Empowering Cities: Good for Growth? Evidence from the People's Republic of China

Megha Mukim and T. Juni Zhu*

This paper utilizes a countrywide process of county-to-city upgrading in the 1990s to identify whether extending the powers of urban local governments leads to better firm outcomes. The paper hypothesizes that since local leaders in newly promoted cities have an incentive to utilize their new administrative remit to maximize gross domestic product and employment, there should be improvements in economic outcomes. In fact, aggregate firm-level outcomes do not necessarily improve after county-to-city graduation. However, state-owned enterprises perform better after graduation, with increased access to credit through state-owned banks as a possible explanation. Importantly, newly promoted cities with high capacity generally produce better aggregate firm outcomes compared with newly promoted cities with low capacity. The conclusions are twofold. First, relaxing credit constraints for firms could lead to large increases in their operations and employment. Second, increasing local government's administrative remit is not enough to lead to better firm and economic outcomes; local capacity is of paramount importance.

Keywords: capacity, credit allocation, decentralization, firm-level data, People's Republic of China, urbanization
JEL codes: G21, H81, L11, R11, R51

I. Introduction

To promote urbanization in the 1980s, the Government of the People's Republic of China (PRC) began upgrading the status of counties to that of county-level cities. This practice persisted until 1997. Counties were eligible to

*Megha Mukim (corresponding author): Senior Economist and Competitive Cities Team Leader; Trade and Competitiveness and Social, Urban, Rural, and Resilience Global Practices, World Bank Group, Washington, DC, United States. E-mail: mmukim@worldbank.org; T. Juni Zhu: Private Sector Development Specialist, Trade and Competitiveness Global Practice, World Bank Group, Washington, DC, United States. E-mail: tzhu@worldbank.org.
The authors are grateful to several World Bank Group staff who contributed their time generously to this paper, providing feedback, comments, and suggestions, including Stefano Negri, Bob Rijkers, Ana Aguilera, Leo Iacavone, and Bilal Zia. Ritam Chaurey worked side-by-side with us and provided constructive and timely comments at every stage of the process. The authors received constructive feedback from seminar participants in Washington, DC and Beijing, including Bert Hofman, Paul Procee, Karlis Smits, Min Zhao, Shahid Yusuf, David Robalino, David Mason, Chandan Deuskar, and Guilherme Lichand. Xiaobo Zhang (International Food Policy Research Institute) and Lixing Li (Peking University) provided access to data and answered many of our questions. Finally, the authors would also like to thank the managing editor and two anonymous referees for helpful comments and suggestions. Funding from the Competitive Industries and Innovation Program is gratefully acknowledged. The usual disclaimer applies. The Asian Development Bank recognizes "China" as the People's Republic of China.

Asian Development Review, vol. 35, no. 1, pp. 175–195
https://doi.org/10.1162/adev_a_00110

Table 1. **County to County-Level City Minimum Upgrading Requirements**

Population Density (person/km^2)		**>400**	**100–400**	**<100**
Percentage of counties in this category		25%	45%	30%
Industrialization level	Industrial output	CNY1.5 billon	CNY1.2 billion	CNY0.8 billion
	Share of industrial output value in gross value of industrial and agricultural output	80%	70%	60%
Population engaged in nonagricultural activities	Size of nonagricultural population	150,000	120,000	100,000
	Share of nonagricultural population in total population	30%	25%	20%
Fiscal strength	Fiscal revenues	CNY60 million	CNY50 million	CNY40 million
	Per capita fiscal revenues	CNY100	CNY80	CNY60

CNY = yuan, km^2 = square kilometer.
Source: Fan, Shenggen, Lixing Li, and Xiaobo Zhang. 2012. "Challenges of Creating Cities in China: Lessons from a Short-Lived County-to-City Upgrading Policy." *Journal of Comparative Economics* 40 (3): 476–91.

Table 2. **County to County-Level City Upgrades, 1994–1997**

Number of county-year observations by upgrading status and number of requirements satisfied					
Number of requirements satisfied	**Total**	**0**	**1**	**2**	**3**
Nonupgrading cases	6,401	4,583	1,317	465	36
Upgrading cases	99	24	30	39	6

Source: Fan, Shenggen, Lixing Li, and Xiaobo Zhang. 2012. "Challenges of Creating Cities in China: Lessons from a Short-Lived County-to-City Upgrading Policy." *Journal of Comparative Economics* 40 (3): 476–91.

graduate to county-level cities if they met certain minimum requirements (Ministry of Civil Affairs 1993). An English language version of this policy document can be found in Zhang and Zhao (1998). To become cities, counties needed to show that (i) their level of industrialization was above a certain threshold; (ii) the share of the population engaged in nonagricultural activities was above a certain threshold; and (iii) their fiscal status, as measured by total fiscal revenues and per capita fiscal revenues, was sound (Table 1).

In practice, these requirements were not strictly enforced, partly because of large regional disparities across the country, wherein even after accounting for factors such as population density, counties in the western PRC and inland regions had trouble meeting these requirements. Instead, it seems that the decision to upgrade a county to a county-level city was based on rates of economic growth as well as the central government's discretion (Li 2011). This led to a situation in which counties that did not meet any of the three requirements were upgraded, while some counties that met all three requirements were not (Table 2).

Table 3. **Select Benefits of Being a City**

Category	Benefits
Taxes and fees	• Cities enjoy a higher urban construction tax than counties (7% versus 5%). • Cities can collect surcharges levied on the issuing of motorcycle registration. • In Liaoning province, cities can receive CNY1 million–CNY2 million in additional subsidies each year after upgrading.
Land-related policies	• Cities generally convert more land to construction use and retain a larger share of revenues from land sales.
Administrative powers	• Cities have more authority over foreign trade and foreign exchange management. • Cities can establish branches of customs offices and large state-owned banks. • Cities can approve projects with a higher investment cap. • Cities have authority over police recruitment and vehicle administration. • After achieving the status of *shengji jihua dalie* (line item under province), cities report directly to the provincial administration to ask for investment projects.
Government size, rank and salary, reputation	• Cities can establish more branches of government and have a larger number of government employees. • In some cases, the bureaucratic rank and salary of officials is raised after upgrading. • Cities generally carry greater prestige and are more attractive to outside investors.

Source: Fan, Shenggen, Lixing Li, and Xiaobo Zhang. 2012. "Challenges of Creating Cities in China: Lessons from a Short-Lived County-to-City Upgrading Policy." *Journal of Comparative Economics* 40 (3): 476–91.

Graduation to city status came with a number of benefits relating to four main categories: (i) taxes and fees; (ii) land-related policies; (iii) administrative powers; and (iv) local government size, rank, salary, and reputation (Table 3).

