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Research Article

The Dynamic Evolution of Overseas Market Network of Chinese Enterprises: Agglomeration or Dispersion

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Based on the CEPII-BACI database and China Customs database from 2000 to 2011, this paper combines the degree of export experience of enterprises with their own trade network to study the differential effects of accumulated export experience on the dynamic evolution of enterprises' overseas market network structure and further explores it from the perspective of community and neighbors. The results of this study show the following. (1) The location choice of Chinese enterprises' overseas market depends significantly on the structure of export network constructed in the past and tends to choose regions with closer geographical and economic ties as export target countries. There is a significant path dependence effect. However, enterprises with rich export experience are no longer subject to the constraints of geographical space and will make the overseas market layout more "decentralized." (2) The decision making of export market location depends on the community distribution of export network. The path-dependent effect of export market layout in the export network community is significantly greater than that outside the community and tends to choose the intra-community region for overseas market layout. (3) The export network of adjacent enterprises has a significant impact on the location of enterprises' overseas market. However, enterprises with rich export experience are less dependent on the geographic network expansion effect of their neighbors and tend to choose markets with close economic links.

1. Introduction

There is a certain dynamic evolution law in the overseas market network of enterprises, among which the export experience of the enterprise in the past determines the future export layout of the enterprise. A large amount of scholars has confirmed that the export experience indeed affects the export behavior of enterprises in the future. Enterprises can reduce the cost of obtaining uncertain information in overseas markets through their own experience, thereby increasing the probability of enterprise exports and influencing enterprises' overseas market decision-making choices [1–4]. On the one hand, the export experience affects the experience's decision-making choices for entering new markets [5, 6]. Enterprises tend to choose the export markets that are geographically close to previous export markets, have close economic ties, or have similar national

characteristics [7–11]. That is so-called "export path dependence" [12–14]. On the other hand, the enterprises' past export experience will affect the enterprise's export continuity [15, 16], the spatial layout of the export products of the enterprise [17], and the enterprises' outward direct investment expansion [18]. Therefore, the enterprise's overseas market selection strategy is not a static process driven by productivity heterogeneity and "sunk fixed costs." It relies on the accumulation of previous export experience, especially the export market structure. Among them, "geographical proximity" and "economic and trade ties" play an important role. Chaney [9] introduced the trade network to international trade theory for the first time, constructing network indicators from the two dimensions of geography and economy to study that the current trade network of enterprises affects the construction of future trade networks. The study found that the influence of the enterprises' export

experience on the future export decision making of the enterprise is manifested not only in the spatial and geographic level but also in the economic connection level. When making export decisions, enterprises will give priority to countries or markets with geographical proximity and close economic ties with existing export networks.

Furthermore, whether the evolution of the overseas market network based on the enterprise's export experience tends to be "aggregated" or "decentralized" at the geographic spatial level, there is no document to respond to this, and further verification and analysis are needed. The evolution of overseas market networks based on the effect of "export path dependence" is undoubtedly "clustered." Due to the existence of "gravity," enterprises tend to enter markets that are geographically close to or have similar characteristics to previous export markets, which leads to enterprises' overseas markets being "clustered" in a certain area [8, 10, 19]. However, "gravity" at the geographic level is not the only factor that affects enterprises' future overseas market decisions. The export experience accumulated by the enterprise, economic trade links, and the overseas market distribution of other enterprises in the same industry are also important factors that affect the strategic layout of the enterprise's overseas market. Enterprises with rich export experiences will no longer be limited by the previous export layout and can deploy their export overseas markets according to their own development strategies, which will inevitably lead to the "dispersion" of the enterprise's future export markets. Similarly, the evolution of the overseas market network caused by economic trade links will also lead to the "dispersion" of the enterprise's future export overseas markets because the degree of trade relevance between countries is not directly related to geographic spatial distribution [9, 18]. Finally, the "following effect" between neighboring enterprises in the same industry will affect the density of the enterprise's overseas market network. The "following effect" among neighboring enterprises in the same industry will cause most enterprises to intensively export to the same or adjacent markets, which will lead to the "clustering" of enterprises' overseas market networks. However, when export enterprises in a certain area are too crowded, enterprises will avoid this area and choose more remote markets for export, which will lead to the "scattering" of the geographical distribution of the enterprise's overseas markets. In addition, enterprises with more export experience are more capable of avoiding "minefields" and choosing remote areas with mild competition when faced with a "crowded" overseas market environment. Therefore, this article focuses on the impact of the accumulated export experience, geographical proximity and economic ties, and the "neighboring effects" of the same industry on the degree of "dispersion" of the enterprise's future overseas market network.

Different from the existing literature that mainly studies the distribution of enterprises in overseas markets, this article focuses on the dynamic evolution of the enterprise's overseas market network and is dedicated to identifying the differences between the accumulation of past export experience and the existing overseas market network layout for the enterprise's future overseas market layout. In this way, we can deeply explore the determinants of "aggregation" and "dispersion" of enterprise overseas market networks. Based on Chaney [9] and Fernandes and Tang [20], this paper identifies the export network connection from the perspective of geographic connection and economic connection and quantifies the export experience of the enterprise.

The possible contribution of this article is to analyze the differential effect of the accumulation of export experience on the dynamic evolution of the enterprise's overseas market network by combining the export network indicators from the richness of the enterprise's export experience. The specific manifestations are as follows. ① Identify the accumulated export experience of enterprises and interact with Chaney's export network indicators and analyze the influence mechanism of export experience on the network evolution of the enterprise's export market. ② Further identify the community relationship between potential overseas markets and then examine the community effect of the "clustering" and "decentralization" of Chinese enterprise' export overseas markets by the enterprise's existing export network connection. ③ Finally, introduce the overseas market network of neighboring enterprises in the same industry and analyze the neighboring effect of the "neighboring enterprise" export network connection on the "agglomeration" and "dispersion" of the enterprise's overseas market. The research in this article shows that the geographical connection of the enterprise's existing export network and the "following effect" of the "neighbor enterprises" in the same industry promotes the enterprise's future overseas markets to "agglomeration." The accumulation of export experience and the economic connection of the enterprise's existing export network drive the continuous "dispersion" of the overseas market of the enterprise. The accumulated export experience of enterprises and the establishment of overseas market networks are important resources that influence the enterprise's overseas market location decisions. At the same time, it also proves that the market plays a decisive role in the resource allocation of Chinese enterprises' export behavior.

2. The Evolutionary Characteristics of the Spatial Geographic Dispersion of the Export Market of Chinese Enterprises

2.1. Data Description. In order to test how enterprises can adjust the dynamic evolution of their overseas market network based on past export experience, and whether this dynamic evolution is "aggregated" or "decentralized," this article not only needs to measure the characteristics of the export network of the enterprise's geographic connection and economic connection but also needs to describe the export experience accumulated by the enterprise that year. Based on this, the data used in this article come from Chinese customs data, CEPII global bilateral trade data, and bilateral geographic distance data.

Starting from the availability of data, the enterprise data used in this article come from the highly segmented China

Customs classification statistics import and export trade data and CEPII global bilateral trade data from 2000 to 2011. This paper constructs the export network indicators of the enterprise, the export experience of the enterprise, and the dynamic evolution characteristics of the overseas market network of the enterprise. (1) China Customs Statistics Database is monthly statistics of the import and export information of enterprises by China Customs, which includes the name, code, HS8 quantile product category, trade volume, and trade volume of import and export enterprises, and distinguishes the trade mode of import and export trade. (2) In this paper, the original monthly data are added up to the annual data in accordance with the years to obtain the data set used in this paper. (3) Based on the problems in the customs data and the incompatibility with the main body of this paper, we learned from Jiang Wei et al., [18] and dealt with the missing value of the customs data and the characteristics of the export market network connection.

