Cultural distance, friendship cities and production rates of contracted arable land in China's overseas arable land investment

Linyan Ma[1] **Zichun Pan**[1] **Feng Wei**[2*]

[1]College of Economics and Management, Northwest A&F University, Yangling, China.
[2]College of Language and Culture, Northwest A&F University, 712100, Yangling, China. E-mail: weifeng@nwafu.edu.cn. *Corresponding author.

ABSTRACT: Based on the data of China's overseas arable land investment in 47 countries along the "Belt and Road", the Tobit model is used to analyze the effects of cultural distance and friendship cities on the production rates of contracted arable land in China's overseas arable land investment. This study provided theoretical basis and empirical support for promoting China's agricultural "going abroad" and improving the production rates of contracted arable land in China's overseas arable land investment. The results show that differences in cultural distance, power distance and the degree of uncertainty avoidance have significant positive effects on the production rates of contracted arable land in China's overseas arable land investment, and differences in individualism have a significant negative effect on the production rates. Friendship city has a positive but insignificant effect on the production rates, meanwhile, it also weaken the positive impact of cultural distance on production rates of contracted arable land in China's overseas arable land investment. The proportion of joint ventures with host country, the economic level and institutional environment of the host country will all have an impact on the production rates. Finally, recommendations are proposed to promote the production rates of contracted arable land, such as focusing on the positive role of cultural distance, establishing friendship cities, and investing host countries with high potential precisely.
Key words: cultural distance, friendship cities, overseas arable land investment, production rates.

Distância cultural, cidades amigas e taxas de produção de terra arável contratada nos investimentos de terra arável no exterior da China

RESUMO: Com base nos dados do investimento da China em terras aráveis no exterior em 47 países ao longo do "Cinturão e Rota", o modelo Tobit é utilizado para analisar os efeitos da distância cultural e das cidades amigas nas taxas de produção de terras aráveis contratadas no investimento da China em terras aráveis no exterior. Os resultados mostram que as diferenças na distância cultural, na distância de poder e no grau de prevenção de incertezas têm efeitos positivos significativos sobre as taxas de produção de terras aráveis contratadas no investimento em terras aráveis no exterior da China, e as diferenças no individualismo têm um efeito negativo significativo sobre as taxas de produção. As cidades amigas têm um efeito positivo, mas insignificante, sobre as taxas de produção, enquanto estas podem enfraquecer o impacto positivo da distância cultural sobre as taxas de produção de terras aráveis contratadas no investimento em terras aráveis no exterior da China. A proporção de investimento cooperativo entre a China e o país anfitrião, o nível econômico e o ambiente institucional do país anfitrião terão um impacto sobre as taxas de produção. Por fim, são propostas recomendações para promover as taxas de produção das terras aráveis contratadas, tais como a concentração no papel positivo da distância cultural, a criação de cidades da amizade e o investimento em países de acolhimento com elevado potencial.
Palavras-chave: distância cultural, cidades da amizade, investimento em terras aráveis no exterior, taxas de produção.

INTRODUCTION

Arable land resources have always been an important influencing factor for human beings to promote food production and for countries to guarantee food security, as well as a material condition that determines social stability. Since the 21st century, with the rapid growth of global population, the great development of bioenergy market and the continuous change of climate environment, the pressure on global resource carrying capacity has further increased (ANTONELLI et al., 2015). All countries are facing the increasingly serious threat to food security, especially under the combined effect of food crisis, financial crisis and energy crisis, arable land has become an important resource that is highly valued and scrambled, in addition to ore and oil and gas resources (AREZKI et al., 2015). In the unfavorable background of increasing food trade restrictions and rising food prices, the way of transnational agricultural investment or overseas arable land investment can effectively guarantee food security and supply of agricultural products, which has become a hot topic in the international community and academia (HALL, 2011).

In recent years, food-import-oriented countries, represented by Japan and South Korea, still regard overseas investment in arable land as the main means to make up for the insufficiency of domestic food production or to guard against the international

trade risk for the sake of food security (LU et al., 2018). Japan has established a "government- civilian collaboration" strategy for overseas arable land investment (EIDT, 1968). Korea has formulated an overseas agricultural development program to provide strategic planning and legal protection for overseas arable land investment activities (MCMICHAEL, 2012). Saudi Arabia in the Gulf region allocated $800 million for overseas agricultural investment production and infrastructure financing as early as 2008 (GRINDLE et al., 2015). Qatar has identified countries such as Brazil and Uruguay in South America as important host countries for overseas arable land investment (MCMICHAEL, 2012). In addition, under the catalyst of the financial crisis in 2008, the financial sectors, investment banks and listed companies of developed countries in western, represented by the United States, the United Kingdom and the Netherlands, have also regarded the high-quality arable land resources of other countries as an important investment target, and have rushed into the wave of overseas arable land investment and gradually become an important force in this field (CHEN et al., 2017).

As a populous country, China is supporting 18.7% of the world's population with 7% of the world's arable land, making an outstanding contribution to ensuring global food security. However, in recent years, China's arable land and water resources are relatively tight, the demand for food has been increasing, as well as the raging epidemic of coronavirus has further exacerbated the "tight balance" of food supply, resulting in a threat to China's food (LU et al., 2019). Under the strategy of "going global" in agriculture, overseas arable land investment has become an important tactic for China to alleviate the contradiction between rapid socio-economic development and food security (LU et al., 2018). However, as the number of China's overseas arable land investment projects and contracted area continue to increase, a series of problems arise, of which breach of contract, or failure to successfully put into production after signing the contract is particularly obvious (HAN et al., 2021).

According to Land Matrix database, as of June 2021, the proportion of contracted area of China's overseas arable land investment that has not been put into production was as high as 67.95%, which seriously undermines investment performance, not only resulting in a waste of resources, but also detrimental to the sustainable development of overseas arable land investment. Therefore, it is crucial to improve the production rates of contracted arable land in China's overseas arable land investment. The successful implementation of overseas arable land investment is affected by many factors, in addition to the institutional quality, resource endowment, and economic level in host country, the cultural distance between the two countries can not be ignored (DANG & ZHAO, 2020). The behavior of countries and nations is often influenced by informal institution formed by its customs, ideology, and values, of which culture is representative. Cultural distance between two countries may have an impact on the implementation, operation, and management of arable land investments (RAJAN & HATTARI, 2009). Besides, international friendship cities, as a kind of bridge to promote commercial and cultural exchanges between countries or regions, which helps both sides to communicate and cooperate better, may also have an impact on the production rates of contracted arable land in China's overseas arable land investment (ZHANG et al., 2020). Therefore, how do cultural distance and friendship cities affect the production rates of contracted arable land in China's overseas arable land investment? What are their mechanisms? Do friendship cities moderate the effect of cultural distance on the production rates of contracted arable land? The above questions will be answered from both theoretical and empirical perspectives, with a view to improving the production rates of contracted arable land in China's overseas arable land investment and promoting rational planning of investment by government and enterprises.

The main contributions of this study are as follows. Firstly, the production rates of contracted arable land in China's overseas arable land investment was studied. Most of the existing studies focus on the distribution characteristics, influencing factors, and development potential of overseas arable land investment, and lack in-depth analysis of comprehensive status of investment projects implementation. Hence, this study fills to some extent the research gap on the production rates of contracted arable land in China's overseas arable land investment. Secondly, based on the dual perspectives of cultural distance and friendship cities, the mechanisms of their influences on the production rates of contracted arable land in China's overseas arable land investment were analyzed. Compared to the existing studies, these perspectives are more novel and focuses on the important influence of cultural distance as an informal institution. Thirdly, the moderating role of friendship cities in the effect of cultural distance on the production rates of contracted arable land was explored. Compared to the existing studies, attention was paid to the important role of friendship cities as informal diplomatic activities, and

the impact of the establishment of friendship cities on arable land investment was further strengthened and analyzed.

The remaining parts of the study are as follows. Section 2 reviewed the literature. Section 3 analyzed the theoretical mechanisms by which cultural distance and friendship cities affect the production rates of contracted arable land in China's overseas arable land investment. Section 4 described the research methodology and data sources. Section 5 interpreted the results, and section 6 and 7 presented the discussion, conclusions, and policy implications of this study.

LITERATURE   REVIEW

Academic research on overseas arable land investment began in the 1960s, especially after the global financial crisis and food crisis of 2008, the scale of overseas arable land investment has expanded rapidly, along with a major explosion of academic research on it (MA et al., 2022). Those researches focus on five aspects of overseas arable land investment: drivers, patterns, location options, potential and risks. The drivers of overseas arable land investment have been categorized as financial profit-seeking, energy security, resource and industrial control, policy-driven, and food security (DING et al., 2022; TIAN & LIU, 2022). The dominant models of investment have been categorized into three types according to the sectoral attributes of the investor and investee: the "government-to-government" model, the "private-to-government" model, and the "private-to-private" model (HAN et al., 2021; ZHAO & CHEN, 2023). In terms of location choice, some studies have found that geo-economic, cultural, political and resource endowment all affect the distribution of overseas arable land investments (NKANSAH-DWAMENA & YOON, 2022; COCHRANE et al., 2023). In terms of investment potential and risk, studies points out that countries with developed economies have relatively high investment potential (WANG et al., 2021), but most investments are characterized by multiple risks in political, economic, market, social and industrial (ZHAI, 2023; TIAN & TUNIO, 2023). What's more, in terms of the production rates of contracted arable land in China's overseas arable land investment, only ZHOU (2014) found that the host country's institutional environment, intergovernmental agreements, and investment area all have an impact on the production rates, by using international arable land investment data. Few scholars have explored the relationship between cultural distance, friendship cities and arable land investment. When the scope of research is extended to overseas investment, there is no unified

conclusion at present. Some studies have pointed out that cultural distance negatively affects investment by increasing communication costs and information friction (LIU et al., 2021; SUN et al., 2024), but some have pointed out multinational corporations' entry into new cultural circles helps them to innovate and can improve the production rates (MOURA et al., 2023). In terms of friendship cities, most scholars agree that the making friendship cities is conducive to the promotion of cultural exchanges, economic exchanges and political mutual trust between the two countries, which can enhance cultural recognition and promote foreign investment (HAN et al., 2022; HUANG et al., 2024).

