

FDI Location Choice at Provincial China

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Since 1993, China has become the second largest foreign direct investment (FDI) recipient in the world, following the United States. FDI from the rest of the world has contributed to a substantial portion of China's promising economic growth. However, previous analyses on this phenomenon often treat China as a unity and neglect the considerable differences, such as the level of development and labor costs across provinces. In addition, firms are assumed to face the same policy environments since the big discrepancies of government capacity among provinces are excluded from most studies. Thus, this paper explores the sub-national impacts of both economic and political environments to international firms when investing in China. John Dunning's eclectic FDI theory is the analytical framework here to determine the optimal investment locations in local China. The panel data is collected from multiple officially-published government yearbooks, which contains a variety of economic, social and political information for 27 Chinese provinces and 4 municipals from 1995-2006. The preliminary empirical results confirm the positive influences of infrastructure and agglomeration economies on FDI, which are suggested by the literature. Also, the econometric model shows that the political capacity of provincial governments can be critical to affect FDI inflows. Besides improving the resolution of FDI location theory to the local level, this paper examines the significance of political considerations on international production.

Field of Research: Firm Strategy, Investment Location Choice

1. Introduction

Since 1993, China has become the second largest Foreign Direct Investment (FDI) recipient in the world (following the United States) and the single largest host country among the developing countries, according to the United Nations Conference on Trade and Development (UNCTAD). As a result, FDI has increasingly integrated the Chinese economy into the world economy. There is little doubt that FDI has contributed significantly to Chinese economic growth

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Chiang

(Graham & Wada 2001), and the Chinese government has been formulated a series of FDI policies to maintain its charm.

FDI diffusion in China is highly geographically concentrated (Barnett & Brooks 2006; Graham & Wada 2001; OECD 2000). In our sample, over 85 percent of FDI inflows went to the East Region, while the Central and the West region only received 9 percent and 5 percent respectively from 1995 to 2006. Foreign direct investment contributes to China's promising economic growth, but also exaggerates the regional disparity situation.

The large differences in FDI accumulation between regions are mostly due to government policies (OECD 2000). FDI tends to concentrate on provinces with the presence of special economic zones (SEZs) such as Guangdong. The central government is responsible for making general policies to attract foreign direct investment. Minister of Commerce is the highest authority to approve, register, and monitor FDI activities. However, this political structure does not have to mean that China is centralized in terms of FDI regulation. On the opposite, provincial governments have more power than people used to think regarding foreign investment activities.

In 1994, the fiscal decentralization substantially changed the institutional arrangements between central and local governments. This fiscal reform redefined the share of tax for the central government and the provincial government respectively, also clarified the tax-sharing framework between these two agencies. Local governments now are granted the rights to fiscal surplus generated within the localities. Therefore, local officials have stronger incentives to initiate growth in order to extract additional revenue. Oi (1992, 1995, 1997, 1999) argues that the institutional changes have made local governments become entrepreneurial. Local officials turn the administrative bureaucracy into a "free channel for information and resources to facilitate market production." Moreover, local governments are no longer only play one role as regulators, but also become "advocates" of their local enterprises. Therefore, "the institutional incentives encourage local officials to carry out policies to maximize local rather than national interests"(Oi 1995).

Therefore, provincial governments enjoy the revenue surplus and bear more responsibility for providing public services today (Jin, Qian & Weingast 2005; Qian & Weingast 1996). If the infrastructures within the locality are poor to

Chiang

attract enough investment, revenue surplus will be reduced because of lousy performances. If the investment is well-performed, the surplus can be part of the extra-budgetary revenue for provincial governments to use without higher-level permission. Thus, it is important to understand what kind of capacity the provincial governments have in order to provide infrastructure, make FDI-friendly policy, and implement policies.

As a response to the current global financial turbulence, Chinese central government announced that local governments will be allowed to approve the setup of some new foreign-invested ventures and increases in foreign investment since 2009. In other words, the procedure of foreign investment in China will be shortened, which makes China more attractive to the world. Local officials will also be able to approve acquisitions by foreign companies of as much as US\$100 million in industries where overseas investment is encouraged. Apparently, foreign direct investment in China will be more localized than it already has been. Local officials will have stronger incentives to supervise the foreign investment contracts since the performance of FDI can directly affect tax revenue and the operating budget at the provincial level.