In addition, this article uses the 2014 BACI global bilateral trade data to identify the top two export destinations of each economy, thereby constructing a trade network relationship between different economies. Figure 1 depicts the top two bilateral trade relations of the global economy and shows the characteristics of the trade network of the global economy. It can be seen from the figure that different economies in the world can be embedded in the global trade network from the perspective of geographic and economic connections. On the one hand, there are huge differences in the geographic distances between different economies in the world. Geographical distance is one of the most important factors affecting information transmission and determines the sequence and path characteristics of an enterprise's choice of overseas markets. On the other hand, there are significant differences in the closeness of economic ties between different economies. The strength of economic ties is also an important factor in determining the location of an enterprise's export market. As shown in Figure 1, countries such as China, the United States, Germany, and Japan have the highest degree of edge density in the trade network. These economies are often more likely to become clusters of enterprises' overseas market layout because of their close ties in the trade network.

2.2. The Spatial Geographic Dispersion of the Export Market of Chinese Enterprises. In order to characterize the degree of agglomeration and dynamic evolution of Chinese enterprise' overseas markets, this paper discusses the dynamic evolution of the distribution of Chinese enterprises' export markets based on the geographical dispersion index of enterprise export markets constructed by Chaney [9]. Based on the model analysis of Chaney [9], the main reason for the increase in the geographic dispersion of enterprise export connections with the number of enterprise export connections is the matching method based on network structure search. If all the export connections are obtained through random search, since each batch of new entrants is spatially independent and identically distributed, the geographic distribution of the enterprise's export connections remains

unchanged, that is, the geographical dispersion of the enterprise's export network connections remains unchanged. Regarding the geographical dispersion of the export network connection of an enterprise, there are two levels of meaning: (1) the geographical distance between the enterprise's export overseas market and its home country and (2) the degree of dispersion of the export market of enterprises. Therefore, based on the model construction of Chaney [9], data samples can be used to estimate the distribution of Chinese enterprises' export geographic network connections over the years. Therefore, the mean square distance of an enterprise's export to overseas markets can be expressed as

$$\Delta_t^2(M) \equiv \frac{\sum_{(f,c)\in E(M)\times C}(1/\text{GDP}_c)\times \text{Dist}_{\text{CH},c}^2 * I\{\text{export}_{f,c,t}>0\}}{\sum_{(f,c)\in E(M)\times C}(1/\text{GDP}_c) * I\{\text{export}_{f,c,t}>0\}}, \quad (1)$$

where GDP_c is the GDP of country C; $\text{Dist}_{\text{CH},c}^2$ is the square of the distance between this country (China) and the enterprise's overseas market; $I\{\text{export}_{f,c,t}>0\}$ is the indicative function; and $E(M)$ is the set of enterprises exporting to overseas markets in year t. Formula (1) is the mean square distance of enterprise exports adjusted according to GDP. In addition, it is also possible to calculate the mean square distance of corporate exports without GDP adjustment:

$$\Delta_t^2(M) \equiv \frac{\sum_{(f,c)\in E(M)\times C}\text{Dist}_{\text{CH},c}^2 * I\{\text{export}_{f,c,t}>0\}}{\sum_{(f,c)\in E(M)\times C}I\{\text{export}_{f,c,t}>0\}}. \quad (2)$$

Formulas (1) and (2) represent the distance between the enterprise's export market and the domestic market and represent the distance radiated by the enterprise's export behavior, as shown in Table 1.

At the same time, the geographical dispersion of the export network connection of enterprises also includes the dispersion of export overseas markets. Assuming that the set of overseas export markets of an enterprise is $C_f = \{c_1, c_2, c_3,...\}$, the geographic dispersion of the enterprise's export market calculated based on one of the enterprises' markets is

$$\Delta_{t,c'}^2(M) \equiv \frac{\sum_{(f,c)\in E(M)\times C}(1/\text{GDP}_c)\times \text{Dist}_{c',c}^2 * I\{\text{export}_{f,c,t}>0\}}{\sum_{(f,c)\in E(M)\times C}(1/\text{GDP}_c) * I\{\text{export}_{f,c,t}>0\}}, \quad (3)$$

where c' represents one of the destination countries where the enterprise f exports to overseas markets at time t and c represents the enterprise f which exports to other overseas markets at time t. Therefore, formula (3) represents the agglomeration degree of enterprises exporting overseas markets calculated based on c'. Also, the agglomeration degree of enterprise f is

$$\Delta_{f,t} = \min\{\Delta_{t,1}^2(M), \Delta_{t,2}^2(M), \Delta_{t,3}^2(M),\cdots\}, \quad (4)$$

where $\Delta_{f,t}$ represents the degree of dispersion of the enterprise's export to overseas markets. The larger $\Delta_{f,t}$ is, the more scattered the export market of the enterprise is. The overseas market of an enterprise may be distributed on various continents, so that the enterprise's overseas market is more dispersed, and if the enterprise's overseas market is
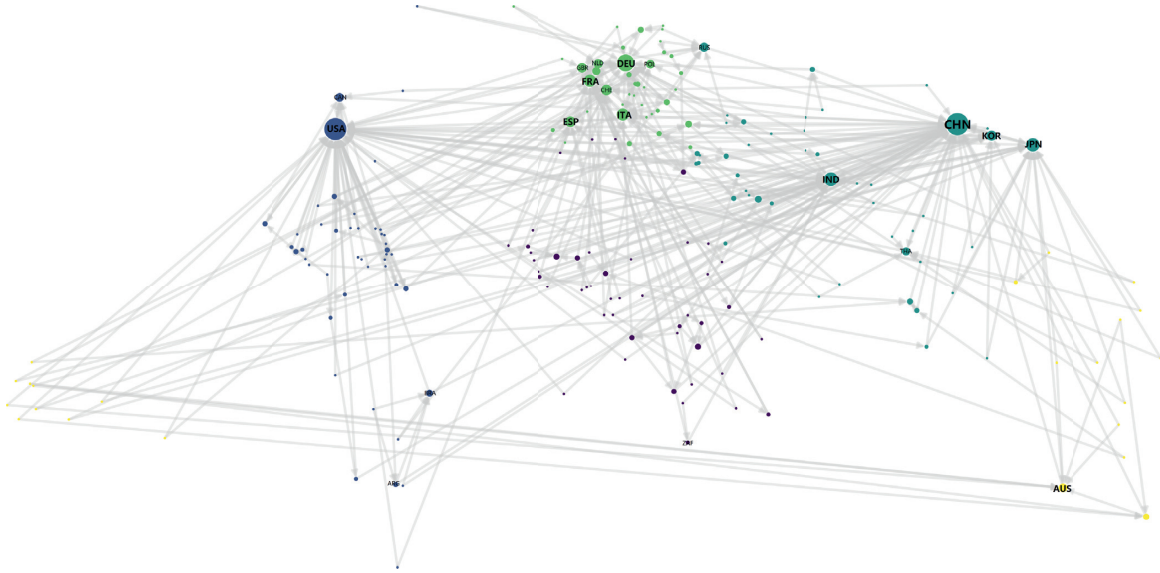
FIGURE 1: Network relationships between the top two trading partners of global economies in 2014 (data source: CEPII-BACI database).

TABLE 1: The spatial geographic dispersion of the export market of enterprises in each year.

Year	The mean square distance of enterprise's overseas market		The concentration of enterprises in overseas markets	
	GDP adjustment	Unadjusted	GDP adjustment	Unadjusted
2000	16.663	16.800	17.099	17.099
2001	16.723	16.856	17.127	17.126
2002	16.779	16.918	17.150	17.150
2003	16.828	16.967	17.177	17.177
2004	16.884	17.025	17.145	17.145
2005	16.990	17.138	17.246	17.245
2006	17.082	17.239	17.267	17.267
2007	17.174	17.303	17.285	17.284
2008	17.247	17.370	17.289	17.288
2009	17.284	17.400	17.295	17.294
2010	17.332	17.445	17.323	17.322
2011	17.353	17.464	17.340	17.339

Source: the authors' calculations based on China Customs database.

distributed in the same region, such as Europe, the enterprise's overseas market is more concentrated.