The existing literature lay good foundation, but the following shortcomings remain: Firstly, there is a lack of attention to the production rates of contracted arable land in China's overseas arable land investment. Secondly, the effect of cultural distance and its different dimensions on the production rates of contracted arable land is ignored, while the possible moderating effect of friendship cities is not considered. In addition, as of June 2021, China has invested in overseas arable land in a total of 53 countries, 47 of which have signed the "Belt and Road" cooperation agreements, suggesting that these countries are the currently hot regions for China's overseas arable land investments. Therefore, these 47 countries were selected, and the Tobit model was applied to analyze the effects of cultural distance and friendship cities on the production rates of contracted arable land in China's overseas arable land investment, and to explore whether there is a moderating effect of friendship cities.

Theoretical analysis and research hypothesis
The effect of cultural distance on the production rates of contracted arable land in China's overseas arable land investment

Cultural distance refers to the degree of divergence between countries in terms of thinking modes, dominant values, and behavior modes, which is relatively stable and not susceptible to change in the short term (LINDERS et al., 2005). In recent years, the "international benefits" of multinational corporations have attracted widespread attention, which arises from making full use of the differences between countries and the advantages of multinationality (THOMAS & EDEN, 2004). Moreover, the internationalization process of multinational corporations is always accompanied by changes in cultural distance. Therefore, it is possible to find the "foreignness benefit" of cultural distance from the "internationalization benefit". The "foreignness benefit" of cultural distance in China's overseas arable land investment are mainly

reflected in the following three aspects: First of all, cultural distance have an advantageous development effect. Cultural distance can bring significant product differentiation advantages. For investment in arable land, the greater the cultural distance between China and host country, the more obvious the differences between the two countries in terms of agricultural production methods, crop cultivation habits, and taste preferences for agricultural products. It is conducive to the development of products that meet local needs and are differentiated from other competitors (EVANS & MAVONDO, 2002), which can enhance the recognition and influence of the enterprise in the market, and thus improve the production rates of contracted arable land. Second, cultural distance have an advantageous exploration effect. On the one hand, cultural distance produces a merger effect. As strategic assets are culturally embedded, the greater the cultural distance, the easier it is for investing companies to acquire scarce assets such as arable land and other agricultural resources through mergers and acquisitions (MOROSINI et al., 1998), which is conducive to improving the production rates of contracted arable land. On the other hand, cultural distance produces a learning effect. When China invests in other countries' arable land, enterprise employees enter a new cultural circle, multicultural convergence and collision is conducive to the employees to learn knowledge and skills different from the China's culture, and can further improve the enterprise's ability to innovate management and operation (GOMEZ-MEJIA & PALICH, 1997), thus enhancing the company's competitiveness and the production rates. Third, cultural distance is beneficial in improving the relationship between subsidiaries and parent companies. Due to the political sensitivity of arable land investment and the fact that cultural differences can increase the sense of crisis in host country, which makes the parent company increase the regulation and restriction on the subsidiary, resulting in the subsidiary usually need to rely on the parent company to provide resources and financial support. This enhances the level of their interaction and collaboration, and contributes to the ease of doing business in the host country for subsidiaries (YI et al., 2016).

In addition, there may be differences in the effects of different dimensions of cultural distance on the production rates of contracted arable land in China's overseas arable land investment. According to the views put forward by Hofstede, cultural distance can be analyzed in four cultural dimensions: power distance, individual and collectivism, masculinity and feminism, and uncertainty avoidance (HOFSTEDE &

MINKOV, 2010). First, power distance is the degree to which members holding less power recognize the unfair distribution of power. China belongs to high-power-distance culture, and when the host country belongs to low-power-distance culture, the difference in power distance is large. In this case, on the one hand, the host countries have low tolerance for power differentials, they are more in pursuit of equality, and more likely to accept the heterogeneous management theories of China's enterprises (AHAMMAD, 2017). On the other hand, employees from different countries can provide differentiated information and resources, enhancing the resource complementarity and creativity, which is conducive to enhancing the production rates of contracted arable land in China's overseas arable land investment (STAHL et al., 2010). Furthermore, individualism and collectivism are the degree to which the country recognizes the primacy of individual versus collective interests. China belongs to collectivist culture, thus there is a big difference when the host country belongs to individualist culture. In this context, on the one hand, China would prefer to establish stable partnerships that help reduce transaction costs, improve team cohesion, and enhance trust (TUNG & VERBEKE, 2010), thus facilitating the smooth implementation and management of investment projects. On the other hand, due to the collectivist culture that emphasizes teamwork and collective interests, China's enterprises may be more inclined to adopt conservative business strategies and risk management measures to ensure the stable development of their investment projects. This risk management capability may provide China's enterprises with an advantage when working with host countries with individualistic cultures, enabling them to better cope with changes and uncertainties in the external environment (BHARDWAJ et al., 2007). Moreover, masculinity and feminism reflect the difference in emotional gender roles in a country. China belongs to a masculinist culture, and when the host country belongs to a feminist culture, the difference between the two countries is greater. In this background, China's enterprises may focus more on authority, ambition and competitiveness, while the host country focuses more on teamwork and consensus, a difference that can lead to conflicts between staff members in their exchanges and cooperation, which in turn adversely affects the production rates of contracted arable land. Last but not least, uncertainty aversion refers to the degree of preference for risk. China belongs to low uncertainty aversion culture, when the host country belongs to high uncertainty aversion culture, the difference between the two countries is greater. In this context,

China's enterprises tend to show higher willingness to take risks (LEE et al., 2008), but the host country is relatively conservative and cautious, and will adopt stricter regulations for China's enterprises to avoid uncertainty, which will stimulate China's enterprises to innovate and further improve the production rates of contracted arable land (MUDAMBI & NAVARRA, 2002). Based on these, Hypothesis 1 and Hypothesis 2 were proposed.

Hypothesis H1: Cultural distance has a positive effect on the production rates of contracted arable land in China's overseas arable land investment.

Hypothesis H2: There are differences in the effects of different dimensions of cultural distance on production rates of contracted arable land in China's overseas arable land investment. Differences in power distance, individual and collectivism, and uncertainty avoidance have a positive effect on the production rate, while the difference in masculinity and feminism have a negative effect on the production rate.

The effect of friendship cities on the production rates of contracted arable land in China's overseas arable land investment

New institutional economics theory believes that institutions can reduce transaction costs and improve the efficiency of cooperation through the functions of information, constraints and incentives. The essence of friendship city is exactly a formal institutional form of government-promoted twinning of cities, which can form a platform for complementary resources, information sharing, and win-win cooperation (BAYCAN-LEVENT et al., 2010). As an important link between China and the host country for cultural exchanges and economic cooperation, friendship cities create favorable conditions for China to carry out overseas investment in arable land (LIAN et al., 2021).

Above all, the establishment of friendship cities is good for creating a favorable investment environment for enterprises. Friendship cities, as a kind of informal diplomatic activity, to a certain extent give bilateral cities "priority treatment" in economic and trade cooperation. For example, the host country will provide more institutional support and policy protection for China's enterprises investing in arable land, which is helpful to reducing investment risks (MBALYOHERE & LAWTON, 2018), and thus improving the production rates of contracted arable land. What's more, the establishment of friendship city is conducive to the enhancement of company's overseas image. The "national image" and "national identity" created in the process of friendship cities

exchanges are conducive to enhancing the host country's recognition of China's enterprises. This not only facilitates the companies' arable land investment, but also reduces the prejudice of the host government and local people against China's arable land investment (HAN et al., 2022), which helps to improve the production rates of contracted arable land. Lastly, the establishment of friendship cities is able to alleviate information asymmetry. Close exchanges between friendship cities can deepen the friendly relations and enhance the sense of trust, and also provide a communication platform for economic and trade cooperation. This is good for improving information transparency, reducing uncertainty in the host country's investment environment, and further improving the degree of match between China and host country in carrying arable land investment cooperation (DESBORDES, 2010), thus improving the production rates of contracted arable land. Based on above, hypothesis 3 was proposed.

Hypothesis H3: Friendship cities have a positive effect on the production rates of contracted arable land in China's overseas arable land investment.