In this paper, we investigate if newly promoted county-level cities in the PRC utilize these new powers to attract additional firms and help existing firms grow. We study macrolevel city outcomes and microlevel firm outcomes. We hypothesize that since local government officials want to achieve high gross domestic product (GDP) and employment growth, they have an incentive to utilize their new administrative remit to promote firm growth. Hence, we should observe better firm-level outcomes in the newly upgraded cities versus similar counties. We exploit the ad hoc nature in which the city upgrading takes place to identify the effect of an increase in city powers on firms' economic outcomes. The paper adds to the existing literature in two ways. First, it identifies whether and to what extent firm-level outcomes improve postupgrading; importantly, it attempts to identify the channels through which these outcomes take place. Second, this paper uses two proxies to measure local government capacity and documents the extent to which local government capacity matters for firm and job growth in the PRC. The rest of the paper is organized as

follows. Section II describes the data sets and how these were prepared. Section III presents the empirical strategy used to identify the effects of city upgrading on firm outcomes. Section IV reports the econometric results for city-level outcomes and firm-level outcomes. Section V concludes.

II. Data Sets and Data Treatment

This paper utilizes two panel data sets, one at the level of counties and the other at the level of firms. We use variables for the period 1993–2004 from the annual series of the Public Finance Statistical Materials of Prefectures, Cities, and Counties published by the Ministry of Finance of the PRC to construct a county-level public finance data set. As of 1998, when the county-to-city upgrading policy came to an end, there were 99 counties that had been upgraded from county to county-level cities between 1994 and 1997.

The firm-level data set spans from 1998 to 2009 and was compiled from the Annual Survey of Industrial Firms (ASIF) collected by the National Bureau of Statistics of China. This data set is often referred to as the "CNY5-million data set" since it contains all state-owned enterprises (SOEs), regardless of sales volume, and non-SOEs with main operating revenues (sales) of more than CNY5 million. Thus, the ASIF survey data set tracks the performance of all SOEs and all large non-SOEs. The ASIF data set details all operational, financial, and managerial facts of firms in three broad categories—mining; manufacturing; and production and distribution of electricity, gas, and water—and classifies each firm to the level of 6-digit industries. This data set represents 89.5% of the total main operating revenues (sales) from all enterprises included in the PRC's 2004 Economic Census (Nie, Jiang, and Yang 2012).

The 1998–2009 ASIF data set covers a period when major structural reforms were under way in the PRC, including SOE reforms in the mid-to-late 1990s. Following the end of the county-to-city upgrading policy in 1997, the PRC carried out a major reform of SOEs between 1998 and 2000. The aim was to either privatize or close small and unprofitable SOEs (Song and Hsieh 2013). The PRC's 2004 Economic Census collected more detailed information on all firms regardless of size.[1] To mitigate some of the adverse effects of the SOE reforms, and since we are only interested in understanding the effects of county-to-city upgrading, we restrict our analysis to incumbents from 1998–2004, thereby excluding all firms entering or exiting the market during this period. We create a balanced panel of 36,778 firms located in 793 counties and 58 newly promoted county-level cities. Table 4 summarizes the breakdown of firms by ownership.

[1]For example, the breakdown of employment by education level, gender, and technical titles was collected (Brandt, Van Biesebroeck, and Zhang 2014).

Table 4. **Number of Firms by Ownership Type**

Firms	Number of Firms	Share of Total
SOE	15,413	42.1%
Non-SOEs (e.g., collective, private, mix)	21,183	57.9%
Total	36,596	100.0%

SOE = state-owned enterprise.
Source: Authors' compilation.

III. Empirical Strategy

To properly identify the effects of a change in city-level powers on economic outcomes, we need to control for selection bias. Simply put, if better-performing or better-managed counties were more likely to be upgraded to county-level cities, then a comparison of outcomes across counties and cities would be upwardly biased. Our aim is to evaluate the causal effect of city upgrading on economic outcomes.

We exploit the ad hoc nature of county-to-city upgrading to find an appropriate counterfactual. We do this by matching newly promoted cities with counties that are similar to these cities and would have been promoted if the upgrading requirements were properly applied. The counterfactual allows us to analyze how economic outcomes within a city would have evolved if it had not been upgraded to city status.

Propensity Score Matching

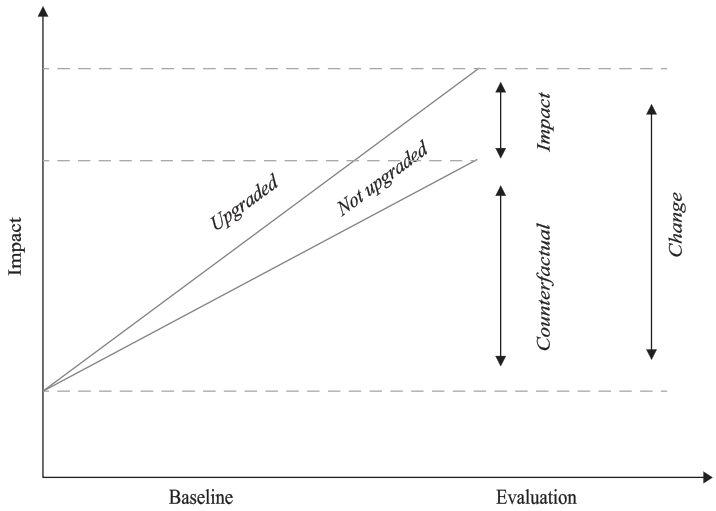
Assuming that a county is promoted to a county-level city at time $s = 0$, let ω_{is} be the economic outcome at time s (the outcome for county i at period s) following upgrading to city status at $s = 0$, while the variable $CITY_i$ takes on the value of 1 if county i becomes a city. The causal effect can be verified by looking at the difference, $(\omega_{is}^1 - \omega_{is}^0)$, where the superscript denotes the promotion. The crucial problem is that ω_{is}^0 is not observable. We follow the microeconometric evaluation literature (Heckman, Ichimura, and Todd 1997) and define the average effect of upgrading on economic outcomes as

$$E\left[\omega_{is}^1 - \omega_{is}^0 | CITY_i = 1\right] = E\left[\omega_{is}^1 | CITY_i = 1\right] - E\left[\omega_{is}^0 | CITY_i = 1\right] \quad (1)$$

The key difficulty is to identify a counterfactual for the last term in equation (1). This is the economic outcome that a city would have experienced, on average, had it not been promoted from a county to a city. What is primarily of interest is the magnitude of the impact in Figure 1, and the main problem is the calculation of the counterfactual that is to be deducted from the total change.

