



Figure 7 The dynamic impacts of GIs with quality supervision

Table 6

Robust checks on free-riding result

	Quality measurements					Excluding products of hs6 with hs8 products more than 3	Keep all gravity variables	Export to developed countries
	Quality measure considering firm-year effects	Quality measure considering firm-country-year effects	Quality measure with $\sigma = 3$	Quality measure with $\sigma = 5$	Quality measure using product trade elasticities			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GI_{cpt}^{noqual}	-0.0481**	-0.0445*	-0.0612*	-0.0481**	-0.0179*	-0.1067***	-	-
	(-2.15)	(-1.67)	(-1.79)	(-2.15)	(-1.77)	(-2.68)	0.0511**	0.0919***
Observations	315209	179426	315209	315209	315922	186162	315416	200544
GI_{cpt}^{qual}	-0.0058	0.0337	0.0653	0.0411	0.0232**	0.0324	0.0438	0.0414
	(-0.26)	(1.28)	(1.63)	(1.55)	(2.10)	(0.59)	(1.42)	(1.13)
Observations	323984	183157	314024	314024	314755	207010	314227	200910
Country-product-firm fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Country-year fixed effects	YES	YES	YES	YES	YES	YES	NO	YES
Firm-year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Product-year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES

Table 7

Quality different between product groups before authorized as GI

	Mean value of GI	Mean value of non-GI	Difference
GI without quality supervision	0.0269	0.0082	0.0188***
GI with quality supervision	0.0427	0.0082	0.0345***

Note: When calculating the mean quality value of GI without quality supervision, the GI products authorized by Quality supervision department are all excluded to avoid disturbance.

Table 8

Consider endogeneity issue

	Adding city-year fixed effect	Using neighbor cities as control group
	(1)	(2)
GI_{cpt}^{noqual}	-0.0488*	-0.0683***
	(-1.85)	(-2.58)
Observations	304363	271385
GI_{cpt}^{qual}	0.0531*	0.0453
	(1.70)	(1.44)
Observations	303255	269788
Country-product-firm fixed effects	YES	YES
Country-year fixed effects	YES	YES
Firm-year fixed effects	YES	YES
Product-year fixed effects	YES	YES

Table 9

Externalities of GIs

	Product GIs	City GIs
	(1)	(2)
$GI_{cpt}^{noqual} \times GI_num_{pt}^{noqual}$	0.0032** (2.09)	
$GI_{cpt}^{noqual} \times GI_num_{ct}^{noqual}$		0.0013 (0.77)
GI_{cpt}^{noqual}	-0.1000*** (-2.94)	-0.0772* (-1.92)
Observations	315209	315209
$GI_{cpt}^{qual} \times T_t \times GI_num_{pt}^{qual}$	-0.0001 (-0.22)	
$GI_{cpt}^{qual} \times T_t \times GI_num_{ct}^{qual}$		0.0124 (1.53)
GI_{cpt}^{qual}	0.0537 (1.46)	0.0010 (0.02)
Observations	314024	314024
Country-product-firm fixed effect	YES	YES
Year fixed effect	YES	YES
Country-year fixed effect	YES	YES
Firm-year fixed effect	YES	YES

Notes: t-statistics reported in parentheses. ***, **, * denote statistical significance at 1, 5, 10 percent level. Robust standard errors clustered at firm level.

Table 10**Heterogeneity of products**

	Animal products	Plant products	Seeds products	Vegetable and fruit	Tea and coffee
	(1)	(2)	(3)	(4)	(5)
GI_{cpt}^{noqual}	-0.2449**	-0.0262	-0.1319	-0.0356	0.2282**
	(-2.14)	(-0.92)	(-1.20)	(-1.08)	(2.34)
Observations	92571	161965	38589	126132	21761
GI_{cpt}^{qual}	0.1684	0.0438	0.0124	0.0782**	-0.1085
	(1.42)	(1.28)	(0.06)	(2.16)	(-0.84)
Observations	92201	166415	33126	131495	21750
Country-product-firm fixed effect	YES	YES	YES	YES	YES
Year fixed effect	YES	YES	YES	YES	YES
Country-year fixed effect	YES	YES	YES	YES	YES
Firm-year fixed effect	YES	YES	YES	YES	YES

Note: Products with 2-digit hscode of 01, 02, 03, 04, 05 are classified as animal products. Products with 2-digit hscode of 06, 07, 08, 09 are classified as plant products. Products with 2-digit hscode of 10, 11, 12 are classified as seeds product. Vegetable and fruit are products with 2-digit hscode of 07 and 08. Tea and coffee is the product with 2-digit code of 09.