Moderating effects: indirect effects of friendship cities

Friendship city may affect the role of cultural distance on the production rates of contracted arable land in China's overseas arable land investment. The reason is that the establishment of a friendship city may have an impact on the cultural distance between China and host country. On the one hand, the channels built up through friendship cities can strengthen communication, enhance understanding and deepen feelings between cities as well as promote youth exchanges, study abroad education, cross-border tourism and other activities, which helps to shorten the cultural distance between China and host country (BRAKMAN et al., 2016). On the other hand, the establishment of friendship city is beneficial for China to form close social networks in host countries. Social networks play an important role in cross-cultural exchanges, and investment companies can make use of the network of overseas China's businessmen to exchange and integrate cultures and institution with host country, and obtain social identity in host country, thus shortening cultural distance (BELDERBOS & SLEUWAEGEN, 1998). Cultural distance positively affects the production rates of contracted arable land in China's overseas arable land investment by generating advantageous development effect and advantageous exploration effect. Therefore, the reduction of cultural distance

will lead to the reduction of development advantage and exploration advantage, which not only reduces the innovation and exploration motivation brought by cultural distance, but also weakens the advantages of Chinese culture and the cultural complementarity between the two countries (LIU et al., 2019), and as a result, it reduces the positive effect of cultural distance on the production rates of contracted arable land in China's overseas arable land investment. Based on above, hypothesis 4 was proposed.

Hypothesis H4: Friendship cities play a negative moderating role in the impact of cultural distance on the production rates of contracted arable land in China's overseas arable land investment.

Study design
Variable selection
Dependent variable

The dependent variable is the production rates of contracted arable land in China's overseas arable land investment, which is expressed as the proportion of arable land that has been put into production to the contracted cultivated land area in China's overseas arable land investment in countries along the "Belt and Road".

Independent variable

(1) The core explanatory variable.

Cultural distance, reflecting the cultural differences between China and host country. Referring to the cultural dimensionality theory proposed by Hofstede, four dimensional indices were used to indicate the cultural scores of China and host country, namely power distance, individual and collectivism, masculinity and feminism, and uncertainty avoidance, with values ranging from 0 to 100. In details, power distance refers to the acceptance degree of unequal power distribution in a society or organization by those in lower society status; individualism and collectivism dimension is a measure of whether a given society in general is concerned with the interests of the individual or the collective; masculinity and femininity dimension depends primarily on whether society represents more masculine qualities (e.g., competitiveness, arbitrariness) or feminine qualities (e.g., modesty, caring for others), as well as on the definition of masculine and feminine functions; uncertainty avoidance refers to whether uncertainty is avoided and controlled through formal channels when society is subject to uncertain events and unconventional environmental threats. And refer to the KSI index proposed by KOGUT & SINGH (1988) to measure the cultural distance between two countries with the formula:

$$CD_j = \frac{1}{4} \sum_{i}^{4} [(I_{ij} - I_i)^2 / V_i]$$

(1)

Where, I_{ij} refers to the cultural score of host country j in dimension i, I_i refers to the score of China's culture in dimension i, and V_i refers to the variance of culture in dimension i.

Friendship city, expressed as the total number of friendship cities established between China and host countries as of the end of 2020. The reason is that data related to arable land investment are available until June 2021, and there may be a lag in the impact of friendship city on the production rates of contracted arable land in China's overseas arable land investment.

(2) Control variables.

Combining the reality of China's overseas arable land investment and referring to the research of related scholars (HOFMAN & HO, 2012), control variables were selected from the investment mode, location relationship, economic environment, resource endowment, infrastructure construction level and institutional environment.

The investment mode was expressed in terms of the proportion of China's independent investment projects and the proportion of joint ventures project with host country. China's arable land investment in host countries is mainly carried out in three ways: independent investment, joint ventures with host countries and joint ventures with other countries. Independent investment has higher requirements for China's companies' capital and management, but it allows the company to have absolute control over the project. Although, joint ventures with host countries can reduce some of the public opinion risks and information transaction costs for China's companies, this may result in a loss of absolute control and an increase in internal management risk. Thus the direction of the impact of independent investment and joint ventures with host countries on investment performance is uncertain. Express the locational relationship in terms of the geographic distance and whether there is a common border. Geographic distance not only represents an iceberg cost, but is also a major cause of information asymmetry which reduces the efficiency of communication between companies and the relevant authorities in the host country, and in turn may adversely affect the production rates of contracted arable land (RAGOZZINO, 2009). In addition, because of the politically sensitive nature of arable land investment and the negative impact of Western public opinion such as the "China threat theory" and

"neo-colonialism", having a common border with the host country may cause panic in host country's society, which is detrimental to the improvement of the production rates. The economic environment of host country is expressed in terms of GDP, GDP per capita and economic freedom degree. Specifically, GDP indicates the absolute market size of the host country, with higher GDP implying a stronger host economy and more opportunity for investment. GDP per capita indicates the relative market size of host country, with higher GDP per capita implying greater profitability and consumption capacity, as well as liberal investment policies and lower labor costs, contributing to higher production rate. The economic freedom degree reflects the degree of government interference in the economy, and higher freedom degree means that China's companies have more opportunities to enter the host country's market and promote arable land investment (LUO & BHATTACHARYA, 2006). Arable land area and internet security server density are used to represent the resource conditions and infrastructure status of host countries, respectively. In general, host countries with more arable land resources are more receptive and inclusive to inward investment, while countries with less arable land are more sensitive and wary. A higher density of secure servers on the internet indicates better communication conditions for the population in host country, as well as higher degree of information reception. Nevertheless, the possibility of Chinese arable land investments being influenced by unfavorable public opinion on the internet increases, which is bad to China's investment performance. The institutional environment in host country is expressed in terms of the completeness of laws and regulations and institutional quality. A good institutional environment means that the host country's legislation is fair and transparent, and government officials are clean, which helps to reduce investment uncertainty and business costs, and improve the production rates (SUN et al., 2002). See table 1 for variable descriptions and descriptive statistics.

Model construction

This paper uses the ratio of the area of arable land put into production to the total contracted area to represent the production rates of contracted arable land. In reality, the production rates of some host countries where none of the contracted arable land is put into production is 0, and there are also some host countries where all the contracted area is put into production, then the performance is 1. Therefore, this explanatory variable is a continuous variable between

0 and 1. Considering that the explanatory variable belong to the two-end truncated data, it is appropriate to analyze it with the Tobit model. The model was set up as follows:

$$Y_j = \alpha_j + \beta_{j1}CD_j + \beta_{j2}FC_j + \lambda_{ji}X_{ji} + \xi_j \quad (2)$$

This study intended to investigate the moderating effect of friendship cities on cultural distance affecting the production rates of contracted arable land. Since the number of friendship cities and cultural distance are both continuous variables, the moderating effect of friendship cities is validated by introducing an interaction according to the method of analyzing the moderating effect of significant variables by WEN et al. (2005). The model was set as follows:

$$Y_j = \alpha_j + \beta_{j1}CD_j + \beta_{j2}FC_j$$
$$+ \beta_{j3}CD_j \times FC_j + \lambda_{ji}X_{ji} + \xi_j \quad (3)$$

Where, Y_j refers to the production rates of contracted arable land in China's overseas arable land investment in host country j; CD_j refers to the cultural distance between host country j and China; FC_j refers to the number pairs of friendship city that host country j has made with China; X_{ji} refers to the i-th control variable of host country j; β and λ are the coefficients to be estimated; and ξ is the disturbance term. The interaction terms were centered in order to overcome the problem of multicollinearity among the explanatory variables.

Data sources

The data sources used in this paper are as follows, data on China's investment in arable land in countries along the "Belt and Road", including the contracted arable land area, production area, and investment mode, are all obtained from the Land Matrix database (https://landmatrix.org/), and the data are as of June 2021. The cultural distance and the number of friendship city pairs between each host country and China are indicated by the latest data published on Geert Hofstede's website and the "Friendship City Statistics" of the China International Friendship City Association - China's provinces and host provinces in 2020, respectively. The remaining indicators are mainly from FAO database, the World Bank, the CEPII database, the ICRG database, and the annual reports of the World Economic Freedom. All data were presented as the average of the earliest years of China's investment in arable land in host country through 2020, and the final values were compiled and summarized by author.

Table 1 - Variable definitions and descriptive statistical analysis.

| Variable categories	Variable name	------------------------Variable descriptions------------------------	Mean	SD
Dependent variable	Production rate of contracted arable land	The proportion of arable land area for production and arable land contracted	0.202	0.352
The core explanatory variables	Cultural distance	Cultural differences between the host country and China	2.589	2.228
	Difference in power distance	Differences between the host country and China in power distance	1.301	2.758
	Difference in individualism	Differences between the host country and China in individualism	1.324	2.258
	Differences in masculinity	Differences between the host country and China in in masculinity	4.153	3.307
	Differences in uncertainty avoidance	Difference between the host country and China in uncertainty avoidance	3.579	3.612
	Friendship cities	Number of friendship city between the host country and China (pairs)	12.128	21.884
Control variables	Proportion of independent investments	The proportion of the number of projects independently invested by China's enterprises to the total number of projects	0.719	0.360
	Proportion of joint ventures project with host country	The proportion of the number of projects in which the host country participates in the joint venture to the total number of projects	0.155	0.292
	Geographical distance	Distance between host country and China's capital (10^7 meters)	0.927	0.446
	Whether there is a common border	Whether the host country has a common border with China, yes = 1, no = 0	0.170	0.376
	GDP	Average annual gross domestic product of host countries (10^{10} dollars)	12.123	26.242
	GDP per capita	Average annual GDP per capita of host countries (10^4 dollars)	0.309	0.339
	Economic freedom	The average annual economic freedom of the host country	55.016	7.279
	Arable land	Average annual arable land area of the host country (10^6 hectares)	9.035	18.569
	Internet security servers	Average annual internet security server density in host countries (one /10^3 person)	0.921	2.712
	Completeness of laws and regulations	The average annual completeness of laws and regulations of the host country	2.972	0.864
	Institutional quality	Average annual system quality in host countries	-0.597	0.499

RESULTS

Analysis of the area of arable land contracted by China to countries along the "Belt and Road" and the production rates of contracted arable land

          Since the "going out" strategy of China's agriculture was put forward, China's enterprises' overseas investment of arable land has been further developed, especially for the countries along the "Belt and Road" route, the area of arable land contracted for investment has gradually increased. According to Land Matrix, a database of global land transaction, as of June 2021, China had signed a total of 9.4114 million hectares of arable land for investment in 47 countries along the "Belt and Road" route, but at present, only 720,800 hectares of arable land have been put into production, and the production rate of arable land is only 7.66%. In this paper, the natural breakpoint method is used to divide the contracted area and production rate of cultivated land, Arcgis is also used to map out the spatial distribution of the contracted cultivated land area and production rate of China's cultivated land investment in the countries along the "Belt and Road" (Figure 1 and Figure 2).

