Capital Mobility & Taxation in Autocracies – Evidence from China *

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Abstract

Do dictatorships compete when it comes to tax rates? Building on the existing literature about capital mobility and tax competition in democracies, we investigate whether similar mechanisms apply in autocracies. Many scholars assume that using the threat of exit, firms with high levels of capital mobility have bargaining power against the state. We apply this argument to the city level in China, where local governments often have discretions and flexibility to provide firms with tax breaks. Most research on how capital mobility may influence corporate taxation has focused on democracies in OECD countries and data at the country level. This paper makes two contributions to the literature. First, we investigate whether the general argument applies to lower levels of government in authoritarian regimes. Second, we do so with firm-level data on effective tax rates. Using data from over 500,000 firms across hundreds of Chinese cities over 13 years, we directly relate firm characteristics to their effective tax payments. Contrary to expectations, we show that firms with a higher share of mobile capital pay higher tax rates and are less likely to have complete tax exemptions. Our findings draw attention to drivers of tax incentives and the type of government-business connections within authoritarian regimes, which may be fundamentally different from democracies.

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1 Introduction

How do authoritarian governments use taxation to rule their economy? What determines their strategies and levels of taxation? Studies of authoritarian regimes in political economy have flourished recently, examining how property rights protection, legislative organization, and other institutions shape government-business relations (Gandhi, 2010; Svolik, 2012; Markus, 2015; Truex, 2016; Wang, 2014). We know much less, however, about the use of taxation and the offering of tax incentives by authoritarian governments. Most research on taxation, especially on corporate taxation and tax incentives, deal with these issues in highly developed and democratic countries, in part due to data limitations. This is a critical shortcoming, given that fiscal policies are crucial for autocrats to remain in power power (Greene, 2010).

Over the last half-century, political economists have wrestled with the idea that capitalist countries have limited power to tax corporations. Given the increase in capital mobility, its effects on economic growth, citizen's welfare, and state finances have become increasingly important topics for scholarly research. As Przeworski and Wallerstein (1988) wrote in their seminal paper, since capitalist societies depend on the private investment decisions for any future growth prospects, these societies will always have incentives to pursue policies that keep capital owners from divesting, even in closed economies. Thus, the "structural dependence of the state on capital" (Przeworski and Wallerstein, 1988). Once capital is mobile and can move across jurisdictions, governments may compete for foreign capital, and the dependency ought to only increase. One would thus expect a downward pressure on tax rates to rise. This may potentially be particularly true for autocracies which face limited political competition when extracting taxes.

Previous work on the effects of capital mobility on corporate taxation has mostly focused on OECD countries and democracies. Furthermore, these findings are commonly based on data at the country level, i.e., cross-national or panel studies.[1] In this paper, we investigate whether capital mobility puts downward pressure on corporate taxes at lower administrative units in China, a non-democratic regime. We use data from over $500,000$ firms across 478 Chinese cities over 13 years. By using micro-level (firm-level) data instead of cross-national data, we can relate firm characteristics to their effective tax payments. In addition, we also calculated firm's effective tax rates, i.e., how much was paid – for both the corporate income tax and the value-added tax – which can often differ from de jure tax rates that are commonly used in research.

We show that firms with a higher share of mobile capital pay higher tax rates and are less likely to have complete tax exemptions, contrary to findings in OECD countries where firms might use the option of "exit" to bargain for lower tax rates. Our results also indicate that export-oriented firms pay less VAT than those producing for the domestic market. Our findings contribute to the general literature on tax competition and our understanding of what drives fiscal policies within authoritarian regimes. We suggest that the motivations driving tax incentives and the type of government-business relations embedded in the Chinese economy may warrant further investigation.

2 Capital Mobility and Taxation

The vast majority of past theoretical work has suggested that capital mobility ought to produce lower taxation. Standard economic theory argues that capital mobility raises efficiency, but

[1] For a notable exception, see Jensen (2013).

may lead to changes in distributive outcomes (Rodrik and van Ypersele, 2001). All else equal, governments may attempt to attract mobile capital by lowering taxes and providing investment incentives, thus leading to a "race to the bottom". Keen and Marchand (1997) show formally that competition for capital may not only lead to inefficiently low tax rates but also overvalue business-friendly spending. To put simply, firms with mobile capital can choose to "exit" in the face of higher tax rates, thus exerting pressure to lower effective tax rates (Hirschman, 1970).

Even though this theoretical expectation is well known and straightforward, however, empirical results are not quite as clear. Findings based on OECD countries show considerable variation. Earlier work suggested that capital mobility may shift taxation from capital to labor thus lowering the effective tax rates on capital and exerting distributional consequences (Garrett, 1995; Rodrik, 1997; Bretschger and Hettich, 2002). Quinn (1997), in contrast, finds that capital mobility is positively related to corporate income taxation. Jensen (2012) and many other studies likewise question the supposed effect of globalization on tax competition and find little support for a race to the bottom (Hays, 2003; Basinger and Hallerberg, 2004; Plümper, Troeger and Winner, 2009).

Whereas much of the literature on capital mobility and taxation has focused on developed countries, an emerging strain of literature has examined governments' use of tax incentives to attract foreign direct investment in developing countries. Here again, the general expectation is that mobility increases the bargaining power of firms. Hence countries are more likely to offer tax incentives to attract capital, but yet again empirical findings often challenge this expectation. In particular, some crucial differences seem to exist between democracies and autocracies. Li (2006) shows that autocracies with a weak rule of law often attempt to make

up for the higher uncertainty by offering more tax incentives. Genschel, Lierse and Seelkopf (2016), on the other hand, argue that autocratic governments are less likely to engage in tax competition, as unlike democracies, they do not need to satisfy the median voter. Jensen (2013) contends the opposite, that tax incentives in democracies are lower because the median voter in democracies is opposed to selective tax deals for corporations. Furthermore, Jensen (2013) finds that, in non-OECD countries, the least mobile firms pay the lowest rates of taxation.

What these debates suggest is that more work on the effects of capital mobility is needed, especially how capital mobility works in different domestic political and economic contexts, e.g., different regime types. One promising path is the increasing availability of micro-level data that allows for a better understanding of what tax payments are extracted from firms, after their specific rate reductions and deductions. For example, tax incentives – regardless of whether effective or not – are used as a form of electoral pandering in democracies. The question arises if autocracies engage in the same practices. Some pioneering work has been done in this regard by Jensen and Malesky (2018). Based on microlevel data from Vietnam, the authors find that tax incentives in autocracies can signal achievements to the party leadership: pandering to party elites instead of the electorate.

As the largest and possibly fastest growing authoritarian country, China provides another excellent environment to study the topic. Theoretically, we expect that there are two mechanisms through which that capital mobility can curb a firm's taxes in authoritarian regimes like China.

First, economic growth and development have been widely believed to be used for the evaluation and promotion of local bureaucrats in China. This should motivate the use of tax

incentives to seek investment. Even if tax incentives are not necessarily effective in attracting business in the long term, offering tax incentive may be used to claim political credits in the short term and thus work in the bureaucrat's favor.

Second, a rational autocrat will raise tax rates to extract more revenue, as outlined in Olson (1993). But as tax rates increase, higher taxes can shrink tax base. The rational autocrat thus ought to raise tax rates only until the equilibrium point when marginal benefits from higher tax rates become zero (Olson, 1993). Capital mobility makes it easier for firms to move to other jurisdictions and should, therefore, lower the tax rate at which the marginal benefit of raising rates become zero. All else being equal, higher asset mobility should consequently lower a firm's tax rates. In the following section, we use micro-level data from China to investigate how decentralization, inter-jurisdiction competition, and firm asset mobility affect the politics of tax incentives.

3 Fiscal Decentralization and Tax Competition in China

Chinas tax system in the post-reform era is marked by decentralization, a feature that distinguishes China from other autocracies. In the early 1980s, China changed its centralized revenue system to a much more delegated system with increased fiscal autonomy at the local level. Fiscal decentralization was seen as one of the significant factors incentivizing local governments to promote economic growth in contemporary China (Oi, 1999; Shirk, 1993). Although the 1994 reform re-claimed part of the central revenue, 70-85 percent of expenditures remained local responsibilities (of Statistics, 2015). Given shrinking budgets and increasing expenditure needs (including infrastructure and welfare), local officials were pushed to attract new revenue sources for their jurisdiction (Jin, Qian and Weingast, 2005; Liu and Tao, 2007).

Moreover, similar to the situation in Vietnam studied by Jensen and Malesky (2018), the evaluation systems of party and government officials have created a strong "accountability from above." Higher level officials evaluate the performance of lower-level bureaucrats/politicians against targets of economic performance and revenue collection and decide over possible bonus and promotions. This evaluation system generated further pressures for local government officials to seek GDP and revenue growth to boost their political achievements (Huang, 1996; Edin, 2003; Lü and Landry, 2014).

One strategy that many local governments under pressure to raise revenues and the system of performance evaluation adopted was aggressive investment attraction. Officials would launch campaigns and use beneficial policies, such as tax breaks, to lure firms to invest in their jurisdiction (Ang, 2016). Although local governments do sacrifice short-term revenues by offering tax incentives, the idea is that these firms contribute to regional growth, investment, and revenue in the long run. Montinola, Qian and Weingast (1995) have argued that China can be characterized as market-preserving federalism, where competition among localities has prevented any government authority to monopolize the market. Throughout the 1990s and the 2000s, local governments have established thousands of development zones to attract investment by offering tax cuts, tax exemptions, land discounts, and other preferential policies. Investment attraction itself as an indicator in addition to general growth and revenue amounts has also been included in the cadre evaluation (Gao, 2015; Zuo, 2015).

