

ADB Economics Working Paper Series



New Economic Geography and Tax Competition in the PRC: A Firm-Level Data Analysis with Policy Implications

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No. 297 | January 2012



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1550 Metro Manila, Philippines
www.adb.org/economics

©2012 by Asian Development Bank
January 2012
ISSN 1655-5252
Publication Stock No. WPS124550

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Abstract

During 2000–2006, nearly 4,000–5,000 new foreign and domestic enterprises entered the export industry of the People’s Republic of China (PRC) yearly, with geographic concentration along the coastal areas. This paper empirically analyzes the spatial determinants of new entrants by applying traditional comparative advantage analysis, new economic geography of agglomeration theory, and tax competition theory by resource flow model. The heterogeneity of firm ownership and trade type enhances the understanding of investment location decisions. Processing traders differ substantially from nonprocessing traders in response to changes in wage cost, level of development in infrastructure, and proximity to the Pacific coast. The presence of foreign-invested enterprises creates a beacon effect on subsequent foreign and domestic investors. The paper also finds that agglomeration plays a greater role for investors specializing in the processing goods trade and highly skill-intensive or research and development-intensive production. Benefits from reduction in the value added tax rate and corporate income tax rate play an evident role for foreign investors and Hong Kong, China and Taipei,China investors in processing trade sector. The PRC’s policy makers intend to transform the “internationalization” process through attraction of foreign investment toward “localization” by reducing the processing good trading portion and by increasing the supply of domestically produced intermediate inputs for their exports. As the PRC moves up the high-value supply chain, expands its domestic market, and exports skill-intensive goods, processing goods traders may consider new locations or business models.

I. Introduction

Ever since the People's Republic of China (PRC) opened up its economic door to the rest of the world in the late 1970s, two economic aspects have been the center of discussion by many academics, researchers, and policy makers in the world. They are the PRC's inward foreign direct investment (FDI) and its exports. Those two issues were reemphasized when the PRC joined the World Trade Organization in 2001.

Each year, during 2000–2006, nearly 4,000–5,000 new foreign and domestic enterprises entered into the PRC's export industry with geographic concentration along the coastal areas. The heterogeneity of new enterprises in ownership is apparent. In the nation as a whole during 2000–2004, foreign-invested firms account for 30%; Hong Kong, China and/or Taipei, China-invested enterprises, 25%; and Chinese private companies, 42%. The number of processing goods exporters among new entrants stand at approximately 30%. Processing goods export value in the PRC constitutes about 50% of total exports in 2007 and has steadily declined from 60% from 1996 to 2004.

Traditional comparative advantage analysis is based on a level of regional development such as infrastructure in highways, railways, and waterways; production costs; abundance of inputs; labor laws (*hukou*: household registration system); education level (human capital); wage level; transportation costs (proximity to the coast, access to raw and intermediate materials); and production costs. The new economic geography theory of agglomeration provides significant explanatory power to the presence of similar firms, supplier firms, or consumers in a particular region, which causes this location to become more attractive to future investors.

Local government policy makers in the PRC strategically determine their tax rates to attract new foreign investments to their region for additional tax revenue and new employment, which can be described by the tax competition with resource flow model. Policy makers provide preferential tax treatment and/or lower regulatory burdens and often implement special policies such as special economic zones and hi-tech zones. There are a number of policy variables, such as capturing overall levels of tax and regulatory burdens or special policies, designed to attract foreign investors.

This paper discusses the PRC's inward FDI and exports by raising the topic of the spatial determinants of new foreign- and domestic-invested enterprises that enter the export industry. Explanatory factors of spatial determinants of FDI identified in this paper are categorized according to three economic theories: traditional comparative advantage

analysis, new economic geography of agglomeration effects, and tax competition theory by resource flow model.

This paper provides rich empirical results by mapping and merging two separate data sources: industry data at the firm level (from the PRC's Industrial Enterprises Database provided by the National Bureau of Statistics) and firm-level export/import data (from the Export/Import Database provided by the PRC Customs). In particular, new enterprises are categorized based on their ownership (foreign-invested; Hong Kong, China and/or Taipei, China-invested; Chinese private-owned; and state-owned) and are distinguished between firms specializing in processing trade and normal trade (Rodrik 2006, Amity and Freund 2010). Furthermore, the paper separates firms according to the education level of their employees and proxy research activity by selecting firms that employ workers with postgraduate qualifications. This paper shows that these subsamples display economically meaningful differences.

Foreign-invested processing trade firms put more weight on proximity to the Pacific coast and increase in average wages than normal traders do, and the presence of foreign-invested enterprises creates a beacon effect in agglomeration to all other types of export enterprises. Investors from Hong Kong, China and Taipei, China are the most inclined to agglomerate with companies that are also from Hong Kong, China and Taipei, China; and tend to least flock together with foreign-invested firms and state-owned enterprises. Private Chinese investors are greatly influenced by the presence of state-owned incumbent firms.

Value-added tax rate that is strategically determined by local government policy makers influences the location choice of foreign investors. Foreign-invested processing goods traders are particularly sensitive to this practice and Chinese private-invested firms are the least sensitive.

The method of the analysis in this paper suggests useful information for policy makers and market entrants. Marginal effects and predicted changes are calculated, induced either by a certain percent change in each explanatory variable in the empirical analysis influencing tax rates and labor costs, or by inducing market entry by pioneering incumbent firms on subsequent market entrants in various subgroups, some of which may be particularly desirable to policy maker intentions on acquiring new technology from foreign-invested enterprises via technology and management knowledge spillover effects in their province.

II. Theory and Institutional Background

The new economic geography theory in the international trade theory framework introduced by Krugman (1991) may be the most relevant to the spatial determinants of FDI. In monopolistic market structures, economies of scale push manufacturing firms to locate in the region with larger demand while minimizing transportation costs. The economic regions with the most production become more profitable and attract even more production activities. The geographic choice of exporting firms is based on the agglomeration associated with similar industry types of incumbent firms and interaction of economies of scale with transportation costs (proximity to coast). Geographic production-concentration lowers the probability of labor shortages. Incumbent firms can spill over informational, technology, and knowledge externally.

The PRC's dynamic policy changes seem to follow Alfred Marshall's concept regarding industry localization: "internationalization" toward "localization" or "processing trades" to "normal trades." Concentration of foreign-invested firms in a location generates labor markets for a specific industry. Local labor markets supply low-skilled labor and foreign processing traders import sophisticated inputs; however, local producers will replace intermediate imports and instead start producing sophisticated inputs in the near future. Agglomerated foreign firms will benefit from information and knowledge spillovers while domestic firms can benefit from technology and possible knowledge spillovers from foreign-invested enterprises.