          From the viewpoint of the contracted area, the natural breakpoint method divides the area into five

Figure 1 - The area of cultivated land contracted by China in the countries along the "Belt and Road".
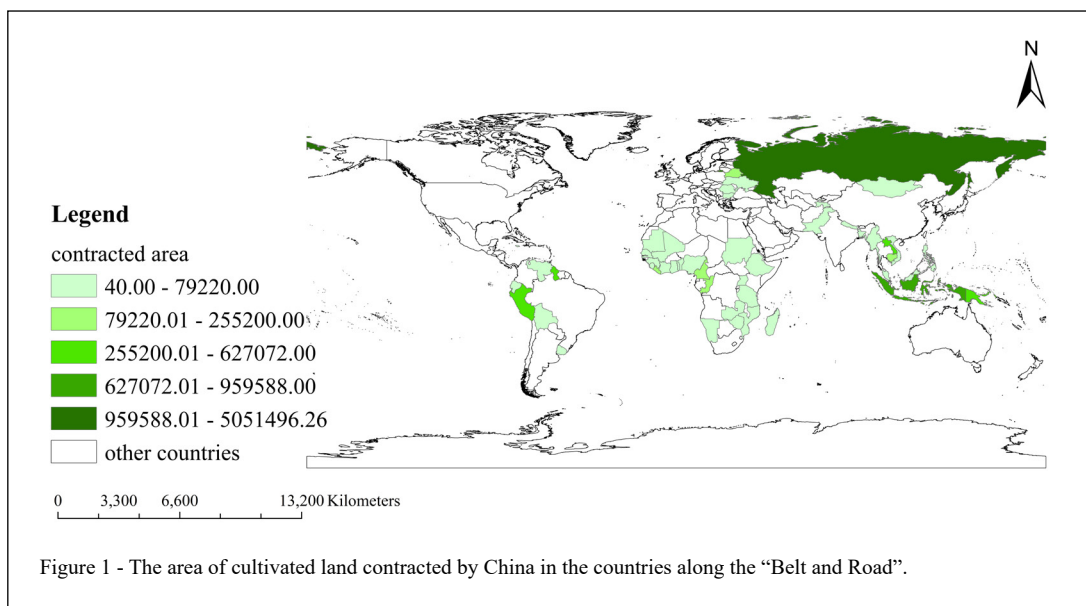
categories. The first category is the country with very large scale of contracted area, with a range of 959,600 hectares and above, the only country represented is Russia, which indicates that Russia is the key country for China's investment at present. The second category is the countries with a large contracted area, which ranges from 627,070 to 959,600 hectares, and is represented by Indonesia in Asia. The third category of countries are countries with average contracted area, which ranges from 255,200 to 627,100 hectares,

the countries represented include Laos, Guyana, etc. The fourth category is the countries with lower contracted area, which ranges from 79,200 to 255,200 hectares, the countries represented include Liberia, Cambodia, etc. The fifth category is the countries with very low contracted area, which ranges from 40 to 79,200 hectares, representing 36 countries, including Ethiopia, Benin, Togo, etc.

In terms of the production rates of contracted arable land, it is divided into five categories

Figure 2 - The production rate of contracted arable land in China's overseas arable land investment.
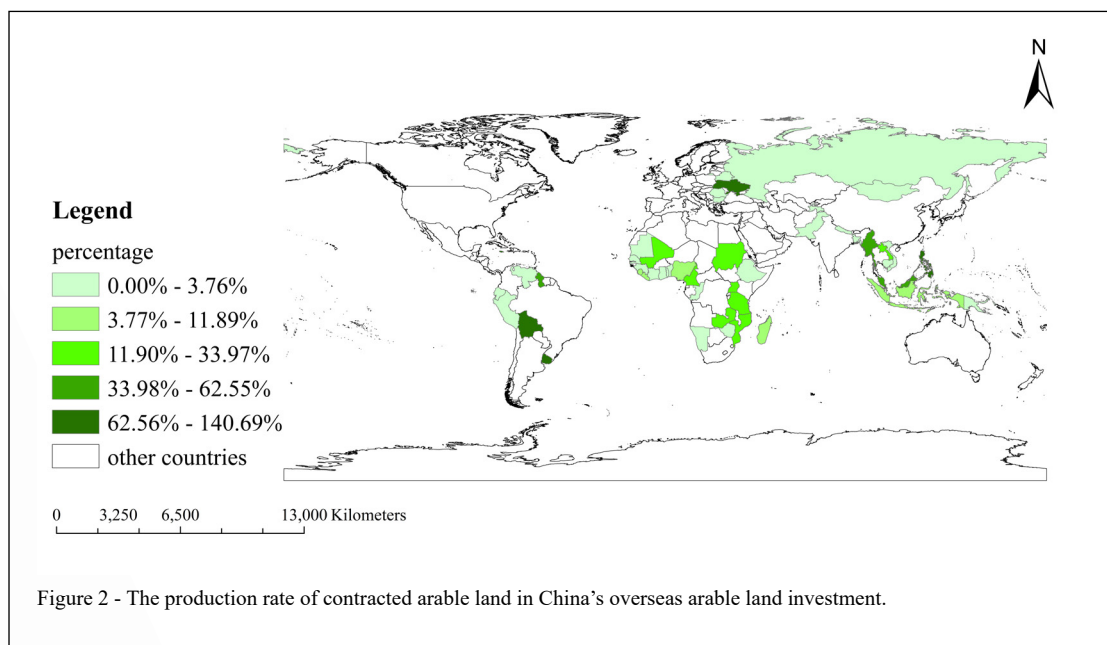
by using the natural breakpoint method. The first category is the countries with very high production rates, with a range of 62.56% to 140.69%, represented by Uruguay, Bolivia, Jamaica, Ukraine and the Philippines. The production rate of Ukraine and the Philippines is more than 100%, indicating that the area of arable land that China has put into production in these two countries is larger than the contracted area, so the arable land investment activities are progressing relatively smoothly. The second category is the countries with higher production rate, with a range of 33.98% to 62.56%, represented by Guyana, Malaysia and Uruguay. The third category is countries with an average production, ranging from 11.90% to 33.98%, represented by 8 countries, including Sudan, Tanzania, etc. The fourth category is countries with low production rate, with a range of 3.77% to 11.90%, represented by 6 countries such as Zimbabwe, Madagascar, etc. And the fifth category is countries with extremely low production rate, with a range of 0.005% to 3.77%, represented by 25 countries, such as Ghana, Nepal. It shows that on the whole, the production rate of arable land contracted by China in the countries along the "Belt and Road" is low, and most of the cultivated land is not put into production, which may be due to the lack of funds of enterprises and the low support of the host country.

The impact of cultural distance on the production rates of contracted arable land in China's overseas arable land investment

Before conducting the estimation, we use variance inflation factors to test the independent variables for multicollinearity, the results showed that the VIF values of all variables were less than 10, indicating that there was no cointegration among the variables. Further, the effects of cultural distance, friendship cities and other variables on the production rates of contracted arable land in China's overseas arable land investment were examined by applying Tobit models through Stata16 software (Tables 2 and 3). Among them, Model 1 introduces all control variables; Model 2 introduces cultural distance and friendship cities on the basis of Model 1; and Model 3 introduces cultural distance in each sub-dimension; Model 4 introduces the interaction term of cultural distance and friendship cities on the basis of Model 2 to examine the moderating effect of friendship cities; Models 5~8 introduce the sub-dimensional cultural distances and their interaction term with friendship cities respectively, to examine whether there were differences in the moderating effect of friendship cities on the influence of cultural distance in different dimensions on the production rates of contracted arable land.

The results of Model 2 show that there is a positive effect of cultural distance on the production rates of contracted arable land in China's overseas arable land investment, and it is significant at the 5% level, so Hypothesis 1 is verified (Table 2). The greater the cultural difference between China and the host country, on the one hand, can enable China's enterprises to give full play to their cultural advantages, seek cultural complementarity with the host country and further enhance the momentum of bilateral cooperation, and accelerate the contracted arable land into production. On the other hand, the cultural distance can stimulate the innovation of enterprises, so that enterprises cancombine the cultural characteristics of the host country and create management and operation methods that can be recognized and accepted by both countries, reduce the host country's hostility to China's investment, help to obtain the support and cooperation of local governments and the public, and promote the smooth development of investment.