This counterfactual is estimated by the corresponding average value of counties that remain as counties and are not upgraded: $E[\omega_{is}^o | CITY_i = 0]$. An important feature of the construction of the counterfactual is the selection of a

Figure 1. **Identification of Impact of Upgrading to City Status**



Source: Authors' illustration.

valid comparison group. In order to identify this group, it is assumed that all the differences in economic outcomes, except those caused by upgrading, between cities and the appropriately selected county comparison group are captured by a vector of observables, including the pre-upgrade county economic outcomes. The intuition behind selecting the appropriate comparison group is to find a group that is as close as possible to the upgraded county in terms of its predicted probability to be upgraded.

Following Fan, Li, and Zhang (2012), we control for the selection bias by matching cities that were upgraded with similar counties that could have been upgraded but were not. Since the county-to-city upgrading policy came to an end in 1997, we use county-level variables from 1993 to 1997 to carry out the matching. We drop cities that were upgraded before 1994 since the public finance data only start from 1993. We carry out the matching exercise using observable county-level economic outcomes in 1994; we match cities (counties that will be promoted to county-level cities) with counties (counties that were not promoted to cities).

More formally, we apply the propensity score matching (PSM) method as proposed by Rosenbaum and Rubin (1984). This boils down to estimating a probit model with a dependent variable, equal to 1 if the county is upgraded and 0 otherwise, on lagged variables. The probability of being upgraded is modeled as follows. $CITY$ is a dummy variable that equals 1 if a county is upgraded. The probability of being promoted (the propensity score) can be represented as

$$\Pr(CITY_{i,1994} = 1) = F(x_{i,1993}) \tag{2}$$

where $F(.)$ is the normal cumulative distribution function. The x variables used in this exercise correspond to the three upgrading requirements mentioned in Table 1. Since these upgrading requirements were not strictly enforced, we used these upgrading requirements variables as a general indicator of the economic development level of a county in 1993 to predict the probability of a county being upgraded to a city in 1994.

We use the first and second moments of the three upgrading requirements as our specification to predict propensity scores. If they can pass the common support test, which is that the covariates in each stratified block are balanced, then we will use this specification to predict the effects of city upgrading by comparing outcomes between treatment (cities) and comparison (counties) groups (Rosenbaum and Rubin 1984). We find that there are no significant differences in covariates between counties and cities within each stratified block using this specification. Hence, we use this specification to estimate the city upgrading treatment effect on city-level and firm-level outcomes.

Since the public finance data set is a panel data set, we obtain one propensity score for each jurisdiction-year pair. Hence, each county or city will have multiple propensity scores. To mitigate the potential problem of counties inflating their economic figures right before the upgrading (Li 2011), we used the earliest data point possible from the public finance data set to conduct the matching exercise. Thus, a county or city's 1994 predicted propensity score is used to match a city with its similar county.

Li (2011) pointed out that the rate of economic growth is one of the key factors in determining which counties can be upgraded to cities. Therefore, in addition to variables corresponding to the three upgrading requirements, we should ideally include the growth rate of GDP as a control in predicting upgrading probability. However, GDP at the county level is only available starting in 1997 when there was a major change in statistical standards in the PRC. Before 1997, we have official statistics on gross value of industrial and agricultural output. We therefore include these variables in our PSM model as an alternative measure of economic development at the county level.[2]

The PSM method also assumes that there exists a region of common support where the treated and control propensity scores overlap and over which a robust comparison can be made. Cities that fall outside of the region of common support are disregarded and for these cities the treatment effect cannot be estimated. With matching, the proportion of such cities is small. Only two city-year observations using the specification that we described earlier fall into this case (Table 5). Since the region of common support is vastly improved and the balancing test is passed between the treatment and control groups, the estimated effect on the remaining

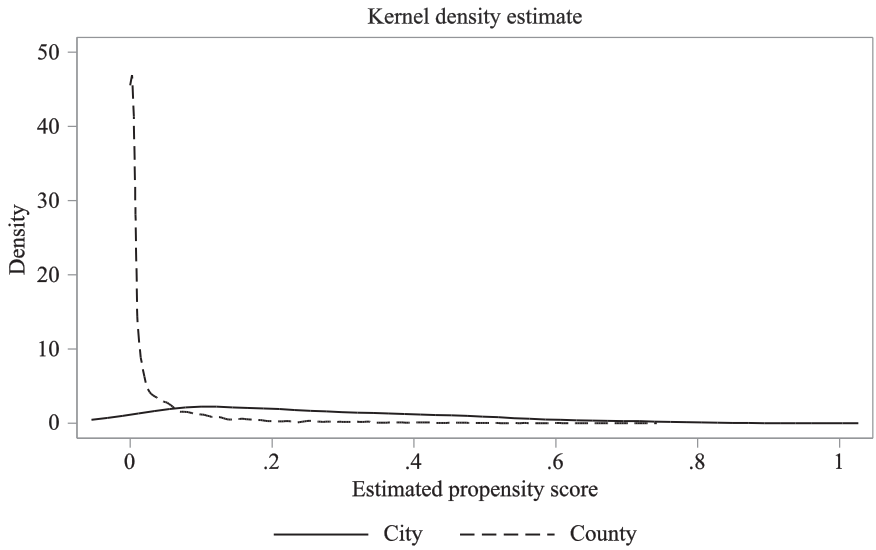
[2] Variables that can potentially have extreme values are transformed into logs to minimize distortions.

Table 5. **Matched Counties and Cities by Blocks of 1994 Propensity Scores**

Blocks of Propensity Scores	County (comparison)	City (treatment)	Total
0	2,953	1	2,954
0.003125	470	3	473
0.00625	501	4	505
0.0125	522	16	538
0.025	541	14	555
0.05	532	34	566
0.1	387	73	460
0.2	239	92	331
0.4	64	57	121
0.6	6	19	25
0.8	0	2	2
Total	6,215	315	6,530

Source: Authors' calculations.

Figure 2. **Kernel Density Distribution Comparison between Cities and Counties**



Source: Authors' calculations.

cities can be viewed as representative. Figure 2 presents a kernel density distribution comparison.