This situation has caused intense tax competition among localities, especially among those within similar region (Zheng, 2006; Chen, 2018; Choi, 2009). For example, Taiwan Compal, the second-largest global manufacturer of notebook computers, originally planned to outsource to Shanghai in the 1990s, which prompted the Shanghai government to start building 40 acres

of factory space. In the end, Taiwan Compal decided to settle in Kunshan, when the latter competed to offer even better tax incentives (Chen, 2018). Using a panel of provincial-level data for 19932007, Liu and Martinez-Vazquez (2014) have found strong evidence that the optimal tax rate in one jurisdiction depends on the tax rates in other jurisdictions, an obvious implication for interjurisdictional competitions. Chois 2009 finding further confirms that local officials have strong career incentives to offer tax breaks to attract investment, and local officials have thoroughly explored these beneficial policies issued by the central government.

Even at the city level, firms are charged different tax rates, both regarding the corporate income tax and value-added tax. Although this is against the central governments will, local governments issue numerous tax cuts and/or rebates in an ad hoc manner, and then instruct government agents (or tax companies associated with government agents) to advertise and implement these policies among firms.[2] We, therefore, see it as important to investigate under what conditions firms can and are able to negotiate lower tax rates. Wu et al. (2007) noted that, in the wake of rising tax rates, companies started to devise ingenious plans to lower their tax burdens, including changing their registration locations to special economic development zones. The main requirements for registration relocations in China are that: (1) two-thirds of shareholders agree on the change; and (2) the registration location must be one of the main office locations (not necessarily the headquarter). Thus, a large number of firms successfully minimize their taxes by changing the companies registration location. This tactic is in line with the existing literature that illuminates the important corporate strategy of tax avoidance that is location shifting (Kemsley, 1998; Single, 1999).

As explained above, due to decentralized fiscal institutions and the cadre evaluation system

[2]Authors interview, 2016. Often this also means seeking bribes from firms that receive tax cuts. Further, see Choi (2009).

for promotion in China's authoritarian regime, local government officials in China have strong incentives to compete for corporate investment with tax cuts. Meanwhile, firms are more likely to choose to relocate to other localities or at least threaten to relocate when tax burdens increase. Firms with a larger share of mobile assets (or few fixed assets) thus ought to hold more bargaining power vs. local governments. Conditional on other factors such as firm features, these firms should also be more likely to receive lower effective tax rates, although tax rates should vary across industrial sectors and regions.

4 Empirical Analysis

To investigate the hypothesis outlined above we have assembled panel data from tax payments and other firm characteristics from 1996 to 2008 from the China National Survey of Industrial Firms. The survey was initiated by the State Economic Census Center of the National Bureau of Statistics (NBS) and implemented using more than three million local enumerators from survey teams organized by the local bureau of statistics. The survey includes micro-level data of all above-scale industrial firms (with sales above 5 million RMB) across all jurisdictions in mainland China. Each year averages around 200,000 industrial firms. We merge the firm-level data with city-level covariates, such as city GDP and city government expenses. We choose to study the period between 1996 and 2008 because it is after China's main fiscal reform in 1994 but precedes the implementation of the corporate income tax rate for foreign-invested firms.

Our two dependent variables are firm-level income tax payments (i.e., payments on the corporate income tax) as well as firm-level value-added tax (VAT) payments. These are two primary revenue sources at the city level, and firms are often given special rates as an

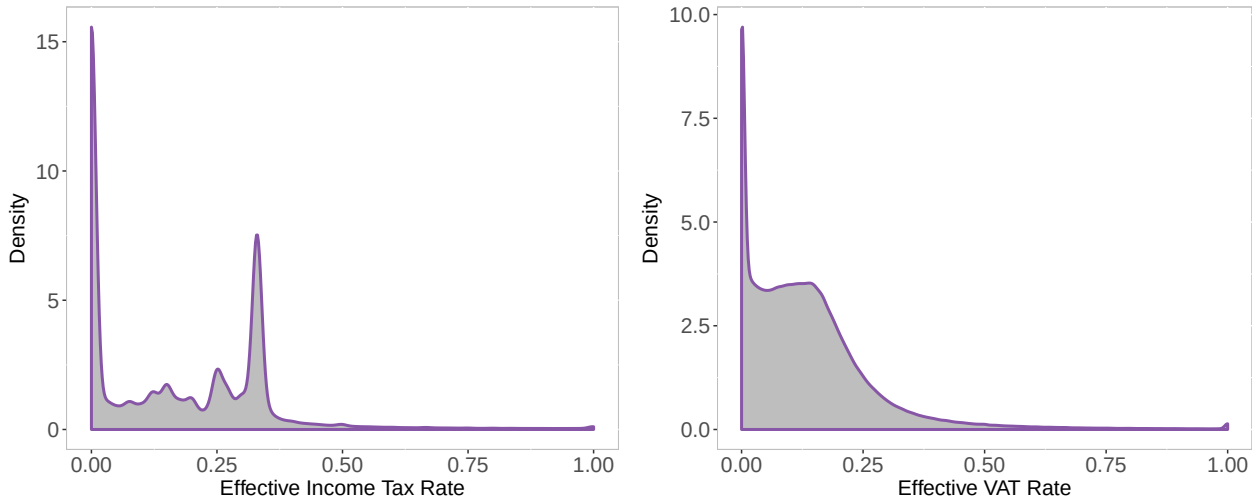
effort to support their competitiveness(Wu et al., 2007; Suwina Cheng, Kenny Lin and Richard Simmons, 2017). By using both corporate income tax and VAT, we are also balancing potential issues in data reporting. For example, it may be easier for firms to get out of profit based income taxes by using accounting tricks to limit their tax base. VATs, on the other hand, are more difficult to get around and therefore can provide us with additional leverage. For both dependent variables we calculate an effective tax rate paid by each firm for a given year. Specifically, for the effective income tax rate, we divide a given firm's income tax payments by its total profit. This is the standard calculation for effective income tax rates and has been used previously (Liu and Martinez-Vazquez, 2014). We drop observations for firm years with zero or negative profits for two reasons. First, these firms are pre-determined to pay zero taxes [3] Second, zeros or negative values in the denominator would create ambiguity about the effective tax rate. For our second dependent variable, the effective value-added tax rate, we divide the value-added tax payments in a given year by the firm's value added. As above, we again drop observations where a firm's value added is zero or negative.

For the effective income tax rate this leaves us with $1,726,614$ observations from 1996 to 2008 for $517,471$ unique firms in 467 cities across 40 industries. The left plot in Figure 1 displays the density of the dependent variable for values between zero and one.[4] As is easily visible, even when excluding firm-years with zero or negative profits, a substantial share of firms pays zero taxes in a given year. For the effective value-added tax rate we have $1,854,715$ observations for $496,636$ firms in 473 cities. The density of values between zero and one is shown in the right plot of Figure 1.[5] As with the effective income tax rate, a large number

[3]This is based on "People's Republic of China Corporate Income Tax Law," see `http://www.gov.cn/flfg/2007-03/19/content_554243.htm`.

[4]4877 observations fall out of this range and are not plotted here.

[5]For the effective VAT rate, 496636 observations are not plotted here as they are outside of the zero to one interval.



(a) Density of Effective Income Tax Rate

(b) Density of Effective VAT Rate

Figure 1: Densities of the two dependent variables: effective income tax rate and effective VAT rate. As is easily visible, both dependent variables have a very large share of observations at zero.

of firms are paying an effect VAT rate of 0 percent, i.e., they have no VAT payments. As a comparison of the two density shows, aside from the large number of zero taxes, the effective VAT rate is, in general, lower than the effective income tax rate.

In the time period we study, the central state sets the corporate income tax to be 15 percent for foreign firms and 33 percent for domestic firms. The overall VAT rate was set to be 17 percent. Nevertheless, effective tax rates show a wider range than the standard rate. As Figure 2 shows, on average, foreign firms pay a lower effective income tax than domestic firms. Here we plot the densities of the effective income tax rate for state-owned enterprises (purple), foreign enterprises (green), and domestic private firms (blue). As one can see, foreign enterprises have the highest spike at zero, while private domestic firms have a large spike around 30%.

Given a large number of outliers in the dependent variable and great share of zeros, we estimate our general models presented below on several variations of the dependent variable.

We explain those transformations in detail below.