The results of Model 3 show that the differences in power distance and uncertainty avoidance both positively affect the production rates of contracted arable land and are statistically significant at the 1% and 5% levels, respectively; while both the difference in individualism and masculinity have a negative effect on the production rate, but only the difference in individualism is statistically significant at the 10% level. So Hypothesis 2 is partially verified (Table 2). China is a high power distance country, and when there are large differences with the host country, the host country is more likely to accept China's differentiated ideas and mindset, and is willing to provide more information and authorization during the investment process, resulting in higher organizational flexibility and contributing to higher production rate. In addition, China is also a low uncertainty-averse country with a high risk-taking spirit, and China's companies are willing to participate in overseas arable land investments despite the high level of risk and uncertainty involved. When the host country is a high uncertainty avoidance country, it is relatively conservative and cautious, and will only give approval to China's investment projects after weighing the pros and cons, and will support the project to start operation after signing the contract, which is conducive to improving production rate (ZHU et al., 2020). The difference in individualism affects the production rate is opposite to the hypothesis, the reason is that China is a collectivist country, when there is a big difference with the host country, China pays more attention to

Table 2 - Baseline regression results.

Variable name	------------Model 1-----------		------------Model 2-----------		------------Model 3-----------	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Cultural distance			0.102**	0.042		
Difference in power distance					0.077***	0.021
Difference in individualism					-0.050*	0.028
Differences in masculinity					-0.004	0.016
Differences in uncertainty avoidance					0.037**	0.016
Friendship cities			0.003	0.010	0.004	0.005
Proportion of independent investments	0.237	0.405	0.201	0.399	0.280	0.197
Proportion of joint ventures project with host country	0.653	0.512	0.597	0.503	0.607**	0.249
Geographical distance	-0.475	0.302	-0.668**	0.331	-0.444***	0.157
Whether there is a common border	-0.526*	0.295	-0.938***	0.363	-0.679***	0.165
GDP	-0.016*	0.008	-0.015*	0.008	-0.013***	0.004
GDP per capita	0.684*	0.397	0.485	0.420	0.408*	0.237
Economic freedom	-0.007	0.019	-0.017	0.019	-0.014	0.011
Arable land	0.022**	0.011	0.020	0.013	0.012*	0.007
Internet security servers	-0.113*	0.062	-0.183*	0.104	-0.067***	0.020
Completeness of laws and regulations	-0.051	0.124	-0.102	0.121	-0.090	0.060
Institutional quality	0.475	0.336	0.701*	0.368	0.503**	0.194
Constant	0.971	1.566	1.889	1.617	1.547*	0.894
log likelihood	-31.206		-29.820		-3.794	
Pseudo-R^2	0.135		0.209		0.810	

Note: The coefficients of the variables in the table are standardized regression coefficients; *, **, *** indicate significant at the levels of 10%, 5%, and 1% respectively.

collective interests and expects the host government and people to cooperate with collective actions, but the host country has stronger independence and pays more attention to individual interests, and the host country will choose to terminate cooperation when the collective interests harm the individual interests, which will prevent the improvement of production rates of contracted arable land.

The impact of friendship cities on the production rates of contracted arable land in China's overseas arable land investment

The estimation results of Model 2 and Model 3 show that friendship cities have a positive but statistically insignificant effect on the production rates of contracted arable land in China's overseas arable land investment (Table 2), while the positive effect of friendship cities is significant at the 5% level after adding the cultural distance and friendship city

interaction terms and the difference in individualism and friendship city interaction terms in Model 4 and Model 6, respectively (Table 3), and Hypothesis 3 is partially verified. The befriending of friendship cities is conducive to improving the frequency and efficiency of communication between China's enterprises and the host country, and China's enterprises are more likely to gain the trust and support of the host country in long-term interactions, while the host country is more receptive to China's investment in local arable land, which will bring local revenues, technology and jobs, which can ultimately contribute to the enhancement of the production rate.

The moderating effect of friendship cities

The estimation results of Model 4, Model 6 and Model 8 show that the interaction terms of the difference in cultural distance, in individualism, in uncertainty avoidance and friendship cities all

Table 3 - Estimation results of the moderating effect of friendship cities on cultural distance influencing the production rate of China's overseas arable land investment.

Variable name	Model 4	Model 5	Model 6	Model 7	Model 8
	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
Cultural distance	$0.081^{**}(0.031)$				
Difference in power distance		0.040 (0.051)			
Difference in individualism			$0.069^{*} (0.035)$		
Differences in masculinity				0.027 (0.026)	
Differences in uncertainty avoidance					$0.033^{**} (0.016)$
Friendship cities	$0.019^{**} (0.009)$	0.001 (0.010)	$0.023^{**} (0.010)$	0.004 (0.010)	0.008 (0.006)
Cultural distance* Friendship cities	$-0.010^{***} (0.003)$				
Difference in power distance* Friendship cities		-0.009 (0.009)			
Difference in individualism* Friendship cities			$-0.011^{***} (0.003)$		
Differences in masculinity* Friendship cities				-0.002 (0.003)	
Differences in uncertainty avoidance* Friendship cities					$-0.002^{***} (0.001)$
Proportion of independent investments	0.453 (0.312)	0.115 (0.353)	0.438 (0.329)	0.382 (0.413)	0.254 (0.186)
Proportion of joint ventures project with host country	$0.948^{**} (0.400)$	0.550 (0.449)	$0.926^{**} (0.416)$	0.765 (0.514)	$0.608^{**} (0.246)$
Geographical distance	-0.225 (0.271)	$-0.579^{*} (0.293)$	-0.047 (0.287)	-0.442 (0.331)	$-0.299^{*} (0.166)$
Whether there is a common border	$-0.923^{***} (0.267)$	$-0.927^{***} (0.321)$	$-0.819^{***} (0.273)$	$-0.631^{*} (0.324)$	$-0.496^{***} (0.155)$
GDP	$-0.022^{***}(0.007)$	$-0.019^{**} (0.007)$	$-0.019^{***} (0.007)$	$-0.017^{**} (0.008)$	$-0.014^{***} (0.005)$
GDP per capita	0.490 (0.333)	$0.609^{*} (0.370)$	0.455 (0.344)	$0.775^{*} (0.406)$	0.355 (0.221)
Economic freedom	-0.016(0.015)	-0.020(0.018)	-0.004(0.016)	-0.008(0.020)	-0.011(0.010)
Arable land	$0.043^{***} (0.012)$	$0.026^{**} (0.012)$	$0.032^{***} (0.011)$	$0.026^{*} (0.016)$	$0.025^{***} (0.008)$
Internet security servers	$-0.117^{**} (0.056)$	$-0.122^{*} (0.063)$	$-0.114^{**} (0.055)$	$-0.127^{*} (0.072)$	$-0.064^{***} (0.020)$
Completeness of laws and regulations	-0.109 (0.095)	-0.094 (0.108)	-0.084 (0.100)	-0.69 (0.121)	$-0.102^{*} (0.061)$
Institutional quality	$0.650^{**} (0.288)$	$0.614^{*} (0.330)$	0.434 (0.311)	0.508 (0.362)	$0.513^{***} (0.186)$
Constant	1.044 (1.282)	2.153 (1.497)	0.103 (1.420)	-0.002 (0.003)	1.237 (0.834)
Log likelihood	-21.887	-25.927	-22.140	-30.309	-2.958
Pseudo-R^2	0.393	0.281	0.386	0.160	0.832

Note: The coefficients of the variables in the table are standardized regression coefficients; *, **, *** indicate significant at the levels of 10%, 5%, and 1% respectively.

have a negative effect on the production rate of contracted arable land in China's overseas arable land investment at the 1% significant level, so Hypothesis 4 is verified (Table 3). The friendship city is conducive to deepening the communication between China and the host country, promoting the understanding and tolerance of each other's culture, and reducing cultural frictions, but it will therefore reduce the advantageous role and complementarity of China's culture, as well as reduce the incentive of

enterprises to innovate and explore, thus weakening the positive impact of cultural distance on the production rate of contracted arable land.

The impact of control variables on the production rates of contracted arable land in China's overseas arable land investment

The estimation results of Model 4 show that the presence of a common border between China and the host country, the GDP of the host country and the density of internet security servers have a significant negative effect on the production rate of contracted arable land in China's overseas arable land investment, while the proportion of joint ventures project with host country, arable land area of the host country and the average institutional quality have a significant positive effect on the production rate (Table 3). Most of the countries that share borders with China are Southeast Asian and Central Asian countries, which are politically volatile and share borders with China make them more wary of China's arable land investment, which is not conducive to long-term investment development. Higher GDP represents a larger market size and better conditions of agricultural infrastructure and production technology in the host country, in which case the host country may have lower demand for inward investment and may be resistant to inward investment, which can have a negative impact on the production rate. The higher density of internet security servers in the host country means that the more sources of information the population receives, and the more likely the population is to be influenced by unfavorable public opinion in the western media about China's overseas investments in arable land, leading them to reject China's investments there and affecting the production rates of contracted arable land. The participation of the host country in joint ventures contributes to improved the production rate because the involvement of the host country reduces the risk of public opinion and information costs, as well as the wariness and hostility of the local government and population. Host countries with large arable land areas, such as Kazakhstan, are unable to use arable land efficiently due to their low technology level and insufficient capital and labor, so such countries need support and assistance from other countries and are more welcoming to China's investments, which can help to improve the production rate. The good institutional environment of the host country can reduce the uncertainty of China's enterprises' investment, lower their operating costs and improve

the stability of earnings, which is conducive to the improvement of the production rate.