Identification of City-Level and Firm-Level Treatment Outcomes

We use the treatment and counterfactual groups to carry out two distinct exercises to identify the effect of city-level upgrading. First, we identify changes in city-level outcomes postupgrading. Fan, Li, and Zhang (2012) used a county and year fixed effects model to identify the postupgrading effect. We use a PSM

Table 6. **City-Level Outcome of City Upgrading Using Propensity Score Matching**

	PSM Model	PSM + Fixed Effects	Fan, Li, and Zhang (2012)
City-Level Govt. Activities Outcome			
Number of public employees	414.9000**	407.5000**	995***
Share of productive expenditure	−0.0058**	−0.0058**	−0.026***
Share of agriculture tax	−0.0586***	−0.0588***	−0.053***
Post-upgrade average GDP growth	−0.0007	−0.0008	-
Number of firm births	4.3710***	4.8440***	-
Log tax from business income	0.5150***	0.5170***	-
Controls	Block FE	Block FE Year FE	County FE Year FE

FE = fixed effects, GDP = gross domestic product, PSM = propensity score matching.
Notes:
1. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
2. The PSM model uses variables of the three upgrading requirements and their interactions to generate a propensity score.
Source: Authors' calculations.

model and compare our results with their findings. To identify city-level outcomes, we stratify the county-level data according to their propensity scores, compare outcomes between treatment and comparison groups within each block, and identify the average upgrading effect (Dehejia and Wahba 1999).[3]

Second, we identify changes in firm-level outcomes postupgrading. We compare the performance of firms located in cities versus the performance of firms located in matched counties. Ideally, we would have liked to use a difference-in-difference estimation in addition to the PSM; however, we are constrained by data limitations since firm-level data begin in 1998 after counties had already been upgraded. We try to minimize the selection bias problem by limiting the results to incumbents (firms that were already operating in 1997).[4] We also control for year fixed, industry fixed, and time-varying industry fixed effects in addition to the PSM method to compare the robustness of our firm-level outcomes.

IV. Econometric Results

City-Level Outcomes

Table 6 reports the city upgrading effects on city-level outcomes, especially government activities since the upgrading. Compared with the fixed-effects model of Fan, Li, and Zhang (2012), the PSM model, with or without year fixed effects,

[3] We considered weighting the samples to identify the average treatment effect. However, since there is not a consensus on which weighting method is the best in identifying the average treatment effect, we decided not to weight the samples, simply controlling for block and year fixed effects.

[4] This assumes that firms in counties and newly promoted counties were similar to one another prior to the upgrade.

Table 7. **Descriptive Statistics of Mean Aggregate Firm-Level Outcomes**

	All Firms	Firms in Cities	Firms in Counties	t-test
Firm-Level Outcome				
Log main operating revenues	9.462	9.866	9.380	0.487***
Log main operating cost	9.228	9.649	9.142	0.507***
Log main operating profit	7.330	7.624	7.270	0.355***
Log number of employees	5.153	5.300	5.123	0.177***
Log labor vocational	2.502	2.439	2.514	−0.075
Log wage per employee	8.792	8.871	8.776	0.095***
Log paid-in capital	8.349	8.425	8.334	0.091***
Log export output value	9.489	9.613	9.456	0.157***

Note: ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
Source: Authors' calculations.

yields similar results. Thus, we confirm the findings in Fan, Li, and Zhang (2012) that government spending's share in productive activities, as defined by spending in construction and providing support to agricultural production, decreases following upgrading. The share of agricultural tax in total tax also falls, which is intuitive since cities begin to shift away from agricultural production postupgrading.

In addition, newly upgraded cities do not necessarily outperform similar counties in terms of rates of GDP growth in the post-upgrade period of 1998–2004. Similar to Fan, Li, and Zhang's (2012) fixed-effects model, findings using a PSM method suggest that at the county level, upgrading does not necessarily lead to higher growth.

We also try and identify the rate of new firm entrants in newly promoted counties compared to the counterfactual counties that were not promoted. We find that there is a significant difference between the two, suggesting that new firms favor cities to counties, even if the former were only recently promoted. Correspondingly, taxes from business income in cities increased more significantly than in their similar counties.

Firm-Level Outcomes

We are also keen to understand how upgrading to city status affects firm-level outcomes. Before we employ the PSM method to identify the upgrading effects on firms, Table 7 provides a summary of descriptive statistics between firms located in county-level cities versus firms located in counties. At first glance, firms located in newly upgraded cities seem to have significantly outperformed, on average, firms located in counties.

In the following sections, we report firm-level outcomes using the PSM method. City-level outcomes suggest that firms tend to favor cities over counties. To avoid the distortion of statistical results, we first restrict our firm sample to

Table 8. **Firm-Level Outcomes of City Upgrading Using Propensity Score Matching for Incumbents**

Incumbent Firms	**(1)**	**(2)**	**(3)**
Firm-Level Outcome			
Log main operating revenues	0.1260	0.1090	0.1090
Log main operating cost	0.1270	0.1080	0.1080
Log main operating profit	0.0673	0.0275	0.0275
Log number of employees	−0.0195	−0.0859	−0.0859
Log labor vocational	−0.0780	−0.0531	−0.0531
Log wage per employee	−0.0528	−0.0409	−0.0395
Log paid-in capital	−0.1160	−0.1170	−0.1170
Log export output value	−0.1020	−0.1180	−0.1260
Controls	Block FE	Block FE Industry FE Year FE	Block FE Industry × Year FE

FE = fixed effects.
Notes:
1. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
2. The firm-level results after propensity score matching control for block fixed effects where samples are stratified and compared against each other in each block.
3. Analysis is restricted to firms opened before 1997.
4. Vocational labor data are only available in 2004.
Source: Authors' calculations.

incumbents (firms that were established before 1997) and report their firm-level outcomes after the upgrade. To better understand the full extent of firm-level outcomes, we also look at new firms' performance and examine whether locating in cities improves their performance. Since there is an inherent selection bias when studying new entrants to cities versus counties, we also study the effect of city upgrading on incumbents.

Firm-Level Outcomes (Incumbents)

By matching county-level cities with similar counties using propensity scores, Table 8 shows that, at the aggregate level, firms located in upgraded cities do not necessarily perform better than firms located in similar counties. Standard errors are clustered at the county level. Although Fan, Li, and Zhang (2012) do not use firm-level data, our estimates for aggregate firm-level outcomes are in line with their findings that upgrading from county to county-level city does not necessarily generate better city-level economic performance and public service provision. Our results suggest that newly formed cities are not using their increased powers to help Chinese firms perform better.