Carlton's (1983) article, an exceptionally significant paper concerning economic geography, emphasizes location and employment of new firms utilizing an econometric model with discrete and continuous endogenous variables. Carlton concludes that taxes and state incentive programs do not affect a firm's decision.

Amiti and Javorcik (2008) analyze new economic geography of agglomeration effects in PRC. They use aggregated provincial-level data to generate measures of intermediate goods and consumer market access using recent Chinese input-output tables. Access to suppliers and markets is the most influential spatial determinants of a firm's location choice. Hu and Owen (2005), however, contend that there is no evidence of strong agglomeration from foreign investors in the PRC but conclude that comparative advantage and government policy are more influential factors for a firm's spatial decision as explanations of the emerging pattern of firm locations. Overseas Chinese investors located along the coast show sensitivity to policy and cost differentials compared to OECD investors. In inland provinces, on the other hand, there seems to be no difference between the two groups of investors. Boermans et al. (2009) use factor analysis with aggregated data and emphasize the major role of institutions, labor costs, and market access.

A seminal paper by Head and Ries (1996) formulates a theoretical monopolistic competitive model of self-reinforcing FDI. The paper explains that open door policies made inward FDI on a large scale to the PRC feasible and their empirical results, comprised of 931 foreign ventures that entered between 1984 and 1991 in 54 cities, illustrate considerable agglomeration effects that magnified the advantage conferred by the privileged status of some cities such as special economic zones and high-tech zones.

Parallel literature explores decisions in particular industries in the PRC by investors from different countries. Wakasugi (2005) demonstrates that location choice of Japanese electronics affiliates in the PRC mainly depend on the level of human resources. Chang and Park (2005) use data for Korean investors in the PRC, indicating an importance of network externality. Belderbos and Carree (2002) examine Japanese manufacturers' locations in the PRC and show significant economic geography of agglomeration effects. Chen's (2009) empirical analysis on Taipei, China's green-field investment in the PRC employed a nested-logit model with firm-level data, which indicated that the agglomeration effect from the incumbent firms has become more apparent over time but its relative strength varies across sectors.

Explanatory variables identified by the above mentioned studies typically fall into three categories: measures of a regional level of development (Hu and Owen 2005); new economic geography theories (Amiti and Javorcik 2008) of agglomeration effects with the presence of similar firms, intermediate goods' suppliers, and consumers in a particular region making a location more attractive to future investors; and policy variables capturing overall levels of tax and regulatory burden or special policies designed to attract foreign investors (Head and Ries 1996).

Many studies in new economic geography analysis have omitted some obvious government policy variables—a measure of a firm's tax burden or other preferential treatment variables.

Cheng and Kwan (2000) divide tax reduction in the PRC into four levels as to provincial scope, with the conclusion that tax reduction is the most important factor of FDI inflow. There have been a large number of government regulations on tax reductions at the central and local government level since 1984. These tax breaks and tax reduction policies have mainly two targets. The first is corporation income tax. Regulations in the 1980s offer 15% corporation income tax rate for foreign-invested companies in various economic and technology development zones, 10% corporation income tax rate for companies in coastal economic open zones with exports constituting more than 70% of total output, or an exemption in corporation income tax in the first 2 years of its opening and reduction by half of income tax in the following 5 years. The second is value-added tax, which is the main resource of tax revenue. There are regulations offering various rates of value-added tax rates for firms in the processing industry admitted by local authority. Value-added tax revenue in the PRC is shared by central and local government

with ratios of 75% and 25%, respectively. There is also sales tax and an additional accounting item including sales tax, property tax, goods and services tax, resource tax, land value increment tax, urban maintenance and construction tax, and surcharge for education and local education expenses.

New legislation in 1994 made local governments more independent units motivated to maximize their political and economic benefits as they compete to attract grants and valuable factors to their regions (Qian and Roland 1998). This competition among local authorities becomes a focus of theoretical work flowing three literatures: tax competition literature, welfare competition literature, and spillover effects literature.

With little power on the legislation of taxation, local governments in the PRC practice tax break policies in order to reduce tax for grants, expand tax-favored zones such as economic and technological development zones or high-tech industrial zones, or lower standards of tax break qualifications for corporations, which makes tax competition no longer observable or measurable by tax rates announced in legislative documents. Tax reduction by local governments should be conducted mostly by using tax break policies, which vary over regions and industries.

The most important motivation for tax reduction is to attract FDI, and this is mentioned in a multitude of research papers. Brueckner (2002) illustrates this tax competition phenomenon by the resource flow model. Wilson's (1999) survey paper provides a wide range of ideas about the tax competition model.

III. Models and Methodology

A. Tax Competition Model

Local governments levy taxes on a mobile tax base (foreign and domestic investments) by choosing their tax rates strategically with particular attention to other local government tax rates. Tax competition models are mostly within the framework of the resource flow model summarized by Brueckner (2002) in the review of government interaction. This model is followed by this paper, which uses an empirical model according to tax reaction function. The general form of tax reaction function can be generated from various tax competition theoretical models, as shown in the seminal work by Brueckner and Saavedra (2001).

Each local government chooses its tax rate t_j and considers the amount of foreign investments (resource) within its borders. Distribution of foreign investments in provinces depends on t_j ; therefore, j^{th} local government decision on tax rate is indirectly affected by

t_{-j} (vector of t 's for the $n-1$ other local governments). The local government j 's objective function is

$$V(t_j, s_j; X_j),$$

where s_j is an amount of inflow of foreign investment into j^{th} province and X_j is the vector of province j 's characteristics. Distribution of s_j is affected by t .

$$s_j = H(t_j, t_{-j}; X_j)$$

Therefore, the reduced form of the resource-flow model can be derived as

$$V(t_j, H(t_j, t_{-j}; X_j); X_j) \equiv V(t_j, t_{-j}; X_j)$$

Province j 's optimal tax rate as a reaction function from the first order condition takes the form of

$$t_j = R(t_{-j}; X_j).$$

B. Conditional Logit Model

In connection with the comparative advantage theory and new economic geography of agglomeration analysis, this study adopts the modified additive random utility model by substituting expected profits Π for utility U . Suppose an investor i chose one province among J ($=29$) alternatives, then expected profits for an investor i of choosing alternative j ($y_i = j$) is given by

$$E(\Pi_{ij}) = V_{ij} + \varepsilon_{ij} = V(CA_{ij}, NEG_{ij}, t_j) + \varepsilon_{ij},$$

where V_{ij} is the deterministic part of expected profits, and ε_{ij} represents a random part (McFadden 1974). it can be expected that investors choose one province among $j = 1, \dots, J$ so as to maximize Π_{ij} . The probability of choosing any one alternative j is equivalent to that the alternative yields greater expected profits than all other alternative choices:

$$p_{ij} = \Pr[y_i = j] = \Pr[\Pi_{ij} \geq \Pi_{ik}, \forall k \neq j] = \Pr[\varepsilon_{ik} - \varepsilon_{ij} \leq V_{ij} - V_{ik}, \forall k \neq j]$$