However, previous literature on FDI location decisions mainly focus on the national level (Bagchi-Sen 1991; Basu & Guariglia 2007; De Santis, Mercuri & Vicarelli 2003). According to Fry (1990), “sub-national ties beyond borders are also vital to large countries like the United States to maintain their economic competitiveness in a complex global arena.” Among those few papers which concern the geographical distribution of FDI at the sub-national level (Delios & Ensign 2000; Gerlowski, Fung & Ford 1994), attentions are mostly given to the advanced industrialized developed countries. This research is trying to expand the sub-national analysis of location theory to developing countries, which examines FDI diffusion phenomenon in China while taking provincial characteristics into account.

The primary research framework for this paper is the eclectic paradigm of location theory, which is developed by John Dunning in the 1980s. Dunning (1997) argues that policy environment plays a substantial role affecting multinational enterprises' decision-making in global business. Rosen (1999) points out that the political environment in China is difficult and the political constraints have been a discouragement to foreign investors. Different from previous literature on modeling the location theory, I propose an empirical

Chiang

research emphasizing the role of political considerations at the provincial level on the optimal location choices for the multinational enterprises (MNEs) within China.

The organization of this research is as following. Section 2 reviews previous studies on investment location choice and points out the lack of sub-national analysis in the literature. Also, this section explains the importance of policy environment on business decision making in foreign investment. Section 3 layouts the research design of this paper, describes the data sample, explains variables which are used in the statistical model. Section 4 shows the preliminary results and their implications to the multinational firms. Section 5 concludes this research and points out the limitation of this study.

2. Literature Review

Investment location theorists in the earlier days assumed that firms would choose locations where they had the comparative advantages. However, John Dunning (1993) claims that when firms are involved in international production, the concept of comparative advantages is not enough to explain the distinctive behavior of multinational enterprises in the world of globalization. He proposes a new approach to location theory, which combines previous research of comparative advantages and locational endowments, and adds internalization advantages as one of the three determinants for multinational enterprises while carrying out economic activities internationally. Based on Dunning's location theory, international production, at any given point of time, represents the accumulation of the strategic responses of firms to their current and the actual or expected changes in ownership (O), location (L), and internalization (I) configurations.

The ownership advantage is exclusive to a firm and is related to the accumulation of intangible assets, technological capacities and product innovations. The extent to which MNEs engage in foreign production will depend on their comparative ownership advantages with host country firms. Ownership advantage represents the "why" of MNEs international operations. "Unlike ownership-specific advantages, which are *internal* to particular enterprises, location-specific endowments are *external* to the enterprises that use them" (Dunning, John 1981). Location advantage factors are those characteristics which can increase firms' foreign investment level at this

Chiang

specific place. These variables are those which are not transferable or mobile across national boundaries, and are offered by the particular geographic area. Location advantage shows the “where” of production that MNEs would operate.

Firms have the need to generate innovations and to retain exclusive rights to their use in order to maintain their profits. Therefore, firms acquire exclusive possession and use of certain kinds of assets by internalizing those previously distributed by the market of public fiat, or by not externalizing those which they originate themselves. Dunning (1981) claims that internalization advantage reflects the perceived efficiency of multinational hierarchies, and the “how” of involvement with political-economic environments that MNEs are dealing with.

Most literature of the eclectic location theory is trying to answer two questions: why there is such amount of FDI in a specific country, and how the country can improve its attractiveness from the policy perspective. These studies conclude that infrastructure, stage of development, market size, investment incentives, labor costs, and the agglomeration economies are the most critical location characteristics of a country’s attractiveness to FDI (Bagchi-Sen 1991, 1995; Bajo-Rubio & Sosvilla-Rivero 1994; De Santis, Mercuri & Vicarelli 2003; Dunning, John 1998; Globerman & Shapiro 1999; Jensen 2003; Mariotti & Piscitello 1995; Sethi et al. 2003; Tuman & Emmert 2004).

However, FDI is not just an “international transfer of a bundle of factors of production,” Kogut (1993) argues that foreign direct investment should be analyzed as a “sequential process” instead of a “single, discrete strategic decision.” Lots of transaction costs are involved in foreign investment activities, and the role of government in shaping these transaction costs is critical since FDI is now on the political agenda of most countries (Dunning, John 1997). Transaction costs can be extremely high in the country where government policy may be changed overnight.