To ensure that the above aggregate results are not sensitive to different matching methods, Table 9 reports the aggregate firm-level outcomes using three different matching methods commonly used in the propensity score literature. We used the same propensity scores generated above to conduct the matching. We can

Table 9. **Firm-Level Outcomes Using Different Propensity Score Matching Methods**

Incumbent Firms	Kernel	Local Linear Regression	5-Nearest Neighbor
Firm-Level Outcome			
Log main operating revenues	0.116***	0.340	0.457***
Log main operating cost	0.125***	0.378	0.552***
Log main operating profit	0.052	0.162	0.077
Log number of employees	−0.027	−0.096	−0.308***
Log labor vocational	−0.108	−0.114	−0.206
Log wage per employee	−0.064***	0.085	0.206***
Log paid-in capital	−0.158***	−0.214	−0.452***
Log export output value	−0.062	0.206	0.359

Notes:
1. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
2. Average treatment on treated effects are reported; that is, upgraded cities and their counterfactual counties are compared to obtain the upgrading effects.
Source: Authors' calculations.

see that compared with Table 8, similar conclusions can be reached. Upgrading counties into county-level cities alone has very limited effect on aggregate firm-level outcomes in terms of firm profits, exports, and employment.

Are There Winners and Losers?

Next, we try and disaggregate this result using data on firm ownership. In Table 10, firms are classified as either an SOE or other, which includes collectives, private firms, and firms with mixed ownership. We are interested in understanding if SOEs outperform their non-SOE counterparts after upgrading to city status. We find that although the aggregate results across all firms suggest that cities are not using their powers to help firms, it turns out that SOEs in newly upgraded cities do significantly better than non-SOEs when compared to those in matched counties. SOEs sell more and employ more (skilled) labor, although they are no more profitable.

Why Do SOEs Outperform Their Private Counterparts?

In this subsection, we try to solve the puzzle of why SOEs gain disproportionately from city upgrading compared with other types of firms. Going back to Table 3, one of the main benefits of city upgrading is that a city can establish branches of state-owned banks. According to Wei and Wang (1997), bank loans made from state-owned banks clearly favor SOEs. In the 1990s, many state-owned banks imposed softer budget constraints on SOEs than in the 1980s, such that bank finance and firm productivity were no longer linked (Cull and Xu 2000). In other

Table 10. **Firm-Level Outcomes of City Upgrading by Ownership Type Using Propensity Score Matching for Incumbents**

Incumbent Firms	Log Main Operating Revenues	Log Main Operating Cost	Log Main Operating Profit	Log Number of Employees	Log Labor Vocational	Log Wage per Employee	Log Export
City	−0.0828	−0.0827	−0.118	−0.268***	−0.241**	−0.0776	−0.160
	(0.106)	(0.106)	(0.125)	(0.0812)	(0.0978)	(0.0519)	(0.233)
SOE	−0.911***	−0.908***	−0.573***	−0.0435	−0.00604	−0.293***	−0.630***
	(0.0720)	(0.0730)	(0.0740)	(0.0559)	(0.0713)	(0.0326)	(0.157)
City × SOE	**0.305****	**0.304****	**0.249**	**0.390*****	**0.404*****	**0.0584**	**0.332**
	(0.150)	(0.151)	(0.163)	(0.102)	(0.143)	(0.0552)	(0.368)
Constant	11.10***	10.64***	9.303***	6.038***	2.724***	8.623***	9.259***
	(0.600)	(0.576)	(0.690)	(0.256)	(0.149)	(0.563)	(0.469)
Observations	32,517	32,428	21,283	18,193	3,892	17,496	4,759
R^2	0.296	0.304	0.186	0.203	0.169	0.197	0.152
Block FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

FE = fixed effects, SOE = state-owned enterprise.
Notes:
1. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
2. Standard errors are in parentheses and clustered at the county level.
3. Analysis is restricted to firms opened before 1997.
4. Vocational labor data are only available in 2004.
Sources: Authors' calculations.

words, the literature provides evidence of favorable lending from state-owned banks to SOEs.

We go back to firm-level data and examine whether SOEs receive more credit from state-owned banks than other firms. Ideally, we would like to identify the source of the increase in credit to SOEs; however, the data do not provide a breakdown of the sources of debt financing. Instead, we use current debt and total debt as proxies to measure credit from state-owned banks and assume that most of the debt financing in counties and county-level cities comes from state-owned banks. This assumption is not without foundation. The fact that the establishment of state-owned banks is one of the major benefits associated with city upgrading indicates that commercial banks and other credit channels are very limited at the county level in the PRC.

In Table 11, the first two columns show that compared with non-SOEs, SOEs located in cities saw a big increase in both current debt and total debt following an upgrade. This suggests that part of the SOE performance differential observed in Table 10 could be explained by improved postupgrading access to credit among SOEs when compared to non-SOEs.

As a robustness check of this possible channel, we compare the debt profile of negative-profit SOEs in cities versus counties. Our hypothesis is that if underperforming SOEs can access credit more easily than underperforming

Table 11. **Debt Financing of Incumbent State-Owned Enterprises**

	Full Sample		Negative Profit SOEs Only	
Incumbent Firms	**Log Current Debt**	**Log Total Debt**	**Log Current Debt**	**Log Total Debt**
City	−0.273*	−0.207	0.442	0.421
	(0.147)	(0.142)	(0.276)	(0.280)
SOE	0.261***	0.248***		
	(0.0819)	(0.0801)		
City × SOE	**0.356****	**0.341***		
	(0.172)	(0.174)		
Constant	10.49***	10.77***	9.706***	10.10***
	(0.529)	(0.513)	(0.255)	(0.277)
Observations	32,240	32,732	1,494	1,515
R^2	0.201	0.188	0.388	0.350
Block FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes

FE = fixed effects, SOE = state-owned enterprise.
Notes:
1. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
2. Standard errors are in parentheses and clustered at the county level.
3. Analysis is restricted to firms opened before 1997.
Source: Authors' calculations.

non-SOEs, then the debt is probably being financed by state-owned banks that have branches in cities since commercial banks or other lending agents would not lend to these underperforming firms. The last two columns of Table 11 report this result. Although the coefficient is positive for cities, it is not significant even if its p-value is not far from 0.1.

There is a vast literature showing how firms in developing countries are more likely to report limited access to finance as a major obstacle to their growth, especially for small firms (Bloom et al. 2010). Results from randomized control trials giving credit to small and medium-sized enterprises in Sri Lanka (de Mel, McKenzie, and Woodruff 2008) and India (Banerjee and Duflo 2014) illustrate that access to credit is indeed a big problem for disadvantaged firms in developing countries.

There is also cross-country evidence showing that if banks are concentrated, with a relatively large share being government-owned banks, then financing obstacles will increase and the likelihood of smaller firms being able to access credit will decrease (Beck, Demirgüç-Kunt, and Maksimovic 2004). With the new micro firm-level data from the PRC, it seems the argument is even stronger that, compared with SOEs, even large non-SOEs are disadvantaged in accessing credit at the county level.