In order to solve for these choice probabilities, an appropriate joint distribution of the random parts must be specified. McFadden (1978) proves that the following expression

$$F(\varepsilon_{i1}, \dots, \varepsilon_{iJ}) = \exp\left(-G\left(e^{-\varepsilon_{i1}}, \dots, e^{-\varepsilon_{iJ}}\right)\right)$$

is the cumulative distribution function of a multivariate extreme value distribution for any function G that is nonnegative, homogeneous of degree one, and fulfills a number of additional regularity conditions (McFadden 1978). Different choices of G yield different models. The choice probabilities can be calculated given that the random parts of expected profits are distributed according to function F (McFadden 1978):

$$p_{ij} = \Pr(y_i = j : \text{investor } i\text{'s choice} = j) = \int_{-\infty}^{+\infty} F_j(\varepsilon, V_1 - V_2 + \varepsilon, \dots, V_1 - V_J + \varepsilon) d\varepsilon$$

$$= \int_{-\infty}^{+\infty} e^{-\varepsilon} G_1(e^{-\varepsilon}, e^{-\varepsilon - V_1 + V_2}, \dots, e^{-\varepsilon - V_1 + V_J}) \exp(-G(e^{-\varepsilon}, e^{-\varepsilon - V_1 + V_2}, \dots, e^{-\varepsilon - V_1 + V_J})) d\varepsilon$$

where the subscripts to F and G denote the first derivative. Since G is homogeneous of degree 1, its derivative G_1 is homogeneous of degree zero. Therefore

$$p_{ij} = \Pr(y_i = j) = \int_{-\infty}^{+\infty} e^{-\varepsilon} G_j(e^{V_1}, e^{V_2}, \dots, e^{V_J}) \exp(-e^{-\varepsilon} e^{-V_j} G(e^{V_1}, e^{V_2}, \dots, e^{V_J})) d\varepsilon$$

$$= e^{V_j} \frac{G_1(e^{V_1}, e^{V_2}, \dots, e^{V_J})}{G(e^{V_1}, e^{V_2}, \dots, e^{V_J})}, \quad j \in \{1, \dots, J\}.$$

Assume that the errors ε_j are *iid* with Weibull distribution, then

$$p_{ij} = \Pr(y_i = j) = \frac{e^{V_{ij}}}{e^{V_{i1}} + e^{V_{i2}} + \dots + e^{V_{iJ}}}$$

Since all of alternative-specific explanatory variables vary across alternatives, conditional logit model is most suitable for this case.

$$p_{ij} = \Pr(y_i = j) = \frac{\exp(\beta_{CA} CA_{ij} + \beta_{NEG} NEG_{ij} + \beta_t t_{ij})}{\sum_{k=1}^J \exp(\beta_{CA} CA_{ik} + \beta_{NEG} NEG_{ik} + \beta_t t_{ik})}$$

The standard maximum likelihood estimation can be used if the choice probabilities above are correctly specified. Since the model is nonlinear, interpretation of the estimated coefficients is not straightforward. To gauge the magnitude of estimated effects, the marginal effects of changes in explanatory variables on choice probabilities have to be calculated. By multiplying with the coefficient estimate and dividing by the probability, these marginal effects can be converted into elasticities. Cameron and Trivedi (2005)

illustrate that the closed form expression of the marginal effects in the conditional logit model is:

$$\frac{\partial p_{ij}}{\partial x_{ik}} = p_{ij} (i_{ijk} - p_{ik}) \beta$$

where i_{ijk} is an indicator variable that for an investor i takes on the value 1 if $j = k$, and 0 otherwise. It is clear from the above formula that this definition implies that, for example, a positive regression coefficient means that a marginal increase in the covariate x_{ik} will lead to a rise in the predicted probability of option k being chosen, but to a fall in the predicted probability of any other option being chosen.

IV. Data

Three major data sources are utilized for empirical analysis. The National Bureau of Statistics provides annual firm-level industry data sets (Chinese Industrial Enterprises Database), containing information on all firms operating in manufacturing sectors whose annual revenue is greater than 5 million yuan. An extensive array of firm-level variables is included in this data set such as a firm's ownership, composition of employment, corporate income tax amount, value added tax amount, firm's location, etc. Industry data in 2004 contains the established date of each company. New economic geography of agglomeration effects—in other words, an influence of the presence of similar firms in certain locations on new entrants' location decisions—can be tested by properly defining an incumbency. All exporting firms that entered the market prior to 2004 will be counted as “incumbents” from the perspective of a new market entrant in 2004. Incumbency statistics are constructed at the 4-digit Harmonized System (HS)-code level associated with the ownership of firms: foreign-invested, Hong Kong, China/Taipei,China (HT) owned; state-owned; and Chinese private-owned. The ownership status is defined as a majority share of capital.

The [People's Republic of] China Customs records monthly export/import data at the transaction level, including sector information in the form of 8-digit HS-codes, among other variables like unit value, type of enterprises, commodity code, etc. This study maps/merges Industry data and Customs data by matching the company names, and then the subsample of exporting firms from the merged data set are reserved for the analysis. Each firm's export transaction documented in the export/import data set helps to identify its main field of business, establishing its sector identity. The disaggregation level is at 4-digit HS-codes and all exports of products in the same 4-digit HS-code group are treated as equivalent.

The [People's Republic of] China Customs Statistics classifies every transaction of flow of goods based on two trade types: processing and normal trade. Processing trade insinuates a low-value added step in the supply chain of a sophisticated product. High-technology intermediate imports are assembled by low-skilled local workers to produce sophisticated final export goods mainly shipped to advanced economies. Nevertheless, the assembling work performed by local workers contributes limited prospects of skill upgrading or technology/knowledge spillover for the PRC to move up the high value supply chain, expand its domestic market, and export skill-intensive goods. Rodrik (2006) points out that the behavior of processing traders is therefore both of scholarly interest and relevant for policy makers.

A difficult challenge is to construct a measure of access to intermediate good suppliers due to the lack of reliable information. Nevertheless, processing traders yield useful insights on this aspect. Processing traders are largely autonomous from local intermediate goods producers other than labor; therefore, one can successfully abstract from the issue of access to intermediate goods suppliers by analyzing processing traders separately from nonprocessing traders. Normal traders might have generated a strong network of intermediate goods suppliers, since incumbent enterprises presumably made location their consideration in choosing intermediate goods suppliers.

