

HIGHLIGHTS

- Estimate the causal effect of decentralization on corruption in the absence of traditional instrumental variable.
- Identification achieved by applying Lewbel (2012) approach.
- Mild evidence of political decentralization being endogenous.
- Controlling for it yields significantly larger positive effect on corruption.
- Fiscal decentralization reduces corruption; there is no evidence it is endogenous.

ARTICLE INFO

ABSTRACT

The causal effect of governmental decentralization on firm-level corruption is inconclusive due to the difficulty in obtaining a traditional instrumental variable. Circumventing the issue by using the Lewbel (2012) identification strategy, we find mild evidence of *political* decentralization being endogenous but no support for *fiscal* decentralization being endogenous.

© 2015 Elsevier B.V. All rights reserved.

1. Introduction

Recent empirical studies on governmental decentralization and corruption have utilized better data to facilitate relatively finer analyses (Fan et al., 2009). Various measures, besides fiscal and federal structure, are available as proxies for decentralization (Treisman, 2002, 2007; Fan et al., 2009). For corruption, household- and firm-level surveys are used to obtain experience-based measures, replacing prior data based on the *perceptions* of individuals. Experience-based measures are arguably an advancement as perceptions are likely to be characterized with more measurement error (Treisman, 2007). Cultural–political–economic factors

which tend to lower corruption bias the perception indices downward from actual corruption experiences (Donchev and Ujhelyi, 2014). Razafindrakoto and Roubaud (2010) found a number of biases in the perceptions of the experts as compared to actual experiences of corruption by the ordinary citizens for some African countries. Thus, studying the impact of decentralization on *direct corruption experiences* has become crucial. Nevertheless, empirical studies have been unable to credibly identify the causal relation between decentralization and corruption experiences.

First, decentralization is a complicated, multi-dimensional process; a single, accurate measure is seemingly unrealistic. Fan et al. (2009, p. 33) state: "Although the data we use are more detailed and precise than in previous explorations, they are still likely to contain some measurement error." This is because several diverse factors are closely associated with decentralization, impacting each other at various levels and contexts. It is not only

---

* Fax: +1 214 768 3911.
E-mail address: schoudhury@smu.edu.

difficult to disentangle them, but segregation of each form of decentralization from the other is unfavorable due to its overlapping features. To circumvent this problem, Ivanyna and Shah (2011) use a composite index of several variables, yet could not disregard the chances of measurement error being present. Moreover, the 'actual' government power existing at a local level is not just due to 'formal' decentralization, but also 'informal' decentralization due to various cultural, traditional, and historical relics of a country that is beyond control of the central government. For example, Vu et al. (2014, p.3) distinguish between "legitimate level of autonomy" assigned by the central government to subcentral level and "de facto discretion in subcentral government decision making" and how this difference affects subcentral government performance. Difficulty for econometricians is that this *actual* governmental decentralization remains unobserved. Instead, we observe the formal decentralization given at a country level.

Second, omitted variable bias cannot be ruled out. Unobserved determinants of corruption like quality of politicians, administrative ability of public officials, long-standing traditions of informal institutions, willingness of common people to participate in politics, etc. may be correlated with decentralization.

Third, reverse causation may be a problem (Arikan, 2004; Fan et al., 2009). Corrupt bureaucrats can be strong supporters of decentralization since it is more conducive to extract rent when they interact with people locally. Besides, regional elites having financial and political incentives encourage decentralization. It provides them with greater opportunity to control public resources and hold offices. National executives reinforce their interest if they have electoral benefits to receive in return. Increasing chance of getting re-elected at the central level by winning regional support, therefore, incentivizes alliances between local elites and central executives leading to further promotion of decentralization (Grossman and Lewis, 2014). In such an instance, corruption *causes* decentralization. Likewise, an alternate argument is also plausible. Regional officials may be close enough to local people to work in their favor and maintain higher accountability than those working at the center. Thus, decentralization gets supported by honest local bureaucrats with the target of having better governance. Referring to these possibilities, Fan et al. (2009, p. 33) state: "… the direction of causation is open to question for all the dimensions of decentralization examined but especially for the results concerning fiscal decentralization."

The traditional way of addressing endogeneity is elusive in this context due to the difficulty of finding a credible instrumental variable (IV) for decentralization. Again, Fan et al. (2009, p. 33) state: "Lacking any reasonable instruments for decentralization, we can suggest plausible interpretations of the patterns in the data, but cannot make confident claims about their causes."