Therefore, the role of government has been highlighted in the eclectic paradigm of international production. Dunning (1993) argues that even though the trend of deregulation, liberalization, and less government intervention has become clearer since 1990s, “the influence of governments on the institutional framework and economic milieu for value-added activity within their countries is increasing.” Governments seem to loosen control over the basic factor

Chiang

endowments, e.g. natural resources, which affect the production costs for firms. However, variables affecting the transaction costs are elements which governments are substantially shaping, either directly or indirectly. This is because governments can and do strongly influence the extent, quality and cost of these variables by their policies regarding education, infrastructure, science and technology, legal and financial systems, industry, and trade.

Even though “there is a widespread recognition that government policies are important determinants of FDI,” however, the recognition is only “implicit, and almost never well developed analytically within the context of FDI theory” (Brewer 1993). Lack of political considerations is a common weakness in the literature. Most scholars only put economic variables into their econometric models (Basu & Guariglia 2007; Borensztein, De Gregorio & Lee 1998; Coughlin, Terza & Arromdee 1991; Krugman 1991; Tuman & Emmert 2004).

Political environment in china has been a discouragement to foreign investors (Graham & Wada 2001; Long 2005). Rosen (1999) conducts a wide range of extensive industry interviews with managers and other professionals working in multinational firms in China at that time, and concludes that political issues will still remain in concerns after China be admitted to the World Trade Organization (WTO). These issues include policy credibility, legal system transparency, economic freedom, social-economic inequality, political instability, and corruption. As a result, political perspectives are inevitable to analysis regarding FDI in China.

Provincial governments now are responsible for foreign investment approval (at certain amount), and for monitoring foreign-invested enterprises. Because of the fiscal structure, provincial governments tend to promote foreign investment in order to attain more extra-budgetary revenue. This so-called “local state corporatism” (Oi 1995, 1997, 1999) explains why Chinese provincial governments become more entrepreneurial these years. Institutional changes have altered the incentive structure of local officials.

However, only little attention has been paid to the sub-national level. Among those few exception (Billington 1999; Coughlin, Terza & Arromdee 1991; De Propriis, Driffield & Menghinello 2005; Delios & Ensign 2000; Friedman, Gerlowski & Silberman 1992; Gerlowski, Fung & Ford 1994; Papalia & Bertarelli 2009), the regions concerned are often western industrialized

Chiang

developed countries. But, foreign direct investment in emerging markets like India and China are those which need more sub-national analysis.

This is because within these developing countries, the institutional frameworks are not as robust as those in the OECD countries, so the political-economic and social environments can be very different across sub-national borders. For example, the condition of human resources and transportation could vary within the same country. In the rural part of a developing country, the legal and financial systems may not be accessible to most people and corruption can seriously undermine MNEs profits maximization.

From above, it is clear that prior studies overlook the importance of political constraints and the role that sub-national authorities has been playing in global business. This paper is here to fill in the space where previous literature has not settled. Thus, I would like to take previous research on eclectic location theory a step further, and use the relative political capacity (RPC) as one of the proxies to analyze the impacts of government policy and political environments on MNEs' location strategies.

Relative Political Capacity (RPC) is a concept first introduced by Organski and Kugler in 1980s (Organski & Kugler 1980). By their definition, political capacity is an expression of the political effectiveness of an elite in achieving governmental goals, and does not imply acceptance or support for the means by which such goals are attained. RPC is an aggregate measurement of the overall performances of political systems. Additionally, RPC reflects the relative success/failure of a government to extract and reach resources in a society, which is not captured successfully by many economic indicators.

Unlike economic output, therefore, political capacity measures the shadow of politics and does not directly disclose the aggregate political components that generate that performance by sector (Arbetman & Kugler 1997). In other words, RPC can be an appropriate proxy when comparing societies with similar levels of material and human resources, meaning RPC can be used to evaluate the aggregate performances of sub-national government within one country. The calculation process of RPC is articulated in Feng (2006).

If the government's RPC is greater than 1, then it collects more taxes than predicted, based on economic factors. Such a government is considered to be

Chiang

strong or politically capable and efficient. Likewise, if the above ratio is less than 1, it means the government fails to collect taxes it is supposed to obtain from economic grounds; in other words, it is “politically incapable” (Feng, Yi 2006).