Table 1 lists the average situation of the enterprise's overseas market distribution in each year. The first two columns are the mean square geographic distance between the enterprise's overseas market and the home country; the latter two columns are the mean square dispersion degree of the enterprise's overseas market. According to the results in Table 1, we can see that during the observation period of this paper, the average distance of enterprises' overseas markets and the degree of dispersion of enterprises' overseas markets have experienced continuous improvement.

Explanation. (1) The overseas market layout of the enterprise continues to extend to markets farther away from the home country. With the accumulation of export experience of

enterprises, enterprises can export to regions or countries farther and farther away from the domestic market. This feature is in line with the assumption that enterprises search based on network structure. (2) The degree of dispersion of enterprises in overseas markets is also increasing. The overseas market of the enterprise is gradually spreading across all corners of the world. With the accumulation of export experience and relying on the existing overseas market network, the enterprise's export overseas market can export across multiple continents.

What needs to be particularly noted here is that based on the relevant research on "export path dependence," enterprises tend to enter markets that are geographically adjacent to the old markets for export, which will inevitably lead to the agglomeration of overseas markets. However, based on the dynamic evolution of online search [9], enterprises' future overseas markets will spread to the surroundings based on existing export connections. At the same time, when there are too many export enterprises in a certain area that have been "crowded," enterprises with rich export experience will choose to avoid the "minefield" and choose to export to remote areas with mild competition. These effects are intertwined and affect the dynamic evolution of the enterprise's overseas market network, so the next step will be to verify the role of each effect in the dynamic evolution of the enterprise's overseas market network through the measurement model. In short, with the continuous evolution of the corporate overseas market network, not only the "export radius" of the enterprise is getting wider and wider but also the area outlined by the enterprise's overseas market is getting larger and larger.

3. Quantitative Models, Variables, and Methods

This article draws on the description of the trade network by Chaney [9], from the perspective of geographic network and economic network, to identify the enterprise's previous

export network connection. At the same time, considering the accumulated differences in the export experience of enterprises and discussing how the differentiated export experience affects the dynamic evolution of the enterprise's overseas market network, the quantitative model is set as follows:

$$
\Pr\left(\mathrm{Export}_{f,c,t+1} > 0\right) = F\left(\beta_1 I\left[\mathrm{Export}_{f,c,t} > 0\right] + \beta_2 \frac{\sum_{c' \neq c} I\left[\mathrm{Export}_{f,c',t} > 0\right] g\left(d_{c',c}\right)}{\sum_{c' \neq c} I\left[\mathrm{Export}_{f,c',t} > 0\right]} \right.
$$

$$
+ \beta_3 \mathrm{Exper}_{f,t} * \frac{\sum_{c' \neq c} I\left[\mathrm{Export}_{f,c',t} > 0\right] g\left(d_{c',c}\right)}{\sum_{c' \neq c} I\left[\mathrm{Export}_{f,c',t} > 0\right]} + \beta_4 \frac{\sum_{c' \neq c} I\left[\mathrm{Export}_{f,c',t} > 0\right]\left(\Delta \mathrm{Export}_{c',c,t+1}/\mathrm{Export}_{c',c,t}\right)}{\sum_{c' \neq c} I\left[\mathrm{Export}_{f,c',t} > 0\right]}
$$

$$
\left. + \beta_5 \mathrm{Exper}_{f,t} * \frac{\sum_{c' \neq c} I\left[\mathrm{Export}_{f,c',t} > 0\right]\left(\Delta \mathrm{Export}_{c',c,t+1}/\mathrm{Export}_{c',c,t}\right)}{\sum_{c' \neq c} I\left[\mathrm{Export}_{f,c',t} > 0\right]} + \gamma \mathrm{Control} + \mu_{f,c,t+1} \right),
$$

$$(5)$$

where f, c, and t are enterprise, country, and year respectively, and the explanatory variable is the probability that enterprise f will export to country c in year t, that is, the probability that the export value is greater than 0. $F(.)$ is the standard normal distribution of CDF, and the shape of the distribution function is determined by a series of explanatory variables and parameters. $\mathrm{Export}_{f,c,t}$ is the export value of enterprise f to country c in year t; $I[.]$ is an indicative function and takes 1 when the condition is true; otherwise, it takes 0; $d_{c,c}$ is the geographic distance from country c to c'; and $g(\cdot)$ is a monotonically decreasing function of geographic distance, that is, the farther the geographic distance, the smaller $g(d_{c',c})$. Drawing lessons from the setting of Chaney [9], this article sets the function to the following form:

$$
g\left(d_{c,c'}\right) = e^{-\left(d_{c,c'}/3.5\right)}. \tag{6}
$$

In the distribution function of formula (5), the first term indicates whether the enterprise exported in the previous period, that is, whether the enterprise f exported to country c in year t. It is used to test whether the enterprise's experience in exporting to country c in year t helps the enterprise in $t + 1$ year to continue its export behavior; if the estimated coefficient β_1 is greater than 0, it indicates that the export experience of the enterprise to country c will promote the enterprise to continue to export to that country in the future. The second term represents the expansion effect of the enterprise's geographic network, that is, the average geographic distance between the potential overseas market and the enterprise's existing export destinations, which is used to test whether the enterprise's future export destination country selection tends to be closer to the historical export destination. If the estimated coefficient β_2 is greater than 0, it indicates that the enterprise tends to choose a country with a geographical distance closer to the export destination for export. The third item is the crossover term of the accumulated export experience ($\mathrm{Exper}_{f,t}$) of enterprise f in year t and the expansion effect of geographic network, which is used to identify the influence of the differentiation of

enterprise export experience on the expansion effect of geographic network. If the estimated coefficient β_3 is greater than 0, it indicates that enterprises with rich export experience tend to choose countries that are more closely linked to the export destination for export. The fourth term represents the expansion effect of the enterprise's economic network, that is, the average degree of trade connection between potential overseas markets and the enterprise's existing export destinations. If the estimated coefficient β_4 is greater than 0, it indicates that enterprises tend to choose countries that are more closely related to the export destination for export. Similarly, the fifth term is the crossover term of the export experience (Exper_{ft}) that firm f has in year t and the expansion effect of the economic network. If the estimated coefficient β_5 is greater than 0, it indicates that enterprises with rich export experience tend to choose countries that are more closely related to the export destination for export. Through the estimation of model (5), this paper can test the differential influence of accumulated export experience of enterprises on the expansion of enterprises' overseas market network.

There are two points for formula (5) that need special explanation. ① Why should accumulative export experience be added to the model? Firstly, the most intuitive impression is that when enterprises with rich export experience make overseas market decisions, they obtain more information and are more able to deploy overseas markets based on their own strategic considerations. The "rookie enterprise" with lack of export experience is most concerned about whether the export is successful. Therefore, to ensure the probability of export success, it relies more on the connection with the previous export network and the export information of the "neighboring enterprises" in the same industry. Therefore, the degree of accumulation of export experience affects the expansion effect of geographic network and economic network expansion. ② How to identify the export experience accumulated by the enterprise? Considering that the duration of an enterprise's export may be affected by the enterprise's previous export network connection [11], this paper selects the time interval between the enterprise's first

export and the current year to identify the enterprise's export experience. At the same time, in the robustness analysis, the number of enterprises covered by the overseas market as of the current year is used as a proxy variable of export experience to test the robustness of the results.