The *Annual Statistical Yearbook of [the People's Republic of] China* contains extensive control variables at the province level. A range of variables at the province level is collected to model comparative advantage analysis of a market entrant's location choices. In addition, a rough distance between a province's main cities and the Pacific coast is measured.

V. Empirical Results

A. R&D-Intensive Firms and Different Type of Exporters

Firms in the high-skill-intensive production industry that employ workers with postgraduate degrees are used as a proxy for R&D-intensive firm activity with respect to technology/knowledge upgrading and spillovers.

Model (1) in Table 1 provides the baseline specification comprising the whole samples, and Model (2) exhibits results for R&D-intensive firms. As opposed to the overall enterprises, R&D-intensive firms put more value on the college graduate population and are sensitive to both value-added and corporate tax rates. Incumbent R&D-intensive firms attract new, similar types of companies through the agglomeration effect.

Table 1: Conditional Logit Model: All Firms and R&D Intensive Firms

Variables	Model (1): All Firms				Model (2): R&D-Intensive Firms			
	Estimates	Marginal Effects	Std. dev.	Predicted Change*	Estimates	Marginal Effects	Std. dev.	Predicted Change*
wage_manufacturing	-0.00 [-22.617]	-0.00 [-27.590]	3016	-3.02	-0.00 [-7.283]	-0.00 [-8.512]	3008	-3.61
GDP per capita	0.00 [21.764]	0.00 [16.826]	4910	1.47	0.00 [5.012]	0.00 [4.656]	4777	0.96
waterway	6.53 [51.405]	0.50 [38.069]	0.07	3.57	6.15 [20.745]	0.79 [22.473]	0.07	5.65
highway	0.97 [9.630]	0.07 [9.076]	0.21	1.56	1.30 [5.398]	0.17 [5.063]	0.21	3.52
high school pop	-7.78 [-12.188]	-0.60 [-15.387]	0.04	-2.6	-8.35 [-6.547]	-1.08 [-8.074]	0.04	-4.66
college pop	-0.59 [-0.677]	-0.05 [-0.666]	0.03	-0.15	7.55 [4.789]	0.97 [5.859]	0.03	3.26
proximity	-0.00 [-57.455]	-0.00 [-41.952]	686	-18.93	-0.00 [-17.935]	-0.00 [-21.379]	686	-18.11
value added tax rate	-1.18 [-4.784]	-0.09 [-4.939]	0.07	-0.62	-0.73 [-1.508]	-0.10 [-1.533]	0.07	-0.65
corp income tax rate	-1.65 [-3.202]	-0.13 [-3.175]	0.02	-0.29	-3.77 [-3.395]	-0.49 [-3.295]	0.02	-1.1
incumbent firms	0.01 [62.528]	0.00 [31.150]	65	3.58	0.01 [26.089]	0.00 [16.116]	51	5.22
Sample size		495673				89217		
LL		-41282				-7988		
Chi2		33203				4868		
Pseudo R2		0.29				0.23		

* Predicted changes (in %) induced by a 1 standard deviation increase in the explanatory variable.

Note: Figures in the square bracket are z-statistics.

Source: Author's calculations.

Models (3) and (4) in Table 2 show analyses from the heterogeneity of firms in their trade type, according to whether they predominantly focus on processing trade or normal trade. Processing trade has been at the center of debates about the sophistication level of the PRC's exports (Rodrik 2006, Wang and Wei 2008). Processing trade is largely dependent on a limited range of local inputs, mainly labor. Processing traders import sophisticated intermediate goods, and only assembly and related low value-added production processing take place locally. Therefore, processing traders are relatively less dependent on intermediate goods supplier networks, while they are particularly sensitive to factors like labor costs, value added tax rate, regional development in infrastructure, and proximity to the Pacific coast.

Table 2: Conditional Logit Model: Processing Traders versus Normal Traders

Variables	Model (3): Processing Traders				Model (4): Normal Traders			
	Estimates	Marginal Effects	Std. dev.	Predicted Change*	Estimates	Marginal Effects	Std. dev.	Predicted Change*
wage_manufacturing	-0.00 [-5.329]	-0.00 [-5.820]	3015	-2.11	-0.00 [-24.052]	-0.00 [-24.794]	3016	-2.71
GDP per capita	0 [17.388]	0 [15.144]	4963	2.98	0 [13.511]	0 [10.665]	4886	0.98
waterway	4.99 [19.295]	0.56 [23.580]	0.07	3.96	7.55 [50.721]	0.40 [26.129]	0.07	2.87
highway	3.78 [18.170]	0.42 [15.932]	0.21	8.88	0.12 [1.030]	0.01 [1.027]	0.21	0.13
high school pop	3.82 [3.043]	0.43 [2.897]	0.04	1.84	-12.08 [-16.203]	-0.64 [-21.596]	0.04	-2.8
college pop	-33.63 [-17.142]	-3.75 [-12.808]	0.03	-12.52	10.09 [10.476]	0.54 [14.975]	0.03	1.81
proximity	-0.00 [-26.313]	-0.00 [-55.907]	686	-30.32	-0.00 [-51.245]	-0.00 [-27.258]	686	-13.17
value added tax rate	-3.61 [-7.601]	-0.40 [-7.883]	0.07	-2.76	-0.67 [-2.261]	-0.04 [-2.317]	0.07	-0.24
corp income tax rate	-2.32 [-2.418]	-0.26 [-2.395]	0.02	-0.58	-1.23 [-1.981]	-0.07 [-1.968]	0.02	-0.15
incumbent firms	0.01 [28.221]	0.00 [25.095]	75	4.44	0.01 [50.676]	0.00 [21.206]	60	2.36
Sample size	154008				341665			
LL	-11207				-29534			
Chi2	13531				20752			
Pseudo R2	0.38				0.26			

* Predicted changes (in %) induced by a 1 standard deviation increase in the explanatory variable.

Note: Figures in the square bracket are z-statistics.

Source: Author's calculations.

Comparing results between processing traders and normal traders supports intuition. From the regression results, there is indeed a difference in agglomerative effects. A new processing trader tends to select a location where other processing traders are operating. In fact, the predicted response to a 1 standard deviation increase in the number of incumbents in terms of choice probabilities is, in the case of processing traders (4.44%), roughly 2 percentage points above the response of normal traders (2.36%). Normal traders in their location choices are unlikely influenced by a reduction in either value added tax rate or corporate income tax rate while processing traders seriously consider the benefit from value added tax rate reduction. The same holds for processing traders' sensitivity to distance from the coast. A 1 standard deviation increase in the distance from the Pacific coast is associated with a more than 30% reduction in choice probability, whereas the reduction for nonprocessing trading firms is about 13%.

