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

	Dependent variable: Product quality (city/product/trade regime/year)									
	Rare earth		Energy		High tech		Skilled		RD	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ln VAT export $\text{tax}_{k,t-1}$	−0.559***		−0.673***		−0.557***		−0.544***		−0.555***	
	(0.097)		(0.120)		(0.097)		(0.097)		(0.097)	
Ln VAT import $\text{tax}_{k,t-1}$	0.481***		0.420**		0.507***		0.485***		0.481***	
	(0.134)		(0.186)		(0.133)		(0.138)		(0.134)	
lag foreign export share^R_{ckr}	0.015	0.001	0.034***	0.018	0.017*	0.003	0.015	0.001	0.016	0.001
	(0.010)	(0.010)	(0.012)	(0.013)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
lag SOE export share^R_{ckr}	0.089***	0.071***	0.094***	0.072***	0.088***	0.070***	0.090***	0.071***	0.090***	0.072***
	(0.010)	(0.011)	(0.013)	(0.014)	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(0.011)
Ln VAT export $\text{tax}_{k,t-1} \times \text{Density}_{ck}$	1.079***	1.006***	1.629***	1.518***	1.038***	0.938***	1.061***	0.972***	1.071***	1.004***
	(0.324)	(0.268)	(0.416)	(0.353)	(0.320)	(0.262)	(0.324)	(0.268)	(0.323)	(0.267)
Ln VAT export $\text{tax}_{k,t-1} \times \text{Eligible}^R$	0.261***	0.296***	0.335***	0.367***	0.264***	0.296***	0.247***	0.284***	0.260***	0.296***
	(0.034)	(0.035)	(0.049)	(0.049)	(0.033)	(0.033)	(0.034)	(0.035)	(0.034)	(0.035)
Ln VAT import $\text{tax}_{k,t-1} \times \text{Density}_{ck}$	−0.611	−0.401	−1.320	−1.111	−0.503	−0.363	−0.629	−0.354	−0.612	−0.402
	(0.684)	(0.649)	(0.803)	(0.748)	(0.662)	(0.655)	(0.701)	(0.665)	(0.684)	(0.649)
Ln VAT import $\text{tax}_{k,t-1} \times \text{Eligible}^R$	−0.656***	−0.587***	−0.578***	−0.452***	−0.675***	−0.617***	−0.644***	−0.576***	−0.656***	−0.587***
	(0.117)	(0.104)	(0.194)	(0.170)	(0.116)	(0.105)	(0.121)	(0.107)	(0.117)	(0.104)
Ln VAT export $\text{tax}_{k,t-1} \times \text{Density}_{ck} \times \text{Eligible}^R$	−0.795***	−0.833***	−1.303***	−1.306***	−0.801***	−0.813***	−0.755***	−0.786***	−0.792***	−0.830***
	(0.159)	(0.154)	(0.236)	(0.231)	(0.154)	(0.149)	(0.161)	(0.156)	(0.159)	(0.154)
Ln VAT import $\text{tax}_{k,t-1} \times \text{Density}_{ck} \times \text{Eligible}^R$	1.332**	0.893	1.807**	1.327*	1.211*	0.828	1.250*	0.837	1.333**	0.894
	(0.657)	(0.614)	(0.867)	(0.745)	(0.643)	(0.621)	(0.676)	(0.630)	(0.657)	(0.614)
City-product-regime fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-sector-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product-destination fixed effect	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
product-year fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Observations	4,739,549	4,739,549	3,268,182	3,268,182	4,704,339	4,704,339	4,640,115	4,640,115	4,744,218	4,744,218
R^2	0.404	0.264	0.411	0.266	0.404	0.265	0.402	0.263	0.404	0.264

This table estimates eq(3). 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 in-parentheses. * Significance at the 10%, ** Significance at the 5%, *** Significance at the 1%.