In addition to whether to export in the previous period, the effect of geographic network expansion, and the effect of economic network expansion, the export network of enterprises also has other characteristics. Ignoring these factors is likely to fail to accurately characterize the characteristics of the export network, leading to the omission of important explanatory variables. Table 2 draws on Chaney's [9] setting of the characteristics of the export network and further characterizes the characteristics of the export network from the number of nodes, geographic network, and other characteristics of the economic network. (1) The number of trade connections in the previous period is used to describe the number of export destinations of the enterprise to the world in the previous period. The increase in the number of trade connections will improve the ability of enterprises to obtain information on overseas markets and thus reduce their information costs. (2) Geographic search effect is used to describe the geographical distance between China and potential overseas markets. The reduction of distance will reduce the search cost of enterprises when exporting overseas, thereby increasing the export tendency of enterprises. (3) The geographical remoteness effect is used to describe the average geographical distance between potential overseas markets and other countries in the world. The lower the remoteness of the potential overseas market and the rest of the world, the higher the information availability of the enterprise, and thus the tendency of the enterprise to export to it, thereby increasing the propensity of enterprises to export to them. (4) The effect of economic remoteness is used to characterize the degree of close economic ties between potential overseas markets and other countries in the

world. Increased economic ties between potential overseas markets and other economies in the world will increase the availability of information to enterprises.

This paper uses formula (5) to test the dynamic evolution of overseas market networks based on previous export experience and introduces the differential influence of the export experience accumulated by enterprises on the above effects. On this basis, this article further extends the dimension to the perspective of "community" to test whether the evolution of corporate overseas market network connection has the characteristics of concentration within the community. This article draws on the identification strategies of Lucio [21] and Wei et al. [18] and uses Chinese customs data at the beginning of the sample (2000) to identify and classify different countries in the export network. This article divides the 196 export destinations of Chinese enterprises into 45 communities and analyzes them.

In order to test the community effect of export network connection on the location selection of Chinese enterprises' export market, this paper constructs a community connection variable to analyze whether there is a problem of intra-community preference in the decision of corporate export market location selection. Enterprises can establish economic ties with different communities through export network connections. The economies within the communities have closer economic ties and greater similarities, which determine the dynamic path of the enterprise's export market location selection. The closeness of the enterprise's ties with the economies in the community is directly related to the number of economies in the community connected by the export network. Therefore, this article measures the enterprise's community connection density from the two perspectives of absolute quantity and relative quantity and builds an econometric model on this basis to test the community effect. This paper constructs the measurement model as follows:

$$\Pr\left(\text{Export}_{f,c,t+1} > 0\right) = F\left(\beta_1 I\left[\text{Export}_{f,c,t} > 0\right] + \beta_2 \frac{\sum_{c' \neq c} I\left[\text{Export}_{f,c',t} > 0\right] g\left(d_{c',c}\right)}{\sum_{c' \neq c} I\left[\text{Export}_{f,c',t} > 0\right]}\right.$$

$$+ \beta_3 \text{Exper}_{f,t} * \frac{\sum_{c' \neq c} I\left[\text{Export}_{f,c',t} > 0\right] g\left(d_{c',c}\right)}{\sum_{c' \neq c} I\left[\text{Export}_{f,c',t} > 0\right]} + \beta_4 \frac{\sum_{c' \neq c} I\left[\text{Export}_{f,c',t} > 0\right]\left(\Delta\text{Export}_{c',c,t+1}/\text{Export}_{c',c,t}\right)}{\sum_{c' \neq c} I\left[\text{Export}_{f,c',t} > 0\right]}$$

$$+ \beta_5 \text{Exper}_{f,t} * \frac{\sum_{c' \neq c} I\left[\text{Export}_{f,c',t} > 0\right]\left(\Delta\text{Export}_{c',c,t+1}/\text{Export}_{c',c,t}\right)}{\sum_{c' \neq c} I\left[\text{Export}_{f,c',t} > 0\right]} + \beta_6 \text{CM}_{f,c,t} + \beta_7 \text{Exper}_{f,t} * \text{CM}_{f,c,t}$$

$$+ \gamma \text{control} + \mu_{f,c,t+1}\bigg).$$

(7)

Among them, this article further adds the community variable $\text{CM}_{f,c,t}$ on the basic of model (5). This variable represents the number of export destinations of enterprise f in the community of economy c in year t or the proportion of export destinations in the number of economies in the

community. The former is defined as the absolute quantity of community characteristics, and the latter is defined as the relative quantity of community characteristics. The estimated coefficients of community variables test the influence of community relationships on the location choices of

TABLE 2: Descriptive index system of enterprise export network.

Attribute	Variable name	Expression	Implication
Direct side	Whether to export in the previous period	$I[\text{Export}_{f,c,t} > 0]$	Dummy variable of whether the enterprise exported to country c in the previous period
Number of nodes	Number of trade connections in the previous period	$\sum_{c' \neq c} I[\text{Export}_{f,c,t} > 0]$	The number of enterprises exporting to global destinations in the previous period
Geographic network	Geographic search effect	$g(d_{\text{CN},c})$	The geographical distance function between China and country c
	Geographical remoteness effect	$\sum_{c' c} g(d_{c',c})/N_{c' \neq \text{CN}}$	Function of the average geographic distance between country c and other countries in the world
	Geographic network expansion effect	$\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0] g(d_{c',c})/\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0]$	The function of the average geographic distance between country c and the previous trade-connected country
Economic network	Economic remoteness effect	$\sum_{c' \neq c} (\Delta \text{Export}_{c',c,t+1}/\text{Export}_{c',c,t})/N_{c' \neq \text{CN}}$	The average degree of close economic ties between country c and other countries in the world
	Economic network expansion effect	$\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0](\Delta \text{Export}_{c',c,t+1}/\text{Export}_{c',c,t})/\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0]$	The average degree of economic ties between country c and the trade-connected countries in the previous period

Note. N represents the number of countries, $I(.)$ is an indicative function, and $g(\cdot)$ is a monotonically decreasing function of geographic distance.

Chinese enterprises' export markets. If the estimated result is significantly positive, it indicates that as the export network constructed by the enterprise and the economy within a certain community is closer, the enterprise tends to expand its exports to the economy within the community. The location selection of the export market of enterprises is concentrated in the community of the export network. In addition, the interaction terms between the accumulated export experience of the enterprise and the community variables are also added to examine the differences in the community effects of enterprises with different export experiences.

After testing the characteristics of concentration within the community of the location selection of the export market of enterprises, this article further tests the heterogeneous effect of the export network connection within and outside the community. Based on this, this article divides the export network of enterprises into intra-community networks and out-of-community networks according to whether the economies belong to the same community. By regression and comparing the size of the marginal effects of different networks, we can infer the heterogeneous influence of intra-community and out-of-community network connections on the location choice of the export market of enterprises. The specific measurement model is as follows:

$$
\begin{aligned}
\Pr\left(\text{Export}_{f,c,t+1} > 0\right) = F\Bigg(& \beta_1 I[\text{Export}_{f,c,t} > 0] + \beta_2 \frac{\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0] I[M_{c'} = M_c] g(d_{c',c})}{\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0]} \\
& + \beta_3 \frac{\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0] I[M_{c'} = M_c](\Delta \text{Export}_{c',c,t+1}/\text{Export}_{c',c,t})}{\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0]} + \beta_4 \frac{\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0] I[M_c \neq M_c] g(d_{c',c})}{\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0]} \\
& + \beta_5 \frac{\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0] I[M_c \neq M_c](\Delta \text{Export}_{c',c,t+1}/\text{Export}_{c',c,t})}{\sum_{c' \neq c} I[\text{Export}_{f,c',t} > 0]} + \gamma \text{control} + \mu_{f,c,t+1}\Bigg),
\end{aligned}
$$

(8)

where M_c represents the type of community to which economy c belongs. According to the theoretical hypothesis of this article, the influence of intra-community export network on the choice of corporate export market location is

greater than that of out-of-community network, which leads to the phenomenon of concentration within the community in the choice of corporate export market location. Among them, in order to clearly show the differences between inside

and outside the community, formula (8) does not include interactive items in the test. Therefore, this paper can predict from the estimation of model (8) that the estimated coefficient of the intra-community network is greater than the estimated coefficient of the out-of-community network.