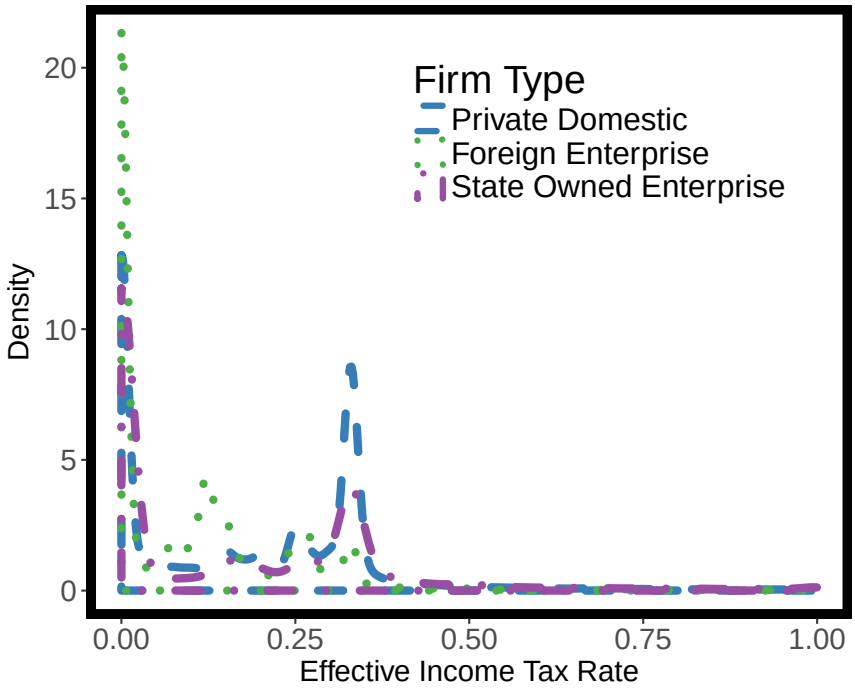


Figure 2: Difference in Effective Income Tax Rate by Firm Type

Our main independent variable of interest is capital mobility, which we measure as the ratio of mobile capital to the sum of mobile and fixed assets owned by each firm in a given year. Thus the mobility variable ranges from zero to one. According to the China National Statistical Bureau, mobile capital or mobile assets refer to "assets which can be cashed in or spent or consumed in an operating cycle of one year or over one year, including cash, all kinds of deposits, short-term investment, receivables, advance payment, stock, etc." In contrast, fixed assets refer to "the net value of fixed assets, clearance of fixed assets, project under construction, fixed assets losses in suspense." The net value of fixed assets typically includes the property, plant, and any equipment and tools associated with production and operation of the business.[6] To check the robustness of our measurement and to follow the practice used

[6]For more information, please see `/http://www.stats.gov.cn/english/classificationsmethods/`

by others, we also create a dummy variable at the industry level and code the 40 industries as fixed or mobile. Both the coding and results are included in the Appendix.

An initial set of three models estimate the bivariate relationship between mobility and effective tax rates conditional on a set of fixed effects (further discussed below). They are followed by a set of models that include a number of control variables which may influence the relationship between capital mobility and effective tax rates. We include logged firm profits, as companies with more mobile capital may be more profitable and profits could influence tax rates. We also add ownership indicators of state-owned or foreign-invested enterprises, because explicitly or implicitly, Chinese local governments may have preferential tax policies towards these type of firms (Huang, 2008).

For the last set of three models, we add an additional number of controls. As more export-oriented firms could profit from Chinese export promotion and exports could be related to capital mobility, we include a control variable for export rates, i.e., the share of sales that were declared as exports in a given firm-year. Similarly, larger firms may be more mobile, profitable, and may, therefore, have more bargaining power with city bureaucracies. We thus include logged total employment as a control variable here. Lastly, we control for the logged value of total assets a firm owns in a given year.[7]

In addition to the control variables discussed above, we also estimate models with three different sets of fixed effects. First, we estimate models that include both city and year fixed effects. These allow us to control for China's vast regional variation in implementing and adapting economic policies (Rithmire, 2014). Although as mentioned above there are no

`Definitions.html`

[7]In general, we add 1 to variables before any log transformation, so that we do not lose observations that were originally zero.

major shifts in the fiscal policies during the time of our study, we include year fixed effects in case of domestic or international events that influence firm behavior or local economies overall. Next, we include city, year, and industry fixed effects, as different industries are often subject to different tax policies nationally and locally. Lastly, we estimate models including both firm and year fixed effects. For each of the three sets of control variables discussed above, we estimate models with each set of fixed effects, therefore resulting in nine models per dependent variable. Given that we are primarily interested in the effect of capital mobility on a firm's effective tax rate, we prefer the specification with city/year(/industry) fixed effects. Here the coefficient estimates are based on the difference between firms within each city (and industry) in a given year. We additionally estimate all models with firm/year fixed effects, however, given our theoretical interest, we do not believe that within-firm differences in capital mobility are large enough to provide a good test for the theoretical argument.

4.1 Effective Income Tax Rate

Table 1 shows the results for the set of nine models with the effective income tax rate as the dependent variable. Columns 1-3 show the results for the bivariate models with the three sets of fixed effects. Columns 4-6 show the results when the first set of controls (log profits, state-owned, and foreign enterprise indicators) are included. Lastly, columns 7-9 show the results when the models are estimated with the full set of controls.

Several results are particularly striking. First of all, throughout eight of the nine models estimated, the effect of capital mobility on effective tax rates is positive and precisely estimated. A higher share of mobile capital is strongly associated with firms' higher effective tax rates. Only when including firm fixed effects, i.e., when estimating within firm changes, is the

coefficient either not precisely estimated (models 3 & 6). Across all models with city and year fixed effect, the effect of mobile capital on effective tax rates is estimated to be positive and statistically significant. These results indicate that firms with higher shares of mobile capital pay significantly higher income tax rates. Consider the results of model 8 in Table 1. Here we include fixed effects for city, year, and industry type, as well as all controls discussed above. In this instance, holding all other variables constant, a half a standard deviation increase in capital mobility from 0.51 to 0.65 is associated with a one percentage point rise in the effective income tax rate. Specifically, the effective income tax rate is estimated to increase from 19% to 20%, and the 95% confidence intervals of the predicted values do not overlap.

A second surprising result is the estimated coefficient associated with logged total profits. Here the estimated coefficient is negative in all models and again precisely estimated, meaning that firms with higher profits pay lower tax rates. While surprising, this result is likely because the dependent variable is constructed with total profits as the denominator. Nevertheless, one might have expected a zero relationship or even a positive relationship if taxes were progressive. Consistent across the different model specifications from the bivariate to the model with full sets of controls and all three sets of fixed effects, the relationship is always estimated to be negative. Considering again model 8 in Table 1. The effect of an increase in logged profits by half a standard deviation from 6.22 to 7.44 is estimated to be a decrease in the effective tax rate of six percentage points, from 21% to 15% (again the 95% confidence intervals of the predictions do not overlap).

There is also some evidence that large firms pay higher income taxes, as both the log of total employment and the log of total assets are associated with higher effective tax rates.[8]

[8]While both variables are correlated with each other at 0.69, given the large number of observations in our model we are not concerned with multicollinearity here.

The estimates for both variables are consistently precisely estimated. The results concerning effective income tax rates do not reveal any consistent evidence that state-owned, private, or foreign enterprises pay different tax rates. Similarly, more export-oriented firms (higher export rates) do not appear to pay lower tax rates.

Table 1: Effective Income Tax Rate

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	0.0731**	0.0669***	0.0110	0.0636**	0.0530***	0.00309	0.0936**	0.0797***	0.0559***
	(0.0357)	(0.0183)	(0.00765)	(0.0286)	(0.0144)	(0.00722)	(0.0408)	(0.0230)	(0.0208)
log_profits				-0.0185***	-0.0225***	-0.0711**	-0.0474***	-0.0506***	-0.0706***
				(0.00713)	(0.00856)	(0.0299)	(0.0176)	(0.0188)	(0.0213)
soe				0.00500	-0.0133	-0.0810	-0.0555	-0.0720	0.00210
				(0.0278)	(0.0306)	(0.118)	(0.0489)	(0.0497)	(0.0301)
fie				-0.0495	-0.0401	0.271	-0.0620	-0.0540	-0.0407**
				(0.0385)	(0.0419)	(0.311)	(0.0428)	(0.0461)	(0.0203)
r_export							-0.0312	-0.0180	0.00184
							(0.0253)	(0.0219)	(0.00675)
log_employment							0.0184***	0.0232***	0.0280***
							(0.00236)	(0.00361)	(0.00691)
log_assets							0.0471**	0.0438**	0.0475***
							(0.0212)	(0.0193)	(0.0165)
_cons	0.149***	0.152***	-0.220	0.284***	0.315***	0.175	-0.0808	-0.0461	-0.0581
	(0.0198)	(0.00997)	(0.328)	(0.0281)	(0.0455)	(0.204)	(0.118)	(0.0932)	(0.0846)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1726325	1545678	1726325	1726325	1545678	1726325	1417966	1237579	1417966
R^2	0.008	0.237	0.000	0.008	0.237	0.000	0.008	0.236	0.000

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Given the somewhat unusual distribution of the dependent variable with a large share of observations at zero and numerous large outliers we estimate the same models as shown in Table 1 on several transformations of the effective income tax rate. First, we winsorize the effective income tax rate to make sure the inference drawn above is not the results of outliers in the dependent variable. As Table 3 in the Appendix shows, the results are essentially the same. There is now some evidence, however, that state-owned and foreign enterprises pay lower effective tax rates.

Next, we create a binary measure of the dependent variable, coded zero for firm-years that have an effective income tax rate that is negative or zero and one otherwise. We here estimate linear probability models of firms having a positive, effective income tax rate. The results for all nine models with the binary outcome are presented in Table 4. In general, the results again are in line with what we reported above. Firms with a higher share of mobile capital are associated with higher probability of having non-zero effective tax rates. Both state-owned and foreign enterprises are associated with a lower probability of positive effective tax rates. On the other hand, in contrast to the findings reported in Table 1, more profits are associated with a higher likelihood of paying a positive tax rate. This seems to indicate that higher profits are associated with a higher probability that firms have to pay any income taxes, but given that income taxes are being paid, the effective rates are lower.

Lastly, we only analyze observations of the dependent variable that are non-zero (Table 5 in the Appendix) or only values of the dependent variable that are positive (Table 6 in the Appendix). The results for the models with both of these variations of the effective income tax rate are in line with the discussion above. First, while still mostly positive, the coefficient for mobile capital share is now much smaller and less precisely estimated. These results

indicate that owning more mobile capital is mostly associated with having a positive (non-zero) effective income tax rate (thus the strong finding in the binary model). Conditional on the effective rate being non-zero, capital mobility is less influential on the actual effective tax rates. Similarly, the effect of logged profits is now very strongly and negatively associated with the outcomes. Again, this suggests that conditional on firms paying any income tax, profits decrease the income tax rates.