The obtained results for the infrastructure variables show that there is a large effect of well-developed road infrastructure on the location decisions of processing traders. A 1 standard deviation rise in roads per area raises the choice probability by 8.9%, whereas the effect is insignificant for normal traders, which conforms to expectations that

processing traders are particularly sensitive to transportation costs, and complements the large coefficient estimate for the distance from the coast. At the same time, however, a comparable estimate is obtained for the waterway density of a province—a rise in waterway density has an effect of roughly the same magnitude for both processing and normal traders.

Overall, it is noticeable that the model seems to do a better job at predicting the choices of low-value added processing firms, displaying a much better overall model fit, with a pseudo-R-squared of 0.376, compared to other samples. High value-added firms might be more dependent on highly specialized input factors (say, college graduates of a certain subject, or intellectual property rights), and therefore their choice propensities may yield predictions less accurate by broad provincial level aggregate variables.

B. Heterogeneity in Origin of Investment Funds

In order to shed more light on the heterogeneous agglomerative processes in the PRC's export industry, the incumbent firms are divided by their ownership origin: foreign-invested (FN); Hong Kong, China/Taipei,China invested (HT); state-owned (ST); and Chinese private-owned (CP) incumbent firms. Further analysis with four subgrouped investors based on their ownership allows one to examine which firms likely play a significant agglomerative leading role for subsequent firms in the same ownership origin and different origin to their location decision. For example, foreign investors might follow other foreign firms, or the presence of state-owned firms might show a strong agglomerative effect to Chinese private investors.

Table 3 introduces separate incumbent counts depending on investor origin. For the foreign-invested sample (5), wage and proximity variables are the most influential factors to new entrants followed by level of infrastructure development. Benefits from the reduction in value added tax rate are also taken critically by foreign investors while an incentive from corporative income tax provided by local policy makers is considered somewhat to a lesser extent.

Table 3: Conditional Logit Model: Foreign Firms and Hong Kong, China/Taipei,China Firms

Variables	Model (5): Foreign-Owned				Model (6): Hong Kong, China/ Taipei,China-Owned			
	Estimates	Marginal Effects	Std. dev.	Predicted Change*	Estimates	Marginal Effects	Std. dev.	Predicted Change*
wage_manufacturing	-0.00 [-21.608]	-0.00 [-15.832]	3037	-3.34	0.00 [13.435]	0.00 [9.835]	3005	9.02
GDP per capita	0.00 [13.481]	0.00 [8.602]	5057	1.01	0.00 [13.783]	0.00 [11.800]	4833	2.9
waterway	7.17 [26.881]	0.31 [16.281]	0.07	2.2	7.38 [22.978]	0.97 [21.786]	0.07	6.88
highway	1.57 [8.261]	0.07 [6.643]	0.21	1.43	0.31 [1.165]	0.04 [1.168]	0.21	0.84
high school pop	-11.17 [-8.853]	-0.48 [-11.842]	0.04	-2.09	7.15 [5.398]	0.94 [4.836]	0.04	4.05
college pop	9.71 [6.216]	0.42 [9.015]	0.03	1.41	-50.36 [-20.445]	-6.61 [-13.251]	0.03	-22
proximity	-0.00 [-32.301]	-0.00 [-15.715]	686	-14.61	-0.00 [-20.999]	-0.00 [-53.876]	686	-34.02
value added tax rate	-3.06 [-6.565]	-0.13 [-6.864]	0.07	-0.9	-1.41 [-1.925]	-0.19 [-1.946]	0.07	-1.27
corp income tax rate	2.87 [3.662]	0.12 [3.751]	0.02	0.28	-3.99 [-2.138]	-0.52 [-2.153]	0.02	-1.18
Incumbent_CP	0.01 [14.244]	0.00 [9.124]	26	0.66	0.00 [5.345]	0.00 [5.115]	27	0.97
Incumbent_ST	0.02 [4.038]	0.00 [3.878]	3	0.29	0.00 [0.374]	0.00 [0.374]	3	0.07
Incumbent_HT	-0.00 [-1.990]	-0.00 [-1.859]	33	-0.12	0.01 [13.869]	0.00 [13.375]	35	2.36
Incumbent_FN	0.02 [26.019]	0.00 [10.406]	20	1.82	0.01 [7.192]	0.00 [6.955]	21	1.74
Sample size		143392				126650		
LL		-11410				-8330		
Chi2		10652				12901		
Pseudo R2		0.32				0.44		

* Predicted changes (in %) induced by a 1 standard deviation increase in the explanatory variable.

Note: Figures in the square bracket are z-statistics.

Source: Author's calculations.

All four HS 4-level incumbent statistics are significant and the largest agglomeration effect is associated with foreign-owned incumbent firms. Twenty additional foreign-owned incumbents in a province would increase the choice probability by about 2%, and the effect of Chinese private firms is comparable. However, the agglomeration effect of HT-invested firms is negative; in other words, foreign investors are less likely to choose a location where HT-invested companies are operating. New foreign investors seem to consider enterprises from Hong Kong, China and Taipei,China as competitors while they interpret the presence of other foreign firms as potential corporative business partners; or they recognize the valuable experience of incumbent foreign firms operating in a similar industry sector in the PRC.

Table 4: Conditional Logit Model: Chinese Private Firms

Variables	Model (7): Chinese Private Firms			
	Estimates	Marginal Effects	Std. dev.	Predicted Change*
wage_manufacturing	-0.00 [-11.434]	-0.00 [-14.028]	3009	-3.01
GDP per capita	0.00 [13.114]	0.00 [10.252]	4874	1.95
waterway	3.38 [14.531]	0.31 [17.384]	0.07	2.23
highway	0.56 [3.507]	0.05 [3.391]	0.21	1.08
high school pop	-7.64 [-7.324]	-0.71 [-9.234]	0.04	-3.07
college pop	0.65 [0.498]	0.06 [0.508]	0.03	0.2
proximity	-0.00 [-31.890]	-0.00 [-23.249]	686	-16.33
value added tax rate	-0.26 [-0.713]	-0.02 [-0.719]	0.07	-0.16
corp income tax rate	-1.69 [-2.044]	-0.16 [-2.006]	0.02	-0.35
Incumbent_CP	0.02 [43.597]	0.00 [16.823]	26	4.06
Incumbent_ST	0.05 [11.628]	0.01 [10.001]	3	1.44
Incumbent_HT	0.00 [3.235]	0.00 [3.389]	26	0.35
Incumbent_FN	0.01 [13.416]	0.00 [9.910]	15	1.79
Sample size			208699	
LL			-17378	
Chi2			14018	
Pseudo R2			0.29	

* Predicted changes (in %) induced by a 1 standard deviation increase in the explanatory variable.