Table 11

GI under the protection of FTA

	(1) Quality	(2) Quality
$GI_{cpt}^{noqual} \times FTA_{dt}$	-0.0654** (-2.07)	
GI_{cpt}^{noqual}	-0.0298 (-1.05)	
$GI_{cpt}^{qual} \times FTA_{dt}$		-0.0590 (-1.51)
GI_{cpt}^{qual}		0.0651** (1.97)
Country-product-firm fixed effect	YES	YES
Year fixed effect	YES	YES
Country-year fixed effect	YES	YES
Firm-year fixed effect	YES	YES
Observations	315922	314755

Table 12

China-EU agreement on geographical indications

	(1) Quality	(2) Quality
$GI_{cpt}^{noqual} \times GI_{EU_{cpt}} \times EU_d$	0.2753*** (2.88)	
GI_{cpt}^{noqual}	-0.0550** (-2.11)	
$GI_{cpt}^{qual} \times GI_{EU_{cpt}} \times EU_d$		-0.0452 (-0.75)
GI_{cpt}^{qual}		0.0500 (1.62)
Country-product-firm fixed effect	YES	YES
Year fixed effect	YES	YES
Country-year fixed effect	YES	YES
Firm-year fixed effect	YES	YES
Observations	315922	314755

Table 13

The impact of market structure on free-riding problem

	(1)	(2)
	Quality	Quality
$GI_{cpt}^{noqual} \times hhi_{cpt}$	0.4584** (2.46)	
GI_{cpt}^{noqual}	-0.0758* (-1.77)	
$GI_{cpt}^{qual} \times hhi_{cpt}$		0.5335*** (3.03)
GI_{cpt}^{qual}		0.1123** (2.28)
Country-product-firm fixed effect	YES	YES
Year fixed effect	YES	YES
Country-year fixed effect	YES	YES
Firm-year fixed effect	YES	YES
Observations	194579	190978

Notes: hhi_{cpt} means Hirschman-Herfindahl Index based on firm level export sales for each product. When calculating hhi_{cpt} we drop city-product combinations with less than 5 firms. t-statistics reported in parentheses. ***, **, * denote statistical significance at 1, 5, 10 percent level. Robust standard errors clustered at firm level.

Table A1
GI products in China by product type

2-digit hscode	Product	GI with quality supervision	GI registered in both system	GI without quality supervision
01	Live animals	9	2	72
02	Meat and edible meat offal	82	4	164
03	Fish and aquatic invertebrates	79	2	115
04	Dairy and egg	20	2	42
05	Other products of animal origin	4	0	4
06	Live trees and other plants	8	0	15
07	Vegetables	142	12	344
08	Fruit and nuts	243	26	423
09	Coffee and tea	108	11	135
10	Cereals	58	3	47
11	Products of the milling industry	18	3	81
12	Oil seeds and oleaginou (medicinal plants included)	177	8	148
13	Lac and gums	0	0	2
14	Other vegetable products	1	--	--
	Total	936	73	1592

Note: To be comparable between two GI systems, we limit product type to primary agricultural products, i.e. 2-digit hscode from 01 to 14.

Table A2

The impact of GI registered in both systems on firm's export activities

	Export	Quantity	Price	Quality	Quality- adjusted price
	(1)	(2)	(3)	(4)	(5)
GI_{cpt}^{both}	-0.1088	-0.0235	-0.0894***	-0.1234***	0.0361
	(-1.06)	(-0.23)	(-3.59)	(-2.71)	(1.03)
Observations	299085	299085	299085	299085	299085
Country-product-firm fixed effects	YES	YES	YES	YES	YES
Country-year fixed effects	YES	YES	YES	YES	YES
Firm-year fixed effects	YES	YES	YES	YES	YES
Product-year fixed effects	YES	YES	YES	YES	YES

Notes: $GI_{cpt}^{both} = 1$ for GIs are registered in both systems, otherwise 0. Only GIs registered in both systems are treatment group, non-GIs are control group. t-statistics reported in parentheses. ***, **, * denote statistical significance at 1, 5, 10 percent level. Robust standard errors clustered at firm level.