Finally, in order to test the hypothesis of the peer effect of the same industry in the location selection of the export market under the connection of the export network, this article further refers to the research of Fernandes and Tang [20] that the neighboring enterprises in the same industry should be similar with the exporting enterprise in terms of geographic location and export products in order to achieve market information spillover effects. Based on this, this article defines an enterprise's neighboring enterprise as an enterprise that exports the same HS 6-bit product in the same city. On the basis of measurement model (5), the proxy variable of the neighboring enterprise network is added. The measurement model is as follows:

$$
\begin{aligned}
\Pr\left(\text{Export}_{f,c,t+1} > 0\right) = F\Bigg(& \beta_1 \sum_{i=1}^{f_i'} I\left[\text{Export}_{f_\beta',c,t} > 0\right] + \beta_2 \frac{\sum_{i=1}^{f_i'} \sum_{c' \neq c} / \left[\text{Export}_{f_\beta'c',t} > 0\right] g\left(d_{c',c}\right)}{\sum_{i=1}^{f_i'} \sum_{c' \neq c} / \left[\text{Export}_{f_\beta'c',t} > 0\right]} \\
& + \beta_3 \text{Exper}_{f,t} * \frac{\sum_{i=1}^{f_i'} \sum_{c' \neq c} \left[\text{Export}_{f_\beta'c',t} > 0\right] g\left(d_{c',c}\right)}{\sum_{i=1}^{f_i'} \sum_{c' \neq c} \left[\text{Export}_{f_\beta'c',t} > 0\right]} + \beta_4 \frac{\sum_{i=1}^{f_i'} \sum_{c' \neq c} / \left[\text{Export}_{f_\beta'c',t} > 0\right]\left(\Delta\text{Export}_{c',c,t+1}/\text{Export}_{c',c,t}\right)}{\sum_{i=1}^{f_i'} \sum_{c' \neq c} / \left[\text{Export}_{f_\beta'c',t} > 0\right]} \\
& + \beta_5 \frac{\sum_{i=1}^{f_i'} \sum_{c' \neq c} \left[\text{Export}_{f_\beta'c',t} > 0\right]\left(\Delta\text{Export}_{c',c,t+1}/\text{Export}_{c',c,t}\right)}{\sum_{i=1}^{f_i'} \sum_{c' \neq c} \left[\text{Export}_{f_\beta'c',t} > 0\right]} + \gamma\text{control} + \mu_{f,c,t+1}\Bigg),
\end{aligned}
\tag{9}
$$

where f_i' is the neighboring enterprise (the "neighbor enterprise" identified in this article is a collection of enterprises) of firm f, N_f, is the number of neighboring enterprises, and the variables on the right side of the equation represent the number of neighboring enterprises that exported to a specific area in the previous period, the geographical network expansion effect of neighboring enterprises, and the economic network expansion effect of neighboring enterprises.

On this basis, this article adds the geographic search effect, geographic remoteness effect, the geographic network expansion effect of the enterprise's own network, the economic network expansion effect, and the export variables of the previous period in the model. By estimating the $\beta1, \beta2$, and $\beta3$ variables, this paper can test the influence of the neighboring enterprise's export network on the enterprise's export market location selection decision after controlling the influence of its own export network.

4. Empirical Results

Since the measurement equation in this article is a typical binary selection problem, this article uses the probit model to estimate and test the measurement equation in this article and explore the differential impact of accumulated export experience on the evolution of enterprises' overseas markets. Since the probit model is a nonlinear maximum likelihood estimation, this paper takes the marginal effect of its coefficients and expands it by 1000 times for better analysis.

4.1. Benchmark Regression. This article first uses the probit model to estimate formula (5) and discusses the influence of the enterprise's past export experience on the dynamic

evolution of the enterprise's future overseas market network. From the richness of export experience and the specific information of the enterprise's export network connection in the previous period, the law of the evolution of the enterprise's overseas market network is tested. The specific estimation results of model (5) are shown in Table 3. Columns 1–4 of Table 3 adopt a gradual regression method to examine how differentiated export experience affects the dynamic evolution of the enterprise's overseas market, thereby verifying the role of various factors in the process of "dispersion" and "agglomeration" of the enterprise's overseas market network. In order to avoid the problem of omitting explanatory variables, this article adds the fixed effects of year, province, industry, enterprise, and potential overseas markets to the estimation of the econometric equation.

Table 3 shows the regression results of econometric equation (5). The first column only adds the network indicators at the geographic and economic levels of the enterprise in the previous period, which shows the differential effect of the enterprise's export network connection at the geographic and economic levels in the previous period. Among them, the estimated result of geographic network expansion effect is significantly negative at the significance level of 1%, which indicates that the export market selection of an enterprise does not simply select a country that is geographically close to the previous overseas destination as the enterprise's export destination country. That is, the export market choice of Chinese enterprises does not conform to the assumption of geographic network expansion effect, while the economic network expansion effect is significantly positive, indicating that the enterprise's future overseas market layout tends to choose regions or markets that are closely connected with the previous period's

TABLE 3: The path effect of export network connection on the enterprise's overseas market location selection.

	(1)	(2)	(3)	(4)
Whether to export in the previous period	272.385*** (0.786)	213.514*** (0.707)	213.387*** (0.705)	212.683*** (0.711)
Geographic network expansion effect	−0.357*** (0.002)	0.148*** (0.002)	−0.358*** (0.002)	0.151*** (0.002)
Exper$_{ft}$* (geographic network expansion effect)		−0.483*** (0.002)		−0.474*** (0.002)
Economic network expansion effect	0.775*** (0.007)	0.771*** (0.007)	0.478*** (0.006)	0.481*** (0.006)
Exper$_{ft}$* (economic network expansion effect)			0.326*** (0.008)	0.331*** (0.008)
Number of trade connections in the previous period	0.351*** (0.002)	0.331*** (0.002)	0.339*** (0.002)	0.341*** (0.002)
Geographic search effect	9.246*** (0.059)	9.508*** (0.060)	9.874*** (0.060)	10.246*** (0.059)
Geographical remoteness effect	1.929*** (0.144)	2.908*** (0.142)	2.554*** (0.144)	1.997*** (0.143)
Economic remoteness effect	0.476*** (0.038)	0.417*** (0.039)	0.338*** (0.040)	0.468*** (0.037)
Control variable	Control	Control	Control	Control
Goodness of fit	0.503	0.514	0.515	0.516
Sample size	127098723	126384609	126384609	126384609

Note. *, **, and *** represent the significance level of 10%, 5%, and 1% respectively. The clustering robust standard deviation of the estimated coefficients is given in parentheses. The estimated coefficients are all marginal effects.

economy. Therefore, judging from the results of geographic network expansion effects and economic network expansion effects, the evolution of the overseas market network of Chinese enterprises is undoubtedly continuously "dispersed," and there is no "aggregation" phenomenon similar to the description of "export path dependence." Columns 2-3 add the interaction terms of the enterprise's export experience (Exper$_{ft}$) and the geographic network expansion effect and the economic network expansion effect. We found the following. (1) The originally significantly negative geographic network expansion effect became significantly positive, while the interaction term between the export experience (Exper$_{ft}$) and the geographic network expansion effect was significantly negative. This shows that the "export path dependence" of the geographic network expansion effect exists. As enterprises continue to enrich their export experience, their reliance on the "export path dependence" effect is becoming less and less, so it shows a negative geographic network expansion effect as shown in the first column. (2) The interaction term between export experience (Exper$_{ft}$) and the economic network expansion effect is still significantly positive, indicating that enterprises with rich export experience are better at deploying overseas markets through economic links. Finally, the fourth column adds two interaction terms at the same time, and we found that the result is still significant and robust.

