



# Does fiscal decentralization promote the inflow of FDI in China? <sup>☆</sup>

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## ABSTRACT

This paper tests whether China's fiscal decentralization promotes the inflow of foreign direct investment (FDI). Using provincial panel data during 1995–2002, we find that fiscal decentralization has a positive and significant effect on inward FDI, after controlling for other factors, and fixed time and province effects in both LSDV (Least squares dummy variables) regression and system GMM (Generalized method of moments) estimations that address the endogeneity of fiscal decentralization. The results are robust to six measures of fiscal decentralization that consider budgetary amount, extra-budgetary funds and inter-governmental transfers. A simple theory is offered to explain the findings. The results during 1987–1994 are further contrasted. Policy implications are also presented.

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## 1. Introduction

There is a long strand of literature on the effect of federalism on economic performance (see Madiès and Dethier, 2010, for a review).<sup>1</sup> The theories (Tiebout, 1956; Buchanan, 1965; Oates, 1972) focus on the discipline imposed and the initiative generated by decentralization on local governments. Montinola et al. (1995) argue that China's economic success can be partly explained by the Chinese style market-preserving federalism. Qian and Roland's (1998) seminal study proves that fiscal decentralization impacts China's economic performance by hardening the budget constraint of local governments.<sup>2</sup> Unfortunately, in empirics, some researchers (Davoodi and Zou, 1998; Xie et al., 1999; Zhang and Zou, 1998) find that fiscal decentralization hurts economic growth, while others (Lin and Liu, 2000) find that fiscal decentralization promotes growth. In this paper we focus on whether fiscal decentralization promotes the inflow of foreign direct investment (FDI) in China, which is also important for the following reasons.

First of all, technology diffusion has been argued to play an essential role in the process of economic development (Nelson and Phelps, 1966;

Barro and Sala-i-Martin, 2004, ch. 8; Acemoglu, 2009, ch. 18). Especially for a small open economy, its technological progress crucially depends on its absorption of world frontier technologies (Barro and Sala-i-Martin, 2004; Acemoglu, 2009, ch. 18). FDI has been highlighted as the main channel for technology diffusion (see Findlay, 1978; Markusen and Venables, 1999; Keller and Yeaple, 2003).<sup>3</sup> Therefore, an examination of whether fiscal decentralization promotes the inflow of FDI would contribute to our understanding of the federalism-growth nexus.

Second, the inward FDI in China has increased dramatically over the past several decades. For example, the share of world FDI inflow to East Asia increases from 2% in 1979 to 17% in 1994, which is mainly due to the increasing volumes of FDI to China (UNCTAD, 2008). One important aspect of China's market-oriented reform is the initiation of fiscal decentralization in 1980 (elaborated in Section 1.1). Therefore, it is intriguing to examine whether fiscal decentralization has caused the tidal surge of FDI in China.

Besides the above motivations, our empirical analysis improves over previous related empirical literature. First, our cross-province analysis within China is more appealing than cross-country studies (e.g., Madhu, 2009, uses cross country data to show that federalism does not help non-democratic countries to attract more FDI). Firstly, the underlying unobserved fundamental differences across provinces are much smaller comparing to those across countries. Therefore, the bias from omitting

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<sup>1</sup> Due to their excellent discussion of it, we shall omit detailed reference to the large literature.

<sup>2</sup> Please see Cai and Treisman (2005) for another seminal approach on federalism.

<sup>3</sup> Keller and Yeaple's (2003) U.S. evidence shows that FDI raises the productivity of domestic firms more than imports do. In our paper, FDI refers to the inflow of FDI (or inward FDI).

the unobserved cross-section characteristics would be less severe. Moreover, our panel data allows us to control for unobserved province characteristics. Secondly, unlike the dichotomous description of federalism in Madhu's study, we quantify the degree of market-preserving federalism by the degree of fiscal decentralization. Due to the gradual approach to reform, the degree of fiscal decentralization has substantial variations across provinces and time. Our analysis exploits the substantive variations.

Second, by highlighting the role of fiscal decentralization in attracting FDI, our study complements the previous large literature on the determinants of FDI (e.g., Cheng and Kwan, 2000; Blomström and Kokko, 2003; Fedderke and Romm, 2006; Ang, 2008; He and Sun, 2013). As technology diffusion plays an essential role in the process of economic development, our study enriches our understanding of the role of FDI in promoting economic growth (e.g., Herzer et al., 2008; Azman-Saini et al., 2010; He et al., 2013).

Third, our study improves over the previous studies on the effect of fiscal decentralization on inward FDI in China (e.g., Cheng and Kwan, 2000; He, 2006).<sup>4</sup> Our analysis is close to He's study. However, we improve over He's study in two aspects. First, we deal with the potential endogeneity of fiscal decentralization that arises because of, for instance, reverse causality (detailed in Section 4.2). We use system GMM (Generalized method of moments) estimation that only needs "internal" instruments – explained later – to deal with the endogeneity of all the explanatory variables including fiscal decentralization (see Arellano and Bover, 1995; Blundell and Bond, 1998; Roodman, 2006), establishing a causal relationship between fiscal decentralization and the inflow of FDI. Second, we have checked whether our results are robust to six measures of fiscal decentralization that consider budgetary amount, extra-budgetary funds and inter-governmental transfers, which may be important as elaborated in Section 1.1.