Table 7 in the Appendix shows the results when we estimate these same models with logged income tax payments as the dependent variable.[9] As in prior models, the effect of capital mobility is positive and very precisely estimated, i.e., firms with more mobile capital pay more in taxes. Again, as before, larger firms are found to pay more taxes, and foreign enterprises pay less, conditional on all other controls. By in large, the results confirm the analysis on the effective income tax rate.

4.2 Effective VAT Rates

As our second dependent variable, we calculate the effective tax rate that firms paid on the value-added tax in a given year. Again, we delete observations for firm-years with zero or negative value added in a given year. Table 2 shows the results for the nine standard models with the effective rate of the value-added tax as the dependent variables. In addition to the ones discussed above, our standard set of controls with this dependent variable also includes the logged total value added by a firm in a given year.

The results concerning the effective VAT rate are less definite than those presented above. There is some evidence of a negative effect of the share of mobile capital on the effective tax rate. The coefficient on mobility is only positive and significant in the models with the full

[9] We add 1 to each observation to be able to use the log transformation.

set of controls. As with the models regarding effective income tax rate, the denominator has a negative effect, i.e., logged value added is negatively associated with the effective VAT rate. Similar to the models presented above, larger firms appear to be paying higher vat rates, as the coefficients on both logged assets and logged employment are positive and precisely estimated in all three models.

Lastly, the evidence concerning different types of firms is less clear. In those models with limited sets of controls, it appears foreign enterprises are associated with higher effective vat rates. This is also true for the model with the full set of controls and firm fixed effects. On the other hand, when including the full set of controls and estimating models with city/year or city/year/industry fixed effects, the association is estimated to be negative. The evidence for state-owned enterprise is similarly inconsistent, indicating a positive association between state ownership and effective rates in the models with limited sets of controls and a negative relationship in the full models (except when firm FEs are included). Firms with larger proportion of exports, however, do consistently pay lower rates of VAT. Larger firms are estimated to pay with higher VAT rates.

Table 2: Effective VAT Rate

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	-0.0176	-0.00765	-0.00757	-0.0323***	-0.0259**	0.0616***	0.0618***	0.0577***	0.0251**
	(0.0109)	(0.0113)	(0.0129)	(0.0113)	(0.0128)	(0.0144)	(0.00789)	(0.00964)	(0.0105)
log_valueadded				-0.105***	-0.118***	-0.339***	-0.219***	-0.228***	-0.269***
				(0.00917)	(0.0115)	(0.0242)	(0.0331)	(0.0395)	(0.0279)
soe				0.0278**	0.0143	0.00905	-0.0263**	-0.0457***	0.000638
				(0.0130)	(0.0122)	(0.0122)	(0.0103)	(0.0147)	(0.0119)
fie				0.0217***	0.0412***	0.0331**	-0.0225***	-0.0109***	0.0174
				(0.00592)	(0.00712)	(0.0150)	(0.00369)	(0.00311)	(0.0135)
log_profits							0.0369***	0.0371***	0.0328***
							(0.00678)	(0.00821)	(0.00349)
r_export							-0.0650***	-0.0511***	-0.0247**
							(0.00565)	(0.00511)	(0.0126)
log_employment							0.0671***	0.0767***	0.0883***
							(0.00988)	(0.0128)	(0.0104)
log_assets							0.100***	0.0950***	0.0838***
							(0.0156)	(0.0158)	(0.00940)
_cons	0.179***	0.175***	0.142***	1.080***	1.189***	2.961***	0.512***	0.597***	0.959***
	(0.00652)	(0.00672)	(0.0205)	(0.0821)	(0.104)	(0.200)	(0.0760)	(0.101)	(0.0844)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1850130	1618970	1850130	1850130	1618970	1850130	1454965	1271609	1454965
R^2	0.004	0.083	0.000	0.006	0.085	0.009	0.005	0.076	0.010

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

As with the effective income tax rate as the dependent variable, as a robustness check, we estimate the models above on variations of the dependent variable. First, Table 8 in the Appendix displays the results for the winsorized effective VAT rate. Importantly and in contrast to the results in Table 2, in these models, the effect of capital mobility is always estimated to be positive. This indicates that previously estimated negative effects were due to outliers in the dependent variable. Otherwise, the results largely do not change, though foreign firms are consistently estimated to pay lower taxes. Table 9 shows the result for the binary VAT variable. Again, we code this variable to be zero for firms that have negative or zero effective vat rates and one otherwise. A higher share of mobile capital is associated with a higher likelihood of paying a positive, effective VAT rate. The same is true for logged employment. Similarly, higher value added of a firm in a given year also increases the probability of a positive, effective VAT rate. This is consistent throughout all nine models and again indicates that the negative effect of value added on the effective rates estimated above is due to those observations with positive rates. In addition, there is consistent evidence that foreign enterprises, state-owned enterprises have a lower likelihood of paying positive rates. Similarly, more exports and assets are associated with a lower probability of a positive rate.

Lastly, Tables 10 and 11 in the Appendix show the results for models when only observations that are non-zero (Table 10) or positive values (Table 11) on the dependent variable are included in the analysis. Here again, the results provide evidence for the interpretation voiced in the previous section, indicating that the negative effect of value added is conditional upon the firm paying any VAT taxes at all. The results for mobility are rather mixed, again providing evidence that a large part of the effect comes from firms paying zero taxes. Throughout these results there is strong evidence that firms with more profits, assets, and employees pay

higher effective VAT rate, given that the rate is non-zero. More export-oriented firms, on the other hand, pay lower taxes.

Lastly, Table 12 in the Appendix displays the results when we use logged total VAT payments as the dependent variable, instead of calculating the rate. Most importantly, the effect of capital mobility is still positive and precisely estimated. Similarly, foreign enterprises appear to pay fewer taxes, controlling for all other variables in the model. Again larger firms (more assets and employees) pay more taxes. Overall, the results are in line with those for the effective tax rates.

5 Robustness Checks & Alternative Explanations

In the analyses presented above, with both the effective corporate income tax and VAT rate as the dependent variable, we consistently find that higher capital mobility (or a higher share of mobile capital) tends to increase a firm's effective tax rate. This finding goes against the theoretical expectation voiced above and against findings in most of the existing literature.[10] Our results might in part be attributed to the uniqueness of China's local taxation system as well as the nature of capitalism in authoritarian environments in general. It may not be the case that all firms with high degrees of capital mobility have the chance to signal the mobility to local officials or they may not have the option of either to "voice" or "exit" at all.

At the same time, due to these surprising findings, we want to check further the robustness of our results. First, we code a binary variable that takes a one for industries that are commonly seen as having a majority of fixed assets and zero otherwise.[11] In Tables 13 and 14 in the Appendix we add this binary variable in substitution of our mobility variable or as

[10] Though recall that the majority of these findings are based on cross-nation data for OECD countries.
[11] See Table 17 in the Appendix for our coding decisions.

an additional control. We estimate the model with the full set of controls plus city and year effects for the untransformed and all transformation of both dependent variables.

For the models with corporate income taxation as the dependent variable, two things are of note. First, our main results regarding the continuous mobility measure and other independent variables do not change with the inclusion of the fixed assets industry dummy. Secondly, there is no clear evidence of any difference in effective income tax rate for these industries that we coded as being particularly immobile. If at all, the winsorized models suggest a lower tax rate for firms in these industries.

When estimating these models for the VAT, the results are a bit more interesting. Again, the additional control does not change our main conclusions about the continuous mobility measure or other variables. On the other hand, we find evidence across all transformations of the dependent variable that these immobile industries do pay higher value-added tax rates, as the coefficient on the fixed asset dummy is positive and significant throughout (except model 9). Note that, within the particular immobile or mobile industries, a higher share of mobile assets is still associated with higher VAT payments.

In addition to these models presented, we also estimate interactions between the industry variable and our continuous measure of mobility. No clear patterns emerge that add insight to our results.

As a different possible explanation for our surprising results, we want to consider the familiarity of firms with local laws and bureaucracy. Firms with low levels of capital mobility and high level of fixed assets are likely to be more familiar with the local tax environment and more entrenched in bureaucratic and political networks with government officials. This could allow these firms to find and exploit tax policy loopholes to further reduce their tax burdens.

For example, Adhikari, Derashid and Zhang (2006) suggest that in Malaysia businesses with political connections are associated with lower effective tax rates. Zhu and Deng (2018) find that firms with more fixed asset intensity are also the ones more likely to engage in bribing of local officials. These results also resonate with literature that highlights relationship-based capitalism: the survival strategies of businesses and the co-optation strategies of the state (Dickson, 2008).

To investigate this idea, we create a variable that measures the age of the individual firm. While imperfect, if this mechanism were true, we should find evidence that older firms pay lower tax rates, potentially in moderating the effect of the mobility variable. We, therefore, again estimate the model with the full set of controls plus city and year fixed effects for both dependent variables with all their transformations. Tables 15 and 16 in the Appendix show the results from these models when we include age as a covariate and when we interact it with the continuous mobility measure. Across both types of taxation, there is no clear evidence that the age of firms matter, either by itself or as an interaction with the mobility variable. Similarly, adding the firm's age squared to the regression does not produce any indication of a nonlinear effect.