Note: Figures in the square bracket are z-statistics.

Source: Author's calculations.

In Model (6), HT investors show a preference in their entry decision for a province with a large high school graduate population, but a strong restriction for a province with a large college graduate population. Most of HT investors in the PRC mainly seek low-skilled laborers while some foreign investors may need intermediate-level managers with college degrees. The obtained result for the wage variable, however, is somewhat puzzling with a positive sign. On one hand, provincial individual income level greatly affects the location decisions of investors from Hong Kong, China and Taipei, China. Benefits from the reduction in both value-added tax rate and corporate income tax rate are taken intensely by investors from Hong Kong, China and Taipei, China.

The results also reveal a much stronger pattern of the agglomeration effect to foreign-invested companies and enterprises from Hong Kong, China and Taipei, China while the

coefficient for state-owned incumbents is insignificant, implying that the presence of state-owned enterprises hardly provides investors from Hong Kong, China and Taipei, China with much influence in their location choice.

In contrast, CPs (7) seem to behave similarly as foreign-invested companies in location decision choice associated with infrastructure-related variables but somewhat differently toward tax incentives. Most domestically invested exporters are normal traders (about 90%), considering corporate income tax rate more seriously than value-added tax.

The agglomeration effect associated with foreign-invested firms is similar to that for the foreign-owned subsample (5), and the effect of CPs is the most significant, while HT incumbents have a negligible effect. However, the presence of state-owned firms has a sizable effect on the co-location of CPs.

In summary, using results from Models (5) to (7), it can be observed that the presence of foreign-invested exporters has a significant beacon effect, with the strongest leading role in agglomeration for new investors coming from the PRC; Hong Kong, China; Taipei, China; and foreign countries in the PRC's export industry. Moreover, privately invested Chinese enterprises show some tendency for co-location, with significant agglomerative influence exerted by other Chinese private-owned incumbent firms.

C. Processing Traders versus Normal Traders

The last empirical results provide comparison analysis between processing traders and normal traders in different ownership origins. The subsamples in each investment origin are further split into processing traders and normal traders. From Models (8A and 8B) in Table 5, foreign investors in the processing and normal trade sectors behave analogously in location choice with respect to infrastructure and proximity to the coast but the absolute magnitude of each element is more significant with investors in the processing goods trade sector than those in the normal goods trade sector. As expected, processing traders are more sensitive to an incentive in the form of value added tax reduction than from corporate income tax reduction. Foreign investors in both the processing trade sector and normal trade sector show a tendency to agglomerate with incumbent foreign companies. In particular, the latter likely cluster together with privately-owned Chinese incumbents while the former shows the opposite.

Table 5: Conditional Logit Model: Processing Traders versus Normal Traders (foreign-owned firms)

Variables	Model (8): Foreign-Owned							
	A: Processing Traders				B: Normal Traders			
	Estimates	Marginal Effects	Std. dev.	Predicted Change*	Estimates	Marginal Effects	Std. dev.	Predicted Change*
wage_manufacturing	-0.00 [-12.959]	-0.00 [-11.644]	3024	-3.93	-0.00 [-17.333]	-0.00 [-10.857]	3048	-2.74
GDP per capita	0 [13.267]	0 [7.353]	5030	2.01	0 [6.016]	0 [4.571]	5080	0.51
waterway	5.91 [14.255]	0.33 [12.345]	0.07	2.34	8.88 [24.640]	0.28 [10.653]	0.07	2
highway	2.32 [7.732]	0.13 [5.643]	0.21	2.72	1.01 [4.052]	0.03 [3.588]	0.21	0.68
high school pop	-4.81 [-2.335]	-0.27 [-2.745]	0.04	-1.15	-16.07 [-9.897]	-0.51 [-10.730]	0.04	-2.21
college pop	-8.34 [-2.966]	-0.46 [-2.374]	0.03	-1.55	21.07 [10.824]	0.67 [13.712]	0.03	2.25
proximity	-0.01 [-21.402]	-0.00 [-12.132]	685.8	-21.19	-0.01 [-23.885]	-0.00 [-10.588]	686	-10.01
value added tax rate	-4.66 [-6.841]	-0.26 [-6.874]	0.07	-1.77	-2.15 [-3.252]	-0.07 [-3.426]	0.07	-0.47
corp income tax rate	3.26 [2.544]	0.18 [2.631]	0.02	0.41	4.16 [4.089]	0.13 [4.005]	0.02	0.3
Incumbent_CP	-0.00 [-0.126]	-0.00 [-0.126]	26	-0.02	0.01 [16.979]	0.00 [7.414]	26	0.73
Incumbent_ST	0.01 [1.152]	0.00 [1.145]	3	0.17	0.03 [5.016]	0.00 [4.362]	3	0.33
Incumbent_HT	-0.00 [-1.373]	-0.00 [-1.290]	36	-0.15	-0.00 [-1.685]	-0.00 [-1.550]	30	-0.11
Incumbent_FN	0.02 [19.780]	0.00 [8.179]	22	2.78	0.02 [14.849]	0.00 [6.570]	18	1.04
Sample size	65309				78083			
LL	-4903				-6331			
Chi2	5436				5567			
Pseudo R2	0.36				0.31			

* Predicted changes (in %) induced by a 1 standard deviation increase in the explanatory variable.

Note: Figures in the square bracket are z-statistics.

Source: Author's calculations.

Models (9A and 9B) exhibit the results for investors from Hong Kong, China and Taipei, China in processing and normal trade sectors (Table 6). Investors in the processing trade sector are sensitive to value-added tax rate while the coefficient of corporate income tax rate is insignificant. Surprisingly, investors from Hong Kong, China and Taipei, China in the normal trade sector are not influenced by any tax incentive. Investors from Hong Kong, China and Taipei, China in the processing and normal trade sectors seem to agglomerate with incumbent foreign-invested and HT-invested companies. Investors in the normal trade sector show a tendency to choose a province with incumbent Chinese privately invested companies while investors in the processing trade sector are unlikely to flock together with privately-owned Chinese incumbents.