Political capacity has been demonstrated to have remarkable explanatory power especially in developing countries. For example, based on Feng and Chen (1997) and Feng (2001), both argue that the variance of relative political capacity increases will cause uncertainty, thereby decrease private investment. Their hypothesis is statistically tested on the aggregate data of forty developing countries from 1978 through 1988. The empirical results indicate that, as expected, private investment decreases as the variance of relative political extraction increases. But their empirical results have not been applied to sub-national level, where allocations are made and policies are implemented. After all, FDI is fundamentally a micro rather than macro-economic phenomenon (Liu & Kang 2008).

When it comes to a large country like China, the capabilities of provincial government are especially needed to execute the desired policies for the central government. The Local government in China has more bargaining power than it looks like. Moreover, Remick (2002) emphasizes the essentiality of local government analysis by saying that “without a local approach, it would not be possible to have as nuanced or as accurate a picture of the Chinese state’s structure and practices or of state-society relations in China.” Eventually all foreign direct investment is local (Coan & Kugler 2009), especially when Chinese central government starts to delegate FDI approval to the local governments.

3. Methodology and Research Design

This empirical study examines the relationship between sub-national FDI inflow and its determinants for 31 provinces (including 5 autonomous regions, and 4 municipalities) in China from 1995 to 2006. Since the primary independent variable in this research is relative political capacity, which is calculated based on provincial governments’ ability of tax extraction, it is essential to start the analysis after the 1994 fiscal decentralization reform. All provincial data in use are officially published by National Bureau of Statistics of China and collected by the author through China Data Online website, which is

Chiang

a database built by University of Michigan.

Dependent variable in this research is the total amount of foreign direct investment utilized in each province (*FDI*). For control variables, prior studies have shown that the following four groups of factor may have substantial impacts on the location decision-making to multinational enterprises: market-related, labor, infrastructure, and policy-related. In order to conduct an empirical research, many variables are utilized to capture these factors. Please see Table 1.

Table 1 – Important Factors in Modeling FDI Location Theory

Type of Factor	Variables	Measurement	Expected Sign
Market-related	Market size	GDP	+
		GDP growth	+
	Development level	per capita GDP	+
	Agglomeration	FDI density	+
Labor	Labor costs	Average wages	—
	Labor availability	Unemployment rate	+
Infrastructure	Transportation	Length of railroads & highways	+
	Human resources	Primary school enrollment rate	+
Policy-related	Government efficiency	RPC	—
		Change of RPC	+

First, there are 3 variables could be used in order to capture the market-related factor: market size, level of development, and agglomeration economies. Market size represents the overall economic capacity of this province, which is measured by the regional gross domestic product (*GDP*). Studies have shown a positive relationship between market size and FDI in developed countries (Dunning, John 1998; Tuman & Emmert 2004; Woodward 1992) Also, Wei et al (Wei et al. 1999) suggest that regional market growth measured by GDP growth rate (*GROWTH*) can have significant positive effect on contracted FDI inflow. Larger market can accommodates more economic activities and provide opportunities for firms to benefit from economies of scales. Additionally, larger market size represents higher market demand for FDI to make profits.

Another proxy of market demand is the province's level of development, which is measured by per capita GDP (*GDPcapita*). Higher level of economic development implies higher purchasing power, which indicates the potential

Chiang

market for producers and investors. Therefore, a positive relationship of market demand and FDI inflow is expected. Coughlin et al (Coughlin, Terza & Arromdee 1991) conclude that FDI is attracted to regions with high density of manufacturing activity for the spillover effect.

Many scholars (Bagchi-Sen 1991; Cheng, S & Stough 2006; De Propris, Driffield & Menghinello 2005) confirm this point of view and suggest that there is a positive externality of agglomeration economies to FDI inflows. This is because if the province can accommodate such large amount of investment, the channel of knowledge diffusion and the network of suppliers must have been built. In other words, the investment environment should be better than other regions. In this research, the ratio of FDI inflow to GDP (*DENSITY*) of the province is the measure of FDI density.

