Table 1: VAT export tax and firm's quality upgrading, Effect of density

	Dependent variable: Product quality (city/product/trade regime/year)			
		Eligible	Non-Eligible	
	(1)	(2)	(3)	(4)
Ln VAT export $\text{tax}_{k,t-1}$		-0.357^{***}	-0.053	
		(0.101)	(0.163)	
Ln VAT import $\text{tax}_{k,t-1}$		-0.090	0.201	
		(0.078)	(0.261)	
Ln VAT export $\text{tax}_{k,t-1} \times \text{Density}_{ck}$	1.108	0.434	-0.045	1.192
	(0.856)	(0.315)	(0.817)	(0.865)
Ln VAT export $\text{tax}_{k,t-1} \times \text{Eligible}^R$	0.004			0.014
	(0.193)			(0.193)
Ln VAT import $\text{tax}_{k,t-1} \times \text{Eligible}^R$	-0.117			0.047
	(0.297)			(0.127)
$\text{Density}_{ck} \times$ Ln VAT import $\text{tax}_{k,t-1}$	-0.685	0.583	-1.714	
	(1.360)	(0.366)	(1.630)	
Ln VAT export $\text{tax}_{k,t-1} \times \text{Comp Adv}_{ck}$				-0.053^{*}
				(0.028)
Ln VAT export $\text{tax}_{k,t-1} \times \text{Density}_{ck} \times \text{Eligible}^R$	-0.897			-0.875
	(0.960)			(0.971)
$\text{Density}_{ck} \times$ Ln VAT import $\text{tax}_{k,t-1} \times \text{Eligible}^R$	0.978			
	(1.485)			
Ln VAT export $\text{tax}_{k,t-1} \times \text{Eligible}^R \times \text{Comp Adv}_{ck}$				-0.030
				(0.030)
City-product fixed effects	No	Yes	Yes	No
City-product-regime fixed effects	Yes	No	No	Yes
City-sector-year fixed effects	No	Yes	Yes	No
City-sector-regime-year fixed effects	Yes	No	No	Yes
Product-destination fixed effect	No	Yes	Yes	No
product-year fixed effects	Yes	No	No	Yes
Observations	4,744,218	3,998,921	745,297	4,744,218
R^2	0.280	0.408	0.607	0.280

This table estimates eq(3). LDC and DC are defined according to the World Bank country classification. Homogeneous and heterogeneous goods are defined according to the official list of goods's classification, Rauch (1999). Small and large are computed based on either the count of HS6 exported by city c or the total quantity exported. When one of these two metrics are above national average, the city is considered as large. Note that 'Eligible' refers to the regime entitle to VAT refund, our treatment group. Our control group is processing trade with supplied input, 'Non-Eligible' to VAT refund. Sectors are defined following the Chinese 4-digit GB/T industry classification and regroup several products. Heteroskedasticity-robust standard errors clustered at the product level appear inparentheses. * Significance at the 10%, ** Significance at the 5%, *** Significance at the 1%.