Does Capacity Matter?

Even though the city-level outcomes do not show that cities with an enlarged scope of power outperform their similar counties, we are worried that the reason we

observe this result is because city governments do not have the capacity to carry out these new powers and not because the new powers themselves are not useful. In urban governance literature, the powers of a city government for managing economic development depend on factors not only of operational scope, but capacity as well (Davey 1993). Therefore, we want to test whether newly promoted cities with expanded capacity help firms perform better. Regional disparities in human capital are vast in the PRC and we include province fixed effects to partly offset this regional difference when evaluating firm-level outcomes, in addition to the time and industry fixed effects we have controlled for.

Since there is not a unified measure of city capacity, we propose using two proxies to measure capacity to conduct this analysis due to data limitation and availability. We propose using the percentage of public employees supported by public finance out of the total city population as a measure of city capacity. Adequate and institutionalized human capital is often cited as one of the key factors in determining city capacity (World Bank 2009). A recent paper by Acemoglu, García-Jimeno, and Robinson (2014) also used a similar measure of capacity: the number of municipality-level bureaucrats excluding police officers, judges, all other judicial employees, and public hospital employees.

Alternatively, we propose using total tax revenues, excluding land sales revenues, as a share of total city GDP as a proxy of city capacity.[5] Fukuyama (2013) proposed using tax revenues as a share of GDP as a proxy for state capacity since the ability to extract tax not only indicates a government's capability, but also means the government has revenues to carry out public functions; hence, tax extraction can be a good proxy for capacity.[6]

From previous results, we have shown that at the aggregate firm level, simply being located in a newly promoted city does not help firms perform better. However, Table 12, which takes into account capacity as measured by more institutionalized human capital available to public services, shows that firms located in newly promoted cities with strengthened capacity perform better in terms of sales, profits, and employee wages.

Table 10 showed that SOEs located in newly promoted cities outperform non-SOEs. However, once we account for city capacity, this result no longer holds (Table 13). This might suggest that cities with more power but less capacity are more likely to exploit their extra power to favor certain types of firms such as SOEs.

We rerun the above exercise using another proxy for city capacity: total tax collection as a proportion of city GDP. We find similar results in that only cities

[5] The two proxies of city capacity are by no means perfect. In an ideal world, the proper understanding and measurement of capacity would require a combination of quantitative proxies supplemented by qualitative data.

[6] We are interested in whether city upgrading itself leads to a jump in capacity postupgrading. Plotting the two proxies during the period 1996–2004 shows us that city capacity does not change much after an upgrade. Therefore, we are essentially comparing cities with different initial capacity levels here and reporting how capacity matters.

Table 12. **Firm-Level Outcomes of City Upgrading and City Capacity for Incumbents**

Incumbent Firms	Log Main Operating Revenues	Log Main Operating Cost	Log Main Operating Profit	Log Number of Employees	Log Labor Vocational	Log Wage per Employee	Log Export
City	−1.210**	−1.216**	−1.311**	−0.580	−0.252	−0.452*	−0.348
	(0.504)	(0.501)	(0.537)	(0.390)	(0.357)	(0.262)	(0.925)
Capacity	−21.560***	−22.010***	−17.690***	−14.790***	−15.430***	−0.127	−7.195
	(4.616)	(4.775)	(4.695)	(3.426)	(4.028)	(1.640)	(12.580)
City × Capacity	**46.610****	**46.650****	**49.130****	**18.570**	**8.353**	**17.370***	**8.777**
	(20.330)	(20.120)	(21.800)	(15.020)	(13.860)	(10.380)	(37.080)
Constant	11.850***	11.430***	10.120***	6.673***	3.117***	8.353***	9.227***
	(0.672)	(0.658)	(0.752)	(0.385)	(0.219)	(0.509)	(0.990)
Observations	32,517	32,428	21,283	18,193	3,892	17,496	4,759
R^2	0.330	0.336	0.228	0.245	0.221	0.251	0.179
Block FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

FE = fixed effects.
Notes:
1. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
2. Standard errors are in parentheses and clustered at the county level.
3. Analysis is restricted to firms opened before 1997.
4. Vocational labor data are only available in 2004.
Source: Authors' calculations.

with both the scope and capacity to carry out their additional remit are able to help firms grow and increase employee wages (Table 14).

Similarly, SOEs are less likely to outperform private firms in cities with relatively more capacity when an alternative measure of city capacity is used.

Tax collection represents only a subset of total revenues that are available to a local government in the PRC. Land sales and transfers from the central government are also major sources of revenues. As a robustness test, we use total government spending as a proportion of city GDP as a proxy to measure the extent to which public services are being delivered using public funding. We obtain similar results: firms in high-capacity cities tend to create more jobs, especially skilled labor jobs, and SOEs are less likely to outperform private firms in these cities (Table 15).

Firm-Level Outcomes (New Entrants)

We have shown that for incumbent firms, city status does not necessarily lead to better aggregate firm-level outcomes, unless this newfound status is accompanied by commensurate capacity. Now, we study new firms that are established in newly upgraded cities. Counties tend to attract more firms after they upgrade to cities. We examine whether these new firms also outperform new firms located in similar

Table 13. **Reexamining Incumbent SOE Outcomes while Accounting for City Capacity**

Incumbent Firms	Log Main Operating Revenues	Log Main Operating Cost	Log Main Operating Profit	Log Number of Employees	Log Labor Vocational	Log Wage per Employee	Log Export
City	−0.704	−0.685	−0.848	−0.255	−0.208	−0.209	0.0498
	(0.760)	(0.767)	(0.906)	(0.443)	(0.444)	(0.294)	(1.045)
Capacity	−4.061	−5.576	4.035	8.095	−2.814	0.945	−5.989
	(6.818)	(7.159)	(8.218)	(5.278)	(6.852)	(3.019)	(13.560)
SOE	−0.176	−0.206	0.263	0.721***	0.425**	−0.201**	−0.772
	(0.218)	(0.226)	(0.242)	(0.172)	(0.213)	(0.0874)	(0.565)
City × Capacity	23.630	22.640	29.110	−0.644	−0.324	8.319	−7.217
	(31.100)	(31.280)	(36.520)	(16.480)	(17.690)	(11.620)	(42.600)
Capacity × SOE	−19.840***	−18.570**	−25.010***	−26.820***	−15.12**	−1.173	10.270
	(7.134)	(7.401)	(8.443)	(5.719)	(6.890)	(2.958)	(20.070)
City × SOE	−0.649	−0.721	−0.521	−0.138	0.173	−0.508	−1.901
	(1.010)	(0.996)	(1.232)	(0.640)	(0.783)	(0.334)	(2.101)
City × Capacity × SOE	**30.700**	**33.600**	**22.800**	**17.640**	**6.978**	**18.520**	**80.490**
	(39.360)	(38.630)	(47.660)	(24.260)	(30.54)	(12.77)	(80.460)
Constant	12.090***	11.700***	9.979***	6.097***	2.671***	8.573***	9.736***
	(0.676)	(0.667)	(0.760)	(0.442)	(0.265)	(0.520)	(0.873)
Observations	32,517	32,428	21,283	18,193	3,892	17,496	4,759
R^2	0.351	0.356	0.236	0.252	0.225	0.264	0.190
Block FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

FE = fixed effects, SOE = state-owned enterprise.