The findings that larger sized firms tend to pay higher taxes is likely because many small and medium-sized firms are eligible to enjoy tax holidays for a substantial period. Additionally, our evidence concerning profits/value-added effects on effective tax rates could in part be explained by the aggressive use of tax policies by the Chinese government to pick the winners and losers and promote more competitive firms. Firms with higher profits and higher value-added, unsurprisingly, have a higher probability of paying positive income tax or VATs (rather than zero or negative). As profits and value added increase, the effective tax rates that firms

must pay decrease. This result is possibly due to the local governments' promotion of winners that reward firms that are more competitive and with higher value-added production.

We also find consistent evidence that a higher share of exports is associated with lower effective VAT rates, yet does not seem to have any influence on corporate income tax rates. This finding directly reflects China's export-promoting institutions. In the local setting, firms and governments can manipulate the value-added tax rate for firms that export a large proportion of their output. The standard tax rebate policy issued by the Ministry of Finance and the Central Tax Bureau legitimizes such policies (although with some flexibility in local implementation). Such manipulation is much harder for the corporate income tax, however, as these policies are often limited to specific high-tech industries and only when the export ratio reaches a certain threshold. These policies are also more closely supervised by the central state.

We do not find consistent evidence across models that firms of different ownership types have higher or lower effective tax rates once we control for other factors. This finding is somewhat surprising. Although China did not initiate a standard policy differentiating domestic private and state-owned enterprises, it did implement the policies of different income tax rates for foreign and domestic firms. However, when the data is winsorized, foreign-invested firms do pay significantly lower rates of corporate income taxes. This suggests that some foreign firms may have much higher tax rates and that these outliers drive the initial results. Besides, the variation across industrial sectors may be a confounding variable here. This would explain the finding that foreign firms and state-owned enterprises tend to have lower tax rates, with foreign firms enjoying the lowest effective tax rates, once industry fixed effects are included.

6 Conclusion

In this paper, we investigate domestic factors that directly contribute to tax incentives in authoritarian countries, in this case, China. Using firm-level panel data over 14 years, we show that tax incentives are widely provided in the local implementation of taxation in such a way that the effective rates of corporate income taxes and value added taxes diverge substantially from standard rates set by the central state. These results hold even when we control for ownership structure and industrial sectors. Contradicting our original hypothesis, however, the evidence does not suggest that more mobile firms pay lower effective rates of taxation. Instead, capital mobility seems to be associated with a higher likelihood of paying non-zero corporate income and VAT rates. This finding suggests that in autocracies, the relationship between assets mobility and effective tax rates may not be the same as one would find in other types of regimes. It also confirms Jensen's (2013) findings regarding non-OECD countries.

Our findings suggest both the limitation of current inquiry and potential direction for future research, especially if one agrees that public officials do have incentives to provide tax cuts in attempts to attract capital and generate growth. On the demand side for tax incentives, capital mobility may not be the only factor affecting a given firm's leverage to receive tax cuts. In fact, firms in autocracies may not even have the same exit/voice options as firms in democracies or at a minimum such options may be limited to certain firms. Even for firms with a large proportion of mobile capital, the cost of relocating to another location may be high, thus reducing the likelihood for firms to use mobility to curb high tax rates. In addition to the usual business costs, there are two major types of political cost. First, when a firm relocates to a different city, it needs a significant amount of time to nurture new political

networks with local officials and become familiar with the local contexts. Second, there are still substantial regional barriers that allow firms to move across localities, and one of the major critiques of Montinola, Qian and Weingast (1995) is that regional barriers have prevented a market of perfect competition from forming in China. As such, having a high proportion of mobile capital as opposed to fixed capital does not immediately entail being "mobile" in the sense of relocating to a different place. Similarly, other factors such as firm-level research and development, high tech industry, the level of pollution, etc. can also influence a firms' likelihood to receive tax incentives [12]. Finally, as Jensen (2013) suggests, firms with immobile assets, those invested in extractive industries and real estate, for example, may be attracted to locations with lower tax rates.

On the supply side concerning tax breaks, incentives of officials for providing these breaks to firms need to be further studies in the future. As mentioned earlier, the trade-off between raising tax rates and offering tax incentives to increase tax bases is important for political leaders. At the same time, timing and office turn-over for political leaders may also affect their temporal horizons for tax policies. We see the study of the demand and the supply side of these tax policies as important topics for future studies on China and other authoritarian regimes. Furthermore, we believe that our results further underline the importance of using micro-level data to investigate these question as they can give us additional leverage that country-level analyses often lack.

7 Appendix

[12]There is far scattered but not consistent evidence that firms in the high-tech industries enjoy lower tax rates

Table 3: Effective Income Tax Winsorized

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	0.0353***	0.0415***	0.000352	0.0358***	0.0383***	-0.000507	0.0429***	0.0456***	0.0196***
	(0.00169)	(0.00203)	(0.000888)	(0.00169)	(0.00198)	(0.000885)	(0.00173)	(0.00206)	(0.00135)
log_profits				-0.00109***	-0.00214***	-0.00941***	-0.00415***	-0.00453***	-0.00965***
				(0.000384)	(0.000434)	(0.000163)	(0.000427)	(0.000471)	(0.000192)
soe				-0.00385***	-0.0165***	0.00487***	-0.0150***	-0.0276***	0.00631***
				(0.00149)	(0.00174)	(0.00176)	(0.00140)	(0.00166)	(0.00211)
fie				-0.0883***	-0.0818***	-0.0162***	-0.0992***	-0.0933***	-0.0308***
				(0.00249)	(0.00262)	(0.00161)	(0.00250)	(0.00263)	(0.00202)
r_export							-0.00666***	-0.00182	0.00375***
							(0.00132)	(0.00146)	(0.00109)
log_employment							0.00981***	0.0124***	0.0140***
							(0.000384)	(0.000417)	(0.000465)
log_assets							0.00480***	0.00243***	0.00525***
							(0.000410)	(0.000451)	(0.000457)
_cons	0.152***	0.147***	0.165***	0.175***	0.179***	0.225***	0.102***	0.110***	0.0897***
	(0.000936)	(0.00111)	(0.00206)	(0.00269)	(0.00295)	(0.00234)	(0.00376)	(0.00415)	(0.00412)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1726325	1545678	1726325	1726325	1545678	1726325	1417966	1237579	1417966
R^2	0.082	0.163	0.002	0.113	0.187	0.008	0.123	0.197	0.009

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 4: Income Tax Binary

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	0.122***	0.126***	-0.00425*	0.138***	0.138***	-0.00121	0.146***	0.148***	0.0747***
	(0.00408)	(0.00488)	(0.00229)	(0.00409)	(0.00478)	(0.00228)	(0.00428)	(0.00511)	(0.00356)
log_profits				0.0336***	0.0334***	0.0305***	0.0312***	0.0318***	0.0278***
				(0.000601)	(0.000677)	(0.000372)	(0.000704)	(0.000797)	(0.000434)
soe				-0.0726***	-0.0997***	0.00782*	-0.0831***	-0.111***	0.0139***
				(0.00417)	(0.00475)	(0.00405)	(0.00398)	(0.00453)	(0.00478)
fie				-0.202***	-0.189***	-0.0159***	-0.217***	-0.202***	-0.0668***
				(0.00536)	(0.00535)	(0.00487)	(0.00537)	(0.00521)	(0.00599)
r_export							-0.00459*	0.00505*	0.0103***
							(0.00250)	(0.00281)	(0.00295)
log_employment							0.0202***	0.0260***	0.0411***
							(0.00102)	(0.00112)	(0.00124)
log_assets							-0.00183*	-0.00680***	0.00577***
							(0.00104)	(0.00114)	(0.00118)
_cons	0.595***	0.589***	0.639***	0.410***	0.407***	0.456***	0.331***	0.336***	0.126***
	(0.00226)	(0.00266)	(0.00508)	(0.00500)	(0.00551)	(0.00570)	(0.0100)	(0.0113)	(0.0109)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1726325	1545678	1726325	1726325	1545678	1726325	1417966	1237579	1417966
R^2	0.110	0.191	0.015	0.145	0.220	0.024	0.142	0.216	0.024

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 5: Income Tax – Zeros excluded

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	0.0641	0.0559*	0.0162	0.0367	0.0229	-0.00719	0.0772	0.0654	0.0561
	(0.0557)	(0.0338)	(0.0162)	(0.0402)	(0.0259)	(0.0109)	(0.0577)	(0.0402)	(0.0365)
log_profits				-0.0476***	-0.0532***	-0.149***	-0.107***	-0.113***	-0.162***
				(0.0123)	(0.0145)	(0.0503)	(0.0334)	(0.0354)	(0.0464)
soe				0.0675	0.114***	-0.118	-0.0445	0.00951	0.00498
				(0.0587)	(0.0253)	(0.124)	(0.100)	(0.0367)	(0.0488)
fie				0.0193	0.0272	0.383	0.00974	0.0166	-0.0283
				(0.0670)	(0.0696)	(0.417)	(0.0761)	(0.0796)	(0.0323)
r_export							-0.0472	-0.0323	0.000411
							(0.0364)	(0.0305)	(0.0109)
log_employment							0.0196***	0.0249***	0.0377***
							(0.00375)	(0.00544)	(0.0107)
log_assets							0.0908**	0.0880**	0.101***
							(0.0384)	(0.0347)	(0.0361)
_cons	0.249***	0.255***	0.0893	0.576***	0.620***	0.980***	-0.0113	0.0290	0.0379
	(0.0315)	(0.0188)	(0.177)	(0.0565)	(0.0764)	(0.152)	(0.187)	(0.153)	(0.165)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1145399	1017797	1145399	1145399	1017797	1145399	921513	794057	921513
R^2	0.017	0.314	0.000	0.018	0.315	0.000	0.018	0.316	0.000