The estimation results in Table 3 confirm that the two mechanisms of "dispersion" and "agglomeration" coexist in the dynamic evolution of the corporate overseas market network. However, because of the different export experiences of enterprises and the "expansion effect" of the economic network expansion effect, the "dispersion" effect of this evolution process is significantly dominant. At the same time, it is also confirmed that the richness of export experience also affects the enterprise's overseas market layout. In the early stage of export, because there are fewer export markets, enterprises will give priority to exporting to markets that are geographically adjacent to the existing export markets for export "clustering." However, when the enterprise has certain export experience, because of the overseas agglomeration effect of the enterprise, the enterprise no longer follows the path effect of geographic network

expansion due to fierce market competition but mainly follows the path effect of economic network expansion. However, this point is often overlooked by scholars.

4.2. The Community Effect of Export Network Connection.
After testing the benchmark model, this article further introduces the community relationship between overseas markets into the benchmark model and analyzes and discusses the influence of the community relationship on the dynamic evolution of the corporate overseas market network. Before estimating the econometric equation (7), this article draws on Lucio et al. [21] and Wei et al. [18], using Chinese customs data to identify and classify the social relationships of the export destinations of enterprises. In the end, this article divides the world's 196 economies into 45 communities. For the specific division of communities, refer to Figure 2 of this article. Among the 45 communities divided in this article, more than 2 countries or regions have been combined into 30 communities, and 15 communities are separate communities whose relations with other regions are isolated. In order to further show the key characteristics of the community, this article sorts the communities according to the number of members and shows the distribution of different communities in the world on the world map, as shown in Figure 1. The members of the community show certain characteristics of geographic proximity, but this characteristic is not the most important factor that dominates the division of community members. Corresponding to geographical connections, economic connections, resource endowments, and technological structure are the dominant factors in forming community relations. For example, the members of the world's largest community include not only the United States and the United Kingdom, but also Southeast Asia, which makes the community span three continents, but the economic ties between these economies are extremely close. Overall, the formation of a community is complexity determined by complex factors and does not individually reflect the characteristics and factors of a certain aspect. In addition, the second largest community and the third largest community in the global economy also exhibit such characteristics. Community
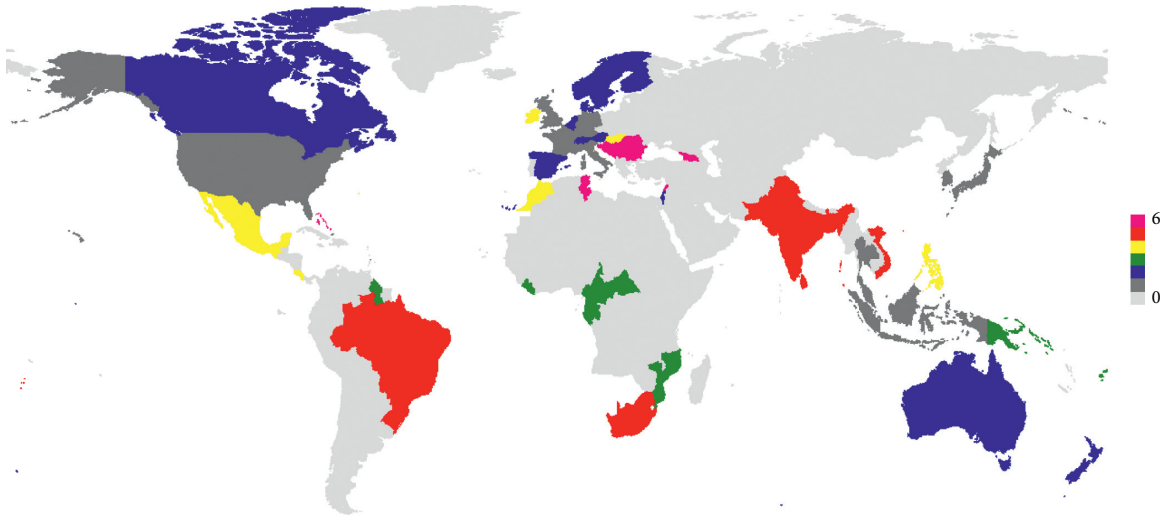
FIGURE 2: Distribution of the top six communities in the export destination countries of Chinese enterprises (2000–2011) (source: the authors'calculations).

relationship is an important factor influencing enterprises' decision making on foreign direct investment.

On the basis of the classification of the social relations of the export destinations of Chinese enterprises, this article further tests and analyzes the measurement equation (7). The specific estimation results are shown in Table 4 (in order to clearly show the impact of accumulated export experience on the community effect, Table 4 does not report the estimated results of other variables such as the number of connections in the previous period, the geographic search effect, and geographic remoteness). Table 4 examines whether there is intra-community concentration in the enterprise's choice of overseas market location and the impact of export experience on this effect. This article describes the community characteristics of potential overseas markets from the perspective of absolute quantity and relative quantity and examines the community effect of export network market location selection from two aspects. This article adds the number of export destination countries within the community as a proxy variable for the community characteristics of potential overseas markets in columns 1-2 and adopts a stepwise regression method for testing and analysis. In the first column, this article only adds path effect variables and community characteristic variables, and the estimated coefficients of community characteristic variables are significantly positive. This shows that under the circumstance that other factors remain the same, enterprises tend to export to areas within the same community of the export destination country, and there is a significant phenomenon of community concentration. In the second column, this article adds the interaction terms of export experience (Exper_{ft}), the expansion of the geographic network, the expansion of the economic network, and the number of host countries in the community. The estimated coefficient of the interaction term for the number of host countries in the community is significantly positive at a significance of 1%. This shows that enterprises with rich export experience can better deploy their markets based on

the community relationships in overseas markets, and because of the distribution characteristics of community relationships, agglomeration within the community will not lead to "crowding" caused by competition in the same industry. Similarly, this article changes the way that absolute numbers measure community characteristics in columns 3-4. By removing the influence of the size of the community and adopting the method of relative weighting to measure the characteristic variables of the community, the estimation results also confirmed that there is a significant concentration effect within the community in the dynamic evolution of the enterprise's overseas market.

The test results in Table 4 confirm that there is a significant trend of concentration within the community in the location selection of Chinese enterprises' export markets. An important reason for this trend of concentration lies in the fact that the path effect generated by the region within the community is greater than that generated outside the community, which leads to the potential host country of enterprise exports tending to the region within the community.

Based on this perspective, this paper regresses the measurement equation (8) and analyzes the path effects within and outside the community. The specific estimation results are shown in Table 5. Table 5 adopts a gradual regression method to test and analyze the effects of geographic network expansion and economic network expansion within and outside the community. The first column of Table 5 adds the variables of the geographic network expansion effect within and outside the community. The estimation results in the table show that the estimated coefficient of the geographic network expansion effect variable within the community is −0.085, and it is significantly negative at the 1% significance level. At the same time, the estimated coefficient of out-of-community geographic network expansion effect variable is −0.656, and it is significantly negative at the 1% significance level (the probit model used in this article to estimate the equation is a nonlinear method; although we

TABLE 4: The community effect of the export network connection on the enterprise's overseas market location selection.