Robustness test

In order to avoid bias in the results due to improper selection of variables and models, the paper adopts the method of replacing core variables, changing the regression model, reducing the tail of the explained variables to conduct robustness tests on the estimation results (Table 4 and Table 5). First, the area of arable land that China has already put into production in each host country is used as the dependent variable and estimated using a linear regression model (Model 9). Second, the absolute value of the cultural difference between the two countries is used to represent the cultural distance between China and the host country and brought into the model for estimation (Model 10). Third, the effects of cultural distance, friendship cities and their interactions on production rates of contracted arable land in China's overseas arable land investment were estimated by replacing the Tobit model with a general linear regression model (Model 11). Fourth, in order to eliminate the influence of extreme values, the interpreted variable, that is, the production rates of contracted arable land, is truncated by 1% and then replaced into the model for estimation (Model 12). Fifth, the sample is divided into two groups based on the mean value of the number of friendship cities established between China and all host countries, one group of friendship cities is higher than the average, the other group is lower than the average. After that, separate regressions were run on the two samples to analyze whether there was a difference in the influence of cultural distance on the production rates of contracted arable land between the two groups of samples (Model 13-14). The estimated results of model 9-12 show that after replacing the measurement method of variables, changing the model and reducing the tail of the explained variables, the direction and significance of the effects of cultural distance, friendship cities and their interaction terms on the production rates of arable land in China's overseas arable land investment are basically consistent with Model 4, indicating that the previous results are robust. In addition, in the grouping regression, the influence coefficient of cultural distance on the production rates of contracted arable land in the sample with a large number of friendship cities is 0.100, which is less than that in the sample with a small number of friendship cities, which is 0.125. Which proves once again that cultural distance has a positive impact on the production rates of contracted arable land in China's overseas arable land investment, and friendship cities play a negative role in the impact of cultural distance on the production rates.

Table 4 - Robustness test.

The variable name	Model 9	Model 10	Model 11	Model 12
	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
Cultural distance	7539.569[*] (3986.536)	0.048[*] (0.025)	0.058[**] (0.023)	0.092[**] (0.037)
Friendship cities	2156.468[**] (982.575)	0.022[*] (0.013)	0.011[*] (0.006)	0.020[*] (0.011)
Cultural distance * Friendship cities	-0.066[***] (0.014)	-0.003[**] (0.001)	-0.007[***] (0.002)	-0.011[***] (0.003)
Control variables	yes	yes	yes	yes
Log likelihood	-323.613	-27.513		-26.506
R^2			0.557	
Pseudo-R^2	0.044	0.238		0.343

Note: The coefficients of the variables in the table are standardized regression coefficients; [*], [**], [***] indicate significant at the levels of 10%, 5%, and 1% respectively.

DISCUSSION

Overseas arable land investment as an important means to leverage global agricultural resource allocation and alleviate the global contradiction between human and land resources has received extensive attention from many scholars. However, it is worth noting that, due to the late start of China's overseas arable land investment, some China's enterprises lack planning and guidance in the investment process, which makes it difficult to guarantee the production rate. Therefore, it is necessary to explore what factors affect the production rate of contracted arable land in China's overseas arable land investment. This study examines the effects of cultural distance and friendship cities on the production rate of contracted arable land from an informal institutional perspective. We not only analyze the respective effects of cultural distance and friendship cities on the production rate, but also explore the moderating role of friendship cities. Combining the results of the above analysis, this paper develops the following discussion.

First, the results of this paper show that cultural distance has a positive impact on the production rate of contracted arable land. Cultural distance can often measure the cultural differences between home country and host countries, and to some extent reflect the impact of corporate ethics on overseas arable land investment. According to traditional outward investment theory, the smaller the cultural differences between the host and home countries, the more favorable it is for investment behavior to occur and develop, which in turn can have

Table 5 - Grouping regression results.

The variable name	Model 13: Groups with a large number of friendship cities		Model 14: Groups with a small number of friendship cities	
	Coefficient	Standard error	Coefficient	Standard error
Cultural distance	0.100[***]	0.000	0.125[**]	0.061
Control variables	yes		yes	
Log likelihood	-12.984		-10.516	
Pseudo-R^2	0.506		0.239	

Note: The coefficients of the variables in the table are standardized regression coefficients; [*], [**], [***] indicate significant at the levels of 10%, 5%, and 1% respectively.

a positive impact on the production rate. However, this conclusion has not been verified in this paper, which is similar to the results of the research of KE et al. (2021). On the one hand, the results reflects that most of China's overseas arable land investment is resource endowment-seeking investment, and its investment model is market-oriented and resource-oriented, and the impact of cultural differences will be more subservient to economic interests or resource interests. On the other hand, cultural distance can give full play to the cooperation motivation of the host country and seeking cultural complementarity, stimulate the innovation power of enterprises, and then innovate management and operation methods, promote the smooth development of investment, finally improve the production rate of contracted arable land.

Second, this study point out that friendship cities not only positively affect the production rate of contracted arable land in China's overseas arable land investment, but also have a significant negative moderating effect on the differences in cultural distance, individualism, and uncertainty avoidance affecting the production rate. Friendship cities, as a kind of informal diplomatic activity, can not only define part of the institutional investment agreement relationship through the establishment of friendship cities, but also provide a basic platform for the deepening of economic interaction and mutual trust between the two sides and reduce the probability of investment risks. At the same time, it can also enhance the cultural adaptability of the host country for investment enterprises by promoting bilateral humanistic exchanges, thus suppressing the negative effects caused by cultural distance and promoting the production rate of contracted arable land in China's overseas arable land investment (DESBORDES, 2010). However, it is worth discussing that the results of this paper do not support the above analysis, this paper argues that the friendship cities have deepened the degree and level of bilateral communication, promoted mutual understanding of each other's culture, and reduced cultural friction. But in this process, excessive humanistic exchanges have to some extent also reduced the dominant role and complementarity of China's culture, which is not conducive to innovation and exploration of the investing enterprises, and ultimately weakened the positive impact of cultural distance on the production rate of contracted arable land. This also puts forward different requirements for China to invest in host countries with different cultural distance from China, and more targeted and specific investment measures

should be adopted to promote the production rate of contracted arable land.

Third, in terms of factors affecting the production rate of contracted arable land, indicators such as the proportion of joint ventures project with host country, internet server density, economic level, and institutional environment of host countries have a relatively large impact. This is consistent with related studies such as HAN et al. (2021), KE et al. (2021). However, the above scholars mainly discuss the impact of various factors on the location selection of overseas arable land investment, which is slightly different from the production rate of contracted arable land. This paper chooses the ratio of the area of arable land put into production to the area of contracted arable land to represent the production rate, which indicates to a certain extent that the indicators of factors affecting the choice of overseas arable land investment location also affect the production rate of arable land investment. From this point of view, the consistency with the above research also verifies the rationality of the results of this study. What is slightly different is that the positive impact of the proportion of joint ventures project with host country on the production rate of overseas arable land investment is more significant, which mainly reflects that the main behavior of overseas arable land investment occurs in the host country, and having a large proportion of cooperative investment with the host country can not only reduce the risk barriers in the investment process, but also reduce transaction costs, improve transaction efficiency, and then promote the improvement of the production rate of contracted arable land.

CONCLUSION

Based on the relevant data of China's overseas arable land investment in countries along the "Belt and Road", this paper empirically analyzes the impacts of cultural distance and friendship cities on the production rate of contracted arable land. The following conclusions are drawn. First, cultural distance has a significant positive impact on the production rate. And there are differences in the influence of cultural distance on the production rate in different dimensions, among which the difference in power distance and uncertainty avoidance has a positive and significant impact on the production rate, the difference in individualism has a negative and significant impact on production rate, and the difference in masculinity has no significant impact on production rate. Second, friendship cities have a positive impact

on production rate of China's overseas arable land investment, and have a significant negative moderating effect on the difference in cultural distance, individualism and uncertainty avoidance. Third, the proportion of joint ventures project with the host country, internet server density, economic level, and institutional environment of the host country will all have an impact on the production rate of contracted arable land.

Based on the above research conclusions, the following suggestions are put forward. First, in the process of overseas arable land investment, cultural distance should be correctly viewed and its positive role should be valued. As cultural distance has a positive impact on the production rates of contracted arable land in China's overseas arable land investment, enterprises should invest in countries of different cultures as far as possible, so as to maintain cultural diversity, in order to give full play to the advantageous development effect and advantageous exploration effect of cultural distance, and promote the improvement of the production rates of contracted arable land. However, at the same time, enterprises should also respect and protect the cultural heritage and traditional knowledge of the host country, actively promote cultural exchange and integration, promote mutual learning among different cultures, and break the shackles through the integration of multi-cultures, and then create a good investment environment.

Second, the positive effect of friendship cities on arable land investment should be enhanced. At the national level, China should continue to encourage local governments to establish friendship cities with other countries and improve the level of opening up to the outside world. Although the empirical results show that the positive impact of friendship cities on the production rates of contracted arable land is not significant, but quantitative change will lead to qualitative change. With the increase in the number and quality of friendship cities established between China and the host country, the relationship between the two countries will be closer, and the field of cooperation will be more in-depth, which will help to create a good environment for follow-up arable land investment and improve the production rates. At the enterprise level, investment enterprises should make full use of the non-governmental channels set up by friendship cities to carry out in-depth cooperation with local non-governmental organizations, this cooperation includes co-holding public welfare activities, carrying out community volunteer services, and providing professional guidance and training. Through cooperation with non-governmental organizations, we can increase the interaction and understanding between enterprises and local communities, establish a good cooperative relationship, at the same time, it can also enhance the social image of enterprises, which is in turn conducive to improve the production rates of contracted arable land.