This paper advances on the existing studies by addressing the potential endogeneity of decentralization using cross-country, firm-level data on corruption from the World Business Environment Survey (WBES) conducted in 1999–2000. Building on previous work in Fan et al. (2009), we circumvent the requirement of a traditional IV by applying the Lewbel (2012) estimation approach. This uses conditional second moments of the data for identification.

The identification strategy performs reasonably well in the current context; the results are notable. There is only mild evidence of *political* decentralization being endogenous when analyzing bribe amounts, but not bribe frequency. There is no support for *fiscal* decentralization being endogenous using either measure of corruption. Also, unlike *political* decentralization, *fiscal* decentralization has a beneficial impact on (reducing) corruption.

2. Empirical analysis

2.1. Estimation

The model[1] is given by

$$C_{ij} = \alpha + \beta D_j + X_j\theta_1 + X_{ij}\theta_2 + \varepsilon_{ij} \tag{1}$$

$$D_j = \pi_0 + X_j\pi_1 + X_{ij}\pi_2 + \eta_{ij}, \tag{2}$$

where C_{ij} is the corruption measure of firm i in country j, D_j indicates the decentralization measure, X_j is a vector of country-level covariates, X_{ij} is a vector of firm-level covariates, $\theta_1, \theta_2, \pi_1,$ and π_2 are conformable vectors of parameters, and ε and η are mean zero, possibly correlated error terms.[2]

The Lewbel (2012) identification requires some of the covariates to be related with the conditional variance of the first stage error (η_{ij}) but unrelated to the conditional covariance between the first stage (η_{ij}) and second stage (ε_{ij}) errors. Formally, if there exists $z \subseteq X$, where $X \in \{X_j, X_{ij}\}$, such that

$$E[z'\eta^2] \neq 0 \tag{3}$$

$$E[z'\varepsilon\eta] = 0, \tag{4}$$

then $\widetilde{z} \equiv (z - \overline{z})\eta$ are valid instruments.

To provide some intuition in the current context, consider the following factor loading error structure:

$$\varepsilon_{ij} \equiv \sigma_\varepsilon(z)\lambda_{ij} \tag{5}$$

$$\eta_{ij} \equiv \sigma_\eta(z)\lambda_{ij}. \tag{6}$$

If λ_{ij} is a common homoskedastic factor, independent of z, with mean zero and unit variance and $\sigma_\varepsilon(z)$ and $\sigma_\eta(z)$ are standard deviations of ε and η, respectively, each depending on z but independent of λ_{ij}, then conditions (3) and (4) will be satisfied.[3]

As an example, consider Indonesia's extensive decentralization in late 1990s. Upon decentralization, it became apparent that there was an insufficient pool of capable local agents to organize and administer (International Crisis Group, 2012). Thus, decentralization resulted in a reduction in the quality of government officials. In the above error structures, λ_{ij} may represent the (unobserved) administrative ability of public officials at the subnational level. The impact of administrative ability on decentralization, operating through η_{ij}, is enhanced or diminished by specific country-level and/or firm-level attributes captured by $\sigma_\eta(z)$. For instance, countries long open to democracy are likely to experience higher bargaining power among local agents. High ability local agents in these areas are expected to influence the central level more, leading to more localization of power. Rich countries with higher GDP per capita tend to have better infrastructure and resources to allow public administration to run more smoothly at all levels. Areas having relatively more high skilled officials are expected to use these resources more efficiently. Hence, variation in decentralization can be observed across different regions depending on the economic status of the country. Firms with government ownership in its financial stake have higher political connections and influences than private firms. Subnational level officials may be forced to conform

---

[1] Note that the 'true' model is given by: $C_{ij} = \alpha + \beta D_{ij}^* + X_j\theta_1 + X_{ij}\theta_2 + \widetilde{\varepsilon}_{ij}$ where $D_j = D_{ij}^* + \mu_{ij}$ and $\varepsilon_{ij} = \widetilde{\varepsilon}_{ij} - \beta\mu_{ij}$. D_{ij}^* captures the unobserved formal and informal decentralization experienced by firm i in country j, and μ_{ij} is measurement error.

[2] Note, the dependent variable in (2) is at the country level, but as is traditional in two-stage models, the first-stage regressions control for all exogenous variables from the second-stage and is, thus, estimated using the full sample and controlling for X_{ij}.

[3] Actually, (5) is stronger than is necessary. Even if ε_{ij} is homoskedastic, (3) and (4) will still be satisfied.