	(1)	(2)	(3)	(4)
Whether to export in the previous period	20.284***	23.477***	18.493***	18.471***
	(0.066)	(0.081)	(0.059)	(0.058)
Geographic network expansion effect	−0.036***	0.028***	−0.036***	0.031***
	(0.000)	(0.000)	(0.000)	(0.000)
$Exper_{ft}*$ (geographic network expansion effect)		−0.056***		−0.053***
		(0.000)		(0.000)
Economic network expansion effect	0.073***	0.054***	0.069***	0.060***
	(0.001)	(0.001)	(0.001)	(0.001)
$Exper_{ft}*$ (economic network expansion effect)		0.031***		0.032***
		(0.001)		(0.001)
Number of host countries in the community	0.171***	0.070***		
	(0.001)	(0.001)		
$Exper_{ft}*$ (number of host countries in the community)		0.971***		
		(0.001)		
Proportion of host country in the community			2.431***	1.202***
			(0.015)	(0.008)
$Exper_{ft}*$ (proportion of host country in the community)				1.431***
				(0.011)
Control variable	Control	Control	Control	Control
Goodness of fit	0.505	0.516	0.509	0.517
Sample size	127098723	126384609	127098723	126384609

Note. *, **, and *** represent the significance level of 10%, 5%, and 1%, respectively. The clustering robust standard deviation of the estimated coefficients is given in parentheses. The estimated coefficients are all marginal effects.

take the marginal effects of the estimation results in the table, the marginal effects cannot be simply added or subtracted; in addition, because the geographic network expansion effect not only depends on the estimated coefficient of the geographic network expansion effect inside and outside the community but also depends on the specific weight, the sum of the estimated results of the expansion effect of the geographic network within and outside the community in Table 4 is greater than 0 and the estimated results in Table 2 are not contradictory). However, after adding the economic network expansion effect variable within and outside the community in the second column of Table 5, the estimated coefficient of the geographical network expansion effect variable within the community is 0.431, and it is significantly positive at the 1% significance level. At the same time, the estimated coefficient of the out-of-community geographic network expansion effect variable is −0.612, and it is significantly negative at the 1% significance level. This estimation result shows that the location choice of an enterprise's export market has a significant geographic path effect within the community, but there is no path dependence outside the community.

At the same time, in the second column of Table 5, the estimated results of the economic network expansion effect variables within and outside the community are 1.301 and 0.519, respectively, and are significantly positive at the 1% significance level. The estimated coefficient of the economic network expansion effect variable within the community is significantly greater than that of the external variable, which also indicates that enterprises are more inclined to expand their export boundaries to areas where the economic network within the community is more closely connected. In turn, the location selection of the export

market of enterprises presents a phenomenon of agglomeration within the community. Finally, after adding the number of intra-community and out-of-community trade connections in the previous period, the geographical remoteness effect, and the trade remoteness effect and other control variables within and outside the community in Table 5, the estimated result of this paper is still steady. Therefore, the estimated results in Table 5 show that the community effect of export networks on the location selection of Chinese enterprises' export markets originates from the significant differences in the path effects of geographic network expansion and economic network expansion between the areas within the community and the areas outside the community. This has led to the concentration of Chinese enterprises' export markets within the community in terms of location selection.

4.3. Neighboring Effects of Export Network Connection.
After testing the benchmark model and the community effect, this article further estimates the econometric equation (9) to test and analyze the "neighboring effects" of the export network of the same industry. The information about the location selection of the export market of an enterprise not only comes from its own export network, but also obtains information overflow through the export network of neighboring enterprises. thus showing the path effect on the export network of neighboring enterprises. On this basis, this paper uses the probit model to estimate measurement equation (9). The estimation results are shown in Table 6.

The first column of Table 6 reflects the geographical network expansion effect and economic expansion effect of neighboring enterprises to test the path dependence of the

TABLE 5: Heterogeneous effects of export network connections within and outside the community.

	(1)		(2)		(3)	
	Coefficient	Standard deviation	Coefficient	Standard deviation	Coefficient	Standard deviation
Whether to export in the previous period	264.797***	(1.059)	258.900***	(0.985)	223.376***	(0.672)
Geographic search effect	7.345***	(0.062)	3.247***	(0.071)	7.788***	(0.077)
Geographical network expansion effect within the community	−0.085***	(0.019)	0.431***	(0.020)	0.472***	(0.020)
Geographical network expansion effect outside the community	−0.656***	(0.003)	−0.612***	(0.004)	−0.519***	(0.003)
Trade network expansion effect within the community			1.301***	(0.009)	1.527***	(0.011)
Trade network expansion effect outside the community			0.519***	(0.009)	0.939***	(0.010)
Number of previous trade connections within the community					0.600***	(0.010)
Number of previous trade connections outside the community					0.411***	(0.003)
The effect of geographic remoteness within the community					−1.964***	(0.193)
The effect of geographic remoteness outside the community					−6.271***	(0.217)
The effect of trade remoteness within the community					−0.037***	(0.009)
The effect of trade remoteness outside the community					0.925***	(0.053)
Control variable	Control		Control		Control	
Goodness of fit	0.501		0.505		0.509	
Sample size	126384609		126384609		110570327	

Note. *, **, and *** represent the significance level of 10%, 5%, and 1%, respectively. The clustering robust standard deviation of the estimated coefficients is given in parentheses. The estimated coefficients are all marginal effects.

neighboring partner's export network.. The estimated result is significantly positive at a significance level of 1%, which shows that the more neighboring enterprises export to the regions, the more enterprises tend to market in these regions, and there are significantly neighboring effects. The second column of Table 6 adds the geographic network expansion effect and economic network expansion effect of neighboring enterprises. The estimated coefficients are all significantly positive, indicating that enterprises tend to export to neighboring enterprises in geographically adjacent areas and regions with closer economic ties to follow exports. At the same time, the interaction term between export experience and neighbor effect is added in the second column to test the impact of the difference in export experience on neighboring effects. It is found that the estimated coefficients of the export experience ($Exper_{ft}$) and the neighboring partner geographic network expansion effect are also significantly negative, indicating that enterprises with rich export experience have less "following exports" behavior. At the same time, the estimated coefficients of export experience ($Exper_{ft}$) and neighboring partners' economic network expansion effects are also significantly positive, indicating that economic connections are still an important source of information for export-experienced enterprises in the overseas market layout process. Finally, in the third column of Table 6, this article adds the variable of the number of connections within the community of neighbors within the community to test the community effect of the export

network of neighboring enterprises. Its estimated coefficient is significantly positive at a significance level of 1%, indicating that enterprises tend to expand their exports in the intra-community areas in the export network of neighboring enterprises. There are also significant community effects in the influence of the export network of neighboring enterprises on the location choice of the enterprise's export market.

4.4. Robustness Test. In addition, in order to ensure the robustness of the results of the enterprise's export experience on the dynamic evolution of the enterprise's overseas market network, this paper separates enterprises with only one year of export experience from the sample to study the differential impact of overseas market networks between different samples. The estimation results are shown in Table 7. The results found that the overseas market evolution of enterprises with different export experience presents the same differences as the above-mentioned research, that is, the degree of export experience of an enterprise also affects the degree of "agglomeration" of the enterprise's overseas market location decision.

5. Conclusions and Policy Recommendations

Under the influence of the market economy, the Internet, as an important resource for the transmission and

TABLE 6: Neighboring effects of export network connection on enterprise's overseas market location selection.

	(1)		(2)		(3)	
	Coefficient	Standard deviation	Coefficient	Standard deviation	Coefficient	Standard deviation
Whether to export in the previous period	290.117***	(0.906)	262.310***	(0.875)	231.589***	(0.760)
Whether the neighboring enterprise exported in the previous period			9.262***	(0.070)	10.020***	(0.073)
Number of neighboring export enterprises	1.153***	(0.027)	1.100***	(0.026)	1.141***	(0.026)
Geographic network expansion effect	−0.627***	(0.005)	−0.581***	(0.004)	−0.561***	(0.004)
Neighboring geographical network expansion effect			0.135***	(0.006)	0.113***	(0.006)
$Exper_{ft}*$ (neighboring geographical network expansion effect)			−0.131***	(0.004)	−0.163***	(0.005)
Trade network expansion effect	1.653***	(0.016)	1.104***	(0.021)	0.971***	(0.021)
Neighboring trade network expansion effect			1.167***	(0.029)	1.188***	(0.030)
$Exper_{ft}*$ (neighboring trade network expansion effect)			1.136***	(0.028)	1.141***	(0.027)
Number of trade connections in the previous period	0.586***	(0.004)	0.549***	(0.004)	0.447***	(0.004)
Number of neighboring partners' trade connections in the previous period	−0.043***	(0.001)	−0.065***	(0.001)	−0.054***	(0.001)
Geographic search effect	12.898***	(0.117)	11.927***	(0.109)	10.611***	(0.110)
Geographical remoteness effect	−1.554***	(0.274)	−2.595***	(0.258)	−5.246***	(0.261)
Trade remoteness effect	1.575***	(0.086)	1.438***	(0.084)	1.663***	(0.087)
Number of connections in neighboring communities	0.539***	(0.006)	0.322***	(0.006)	0.155***	(0.005)
Proportion of trade connections within the community					18.127***	(0.143)
The remoteness effect of neighboring trade					−1.391***	(0.073)
Control variable	Control		Control		Control	
Goodness of fit	0.528		0.530		0.532	
Sample size	72867430		72867430		72867430	

Note. *, **, and *** represent the significance level of 10%, 5%, and 1%, respectively. The clustering robust standard deviation of the estimated coefficients is given in parentheses. The estimated coefficients are all marginal effects.