Third, pay attention to other factors that affect the production rates of contracted arable land in China's overseas arable land investment. As the common border, host country GDP and internet security server density have a significant negative impact on the production rates of contracted arable land in China's overseas arable land investment, China's enterprises should avoid investing in areas with territorial disputes, consider the economic situation of the host country when choosing investment sites, choose countries with economic stability and great development potential, and strengthen internet security measures in the process of investment, ensure the security of data and information in order to improve the production rates. In addition, as the proportion of joint ventures project with host country, the size of the host country's arable land and the average institutional quality have a significant positive effect on the production rate, China's enterprises should focus on investing in areas with large arable land and high institutional quality, at the same time, they should increase the proportion of joint ventures, establish close cooperative relations with local enterprises, and share risks and benefits together, so as to improve the production rates of contracted arable land.

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DECLARATION OF CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHORS' CONTRIBUTIONS

All authors contributed equally for the conception and writing of the manuscript. All authors critically revised the manuscript and approved of the final version.

REFERENCES

AHAMMAD, M. F. et al. Equity ownership in cross-border mergers and acquisitions by British firms: An analysis of real options and transaction cost factors. **British Journal of Management**, v.28, n.2, p.180-196, 2017. Available from: <https://doi.org/10.1111/1467-8551.12215>. Accessed: May, 13, 2024. doi: 10.1111/1467-8551.12215.

ANTONELLI, M. et al. Global investments in agricultural land and the role of the EU: Drivers, scope and potential impacts. **Land Use Policy**, v.47, n.September, p.98-11, 2015. Available from: <https://doi.org/10.1016/j.landusepol.2015.04.007>. Accessed: Jun. 16, 2023. doi: 10.1016/j.landusepol.2015.04.007.

AREZKI, R. et al. What drives the global "land rush"?. **World Bank Economic Review**, v.29, n.2, p.207-233, 2015. Available from: <https://doi.org/10.5089/9781463923334.001>. Accessed: May, 10, 2023. doi: 10.5089/9781463923334.001.

BELDERBOS, R.; SLEUWAEGEN, L. Tariff jumping DFI and export substitution: Japanese electronics firms in Europe. **International Journal of Industrial Organization**, v.16, n.5, p.601-638, 1998. Available from: <https://doi.org/10.1016/S0167-7187(97)00027-1>. Accessed: May, 12, 2024. doi: 10.1016/S0167-7187(97)00027-1.

BHARDWAJ, A. et al. Host country cultural influences on foreign direct investment. **Management International Review**, v.47, n.1, p.29-50, 2007. Available from: <https://doi.org/10.1007/s11575-007-0003-7>. Accessed: Jun. 20, 2023. doi: 10.1007/s11575-007-0003-7.

BRAKMAN, S., et al. Town twinning and German city growth. **Regional Studies**, v.50, n.8, p.1420-1432, 2016. Available from: <https://doi.org/10.1080/00343404.2015.1023282>. Accessed: Jun. 21, 2023. doi: 10.1080/00343404.2015.1023282.

CHEN, Y. F. et al. Is China different from other investors in global land acquisition? Some observations from existing deals in China's going global strategy. **Land Use Policy**, v.60, n.January, p.362–372, 2017. Available from: <https://doi.org/10.1016/j.landusepol.2016.10.045>. Accessed: Jun. 13, 2023. doi: 10.1016/j.landusepol.2016.10.045.

COCHRANE, L. et al. Why foreign agricultural investment fails? Five lessons from Ethiopia. **Journal of International Development**, v.36, n.1, p.541-558, 2023. Available from: <https://doi.org/10.1002/jid.3827>. Accessed: May, 12, 2024. doi: 10.1002/jid.3827.

DANG, L. J.; ZHAO, J. F. Cultural risk and management strategy for Chinese enterprises' overseas investment. **Chinal Economic Review**, v.61, n.June, p.101433, 2020. Available from: <https://doi.org/10.1016/j.chieco.2020.101433>. Accessed: Jun. 20, 2023. doi: 10.1016/j.chieco.2020.101433.

DESBORDES, R. Global and diplomatic political risks and foreign direct investment. **Economics & Politics**, v.22, n.1, p.92-125, 2010. Available from: <https://doi.org/10.1111/j.1468-0343.2009.00353.x>. Accessed: Jun. 19, 2023. doi: 10.1111/j.1468-0343.2009.00353.x.

DING, H. Y. et al. Land holdings and outward foreign direct investment: Evidence from China. **Journal of International Money and Finance**, v.124, n.June, p.102630, 2022. Available from: <https://doi.org/10.1016/j.jimonfin.2022.102630>. Accessed: May, 12, 2024. doi: 10.1016/j.jimonfin.2022.102630.

EIDT, R. C. Japanese agricultural colonization: A new attempt at land opening in argentina. **Economic Geography**, v.44, n.1, p.1-20, 1968. Available from: <https://doi.org//10.2307/143340>. Accessed: Jun. 11, 2023. doi: 10.2307/143340.

EVANS, J.; MAVONDO, F. T. Psychic distance and organizational performance: An empirical examination of international retailing operations. **Journal of International Business Studies**, v.33, n.September, p.515-532, 2002. Available from: <https://www.jstor.org/stable/3069528>. Accessed: May, 11, 2024. doi: stable/3069528.

GOMEZ-MEJIA, L. R.; PALICH, L. Cultural diversity and the performance of multinational firms. **Journal of InternationalBusiness Studies**, v.28, n.2, p.309-335, 1997. Available from: <https://doi.org/10.1057/palgrave.jibs.8490103>. Accessed: May, 12, 2024. doi: 10.1057/palgrave.jibs.8490103.

GRINDLE, A. K. et al. Food security amidst water scarcity: insights on sustainable food production from Saudi Arabia. **Sustainable production and consumption**, v.2, n.April, p.67-78, 2015. Available from: <https://doi.org/10.1016/j.spc.2015.06.002>. Accessed: Jun. 26, 2023. doi: 10.1016/j.spc.2015.06.002.

HALL, R. Land grabbing in Southern Africa: The many faces of the investor rush. **Review of African Political Economy**, v.38, n.128, p.193-214, 2011. Available from: <https://doi.org/10.1080/03056244.2011.582753>. Accessed: May, 23, 2023. doi: 10.1080/03056244.2011.582753.

HAN, J. et al. Spatial distribution of Chinese overseas arable land investment projects in Southeast Asia and analysis of influencing factors. **Journal of Natural Resources**, v.36, n.6, p.1521-1534, 2021. Available from: <https://doi.org/10.31497/zrzyxb.20210613>. Accessed: Jul. 29, 2023. doi: 10.31497/zrzyxb.20210613.

HAN, Y. H. et al. The Belt and Road Initiative, sister-city partnership and Chinese outward FDI. **Economic Research-Ekonomska Istraživanja**, v.35, n.1, p.3416-3436, 2022. Available from: <https://doi.org/10.1080/1331677X.2021.1997618>. Accessed: May, 12, 2024. doi: 10.1080/1331677X.2021.1997618.

HOFMAN, I.; HO, P. China's 'developmental outsourcing': a critical examination of Chinese global 'land grabs' discourse. **Journal of Peasant Studies**, v.39, n.1, p.1-48, 2012. Available from: <https://doi.org/10.1080/03066150.2011.653109>. Accessed: Jul. 22, 2023. doi: 10.1080/03066150.2011.653109.

HOFSTEDE, G. H.; MINKOV, M. Cultures and organizations: Software of the mind. **London: McGraw-Hill**. 1991. Available from: <https://doi.org/10.2307/2393257>. Accessed: Jun. 24, 2023. doi: 10.2307/2393257.

HUANG, Y. X. et al. Sister-city ties and Chinese outward foreign direct investment: A spatial econometric analysis. **China & World Economy**, v.32, n.1, p.231-258, 2024. Available from: <https://doi.org/10.1111/cwe.12521>. Accessed: May, 14, 2024. doi: 10.1111/cwe.12521.

KE, S. G. et al. Study on the evolution of the spatial pattern of China's overseas arable land investment and its driving mechanisms from a dynamic perspective. **China Land Science**, v.35, n.4, p.44-52, 2021. Available from: <https://doi.org/10.11994/

zgtdkx.20210331.081705>. Accessed: May, 24, 2023. doi: 10.11994/zgtdkx.20210331.081705.

KOGUT, B.; NATH, R. The effect of national culture on the choice of entry mode. **Journal of International Business Studies**, v.19, n.3, p.411-432, 1988. Available from: <https://doi.org/10.1057/palgrave.jibs.8490394>. Accessed: Jun. 23, 2023. doi: 10.1057/palgrave.jibs.8490394.

LEE, S. H. et al. Cultural distance, investment flow, and control in crossborder cooperation. **Strategic Management Journal**, v.29, n.10, p.1117-1125, 2008. Available from: <https://doi.org/10.1002/smj.685>. Accessed: Jul. 21, 2023. doi: 10.1002/smj.685.

LIAN, Z. et al. International sister cities and cross-border M&A of Chinese enterprises: An empirical study based on Zephyr's global M&A analysis transaction library. **Finance & Trade Economics**, v.42, n.10, p.147-164, 2021. Available from: <https://doi.org/10.19795/j.cnki.cn11-1166/f.20211014.010>. Accessed: Jun. 23, 2023. doi: 10.19795/j.cnki.cn11-1166/f.20211014.010.

LINDERS, G. J. M. et al. Cultural and institutional determinants of bilateral trade flows. **Tinbergen institute discussion paper**, v.7, n.July, p.1-28, 2005. Available from: <https://doi.org/10.2139/SSRN.775504>. Accessed: Jun. 22, 2023. doi: 10.2139/SSRN.775504.