Notes:

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 6: Income Tax – Only positive values

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	0.0610	0.0521	0.0192	0.0272	0.0126	-0.00597	0.0769	0.0626	0.0630*
	(0.0556)	(0.0333)	(0.0159)	(0.0400)	(0.0252)	(0.0105)	(0.0576)	(0.0398)	(0.0360)
log_profits				-0.0577***	-0.0634***	-0.160***	-0.117***	-0.125***	-0.175***
				(0.0120)	(0.0141)	(0.0503)	(0.0332)	(0.0350)	(0.0463)
soe				0.0812	0.134***	-0.107	-0.0407	0.0185	0.00724
				(0.0585)	(0.0230)	(0.124)	(0.100)	(0.0347)	(0.0489)
fie				0.0378	0.0484	0.388	0.0143	0.0237	-0.0263
				(0.0666)	(0.0691)	(0.418)	(0.0761)	(0.0796)	(0.0323)
r_export							-0.0474	-0.0320	0.00917
							(0.0364)	(0.0304)	(0.00911)
log_employment							0.0211***	0.0268***	0.0397***
							(0.00356)	(0.00510)	(0.0106)
log_assets							0.0996***	0.0984***	0.105***
							(0.0383)	(0.0345)	(0.0361)
_cons	0.258***	0.265***	0.0698	0.653***	0.699***	1.032***	-0.0331	0.00541	0.0537
	(0.0315)	(0.0185)	(0.176)	(0.0530)	(0.0736)	(0.150)	(0.187)	(0.152)	(0.165)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1144286	1016697	1144286	1144286	1016697	1144286	920773	793330	920773
R^2	0.017	0.317	0.000	0.018	0.318	0.001	0.018	0.319	0.001

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 7: Logged Income Tax Payments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	0.555***	0.580***	0.0149	0.576***	0.589***	0.0151	0.740***	0.767***	0.403***
	(0.0279)	(0.0333)	(0.0114)	(0.0226)	(0.0267)	(0.0125)	(0.0235)	(0.0283)	(0.0186)
log_profits				0.638***	0.629***	0.479***	0.552***	0.545***	0.436***
				(0.00354)	(0.00423)	(0.00173)	(0.00433)	(0.00497)	(0.00193)
soe				0.0509***	-0.0799***	0.0198	-0.213***	-0.347***	0.0201
				(0.0196)	(0.0217)	(0.0219)	(0.0163)	(0.0183)	(0.0252)
fie				-0.976***	-0.895***	-0.0771***	-1.155***	-1.077***	-0.428***
				(0.0318)	(0.0324)	(0.0296)	(0.0310)	(0.0316)	(0.0353)
r_export							-0.0829***	-0.0114	0.0804***
							(0.0140)	(0.0156)	(0.0151)
log_employment							0.152***	0.194***	0.330***
							(0.00515)	(0.00557)	(0.00659)
log_assets							0.149***	0.122***	0.199***
							(0.00559)	(0.00591)	(0.00623)
_cons	2.380***	2.366***	2.578***	-0.882***	-0.859***	-0.0338	-2.601***	-2.560***	-3.624***
	(0.0153)	(0.0180)	(0.0248)	(0.0218)	(0.0248)	(0.0327)	(0.0421)	(0.0462)	(0.0594)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2241902	2003484	2241902	1789775	1603350	1789775	1468952	1283796	1468952
R^2	0.111	0.195	0.028	0.331	0.388	0.138	0.333	0.388	0.137

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 8: Effective VAT Winsorized

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	0.0115***	0.0190***	0.00148	0.0115***	0.0159***	0.0159***	0.0400***	0.0394***	0.00977***
	(0.00105)	(0.00120)	(0.000919)	(0.000969)	(0.00114)	(0.00131)	(0.00106)	(0.00116)	(0.000907)
log_valueadded				-0.0217***	-0.0243***	-0.0708***	-0.0573***	-0.0574***	-0.0774***
				(0.000584)	(0.000643)	(0.000361)	(0.00118)	(0.00129)	(0.000456)
soe				0.0247***	0.0211***	0.00346***	0.00207**	-0.00158	0.0000133
				(0.00108)	(0.00135)	(0.00115)	(0.000866)	(0.000973)	(0.00125)
fie				-0.0171***	-0.00914***	0.00853***	-0.0198***	-0.0157***	0.000527
				(0.00135)	(0.00152)	(0.00136)	(0.000921)	(0.00103)	(0.00135)
log_profits							0.0105***	0.0101***	0.0102***
							(0.000252)	(0.000274)	(0.000110)
r_export							-0.0486***	-0.0443***	-0.0132***
							(0.00228)	(0.00260)	(0.000799)
log_employment							0.0188***	0.0201***	0.0222***
							(0.000511)	(0.000578)	(0.000380)
log_assets							0.0278***	0.0256***	0.0251***
							(0.000517)	(0.000566)	(0.000364)
_cons	0.134***	0.129***	0.137***	0.320***	0.340***	0.726***	0.194***	0.213***	0.372***
	(0.000627)	(0.000710)	(0.00173)	(0.00509)	(0.00567)	(0.00340)	(0.00410)	(0.00456)	(0.00357)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1850130	1618970	1850130	1850130	1618970	1850130	1454965	1271609	1454965
R^2	0.055	0.160	0.001	0.101	0.206	0.159	0.181	0.270	0.165

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 9: VAT Binary

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	0.0164***	0.0298***	0.0209***	0.0186***	0.0266***	0.0156***	0.0270***	0.0223***	0.0137***
	(0.00235)	(0.00278)	(0.00186)	(0.00196)	(0.00224)	(0.00180)	(0.00226)	(0.00250)	(0.00215)
log_valueadded				0.0190***	0.0179***	0.0259***	0.0152***	0.0183***	0.0220***
				(0.000544)	(0.000653)	(0.000389)	(0.000762)	(0.000851)	(0.000525)
soe				-0.0145***	-0.0245***	0.00263	-0.0122***	-0.0145***	0.0000574
				(0.00168)	(0.00185)	(0.00182)	(0.00161)	(0.00176)	(0.00238)
fie				-0.167***	-0.149***	-0.0117***	-0.0995***	-0.0942***	-0.0114***
				(0.00427)	(0.00470)	(0.00286)	(0.00254)	(0.00291)	(0.00335)
log_profits							0.00511***	0.00519***	0.00482***
							(0.000375)	(0.000424)	(0.000228)
r_export							-0.193***	-0.188***	-0.0671***
							(0.00758)	(0.00902)	(0.00227)
log_employment							0.0115***	0.00583***	0.00395***
							(0.000845)	(0.000910)	(0.000831)
log_assets							-0.0116***	-0.0126***	-0.0101***
							(0.000802)	(0.000819)	(0.000769)
_cons	0.875***	0.868***	0.874***	0.745***	0.749***	0.660***	0.824***	0.835***	0.761***
	(0.00141)	(0.00165)	(0.00246)	(0.00514)	(0.00615)	(0.00411)	(0.00745)	(0.00839)	(0.00724)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1850130	1618970	1850130	1850130	1618970	1850130	1454965	1271609	1454965
R^2	0.062	0.177	0.003	0.100	0.204	0.009	0.128	0.230	0.010

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 10: VAT – Zeros excluded

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	-0.0243*	-0.0176	-0.00886	-0.0492***	-0.0470***	0.0708***	0.0645***	0.0586***	0.0266**
	(0.0126)	(0.0132)	(0.0166)	(0.0135)	(0.0155)	(0.0174)	(0.00882)	(0.0111)	(0.0122)
log_valueadded				-0.125***	-0.139***	-0.424***	-0.260***	-0.272***	-0.329***
				(0.0106)	(0.0134)	(0.0301)	(0.0391)	(0.0470)	(0.0342)
soe				0.0419***	0.0272**	0.0127	-0.0252**	-0.0456***	0.00165
				(0.0145)	(0.0132)	(0.0134)	(0.0113)	(0.0159)	(0.0130)
fie				0.0605***	0.0802***	0.0383**	-0.00870**	0.00432	0.0226
				(0.00763)	(0.00893)	(0.0177)	(0.00436)	(0.00399)	(0.0155)
log_profits							0.0428***	0.0433***	0.0394***
							(0.00795)	(0.00971)	(0.00428)
r_export							-0.0398***	-0.0250***	-0.0171
							(0.00585)	(0.00545)	(0.0154)
log_employment							0.0759***	0.0881***	0.106***
							(0.0114)	(0.0151)	(0.0126)
log_assets							0.120***	0.115***	0.103***
							(0.0184)	(0.0190)	(0.0115)
_cons	0.202***	0.200***	0.159***	1.278***	1.405***	3.699***	0.613***	0.710***	1.170***
	(0.00756)	(0.00786)	(0.0228)	(0.0958)	(0.122)	(0.249)	(0.0886)	(0.119)	(0.103)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1658946	1450889	1658946	1658946	1450889	1658946	1317713	1151112	1317713
R^2	0.004	0.091	0.000	0.007	0.094	0.012	0.006	0.077	0.012

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 11: VAT – Only positive values

