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How large is the local fiscal multiplier? Evidence from Chinese counties

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A B S T R A C T

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The paper estimates local fiscal multipliers using annual data for 1800 China counties. The identification exploits a peculiar feature of the allocation mechanism of China's intergovernmental transfers that triggers exogenous variations on local public spending. When aggregate central-local transfers go up at the national level, National Poor Counties can receive a disproportionate amount of transfers. We therefore construct an instrument that captures this heterogeneity in the response of local public spending to national central-local transfers. The analysis points to local fiscal multipliers of approximately 0.6, which is much lower than the estimates in most previous studies. The effects of local public spending are concentrated on non-tradable industries. Finally, we find local public spending has striking effects on stimulating in-county investment, but has negligible effects on stimulating in-county consumption. *Journal of Comparative Economics* **44** (2) (2016) 343–352. China Financial Policy Research Center, School of Finance, Renmin University of China, China;Guanghua School of Management, Peking University, China.

1. Introduction

Since the Great Recession, the effectiveness of government spending in resuscitating the economy has been an intensely debated policy issue. In academic circles, the Great Recession has also revitalized the empirical debate on the size of fiscal multipliers. While the literature has mostly focused on aggregate effects at a national level, a growing strand of literature has turn to identifying the size of local fiscal multipliers by exploiting plausibly exogenous variation in subnational government spending. However, nearly all of this evidence comes from developed countries (Nakamura and Steinsson, 2014; Acconcia et al., 2014; Serrato and Wingender, 2014; Brückner and Tuladhar, 2014; Shoag, 2010; Clemens and Miran, 2012) and evidence on developing countries is scant. In this paper, we seek to fill this gap by using a rich dataset of county government expenditures in China during the 2001–2009 period.

China is a large developing country, and its public spending is highly decentralized. Expenditures of sub-provincial (city and county level) governments account for more than 65% of total government expenditures. The Chinese government has also

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extensively resorted to fiscal policy to stimulate the economy. As a recent example, a significant fraction of the 4 trillion RMB government stimulus package was designed to counter the adverse impacts of the Great Recession on China's export sector during 2008–2010. However, government spending in developing countries has also been blamed as reckless and highly inefficient (Ferraz and Finan, 2008; Bandiera et al., 2009), thus the fiscal policy–output nexus may vary across different countries. Thereby, knowledge of the size of fiscal multipliers in developing countries is crucial to informing policy discussions.

Our estimation strategy to identify the local fiscal multiplier exploits a peculiar feature of the allocation mechanism of China's intergovernmental transfers that triggers exogenous variations on local public spending: National Poor Counties (henceforth, NPCs) designated by the central government enjoy preferential treatments in receiving central-local earmarked transfers. Following Nakamura and Steinsson (2014) and Pennings (2014), we instrument for county government expenditures using aggregate central-local transfers interacted with a dummy for NPC status. This instrument is based on two characteristics of central-local earmarked transfers. First, the aggregate amount of central-local transfers is determined by the central government, and exogenous to the economic conditions of a specific county. During the sample period, aggregate central-local transfers has increased fast because of the fast increase of central government tax revenues; second, when aggregate transfers go up at the national level, NPCs can receive a disproportionate amount of transfers from the central government. For example, in 2007, when aggregate central-local earmarked transfers rose by 0.7 percentage point of GDP, it rose on average by 1.5 percentage points in NPCs, but only 0.5 percentage points in non-NPCs. Therefore, the instrument captures this heterogeneity in the response of local public spending to national central-local transfers.

We estimate a local fiscal multiplier of approximately 0.6; that is, an increase of 1 RMB in local public spending generates an increase of 0.6 RMB in GDP at the county level. We find that the effects of local government spending are concentrated in non-tradable industries. 1 RMB of local government spending can stimulate 0.3 RMB of the output of the service sector, but only 0.08 RMB of the output of the manufacturing sector.

We also examine the effects of local government spending on the components of GDP. From the expenditures approach of GDP accounting, GDP equals to the sum of investment, consumption and net exports. Data on consumption, imports and exports are not available at the county level, thus we rely on the proxies of consumption by retail sales. We find that 1 RMB of county government spending can increase in-county investment by 1.2 RMB but can only increase in-county consumption by 0.03 RMB. These results further suggest local public spending increases net imports from the outside.

Together with the present study, a number of recent works have also delved into the identification of local fiscal multipliers using disaggregated data. The multiplier obtained in this paper is much smaller than the estimates of most previous studies based on developed economies, which find local fiscal multipliers well above 1. For example, Nakamura and Steinsson (2014) look at state-level relative to national-level military spending in the United States, and estimate a multiplier of 1.5. Serrato and Wingender (2014) exploit US federal spending reallocations driven by unanticipated revisions to local population estimates, while Shoag (2010) exploits the idiosyncratic components in the returns on defined-benefit pension plans managed by the US states. In these two studies, multipliers are estimated up to 1.88 and 2.12. Acconcia et al. (2014) exploit cuts in public spending triggered by the dismissal of Italian province governments suspected of mafia infiltration and estimate local multipliers as high as 1.9. As a notable exception, Brückner and Tuladhar (2014) exploit geographical variation within Japanese prefectures and report multipliers of about 0.9.[1]

Although the fiscal multiplier estimated in this paper is significantly lower than most studies found in developed countries, it is comparable with the findings of Kraay (2012), who employs World Bank project-level disbursement data in a sample of 29 low-income countries and obtains a nation-level fiscal multiplier of 0.5. Ilzetzki et al. (2013) assemble quarterly data for a sample of 20 developed and 24 developing countries, implement standard VAR-based identification strategies, and also find that the response of output to increases in government consumption is larger in developed than in developing countries. The present study further suggests that the fiscal policy-output nexus may vary across different countries.

The remainder of the paper is organized as follows. Section 2 discusses the relevant Chinese institutional features that we exploit for identification and illustrates the econometric strategy. Section 3 describes the dataset. Section 4 presents the estimation results. Section 5 provides the conclusions.

2. Institutional background and econometric strategy

2.1. The empirical model

In our study, we aim to recover the short-run effects of local public spending on output at the county level in China. In line with the recent literature (see, e.g., Barro and Redlick, 2011), we estimate the spending multiplier relating the GDP growth in a county to the year-on-year change in local public spending in the same county. Our empirical model is

$$\frac{Y_{it} - Y_{it-1}}{Y_{it-1}} = \alpha 1 + \beta \frac{G_{it} - G_{it-1}}{Y_{it-1}} + Z_{it} + \lambda_i + \pi_t + \mu_{it} \tag{1}$$

[1] Clemens and Miran (2012) build on differences in the balanced-budget requirements at the US state level and estimate multipliers at 0.5. Clemens and Miran argue that their smaller estimates of multipliers are consistent with a role for the "Ricardian" effect, whereas other studies use "windfall" financing as sources of variation in subnational public spending.