TABLE 7: Export experience and the dynamic evolution of Chinese enterprises' overseas market network (source: the authors' calculations).

	First export enterprise			Historical export enterprise		
	(1)	(2)	(3)	(4)	(5)	(6)
Whether to export in the previous period	171.2938*** (6.8896)	171.3439*** (6.8907)	165.6504*** (6.7878)	295.6239*** (17.7914)	294.8625*** (17.7057)	286.3229*** (18.2174)
Number of neighboring export enterprises			0.0001*** (0.0000)			0.0005 (0.0002)
Geographic network expansion effect	0.3402*** (0.0935)	0.3264*** (0.0950)	0.2897*** (0.0849)	−0.3863*** (0.0632)	−0.3531*** (0.0615)	−0.5798*** (0.1689)
Neighboring geographical network expansion effect			0.0720** (0.0376)			−0.0019*** (0.0002)
Economic network expansion effect	0.5111*** (0.0760)	0.4881*** (0.0763)	0.4668*** (0.0753)	0.8724*** (0.3320)	0.7923** (0.3321)	0.7287** (0.3203)
Neighboring economic network expansion effect			0.4847*** (0.0609)			1.0872*** (0.2949)
Number of trade connections in the previous period	0.3621*** (0.0177)	0.3649*** (0.0179)	0.3466*** (0.0172)	0.7039*** (0.0597)	0.7079*** (0.0601)	0.6424*** (0.0627)
Geographic search effect	4.8811*** (0.5080)	4.3296*** (0.5176)	3.9976*** (0.5165)	9.8902*** (2.6199)	8.3461*** (2.6515)	7.7045*** (2.6325)
Geographical remoteness effect	−7.5281 (5.3306)	−8.3767 (5.3725)	−9.8826* (5.4196)	33.2194** (15.1388)	31.8277** (15.3740)	26.0266* (14.0127)
Trade remoteness effect	0.4218 (0.4109)	0.4341 (0.4115)	0.1823 (0.4076)	1.9223 (1.9154)	1.8774 (1.9101)	1.3288 (1.8997)

TABLE 7: Continued.

	First export enterprise			Historical export enterprise		
	(1)	(2)	(3)	(4)	(5)	(6)
Number of host countries in the community		1.1273***	1.1770***		3.9037***	3.9319***
		(0.2744)	(0.2802)		(1.2544)	(1.2415)
Control variable	Control	Control	Control	Control	Control	Control
Pseudo R^2	0.4980	0.4982	0.5023	0.5166	0.5169	0.5222
Sample size	676266	676266	676266	133998	133998	133998

Note. *, **, and *** represent the significance level of 10%, 5%, and 1%, respectively. The clustering robust standard deviation of the estimated coefficients is given in parentheses. The estimated coefficients are all marginal effects.

continuation of market information, affects the enterprise's overseas market layout. This paper uses the 2000–2011 CEPII-BACI database and China Customs database to combine the export experience of the enterprise with its own trade network to study the differential effect of the accumulated export experience of the enterprise on the dynamic evolution of the enterprise's overseas market network.

This article describes the export network of enterprises from the perspective of geographic connection and economic connection and identifies the path dependence of Chinese enterprises' export market location selection under the connection of export networks. The research in this article finds that the location choice of the export market of Chinese enterprises is significantly dependent on the structure of the export network constructed in the past, and they tend to choose regions with closer geographical proximity and economic ties as the export target countries, and there is a significant path dependence effect. At the same time, through the estimation results of the interaction terms, it is found that the degree of export experience of an enterprise affects the mechanism of the "path dependence effect." Enterprises with rich export experience are no longer constrained by geographical space and will choose a more "decentralized" overseas market layout based on the effect of economic expansion.

Based on the benchmark model, this article draws on Lucio et al. [21] and Wei et al. [18] to divide the overseas trade-linked communities of corporate export networks and divides 196 economies around the world into 45 communities. It also examines the enterprise's decision making on the location of the export market within the community and outside the community. The research in this article finds that the location choice of the export market of an enterprise depends on the community distribution of the export network, and enterprises tend to choose areas within the export network community for export boundary expansion, which has a significant concentration effect within the community. This effect is especially suitable for enterprises with rich export experience. This article further distinguishes the path dependence effect of Chinese enterprises' choice of export market location within and outside the community. The study found that the path effect within the community is significantly greater than the path effect outside the community. In particular, the overseas market layout of Chinese enterprises in the area within the community tends to "aggregate" in geographically adjacent areas. The areas outside the community tend to be "decentralized" in more geographically distant areas, and the overseas

market layout for the areas within the community is more in line with the path dependence effect.

The information needed for decision making on the location of an enterprise's export market not only comes from its own export network but also is affected by the export network of neighboring enterprises in the same industry. On this basis, this paper constructs the export network of neighboring enterprises and examines the neighboring effect of the export network connection on the location selection of the export market of the enterprise. The study found that for enterprises with insufficient export experience, the export network of neighboring enterprises significantly affects the enterprise's export market location selection decision and conforms to the path dependence effect. However, for enterprises with rich export experience, their overseas market layout is more flexible, and the phenomenon of "following exports" is rarely seen.

The research conclusions of this article have important policy implications for Chinese enterprises to promote the transformation and upgrading of the export market structure, build a new pattern of comprehensive opening up, and promote the high-quality development of Chinese foreign trade. In recent years, although Chinese foreign trade has achieved rapid growth and its foreign trade flow has steadily ranked first in the world, the structure of the export market of Chinese enterprises is single and solid, which can easily lead to anti-dumping lawsuits in target countries. Especially in the current uncertain environment of global trade and investment, how to effectively realize the communication and transfer of information and knowledge can ensure that the high-quality products of Chinese enterprises successfully go global. The rapid growth of Chinese trade in the past four decades has provided an important foundation for the transfer of information and knowledge in global operations. The reach of Chinese export enterprises around the world can provide important resources and national advantages for the optimization of the export market in the future. In order to transform Chinese export network experience into the advantages of Chinese enterprises in developing emerging markets and transforming into diversified markets, the government should focus on promoting the construction of a trade network system from the following three aspects. ① The government should build an integrated platform for enterprises to search export network information and realize the effective dissemination of information. ② Strengthen industry associations, chambers of commerce, and other nongovernmental entities to play the function of information

collection, form an information network mechanism between enterprises, and transform the existing export network of Chinese enterprises into information advantages for the marginal expansion of their export markets in the future. ③ Using the business activities organization functions of the Department of Commerce, the International Trade Promotion Committee should promote Chinese enterprises to enhance the information. This will improve the continuous optimization of the export market structure of Chinese enterprises and expand the proportion of emerging markets.

Data Availability

The data used to support the findings of this paper are included within the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest regarding the publication of this paper.

Authors' Contributions

All authors contributed equally to this study.

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