Notes:

1. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
2. Standard errors are in parentheses and clustered at county level.
3. Analysis is restricted to firms opened before 1997.
4. Vocational labor data are only available in 2004.

Source: Authors' calculations.

counties. Admittedly, this exercise is fraught with selection bias. However, we remain interested in knowing if new firms in cities outperform new firms in similar counties, especially since this finding has policy implications. Cities care about better economic outcomes, which could be generated by a better performance by incumbents or by better-performing entrants.

New firms in cities tend to operate on a larger scale than new firms in counties in terms of operating revenues (sales) and operating costs (Table 16). However, they are not necessarily more profitable nor do they generate more or better-paying jobs. Thus, city status does not necessarily attract better, more competitive firms to locate in the city postupgrading. We also tried to break down new firms located in high-capacity cities versus low-capacity cities and see whether there is a difference. Unfortunately, we do not have enough data on entrants to carry out a robustness test.

Table 14. **Firm-Level Outcomes of City Upgrading and City Capacity for Incumbents Using an Alternative Measure of Capacity**

Incumbent Firms	Log Main Operating Revenues	Log Main Operating Cost	Log Main Operating Profit	Log Number of Employees	Log Labor Vocational	Log Wage per Employee	Log Export
City	−0.606**	−0.560*	−0.642***	−0.457**	−0.496	−0.340***	−0.734
	(0.301)	(0.306)	(0.234)	(0.228)	(0.302)	(0.114)	(0.530)
Capacity	−0.00236	−0.00171	0.00730	0.00318	−0.00427	0.000172	−0.0136
	(0.00674)	(0.00672)	(0.00841)	(0.00387)	(0.00519)	(0.00173)	(0.00899)
City × Capacity	**16.22***	**14.70**	**16.29****	**9.629**	**12.46**	**9.621*****	**16.91**
	(8.977)	(9.032)	(7.336)	(6.678)	(8.363)	(3.185)	(16.13)
Constant	11.07***	10.64***	9.474***	6.081***	2.779***	8.356***	8.822***
	(0.682)	(0.658)	(0.776)	(0.201)	(0.190)	(0.504)	(0.917)
Observations	32,517	32,428	21,283	18,193	3,892	17,496	4,759
R^2	0.325	0.330	0.225	0.240	0.218	0.252	0.180
Block FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

FE = fixed effects.

Notes:

1. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
2. Standard errors are in parentheses and clustered at county level.
3. Analysis is restricted to firms opened before 1997.
4. Vocational labor data are only available in 2004.

Source: Authors' calculations.

V. Conclusion

This paper utilizes a countrywide county-to-city upgrade in the 1990s in the PRC to explore whether expanding a city's power leads to better firm performance. When counties are upgraded to cities, their remit expands and they gain additional administrative and fiscal powers. A postupgrading increase in power should provide these former counties with the ability to provide greater support to or, at a minimum, a better business environment for, firms, thereby helping to ensure more growth and employment.

Unfortunately, in this paper we find that this is not always the case. Increasing the policy space controlled by a city does not necessarily translate into better city and firm performance. This does not suggest that cities could not utilize their new powers effectively; indeed, we find evidence that certain types of firms, SOEs, begin to outperform their non-SOE counterparts as soon as their credit constraints are relaxed. Newly established state-owned banks within cities might help explain better access to credit for SOEs, leading to higher levels of employment and increased sales among SOEs. This suggests that if access to finance were a market-based decision, then the gains from the city-upgrading policy could be expanded to all firms rather than just SOEs.

Table 15. **Incumbent State-Owned Enterprise Outcomes of City Upgrading (with an alternative measure of capacity)**

Incumbent Firms	Log Main Operating Revenues	Log Main Operating Cost	Log Main Operating Profit	Log Number of Employees	Log Labor Vocational	Log Wage per Employee	Log Export
City	−0.298	−0.251	−0.302	−0.512**	−0.418	−0.338**	−0.515
	(0.340)	(0.339)	(0.412)	(0.236)	(0.284)	(0.147)	(0.687)
Capacity	0.00895**	0.00875*	0.0241***	0.00706***	0.00505	0.00402	−0.0114
	(0.00401)	(0.00446)	(0.00579)	(0.00252)	(0.00508)	(0.00701)	(0.00845)
SOE	−0.708***	−0.706***	−0.394***	0.00481	0.0168	−0.230***	−0.501***
	(0.0689)	(0.0709)	(0.0699)	(0.0535)	(0.0709)	(0.0261)	(0.156)
City × Capacity	4.205	2.606	4.621	6.125	4.677	10.16**	10.44
	(11.15)	(11.06)	(13.31)	(6.679)	(8.124)	(4.378)	(21.20)
Capacity × SOE	−0.0148***	−0.0137***	−0.0215***	−0.00400	−0.0105	−0.00508	−0.0159***
	(0.00379)	(0.00343)	(0.00309)	(0.00243)	(0.0107)	(0.00826)	(0.00380)
City × SOE	−0.340	−0.339	−0.448	0.222	−0.0435	0.00244	−0.0611
	(0.410)	(0.403)	(0.555)	(0.317)	(0.413)	(0.174)	(1.158)
City × Capacity × SOE	**16.10**	**16.16**	**16.56**	**4.236**	**13.08**	**−1.310**	**5.910**
	(12.48)	(12.15)	(16.50)	(9.334)	(12.06)	(4.969)	(31.68)
Constant	11.74***	11.30***	9.851***	6.061***	2.650***	8.602***	9.209***
	(0.666)	(0.643)	(0.766)	(0.206)	(0.195)	(0.513)	(0.944)
Observations	32,517	32,428	21,283	18,193	3,892	17,496	4,759
R^2	0.346	0.350	0.231	0.243	0.221	0.264	0.189
Block FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

FE = fixed effects.

Notes:

1. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
2. Standard errors are in parentheses and clustered at county level.
3. Analysis is restricted to firms opened before 1997.
4. Vocational labor data are only available in 2004.