Table 6: Conditional Logit Model: Processing Traders versus Normal Traders (Hong Kong, China/Taipei,China firms)

Variables	Model (9): Hong Kong, China/Taipei,China-Owned							
	A: Processing Traders				B: Normal Traders			
	Estimates	Marginal Effects	Std. dev.	Predicted Change*	Estimates	Marginal Effects	Std. dev.	Predicted Change*
wage_manufacturing	0.00 [14.299]	0.00 [16.707]	3005	16.23	0.00 [3.060]	0.00 [2.722]	3006	1.8
GDP per capita	0.00 [11.095]	0.00 [10.940]	4905	3.43	0.00 [7.963]	0.00 [6.771]	4760	1.9
waterway	7.68 [13.934]	0.92 [13.054]	0.07	6.53	8.70 [20.842]	0.86 [17.879]	0.07	6.13
highway	1.48 [3.163]	0.18 [3.194]	0.21	3.74	-0.80 [-2.464]	-0.08 [-2.427]	0.21	-1.67
high school pop	15.99 [7.984]	1.91 [9.203]	0.04	8.25	-1.19 [-0.662]	-0.12 [-0.679]	0.04	-0.51
college pop	-92.16 [-22.706]	-11.03 [-39.666]	0.03	-36.72	-19.91 [-6.314]	-1.97 [-4.947]	0.03	-6.57
proximity	-0.00 [-10.869]	-0.00 [-9.425]	686	-29.08	-0.00 [-18.864]	-0.00 [-30.889]	686	-29.84
value added tax rate	-3.37 [-2.620]	-0.40 [-2.652]	0.07	-2.76	-0.55 [-0.582]	-0.05 [-0.586]	0.07	-0.37
corp income tax rate	-5.33 [-1.315]	-0.64 [-1.286]	0.02	-1.44	-3.10 [-1.453]	-0.31 [-1.470]	0.02	-0.7
Incumbent_CP	-0.01 [-5.460]	-0.00 [-5.311]	27	-2.19	0.01 [9.438]	0.00 [8.023]	28	1.4
Incumbent_ST	-0.01 [-1.036]	-0.00 [-1.036]	4	-0.31	0.01 [1.651]	0.00 [1.639]	3	0.32
Incumbent_HT	0.01 [11.846]	0.00 [10.067]	37	3.17	0.00 [4.893]	0.00 [5.078]	34	0.87
Incumbent_FN	0.01 [3.747]	0.00 [3.673]	22	1.37	0.01 [4.109]	0.00 [3.920]	19	1.05
Sample size	63510				63140			
LL	-3200				-4698			
Chi2	8418				5346			
Pseudo R2	0.57				0.36			

* Predicted changes (in %) induced by a 1 standard deviation increase in the explanatory variable.

Note: Figures in the square bracket are z-statistics.

Source: Author's calculations.

Privately owned Chinese firms (10A) in the processing trade sector (Table 7) are quite sensitive to corporate tax incentives. Investors in both the processing and normal trade sectors reveal a strong agglomeration effect associated with all types of incumbents except HT incumbents. For processing traders, foreign incumbents have the most significant agglomeration effect while Chinese privately invested incumbents agglomerate normal traders of privately invested entrants (10B).

Table 7: Conditional Logit Model: Processing Traders versus Normal Traders (Chinese private firms)

Variables	Model (10): Chinese Private Firms							
	A: Processing Traders				B: Normal Traders			
	Estimates	Marginal Effects	Std. dev.	Predicted Change*	Estimates	Marginal Effects	Std. dev.	Predicted Change*
wage_manufacturing	-0.00 [-0.319]	-0.00 [-0.323]	3020	-0.3	-0.00 [-11.603]	-0.00 [-14.179]	3008	-3.01
GDP per capita	0.00 [6.408]	0.00 [5.999]	4928	4.93	0.00 [11.353]	0.00 [8.907]	4867	1.95
waterway	-3.13 [-3.835]	-0.49 [-3.343]	0.07	-3.51	4.07 [16.619]	0.35 [17.984]	0.07	2.46
highway	1.93 [3.629]	0.30 [3.500]	0.21	6.38	0.46 [2.736]	0.04 [2.659]	0.21	0.82
high school pop	5.40 [1.631]	0.85 [1.546]	0.04	3.7	-9.00 [-8.144]	-0.76 [-10.635]	0.04	-3.32
college pop	-17.92 [-4.720]	-2.82 [-3.975]	0.03	-9.47	2.49 [1.770]	0.21 [1.918]	0.03	0.71
proximity	-0.00 [-9.739]	0 [-15.956]	686	-29.29	-0.00 [-29.888]	0 [-20.469]	686	-14.75
value added tax rate	-0.79 [-0.774]	-0.12 [-0.782]	0.07	-0.85	-0.22 [-0.576]	-0.02 [-0.581]	0.07	-0.13
corp income tax rate	-5.97 [-2.686]	-0.94 [-2.543]	0.02	-2.12	-1.39 [-1.565]	-0.12 [-1.543]	0.02	-0.27
Incumbent_CP	0.01 [8.399]	0.00 [7.353]	28	3.87	0.02 [42.971]	0.00 [15.156]	26	4.01
Incumbent_ST	0.05 [4.570]	0.01 [4.413]	4	3.19	0.05 [10.784]	0.00 [9.132]	3	1.3
Incumbent_HT	-0.00 [-1.297]	-0.00 [-1.263]	37	-0.64	0.00 [1.551]	0.00 [1.597]	25	0.18
Incumbent_FN	0.02 [11.235]	0.00 [8.658]	21	7.47	0.01 [9.700]	0.00 [7.667]	14	1.29
Sample size		22489				186210		
LL		-1808				-15425		
Chi2		1636				12671		
Pseudo R2		0.31				0.29		

* Predicted changes (in %) induced by a 1 standard deviation increase in the explanatory variable.

Note: Figures in the square bracket are z-statistics.

Source: Author's calculations.

VI. Policy Implications

For governors in the PRC whose most decisive achievements are judged by increasing gross domestic product in the region, attracting new foreign and domestic direct investment is beneficial in spurring economic growth, generating more employment, expanding the tax base, and boosting resident income. Local policy makers encourage technologically sophisticated firms to enter their province for gradual improvement of production technologies in related industries by means of technology and management knowledge spillover. Correspondingly, policy makers prefer to train and produce a highly

skill-intensive labor force that will help meet the demand for high-quality jobs as highly sophisticated, technology-based, and R&D-intensive (foreign and domestic) enterprises enter their province. Therefore, provincial planners tend to pay particular attention to the effect of their policies and actions on the behavior of firms that are likely to engage in R&D activity, firms that focus on high-quality technology development, and firms that will produce sophisticated final goods in the high technology-based industry. Therefore, they may want to attract foreign-invested enterprises with high technology, as the knowledge and technology transfer induced by their market entry will clearly be welcome externalities.