The previous theories have proposed many possible mechanisms for fiscal decentralization to impact the inflow of FDI.<sup>5</sup> We offer a simple theory to motivate our empirical analysis. A higher degree of fiscal decentralization means that the provincial governments can keep a higher share of the revenue from taxing FDI. We assume that the government is neither benevolent (Zodrow and Mieszkowski, 1986; Wilson, 1999) nor a Leviathan (Brennan and Buchanan, 1980). Instead the provincial government maximizes a weighted average of the growth rate of the economy and its own consumption. The provincial government spends its budget either on its own consumption or on public infrastructure that would attract more FDI as in Qian and Roland (1998). More FDI raises the growth rate (the marginal benefit of infrastructure). All else equal, a unit value of local public infrastructure expenditure in terms of forgone provincial government consumption (the marginal cost of infrastructure) is lower with a higher degree of fiscal decentralization, due to the relaxation of the budget constraint for the provincial government. That is, fiscal decentralization would decrease the marginal cost of local public infrastructure. The marginal cost of local public infrastructure is upward sloping and its marginal benefit is downward sloping. Therefore, a downward-shifted marginal cost curve yields a higher level of local public infrastructure expenditure.<sup>6</sup> This in turn would attract more FDI.<sup>7</sup>

We use the panel data for 27 Chinese provinces for the period 1995–2002 (see Section 3.2 for details on the choice of the sample period).

<sup>4</sup> Please see He (2006) for detailed reference to the relevant literature.

<sup>5</sup> See Madhu (2009) for a review. Examples of the mechanisms include tax competition and soft budget constraint (see Madiès and Dethier, 2010).

<sup>6</sup> Zhang and Chen (2007) show that China's fiscal decentralization increases local public infrastructure. Similar results are found in cross-country studies like Estache and Sinha (1995).

<sup>7</sup> Our theory mimics that of Qian and Roland (1998). Under fiscal decentralization, the fiscal competition effect would harden the budget constraint of the local government and increase infrastructure investment, which thereby attracts more foreign capital. This is because more foreign capital not only increases employment rents but also raises tax revenues. These benefits would make the local governments spend more of their budget on infrastructure, ending up with a virtuous cycle.

Following the previous literature, we measure FDI as the ratio of the nominal value of FDI to nominal GDP (gross domestic product). We use six measures of fiscal decentralization, some of which consider inter-governmental transfers and extra budgetary funds. We find that fiscal decentralization has a positive and significant effect on the inflow of FDI, after controlling for other factors, and time and province effects in both LSDV (Least squares dummy variables) and system GMM estimations. Our result suggests that China's fiscal decentralization is a significant causal factor for its large inflow of FDI.

The estimated magnitude of system GMM regression is economically significant for the fiscal decentralization indicators. For example, a 1% increase in per capita ratio of the budgetary expenditure of a provincial government to that of the central government would bring a 12% increase in the ratio of FDI to GDP during the period 1995–2002.

The results during 1987–1994 are further contrasted. Policy implications are also presented in the concluding section.

The rest of the paper proceeds as follows. After we introduce the institutional background, we describe the theoretical model in Section 2. Section 3 describes the data and the estimation strategy. Section 4 reports the regression results, and Section 5 concludes.

### 1.1. Institutional background

A comprehensive description of China's fiscal decentralization is beyond the scope of this paper (see Montinola et al., 1995; Wang, 1995, for details). Here, we give a brief summary. In 1978, China initiated the market-oriented reform and opening-up.

Concerning market-oriented reforms, provincial and local governments were gradually granted a wide range of authority (see Montinola et al. for details). One important aspect of the market-oriented reform is the initiation of fiscal decentralization in 1980. That is, China adopted a fiscal contracting system between the central and provincial governments (and between any two adjacent levels of governments). According to Montinola et al., the provincial government contracts with the central government on the total amount (or share) of tax and profit revenue (negative values mean subsidies) to be remitted for the next several years and the provincial government keeps the rest.

In 1994, a new fiscal system – the tax assignment system – was introduced to replace the fiscal contracting system (the old discretion-based system of revenue-sharing). Wang (1995) provides a summary of the new rule-based system of revenue-sharing. Firstly, in the old system, a negotiated percentage or amount of locally collected revenues would be remitted to the central government. After 1994 taxes were divided into three distinct categories: central, local, and shared. Central taxes would go into the central coffer, and local taxes into local budgets. Shared taxes were to be divided between the central and provincial governments according to some established formulas. For instance, 75% of the revenue from the value added tax (VAT) belonged to the central government and the remaining 25% to the provincial governments. After 1994 the sharing formulas were not subject to negotiation (i.e., they were fixed and applied to all the provinces). Secondly, after 1994 the government simplified the tax structure and standardized the tax rates. For example, a universal tax rate of 33% was imposed on all enterprises. Moreover, local governments were no longer allowed to grant tax breaks. Thirdly and most importantly, tax administration was centralized. Before 1994 local tax offices collected virtually all taxes. After 1994 the center established its own revenue collection agency (the national tax service). Now there were two parallel systems of tax administration: a national system to collect central taxes and a local system to collect local taxes. Shared taxes were collected by the national system first and then would be split between the central and subnational governments according to the newly established formulas.

One aspect of fiscal decentralization is the expansion of the extra-budgetary funds (Montinola et al. describe them as certain categories of revenues collected by the local governments and ministries, including some retained profits of state-owned enterprises) in both fiscal

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