Source: Authors' calculations.

We also examine the effects of an increased "city wedge" and take into account not just increased powers, but also city capacity.[7] Governance literature shows that in order for a government to manage its economic development goals, both its operational scope and capacity matter. Therefore, granting additional powers to newly promoted cities does not necessarily translate into better economic performance unless these cities also have the capacity to utilize the additional remit and benefits. We measure city capacity by local government's human capital level as well as tax extraction ability. We find that incumbent firms located in newly promoted cities with high capacity tend to outperform firms in similar counties. Interestingly, SOEs in cities with high capacity do not necessarily outperform

[7]The "city wedge" refers to the range of policies that city leaders can hope to influence, including those that are predetermined by higher levels of government. City leaders and governments can manage growth effectively only if they have the functional mandate, revenue base, and capabilities to target local economic development.

Table 16. **Firm-Level Outcomes of City Upgrading Using Propensity Score Matching for New Firms**

New Firms	(1)	(2)	(3)
Firm-Level Outcome			
Log main operating revenue	0.297	0.344*	0.344*
Log main operating cost	0.378*	0.423**	0.427**
Log main operating profit	0.0845	0.294	0.322
Log number of employees	0.113	0.154	0.140
Log wage per employee	−0.0004	−0.0564	−0.0572
Log paid-in capital	−0.111	−0.0189	−0.0180
Controls	Block FE	Block FE Industry FE Year FE	Block FE Industry × Year FE

FE = fixed effects.
Notes:
1. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.
2. There are not enough observations for new firms' vocational labor data and export value data. To avoid using an underrepresentative sample and generalizing results from comparing between new firms located in only a few cities and counties, we do not report the results of these two firm-level outcomes.
3. Analysis is restricted to new firms opened after 1997, which is after the upgrading was finished.
Source: Authors' calculations.

non-SOEs, indicating that low-capacity cities are more likely to abuse their additional remit to favor certain groups of firms.

The World Bank Group and other development institutions are increasingly dealing with subnational governments to improve economic outcomes. In addition, many developing countries have devolved powers to subnational regions. However, there is a lack of evidence about how changing the powers available to local government policy makers relates to economic outcomes. This paper attempts to address this gap and provide some rigorous evidence in support of administrative decentralization accompanied by commensurate increases in capacity.

Governments are making employment their main priority, and job creation, both in modern sectors and in the informal sector, is overwhelmingly urban. This paper adds to the empirical evidence linking the ability of city governments to implement proactive policies to actual economic outcomes. It sheds light on how and under what conditions city leaders can utilize the policy instruments at their disposal to actively target firm growth and job creation in cities. The lessons learned in the PRC point overwhelmingly to the importance of local government capacity. To be an effective strategy for economic development, decentralization should be accompanied by large and commensurate increases in capacity.

References

Acemoglu, Daron, Camilo García-Jimeno, and James A. Robinson. 2014. "State Capacity and Economic Development: A Network Approach." NBER Working Paper No. 19813.

Banerjee, Abhijit V., and Esther Duflo. 2014. "Do Firms Want to Borrow More? Testing Credit Constraints Using a Directed Lending Program." *Review of Economic Studies* 81 (2): 572–607.

Beck, Thorsten, Asli Demirgüç-Kunt, and Vojislav Maksimovic. 2004. "Bank Competition and Access to Finance: International Evidence." *Journal of Money, Credit, and Banking* 36 (3): 627–48.

Bloom, Nicholas, Aprajit Mahajan, David McKenzie, and John Roberts. 2010. "Why Do Firms in Developing Countries Have Low Productivity?" *American Economic Review* 100 (2): 619–23.

Brandt, Loren, Johannes Van Biesebroeck, and Yifan Zhang. 2014. "Challenges of Working with the Chinese NBS Firm-Level Data." *China Economic Review* 30 (C): 339–52.

Cull, Robert, and Lixin Colin Xu. 2000. "Bureaucrats, State Banks, and the Efficiency of Credit Allocation: The Experience of Chinese State-Owned Enterprises." *Journal of Comparative Economics* 28 (1): 1–31.

Davey, Kenneth J. 1993. "Elements of Urban Management." World Bank Urban Management Programme Discussion Paper 11.

de Mel, Suresh, David McKenzie, and Christopher Woodruff. 2008. "Returns to Capital in Microenterprises: Evidence from a Field Experiment." *The Quarterly Journal of Economics* 123 (4): 1329–72.

Dehejia, Rajeev H., and Sadek Wahba. 1999. "Causal Effects in Nonexperimental Studies: Reevaluating the Evaluation of Training Programs." *Journal of the American Statistical Association* 94 (448): 1053–62.

Fan, Shenggen, Lixing Li, and Xiaobo Zhang. 2012. "Challenges of Creating Cities in China: Lessons from a Short-Lived County-to-City Upgrading Policy." *Journal of Comparative Economics* 40 (3): 476–91.

Fukuyama, Francis. 2013. "What is Governance?" *Governance* 26 (3): 347–68.

Government of the People's Republic of China, Ministry of Civil Affairs. 1993. *Adjusting the Criteria for the Designation of New Cities*. Beijing.

Heckman, James J., Hidehiko Ichimura, and Petra E. Todd. 1997. "Matching as an Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Programme." *The Review of Economic Studies* 64 (4): 605–54.

Li, Lixing. 2011. "The Incentive Role of Creating 'Cities' in China." *China Economic Review* 22 (1): 172–181.

Nie, Huihua, Ting Jiang, and Rudai Yang. 2012. "Current Usage and Potential Problems of the Chinese Industrial Enterprises Database." *World Economics* 5: 142–58.

Rosenbaum, Paul R., and Donald B. Rubin. 1984. "Reducing Bias in Observational Studies Using Subclassification on the Propensity Score." *Journal of the American Statistical Association* 79 (387): 516–24.

Song, Zheng, and Chang-Tai Hsieh. 2013. "Grasp the Large, Let Go of the Small: The Transformation of the State Sector in China." Society for Economic Dynamics Meeting Papers 1330.

Wei, Shang-Jin, and Tao Wang. 1997. "The Siamese Twins: Do State-Owned Banks Favor State-Owned Enterprises in China?" *China Economic Review* 8 (1): 19–29.

World Bank. 2009. *Guidance Note Human Resource Management Actionable Governance Indicators Instrument*. Washington, DC.

Zhang, L., and Simon X. B. Zhao. 1998. "Re-Examining China's 'Urban' Concept and the Level of Urbanization." *The China Quarterly* 154: 330–81.