LIU, A. L. et al. Does cultural distance hinder exports?: A comparative study of China and the United States. **Economic Modelling**, v.105, n.December, p.105668, 2021. Available from: <https://doi.org/10.1016/j.econmod.2021.105668>. Accessed: Jul. 21, 2023. doi: 10.1016/j.econmod.2021.105668.

LIU, L. et al. Cultural distance, parent company capability and cross-border M&A performance: An empirical study based on a sample of cross-border M&A of Chinese listed companies. **Journal of Shandong University**, v.235, n.4, p.55-64, 2019.

LU, X. H. et al. The impacts of large-scale OFI on grains import: empirical research with double difference method. **Land use policy**, v.76, n.July, p.352-358, 2018. Available from: <https://doi.org/10.1016/j.landusepol.2018.05.023>. Accessed: May, 19, 2023. doi: 10.1016/j.landusepol.2018.05.023.

LU, X. H. et al. Spatial distribution pattern and its optimization strategy of China's overseas farmland investments. **Land Use Policy**, v.91, n.February, p.104355, 2019. Available from: <https://doi.org/10.1016/j.landusepol.2019.104355>. Accessed: Jul. 30, 2023. doi: 10.1016/j.landusepol.2019.104355.

LUO, X.; BHATTACHARYA, C. B. Corporate social responsibility, customer satisfaction and market value. **Journal of Marketing**, v.70, n.4, p.1-18, 2006. Available from: <https://doi.org/10.1509/jmkg.70.4.1>. Accessed: Jul. 19, 2023. doi: 10.1509/jmkg.70.4.1.

MA, L. Y. et al. Spatial distribution characteristics and influencing factors of the success or failure of China's overseas arable land investment projects - Based on the countries along the "Belt and Road". **Land**, v.11, n.11, p.2090, 2022. Available from: <https://doi.org/10.3390/land11112090>. Accessed: May, 12, 2024. doi: 10.3390/land11112090.

MBALYOHERE, C.; LAWTON, T. C. Engaging stakeholders through corporate political activity: Insights from MNE nonmarket strategy in an emerging African market. **Journal of International Management**, v.24, n.4, p.369-385, 2018. Available from: <https://

doi.org/10.1016/j.intman.2018.04.006>. Accessed: Jun. 28, 2023. doi: 10.1016/j.intman.2018.04.006.

MCMICHAEL, P. The land grab and corporate food regime restructuring. **Journal of Peasant Studies**, v.39, n.3-4, p.681-701, 2012. Available from: <https://doi.org/10.1080/03066150.2012.661369>. Accessed: May, 27, 2023. doi: 10.1080/03066150.2012.661369.

MOROSINI, P. et al. National cultural distance and cross-border acquisition performance. **Journal of International Business Studies**, v.29, n.1, p.137-158, 1998. Available from: <https://doi.org/10.1057/palgrave.jibs.8490029>. Accessed: May, 15, 2024. doi: 10.1057/palgrave.jibs.8490029.

MOURA, S. T. G. et al. Cultural distance and post-acquisition performance: the role of absorptive capacity. **International Journal of Emerging Markets**, v.18, n.12, p.6322-6342, 2023. Available from: <https://doi.org/10.1108/IJOEM-08-2021-1251>. Accessed: May, 13, 2024. doi: 10.1108/IJOEM-08-2021-1251.

MUDAMBI, R.; NAVARRA, P. Institutions and international business: A theoretical overview. **International Business Review**, v.11, n.6, p.635-646, 2002. Available from: <https://doi.org/10.1016/S0969-5931(02)00042-2>. Accessed: Jul. 20, 2023. doi: 10.1016/S0969-5931(02)00042-2.

NKANSAH-DWAMENA, E.; YOON, H. Why is sub-Saharan Africa an attractive destination to foreign land grabbers? Evidence from country characteristics. **African Development Review**, v.34, n.2, p.280-292, 2022. Available from: <https://doi.org/10.1111/1467-8268.12632>. Accessed: May, 16, 2024. doi: 10.1111/1467-8268.12632.

RAGOZZINO, R. The effects of geographic distance on the foreign acquisition activity of U.S. firms. **Management International Review**, v.49, n.4, p.509-535, 2009. Available from: <https://doi.org/10.1007/s11575-009-0006-7>. Accessed: Jul. 12, 2023. doi: 10.1007/s11575-009-0006-7.

RAJAN, R.; HATTARI, R. What explains intra-asian FDI flows: Do distance and trade matter. **Economics Bulletin**, v.29, n.1, p.122-128, 2009. Available from: <http://hdl.handle.net/10986/4858>. Accessed: Jun. 25, 2023.

STAHL, G. K. et al. Unraveling the effects of cultural diversity in teams: A meta-analysis of research on multicultural work groups. **Journal of International Business Studies**, v.41, n.1, p.690-709, 2010. Available from: <https://doi.org/10.1057/jibs.2009.85>. Accessed: May, 13, 2023. doi: 10.1057/jibs.2009.85.

SUN, J. Q. et al. Cultural distance, language dissimilarity and trade disputes. **Applied Economics**, v.56, n.8, p.941-955, 2024. Available from: <https://doi.org/10.1080/00036846.2023.2174932>. Accessed: May, 15, 2024. doi: 10.1080/00036846.2023.2174932.

SUN, Q. et al. Determinants of foreign direct investment across China. **Journal of International Money and Finance**, v.21, n.1, p.79-113, 2002. Available from: <https://doi.org/10.1016/S0261-5606(01)00032-8>. Accessed: Jun. 22, 2023. doi: 10.1016/S0261-5606(01)00032-8.

THOMAS, D. E.; EDEN, L. What is the shape of the multinationality-performance relationship? **Multinational Business Review**, v.12, n.1, p.89-110, 2004. Available from: <https://doi.org/10.1108/1525383X200400005>. Accessed: May, 14, 2024. doi: 10.1108/1525383X200400005.

TIAN, J. J.; LIU, Y. J. A study on agricultural investment along the Belt and Road. **Frontiers in Sustainable Food Systems**, v.6, n.December, p.1036958, 2022. Available from: <https://doi.org/10.3389/fsufs.2022.1036958>. Accessed: May, 13, 2024. doi: 10.3389/fsufs.2022.1036958.

TIAN, Y.; TUNIO, F. H. Assessing financial risks of foreign agricultural investment in belt and road countries: A risk index approach and VHSD-EM model analysis. **Plos One**, v.18, n.12, p.e0293146, 2023. Available from: <https://doi.org/ 10.1371/ journal.pone.0293146>. Accessed: May, 14, 2024. doi: 10.1371/ journal.pone.0293146.

TUNG, R. L.; VERBEKE, A. Beyond Hofstede and GLOBE: Improving the quality of cross-cultural research. **Journal of International Business Studies**, v.41, n.8, p.1259-1274, 2010. Available from: <https://doi.org/10.1057/jibs.2010.41>. Accessed: May, 13, 2024. doi: 10.1057/jibs.2010.41.

WANG, Y. M. et al. Measurement of investment potential and spatial distribution of arable land among countries within the "Belt and Road Initiative". **Agriculture**, v.11, n.9, p.848, 2021. Available from: <https://doi.org/10.3390/agriculture11090848>. Accessed: Jun. 23, 2023. doi: 10.3390/agriculture11090848.

WEN, Z. L. et al. Comparison and application of moderating effects and mediating effects. **Journal of Psychology**, v.2, p.268-274, 2005.

YI, C. J. et al. Research on the influence of overseas Chinese business network and multi-dimensional distance on the location selection of OFDI of Chinese enterprises. **International Business**, v.173, n.6, p.97-107, 2016. Available from: <https://doi.org/10.13509/j.cnki.ib.2016.06.010>. Accessed: Jun. 20, 2023. doi: 10.13509/j.cnki.ib.2016.06.010.

ZHAI, W. Risk assessment of China's foreign direct investment in "One Belt, One Road": Taking the green finance as a research perspective. **Socio-Economic Planning Sciences**, v.87, n.B, p.101558, 2023. Available from: <https://doi.org/10.1016/j.seps.2023.101558>. Accessed: May, 15, 2024. doi: 10.1016/j.seps.2023.101558.

ZHANG, Y. M. et al. International friendship cities, regional government leaders, and outward foreign direct investment from China. **Journal of Business Research**, v.108, n.January, p. 105-118, 2020. Available from: <https://doi.org/10.1016/j.jbusres.2019.09.056>. Accessed: Jun. 15, 2023. doi: 10.1016/j.jbusres.2019.09.056.

ZHAO, Y. Z.; CHEN, Y. F. Global patterns of agricultural investment and food security: Evidence from the fDi markets database. **Foods**, v.12, n.9, p.1827, 2023. Available from: <https://doi.org/10.3390/foods12091827>. Accessed: May, 15, 2024. doi: 10.3390/foods12091827.

ZHOU, H. C. Government agreements, institutional environment and foreign land investment. **Finance & Trade Economics**, v.393, n.8, p.71-84, 2014. Available from: <https://doi.org/10.19795/j.cnki.cn11-1166/f.2014.08.008>. Accessed: Jun. 15, 2023. doi: 10.19795/j.cnki.cn11-1166/f.2014.08.008.

ZHU, H. et al. The roles of Chinese CEOS in managing individualistic cultures in cross-border mergers and acquisitions. **Journal of Management Studies**, v.57, n.3, p.664-697, 2020. Available from: <https://doi.org/10.1111/joms.12556>. Accessed: May, 13, 2023. doi: 10.1111/joms.12556.