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	-0.0202	-0.0174	-0.00103	-0.0476***	-0.0482***	0.0833***	0.0698***	0.0609***	0.0311**
	(0.0126)	(0.0134)	(0.0164)	(0.0136)	(0.0158)	(0.0171)	(0.00894)	(0.0113)	(0.0122)
log_valueadded				-0.135***	-0.145***	-0.459***	-0.278***	-0.280***	-0.361***
				(0.0108)	(0.0136)	(0.0302)	(0.0395)	(0.0476)	(0.0322)
soe				0.0448***	0.0283**	0.0138	-0.0281**	-0.0460***	0.00113
				(0.0146)	(0.0135)	(0.0135)	(0.0113)	(0.0159)	(0.0131)
fie				0.0834***	0.0925***	0.0503***	-0.000559	0.00782*	0.0234
				(0.00799)	(0.00901)	(0.0168)	(0.00457)	(0.00405)	(0.0157)
log_profits							0.0457***	0.0443***	0.0430***
							(0.00801)	(0.00985)	(0.00407)
r_export							-0.0236***	-0.0152***	-0.00279
							(0.00451)	(0.00530)	(0.0149)
log_employment							0.0801***	0.0897***	0.116***
							(0.0115)	(0.0153)	(0.0119)
log_assets							0.129***	0.120***	0.113***
							(0.0186)	(0.0193)	(0.0112)
_cons	0.207***	0.205***	0.169***	1.363***	1.455***	3.995***	0.641***	0.721***	1.273***
	(0.00756)	(0.00798)	(0.0218)	(0.0974)	(0.124)	(0.250)	(0.0895)	(0.121)	(0.0961)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1636846	1434564	1636846	1636846	1434564	1636846	1304455	1141360	1304455
R^2	0.004	0.091	0.000	0.007	0.094	0.014	0.007	0.077	0.016

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 12: Logged VAT Payments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
mobility	-0.0363*	0.0900***	0.0370***	0.113***	0.204***	0.168***	0.415***	0.396***	0.116***
	(0.0218)	(0.0265)	(0.00939)	(0.0147)	(0.0174)	(0.0129)	(0.0173)	(0.0195)	(0.0140)
log_valueadded				0.812***	0.784***	0.547***	0.503***	0.517***	0.435***
				(0.00706)	(0.00806)	(0.00231)	(0.0124)	(0.0150)	(0.00357)
soe				0.173***	0.0675***	0.0215*	0.0221*	-0.0362***	0.00573
				(0.0130)	(0.0142)	(0.0123)	(0.0122)	(0.0132)	(0.0159)
fie				-0.985***	-0.852***	0.0273	-0.700***	-0.646***	-0.0558**
				(0.0347)	(0.0397)	(0.0205)	(0.0201)	(0.0235)	(0.0241)
log_profits							0.123***	0.121***	0.111***
							(0.00372)	(0.00437)	(0.00152)
r_export							-1.457***	-1.415***	-0.468***
							(0.0635)	(0.0769)	(0.0154)
log_employment							0.237***	0.217***	0.195***
							(0.00802)	(0.00895)	(0.00550)
log_assets							0.166***	0.140***	0.132***
							(0.00774)	(0.00848)	(0.00496)
_cons	5.708***	5.662***	5.638***	-1.185***	-1.014***	0.907***	-1.977***	-1.743***	-0.999***
	(0.0119)	(0.0142)	(0.0188)	(0.0624)	(0.0715)	(0.0267)	(0.0694)	(0.0787)	(0.0477)
City FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2235178	2003250	2235178	1841609	1614335	1841609	1442656	1262739	1442656
R^2	0.093	0.230	0.041	0.341	0.433	0.117	0.367	0.452	0.116

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 13: Effective Income Tax – including Fixed Asset Dummy

	(1) Untransformed	(2) Untransformed	(3) Winnowed	(4) Winnowed	(5) Binary	(6) Binary	(7) NoZero	(8) NoZero	(9) Positive	(10) Positive
fixed_dummy	-0.00511	0.00171	0.00666***	0.00994***	-0.00446**	0.00629***	-0.00809	-0.00271	-0.0123	-0.00696
	(0.0180)	(0.0154)	(0.000757)	(0.000762)	(0.00196)	(0.00193)	(0.0299)	(0.0263)	(0.0299)	(0.0263)
log_profits	-0.0473***	-0.0474***	-0.00421***	-0.00423***	0.0312***	0.0312***	-0.107***	-0.107***	-0.117***	-0.117***
	(0.0174)	(0.0174)	(0.000423)	(0.000426)	(0.000701)	(0.000701)	(0.0332)	(0.0332)	(0.0330)	(0.0330)
soe	-0.0604	-0.0557	-0.0183***	-0.0159***	-0.0916***	-0.0837***	-0.0483	-0.0442	-0.0440	-0.0399
	(0.0494)	(0.0475)	(0.00137)	(0.00139)	(0.00384)	(0.00398)	(0.100)	(0.0975)	(0.100)	(0.0973)
fie	-0.0613	-0.0619	-0.0985***	-0.0987***	-0.216***	-0.216***	0.0110	0.00960	0.0154	0.0140
	(0.0423)	(0.0420)	(0.00250)	(0.00252)	(0.00541)	(0.00539)	(0.0757)	(0.0748)	(0.0757)	(0.0749)
r_export	-0.0290	-0.0310	-0.00488***	-0.00594***	-0.000538	-0.00414	-0.0460	-0.0474	-0.0465	-0.0479
	(0.0256)	(0.0263)	(0.00135)	(0.00132)	(0.00255)	(0.00251)	(0.0369)	(0.0379)	(0.0369)	(0.0379)
log_employment	0.0177***	0.0184***	0.00943***	0.00991***	0.0185***	0.0202***	0.0187***	0.0195***	0.0202***	0.0210***
	(0.00246)	(0.00239)	(0.000377)	(0.000381)	(0.00100)	(0.00102)	(0.00418)	(0.00388)	(0.00401)	(0.00369)
log_assets	0.0459**	0.0471**	0.00429***	0.00464***	-0.00287***	-0.00193*	0.0900**	0.0908**	0.0988**	0.0997**
	(0.0210)	(0.0215)	(0.000404)	(0.000408)	(0.00104)	(0.00104)	(0.0385)	(0.0388)	(0.0384)	(0.0387)
mobility		0.0939**		0.0447***		0.147***		0.0767		0.0757
		(0.0382)		(0.00174)		(0.00428)		(0.0532)		(0.0532)
_cons	-0.00869	-0.0810	0.134***	0.100***	0.438***	0.330***	0.0496	-0.0109	0.0278	-0.0321
	(0.0873)	(0.116)	(0.00354)	(0.00378)	(0.00884)	(0.0101)	(0.144)	(0.183)	(0.144)	(0.183)
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1418193	1417966	1418193	1417966	1418193	1417966	921556	921513	920816	920773
R^2	0.008	0.008	0.120	0.123	0.138	0.142	0.018	0.018	0.018	0.018

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 14: Effective VAT – including Fixed Asset Dummy

	(1) Untransformed	(2) Untransformed	(3) Winnowed	(4) Winnowed	(5) Binary	(6) Binary	(7) NoZero	(8) NoZero	(9) Positive	(10) Positive
fixed_dummy	0.0404***	0.0389***	0.0206***	0.0224***	0.0128***	0.0185***	0.0373***	0.0407***	-0.0123	0.0413***
	(0.0118)	(0.0115)	(0.000706)	(0.000732)	(0.00146)	(0.00141)	(0.0125)	(0.0124)	(0.0299)	(0.0124)
log_valueadded	-0.189***	-0.219***	-0.0507***	-0.0575***	-0.00202	0.0151***	-0.255***	-0.261***		-0.278***
	(0.0286)	(0.0331)	(0.00114)	(0.00118)	(0.00180)	(0.000762)	(0.0384)	(0.0391)		(0.0395)
log_profits	0.0322***	0.0367***	0.00940***	0.0104***	0.00764***	0.00502***	0.0419***	0.0427***	-0.117***	0.0456***
	(0.00629)	(0.00680)	(0.000246)	(0.000253)	(0.000461)	(0.000374)	(0.00789)	(0.00796)	(0.0330)	(0.00803)
soe	-0.00690	-0.0299***	0.00334***	-0.0000549	-0.0328***	-0.0139***	-0.0278***	-0.0293***	-0.0440	-0.0322***
	(0.00889)	(0.00970)	(0.000855)	(0.000852)	(0.00203)	(0.00162)	(0.0104)	(0.0106)	(0.100)	(0.0106)
fie	-0.00724*	-0.0204***	-0.0157***	-0.0186***	-0.108***	-0.0985***	-0.00320	-0.00643	0.0154	0.00177
	(0.00431)	(0.00378)	(0.00100)	(0.000928)	(0.00273)	(0.00256)	(0.00454)	(0.00452)	(0.0757)	(0.00472)
r_export	-0.0698***	-0.0622***	-0.0478***	-0.0470***	-0.183***	-0.192***	-0.0383***	-0.0368***	-0.0465	-0.0205***
	(0.00624)	(0.00551)	(0.00236)	(0.00230)	(0.00766)	(0.00761)	(0.00582)	(0.00576)	(0.0369)	(0.00438)
log_employment	0.0696***	0.0676***	0.0190***	0.0191***	0.00724***	0.0117***	0.0779***	0.0765***	0.0202***	0.0808***
	(0.0105)	(0.00993)	(0.000546)	(0.000511)	(0.00104)	(0.000840)	(0.0118)	(0.0115)	(0.00401)	(0.0116)
log_assets	0.0683***	0.0997***	0.0205***	0.0275***	0.00893***	-0.0118***	0.112***	0.119***	0.0988**	0.128***
	(0.0109)	(0.0155)	(0.000566)	(0.000517)	(0.00183)	(0.000803)	(0.0175)	(0.0183)	(0.0384)	(0.0185)
mobility		0.0690***		0.0441***		0.0304***		0.0724***		0.0778***
		(0.00762)		(0.00107)		(0.00229)		(0.00855)		(0.00866)
_cons	0.609***	0.508***	0.233***	0.191***	0.794***	0.822***	0.673***	0.609***	0.0278	0.637***
	(0.0829)	(0.0762)	(0.00452)	(0.00413)	(0.00792)	(0.00752)	(0.0894)	(0.0888)	(0.144)	(0.0896)
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1459079	1454965	1459079	1454965	1459079	1454965	1318080	1317713	920816	1304455
R^2	0.005	0.005	0.171	0.184	0.129	0.129	0.006	0.006	0.018	0.007