Some explanatory variables analyzed in the empirical section are explicitly and/or implicitly controlled and influenced by provincial-level policy choices. In particular, policy makers would like to understand how variations in their local policy influence the market entry decisions of certain groups of firms. For example, highways per area and length of inland waterways are infrastructure-related policy variables that can be influenced by building more highways, making more rivers suitable for commercial traffic, or constructing canals. An upgrade to the waterway and highway infrastructure in the province is predicted to have a significant effect on the entry decisions of processing goods traders (see Model 3 in Table 2). A 1 standard deviation increase in waterways and highways will raise choice probabilities by about 4% and 9%, respectively. The share of high school graduates and college graduates in the population could be influenced by province-level policies aimed at encouraging higher education.

It would be feasible for provincial planners to find the specific cost of generating a particular infrastructure upgrade—for example, building additional highways—and setting it in relation to the expected effect. For example, suppose that 5,000 new enterprises enter the PRC's export industry every year, and an increase of the choice probability by 5% would result in an expected additional 250 firms. The expected benefits of such additional investment could be compared to the cost of specific policy interventions.

The average wage level in the manufacturing sector is related to policy in important ways: the formulation and implementation of labor laws inclusive of the minimum wage; the restriction of domestic migrant workers (for example, *hukou* system); and the stance taken by policy makers in labor disputes all influence the factor price of labor. Using the Model (8A), a 1 standard deviation increase to the average wage in manufacturing sector will reduce choice probabilities by about 4%. One standard deviation is 3,024 yuan per year, or 252 yuan per month. This is a sizable wage increase and its predicted effect is relatively large. Overall, investors seem sensitive to the average wage rate in a province. Taking Foxconn for example, the wage level for its low-skilled workers increased by 30%–50% and the company moved its factory from Shenzhen in Guangdong province to Chengdu in Sichuan province in 2011.

Reduction in tax rates, particularly value added tax, brings a significant influence to investors from foreign countries and Hong Kong, China/Taipei, China in their location choice. An interesting policy implication is given by Models (8) to (10). The agglomeration effect of foreign-invested enterprises seems notably strong for foreign-invested processing traders, HT- invested companies, and private Chinese investors in the processing trade sector. Hosting foreign-invested enterprises in one location could attract subsequent investors in the same location. If the provincial government targets a specific industry to be developed, then our results suggest that it might kick-start this industry by hosting a number of foreign-invested enterprises to locate in a particular location. The presence of 22 foreign-invested incumbent firms would raise the predicted probability of market entry of other foreign firms in the processing export industry by about 2.8%, and that of private Chinese investors by roughly 7.5%. The PRC's industry structure is still rooted in low-skilled labor-intensive manufactured goods production and highly sophisticated final goods are mostly assembled by foreign-invested enterprises. Policy makers in the PRC need to find ways to achieve a substantial level of technology spillover from foreign-invested enterprises operating in high-technology industry areas to local producers manufacturing intermediate goods. Technology spillover can be acquired through internationalization, of hosting foreign-invested firms producing high-skilled technology goods, after which local producers that obtained high-technology skills will be encouraged to gradually replace the foreign-invested processing goods traders through internalization/localization in production of sophisticated manufactured goods.

Similarly, the presence of state-owned enterprises in a certain industry will attract more privately invested Chinese companies (Models 10A and 10B) and foreign normal goods traders (Model 8B). These increases only apply to the subpopulation of investors active in this particular product class, so that the number of firms that can be induced to enter in this way may still be small. It suggests that a state-owned infant industry may still play a limited leading role to develop specific target industries.

VII. Conclusion

The most important result of this study is the proof of a basic concept: that heterogeneity in firm ownership and trade type can enhance the understanding of investment location decisions in the PRC. Processing traders differ substantially from nonprocessing traders in response to changes in wage cost, level of development in infrastructure, and proximity to the Pacific coast. Presence of foreign-invested enterprises creates a beacon effect on subsequent foreign and domestic investors.

The most basic conclusion from the empirical analyses is that proximity to the Pacific coast and new economic geography of agglomeration effect and the presence of incumbent firms in the same product class are the strongest determinants of an investor's

location choice in the PRC's export industry. Agglomeration also plays a greater role for investors specializing in processing goods trade and highly skill-intensive or R&D intensive production. Firms with a higher educated workforce agglomerate more than others.

Similarly, processing trade firms display stronger agglomerative behavior than nonprocessing traders. Moreover, processing traders are more sensitive to the wage level and value proximity to the coast more. A wide range of industrial policies designed to attract clusters of leading firms may be justifiable on these grounds. Among investors of different origin, Hong Kong, China and Taipei,China investors seem the least driven by agglomeration. Investors from Hong Kong, China and Taipei,China, by contrast, tend to co-locate with other firms from the same region, while foreign-invested firms seem to be negatively influenced by the presence of Hong Kong, China/Taipei,China incumbents. Foreign-invested incumbent firms have a very large effect on subsequent private Chinese investors in processing trade sector, and have a sizable effect on other foreign investors and investors from Hong Kong, China and Taipei,China.

Benefits from reduction in value-added tax rates and corporate income tax rates play an evident role for foreign investors and HT investors in the processing trade sector. However, since 2008, a number of provinces started dismantling preferential labor laws, export subsidies, favorable value-added tax rates, and corporate tax rates to low-skill-intensive foreign enterprises including processing goods traders. Policy makers have publicly stated their goal that the PRC will dynamically transform its comparative advantage from low-skill-intensive to high-tech industry concentrated. Policy makers in the PRC intend to transform the "internationalization" process through attraction of foreign investment toward "localization" by reducing the processing good trading portion and by increasing the supply of domestically produced intermediate inputs for their exports. As the PRC moves up to the high value supply chain, expands its domestic market, and exports skill-intensive goods, processing goods traders might consider new places or new business models.

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About the Paper

Minsoo Lee analyzes the spatial determinants of new foreign and domestic enterprises in the export industry of the People's Republic of China (PRC) by applying new economic geography of agglomeration theory, tax competition theory by resource flow model, and comparative advantage analysis. He finds that agglomeration plays a greater role for foreign investors specializing in the processing goods trade and highly skill-intensive or research and development-intensive production, and that benefits from reduction in the value added tax rate and corporate income tax rate play an evident role for foreign investors and Hong Kong, China and Taipei, China investors in the processing trade sector. As the PRC moves up the high-value supply chain and transforms the "internationalization" process through attraction of foreign investment toward "localization" by reducing the processing goods trading portion and increasing the supply of domestically produced intermediate inputs for their exports, processing goods traders may consider new locations or business models.


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Asian Development Bank
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
www.adb.org/economics
ISSN: 1655-5252
Publication Stock No. WPS124550

January 2012

 Printed on recycled paper



Printed in the Philippines