The second group of factor is regarding the labor market. In this category, labor costs and labor availability are the common variables been used in the eclectic model to capture this locational advantage (Basu & Guariglia 2007; Chen 1997; Cheng, LK & Kwan 2000; Cletus & Eran 1999; Coughlin, Terza & Arromdee 1991). The lower average wage level (*WAGE*) is one of the most important reasons why companies all over the world has been increasing their investments into China (Sethi et al. 2003). Higher labor costs means higher production costs so that this province would be less attractive to foreign investors. Another labor relevant factor is the huge supply of Chinese population. Unemployment rate (*UNEMPLOY*) is used to measure the labor availability in this research. Besides the conclusion of higher wages deter foreign direct investment, Coughlin et al (1991) also argue that higher unemployment rates attract FDI. Billington (1999) confirms the result of an earlier study that unemployment actually encourages FDI.

The third important factor is the infrastructure of the region, which has been proven to be the most significant determinant of FDI location choice (Amiti & Smarzynska Javorcik 2008; Coughlin, Terza & Arromdee 1991; Globerman & Shapiro 2003; Ozyurt 2008; Wei et al. 1999). A province with better infrastructure, such as power supply, transportation facilities, communication networks and human resources are more attractive to FDI because these features represent the ease of operation in a location. In this paper, the intensity of transportation and human capital are two variables to measure the level of infrastructure for provinces in China. Intensive transportation network

Chiang

allows foreign investors to move their production materials and products more easily to designated areas (Liu & Kang 2008). The total length of railroads and highways (*TRANSPORT*) is the measurement of transportation in this research.

Human capital formation is one of the key variables regarding the infrastructure of an area. The quality of human capital represents the ability of knowledge diffusion and the absorption of technology in population, in other words, the labor productivity. Borensztein et al (1998) argue that the higher productivity of FDI holds only when the host country has a minimum threshold stock of human capital. Thus, FDI contributes to economic growth only when a sufficient absorptive capability of the advanced technology is available in the host economy. This paper uses the number of primary school enrollment (*ENROLLMENT*) as the proxy to measure the condition of human resources for each province.

The last group of factor is policy-related, concerning the role of provincial government in attracting FDI. Policy environment in the specific province is crucial to foreign investors because local governments have the power to affect the transaction costs in international production by making policy changes. For example, many investment incentives can be made by governments such as lower corporate tax rates for foreign companies, or less restriction in certain promotional industry. However, these preferential treatments only give us some information about whether there are policies facilitating foreign investment. There is not much detail on the discretionary power of the government to implement a desired policy. In other words, prior research excludes the influence of government capacity and its performance.

The value-added variable in this paper is the relative political capacity (*RPC*), which is designed to capture the government efficiency. *RPC* is an aggregate measurement of the overall performances of political systems (Arbetman & Kugler 1997). According to Feng (2006) and Feng & Chen (1997), private investment decreases as the variance of relative political extraction increases. Therefore, higher level of *RPC* may result in less foreign direct investments inflows. In order to examine the possible nonlinear relationship between *RPC* and FDI, not only the level of *RPC* is included but also the change of *RPC* (*D_RPC*) will be tested. The basic description for each variable in our sample is presented in Table 2.

Chiang

Table 2 – Data Description

Variable	Obs	Mean	Std. Dev.	Min	Max	Unit
FDI	329	186,662	292,160	247	1,743,000	\$10,000 US Dollars
GDP	341	4,036	3,935	65	25,969	\$100 million yuan
GDP Growth	310	11.19	4.50	-10.20	33.20	%
GDP per capita	341	10,704	9,227	2,021	75,990	yuan
FDI Density	329	37.04	39.17	0.81	203.30	USD/yuan
Average Wage	339	10,597	5,484	4134	34,345	yuan/year
Unemployment Rate	179	3.79	0.94	0.40	7.40	%
Length of Transportation	330	58.76	38.93	4.14	240.39	Kilometers
Enrollment of Primary School	323	365	248	12	997	10,000 persons
RPC	297	1.005	0.259	0.552	1.857	ratio
Change of RPC	264	-0.001	0.162	-1.082	0.666	ratio