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 15: Effective Income Tax – including Firm Age

	(1) Untransformed	(2) Untransformed	(3) Winnowed	(4) Winnowed	(5) Binary	(6) Binary	(7) NoZero	(8) NoZero	(9) Positive	(10) Positive
mobility	0.0501***	0.0552***	0.0422***	0.0425***	0.141***	0.144***	0.0147	0.0250*	0.0139	0.0241*
	(0.00778)	(0.00831)	(0.00210)	(0.00181)	(0.00560)	(0.00448)	(0.0122)	(0.0132)	(0.0117)	(0.0127)
firm_age	-0.000177	0.000117	0.0000605	0.0000785	0.0000617	0.000243*	-0.000452	0.000112	-0.000430	0.000132
	(0.000239)	(0.0000802)	(0.0000423)	(0.0000477)	(0.000107)	(0.000138)	(0.000472)	(0.000120)	(0.000466)	(0.000119)
mobility×firm_age	0.000553		0.0000338		0.000342		0.00110		0.00110	
	(0.000536)		(0.0000957)		(0.000343)		(0.00102)		(0.00102)	
log_profits	-0.0285***	-0.0285***	-0.00458***	-0.00458***	0.0305***	0.0305***	-0.0696***	-0.0696***	-0.0802***	-0.0803***
	(0.00399)	(0.00399)	(0.000445)	(0.000445)	(0.000724)	(0.000725)	(0.00767)	(0.00768)	(0.00659)	(0.00660)
soe	-0.00770	-0.00809	-0.0155***	-0.0156***	-0.0856***	-0.0858***	0.0528**	0.0524**	0.0573***	0.0568***
	(0.0116)	(0.0116)	(0.00160)	(0.00161)	(0.00449)	(0.00454)	(0.0208)	(0.0208)	(0.0187)	(0.0188)
fie	-0.105***	-0.105***	-0.0994***	-0.0994***	-0.217***	-0.217***	-0.0674***	-0.0676***	-0.0625***	-0.0627***
	(0.00412)	(0.00415)	(0.00263)	(0.00263)	(0.00563)	(0.00563)	(0.00652)	(0.00656)	(0.00579)	(0.00585)
r_export	-0.00487	-0.00492	-0.00618***	-0.00618***	-0.00319	-0.00322	-0.00952	-0.00966	-0.00975	-0.00988
	(0.00824)	(0.00821)	(0.00138)	(0.00138)	(0.00259)	(0.00259)	(0.0122)	(0.0121)	(0.0120)	(0.0120)
log_employment	0.0169***	0.0170***	0.00963***	0.00963***	0.0194***	0.0194***	0.0180***	0.0182***	0.0198***	0.0199***
	(0.00238)	(0.00237)	(0.000408)	(0.000407)	(0.00107)	(0.00107)	(0.00361)	(0.00361)	(0.00340)	(0.00339)
log_assets	0.0246***	0.0246***	0.00488***	0.00488***	-0.00157	-0.00156	0.0491***	0.0492***	0.0582***	0.0583***
	(0.00401)	(0.00402)	(0.000429)	(0.000429)	(0.00110)	(0.00109)	(0.00733)	(0.00735)	(0.00648)	(0.00650)
_cons	0.0430**	0.0399*	0.105***	0.105***	0.339***	0.337***	0.182***	0.175***	0.160***	0.153***
	(0.0215)	(0.0219)	(0.00402)	(0.00392)	(0.0109)	(0.0106)	(0.0326)	(0.0336)	(0.0305)	(0.0315)
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1327808	1327808	1327808	1327808	1327808	1327808	869115	869115	868432	868432
R^2	0.006	0.006	0.125	0.125	0.141	0.141	0.011	0.011	0.012	0.012

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 16: Effective VAT – including Firm Age

	(1) Untransformed	(2) Untransformed	(3) Winnowed	(4) Winnowed	(5) Binary	(6) Binary	(7) NoZero	(8) NoZero	(9) Positive	(10) Positive
mobility	0.0644***	0.0606***	0.0412***	0.0398***	0.0261***	0.0260***	0.0680***	0.0628***	0.0139	0.0681***
	(0.00881)	(0.00819)	(0.00131)	(0.00111)	(0.00258)	(0.00235)	(0.00999)	(0.00915)	(0.0117)	(0.00929)
firm_age	0.000137	-0.0000763	0.000130**	0.0000499*	0.000142	0.000135**	0.000140	-0.000139	-0.000430	-0.000150
	(0.000121)	(0.0000828)	(0.0000616)	(0.0000258)	(0.0000921)	(0.0000638)	(0.000139)	(0.000121)	(0.000466)	(0.000125)
mobility × firm_age	-0.000400*		-0.000150**		-0.0000114		-0.000536*		0.00110	
	(0.000204)		(0.0000699)		(0.000105)		(0.000304)		(0.00102)	
log_valueadded	-0.219***	-0.219***	-0.0574***	-0.0573***	0.0148***	0.0148***	-0.260***	-0.260***		-0.278***
	(0.0354)	(0.0354)	(0.00125)	(0.00125)	(0.000790)	(0.000790)	(0.0417)	(0.0417)		(0.0421)
log_profits	0.0373***	0.0373***	0.0106***	0.0106***	0.00541***	0.00541***	0.0433***	0.0433***	-0.0802***	0.0463***
	(0.00733)	(0.00733)	(0.000266)	(0.000267)	(0.000396)	(0.000396)	(0.00859)	(0.00859)	(0.00659)	(0.00866)
soe	-0.0231*	-0.0227*	0.00176*	0.00189*	-0.0134***	-0.0134***	-0.0205	-0.0202	0.0573***	-0.0232*
	(0.0123)	(0.0123)	(0.00100)	(0.000982)	(0.00189)	(0.00188)	(0.0137)	(0.0137)	(0.0187)	(0.0137)
fie	-0.0247***	-0.0246***	-0.0202***	-0.0202***	-0.100***	-0.100***	-0.0114**	-0.0113**	-0.0625***	-0.00274
	(0.00390)	(0.00390)	(0.000941)	(0.000942)	(0.00262)	(0.00262)	(0.00457)	(0.00456)	(0.00579)	(0.00478)
r_export	-0.0679***	-0.0679***	-0.0499***	-0.0499***	-0.197***	-0.197***	-0.0433***	-0.0433***	-0.00975	-0.0264***
	(0.00589)	(0.00589)	(0.00237)	(0.00237)	(0.00789)	(0.00789)	(0.00606)	(0.00606)	(0.0120)	(0.00456)
log_employment	0.0676***	0.0676***	0.0188***	0.0188***	0.0114***	0.0114***	0.0765***	0.0765***	0.0198***	0.0809***
	(0.0106)	(0.0106)	(0.000535)	(0.000535)	(0.000887)	(0.000887)	(0.0123)	(0.0123)	(0.00340)	(0.0124)
log_assets	0.0996***	0.0996***	0.0273***	0.0273***	-0.0123***	-0.0123***	0.119***	0.119***	0.0582***	0.128***
	(0.0167)	(0.0167)	(0.000545)	(0.000546)	(0.000824)	(0.000824)	(0.0196)	(0.0196)	(0.00648)	(0.0199)
_cons	0.519***	0.521***	0.197***	0.198***	0.833***	0.833***	0.619***	0.622***	0.160***	0.652***
	(0.0817)	(0.0821)	(0.00432)	(0.00429)	(0.00775)	(0.00768)	(0.0952)	(0.0957)	(0.0305)	(0.0967)
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1360160	1360160	1360160	1360160	1360160	1360160	1232452	1232452	868432	1219583
R^2	0.005	0.005	0.182	0.182	0.127	0.127	0.006	0.006	0.012	0.006

Notes:

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

Table 17: Fixed Asset Indicator Coding

Binary Coding	
Industry	Indicator Value
coal mining	1
petroleum and natural gas	1
Heavy metal mining	1
lignt metal mining	1
non-metal mining	1
mining accessary activities	1
other mining	1
Agriculture processing	0
Food making	0
Beverage making	0
Tobacco making	0
Textile	0
Garment, shoes, hats	0
Leather, fur, feather products	0
Wood, bamboo products	0
Furniture	0
Paper	0
Printing	0
Stationary, Sports wear, music instruments	0
Petroleum processing and nuclear fuel	1
chemical and related processing	0
pharmaceutical	0
chemical fiber manufacturing	0
rubber manufacturing	0
plastic manufacuring	0
cement, brick, glass making (non-metal mineral manufacturing)	1
heavy metal metallergy	1
light metal metallergy	1
metal products	0
general machinery and equipment	0
specialized machinery and equipment	0
transportation equipment manufacturing	0
Electrical mechanics and tools	0
Communication, IT and other electronics	0
meters	0
Arts and Crafts	0
Recyling	0
Electric power thermal power supply	1
Gas supply	1
Water supply	1

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