Based on the cross-sectional time-series data in this research, fixed effect regression model is used to explain why some provinces would attract more FDI than others. Fixed effect model assumes that the individual specific effect is correlated with the independent variables. In other words, each province may have its own characteristics affecting FDI inflows, and these features are constant over time. Therefore, the model specification in this paper can be written as:

$$\begin{aligned}
 FDI_{it} = & \beta_0 + \beta_1 GDP_{it} + \beta_2 GROWTH_{it} + \beta_3 GDPcapita_{it} + \beta_4 DENSITY_{it} \\
 & + \beta_5 WAGE_{it} + \beta_6 UNEMPLOY_{it} + \beta_7 TRANSPORT_{it} + \beta_8 ENROLLMENT_{it} \\
 & + \beta_9 RPC_{it} + \beta_{10} D_RPC_{it} + \varepsilon_{it}
 \end{aligned}$$

4. Findings/ Discussion

This research is trying to understand the determinants of FDI location choice made by multinational enterprises in China. Both economic factors and political constraints are taking into account in the econometric model.

Chiang

Table 3— Statistical Results

	Model 1	Model 2
Dependent Variable	FDI (log)	FDI (log)
Intercept	-1.966 (4.379)	-3.086** (1.408)
GDP (log)	2.472* (1.326)	0.960** (0.473)
GDP growth	-0.00075 (0.01368)	
GDP per capita (log)	-0.592 (1.01)	1.054* (0.539)
FDI Density	0.0298*** (0.00354)	0.0178*** (0.00137)
Wages (log)	-1.052 (1.072)	-0.619* (0.353)
Unemployment Rate	0.0621 (0.140)	
Transportation (log)	1.733* (0.910)	0.356** (0.176)
Enrollment of Primary School	0.00110* (0.000600)	0.00184*** (0.000364)
RPC	0.104 (0.383)	-0.120 (0.215)
Change of RPC	0.282 (0.245)	0.336* (0.186)
Number of Observations	106	241
Overall R-square	0.4415	0.8428

* indicates statistical significance at 10% level, ** at 5% level, and *** at 1% level.

Standard errors are in parenthesis.

The impacts of GDP growth and the unemployment rate on FDI attractiveness are pointed out by the previous literature (Coughlin, Terza & Arromdee 1991). However, it is not significant in our sample. The reason for the insignificance is because that we do not have enough data for the unemployment rate. Thus, the number of observation drops dramatically when we include this variable. Moreover, the R-square is lower when all independent variables are included.

Chiang

GDP represents the market size, which shows positive relationship with FDI inflows in our sample. Also, the level of development is positively significant in model 2 even though it's not in model 1. The agglomeration effect is confirmed in our panel data. Higher average wages indicate higher production costs so that multinational enterprises would be less attractive to the region. Both measurements of infrastructure (transportation and human resources) are reported positively significant in attracting FDI inflows.

Relative political capacity is the primary measurement in this analysis to capture the political environment faced by international firms. Although the relative political capacity is not significant in both models, the change of RPC is positively significant in model 2. This means previous research on RPC itself is neglecting the nonlinear impacts of political capacity on FDI inflows. For example, if the local government has higher RPC value, meaning the government is extracting more than it should be, over-taxation and political controls may drive foreign investment away from this province.

However, if the change of RPC is positive, which means the RPC is increasing, the investment condition may be even worse than the province with high but declining RPC. Likewise, if the province has low but increasing RPC, it can still be attractive to foreign investment since the government efficiency is improving. The worse scenario is when RPC is low and keep decreasing, the local government would be considered unable to control the province.

5. Conclusion and Limitations

The preliminary empirical results confirm the positive influences of infrastructure and agglomeration economies on FDI, which are suggested by the literature. Also, the econometric model shows that the political capacity of provincial governments can be critical to affect FDI inflows. Besides improving the resolution of FDI location theory to the local level, this paper examines the significance of political considerations on international production. However, there are other variables can be used to capture the policy environment in local China, e.g. the government spending on scientific research, political stability. Due to the data availability, these variables are very difficult to get at the sub-national level.

Besides adding the political consideration into Dunning's FDI location theory,

Chiang

another contribution of this paper is that it improves the resolution of FDI literature to the sub-national level, where allocations are made and policies are implemented. Moreover, the empirical analysis provides the possibility to create an index of FDI success for Chinese provinces. Multinational enterprises will have enough information to evaluate each province and to decide where to invest within China. Chinese local officials can use this FDI success index to improve their investment environments and attract more future investments.

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Chiang

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